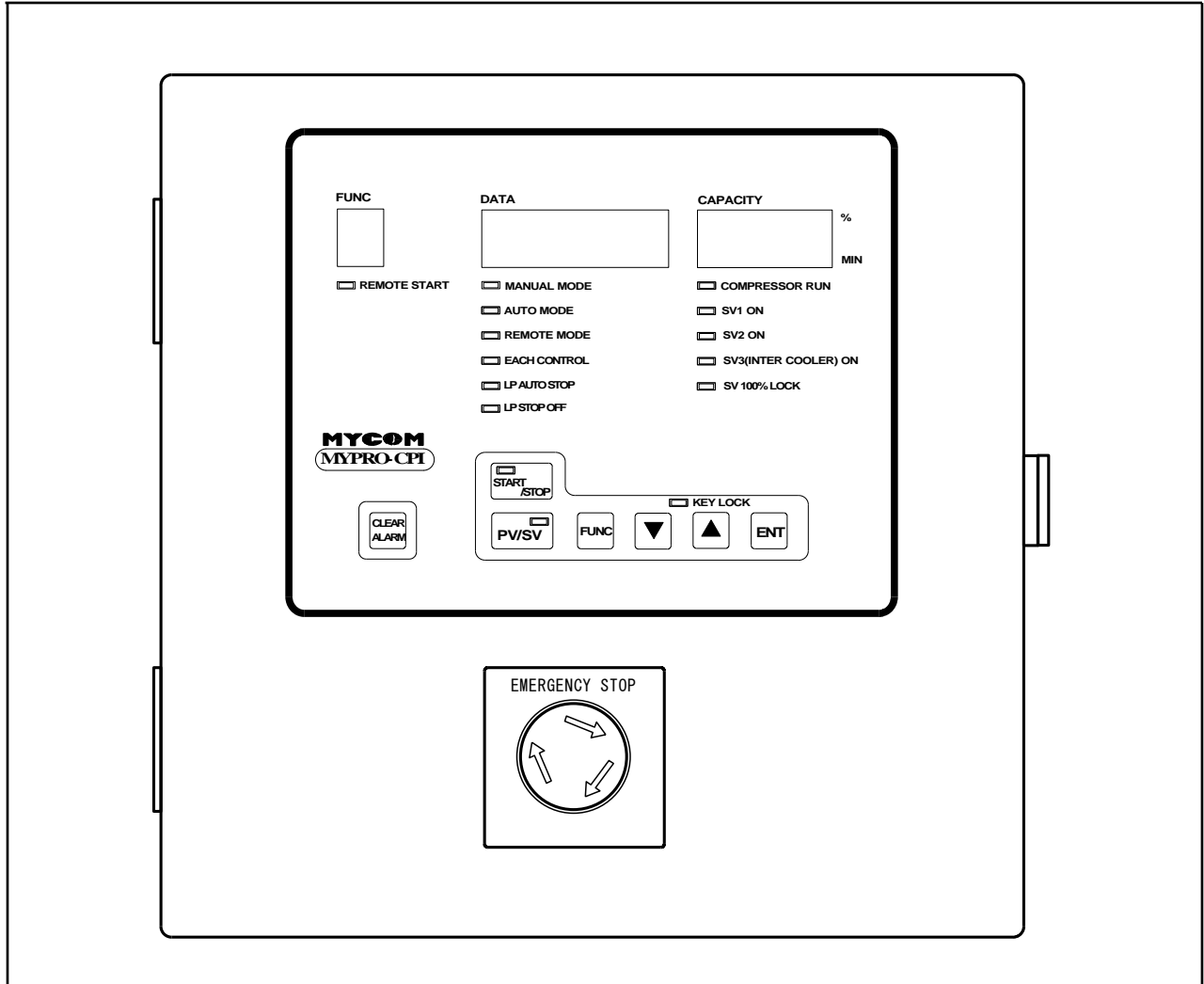


# MYPRO-CPI

MAYEKAWA MYCOM Compressor Controller

## INSTRUCTION MANUAL



\* Illustration is MYPRO-CP I standard type.



Carry out operation and inspection of product after reading the manual closely and understanding the product thoroughly.

# MYCOM

MAYEKAWA MFG. CO., LTD.

# SAFETY INFORMATION

This manual is prepared for using the product safely and effectively.

Do not disassemble the product because the product consists of electronic components.

We are not responsible if the product is disassembled.

There is a possibility of serious problems if the manual is neglected.

Most of accidents and problems occur when operation, inspection and maintenance are made without keeping fundamental safety rules.

Read this manual carefully before commencing operation or undertaking inspection or maintenance of the product.

Safety and precautionary warnings provided in this manual are classified into the following categories:



## DANGER

"DANGER" indicates a hazardous situation in which failure to observe all safety precautions **will lead to death or serious injury and major damage** to the product.



## WARNING

"WARNING" indicates a hazardous situation in which failure to observe all safety precautions **may lead to death or serious injury or major damage** to the product.



## CAUTION

"CAUTION" indicates a hazardous situation in which failure to observe all safety precautions **could lead to death or serious injury or damage** to the product. Moreover, it is used also about **notes for exhibiting sufficient performance** about the product.

The safety and precautionary warnings contained in this manual establish minimum level of safety to perform operation, inspection and maintenance work or the product.

Operations and maintenance personnel are advised to implement at their own responsibility any further safety activities in line with the particular environment or location of the product.

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- FORWARD -

Thank you choosing the MYPRO-CPI.

This manual should be kept in a convenient easily accessible location near the product and should be studied periodically by those working with the product.

Read this manual carefully in order to familiarize yourself with and use the product effectively.

1. Request

This manual should be kept in a convenient easily-accessible location near the product and should be studied periodically by those working with the product.

Read this manual carefully in order to familiarize yourself with and use the product effectively.

2. Notice

While every effort is made to ensure contents of the manual, it is possible that explanations in this may have been superseded, if any uncertainty exists, contact the manufacturer.

We reserve the right to make changes or improvements to the product without notice.

3. Receiving and inspection

Confirm the following before use.

MYPRO-CPI has 3 variations. Standard type, CSA type and EN type.

Further 19 options at shipment exist.

S (standard: 3 voltage type pressure sensor	)
H1 (Only main part: No press. sensor + power source for current type sensor	)
H2 (Only main part: No press. sensor + power source for current type sensor + temperature transducer	)
H3 (Only main part: No press. sensor + power source for current type sensor + communication board	)
H4 (Only main part: No press. sensor + power source for current type sensor + temperature transducer + communication board	)
O1 (option 1: 3 voltage type pressure sensor + temperature transducer	)
O11 (option 11: 3 voltage type pressure sensor + communication board	)
O12 (option 12: 3 voltage type pressure sensor + temperature transducer + communication board	)
O2 (option 2: 4 voltage type pressure sensor	)
O21 (option 21: 4 voltage type pressure sensor + communication board	)
O3 (option 3: 4 voltage type pressure sensor + temperature transducer	)
O31 (option 31: 4 voltage type pressure sensor + temperature transducer + communication board	)
O4 (option 4: 3 current type pressure sensor + power source for current type sensor	)
O41 (option 41: 3 current type pressure sensor + power source for current type sensor + communication board	)
O5 (option 5: 3 current type pressure sensor + power source for current type sensor + temperature transducer	)
O51 (option 51: 3 current type pressure sensor + power source for current type sensor + temperature transducer + communication board	)
O6 (option 6: 4 current type pressure sensor + power source for current type sensor	)
O61 (option 61: 4 current type pressure sensor + power source for current type sensor + communication board	)
O7 (option 7: 4 current type pressure sensor + power source for current type sensor + temperature transducer	)
O71 (option 71: 4 current type pressure sensor + power source for current type sensor + temperature transducer + communication board	)

Confirm the following setup value before use.

4 Page 3-1 Configuration setup mode

7 Page 3-3 Function

(Described pressure unit is MPa unless otherwise specified and temperature unit is °C.)

\* In MYPRO-CPI, when Suction Pressure Process Value and Suction Pressure Set Value is -0.100Mpa to -0.001MPa, actual display shows "0.000" to "0.000".

This is based on hardware specifications and it is not malfunction.

For convenience, in this manual "-0.100" to "-0.001" is used instead of "-0.100" to "-.001".

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## 0 . Safety

### 0 . 0 . 1 . Basic Safety Instructions

This manual is prepared in order to assure safe and effective operation of the product.

Do not disassemble the product because the product consists of electronic components.

We are not responsible if the product is disassembled. There is a possibility of serious problems if the manual is neglected.



Do not disassemble the product because the product consists of electronic components.

Read this manual carefully before commencing operation or maintenance of the product.

This manual should be kept in a convenient, easily accessible location near the product and should be studied periodically by those working with the product.


- Understand explanations in this manual thoroughly before inspection or maintenance of the product.
- Read safety information in the opening before commencing maintenance work.
- Keep this manual at your hand and study periodically.
- Please order the manual to the manufacturer or the nearest representative in your area when you lost or damaged it.
- When you transfer the product to the other party, this manual should always be accompanied the product.
- We reserve the right to make changes or improvements to the product without notice. If any uncertainty exists, contact us.

# 1. Outline


- MYPRO-CPI is a controller for compressors, model A, B, C, J, K, L, 10S, 11S, 1290, 1410, HK, M.  
It has max. 4 pressure sensors, 2 temperature inputs, 4 contact inputs (*Emergency Stop Input* is included.) , 3 contact outputs, 3 capacity control solenoid valve outputs (voltage contact). (Number of attached pressure sensors for standard unit is 3.)  
(However, because the sensor range is different, the pressure sensors used with HK compressor is an option.)
- Besides the voltage type pressure sensor of standard attachment, MYPRO-CP I can also be use general current 4 to 20mA type pressure sensor. (It corresponds by the option set.)
- Compressor capacity is automatically controlled by suction pressure sensor to meet target Suction Pressure.
- Discharge Pressure sensor issues alarm in case of High Discharge Pressure and Oil Pressure sensor issues alarm in case of Low Oil Pressure and keep these situations.
- Discharge Temperature and Oil Temperature can be monitored and issues alarm when High Temperature by using RTD Pt100Ω sensors. (Temperature transducer and temperature sensors are optional parts.)
- Following items are setup by key operation. Compressor model, number of solenoid valve, pressure/ temperature display unit, control mode, operation of contact input, measurement unit of pressure sensors and so on.
- Careless change of setup value is prohibited by key-lock function.
- Start and stop of compressor and capacity control is available at hand. Manual operation of capacity control is also available.
- MYPRO-CP I has self-diagnosis function of abnormal sensors.
- By using RS-485 communication board, read out or write in of MYPRO-CPI process value and set value is available from external device. Communication protocol corresponds to MYCOM original communication protocol and MODBUS communication protocol.

## LED Display Font

The following alphanumeric font is used for the 7-segment LED FUNC and DATA displays. Control operators should take the time to familiarize themselves with the font characters to avoid confusion.

0 1 2 3 4 5 6 7 8 9  


A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  

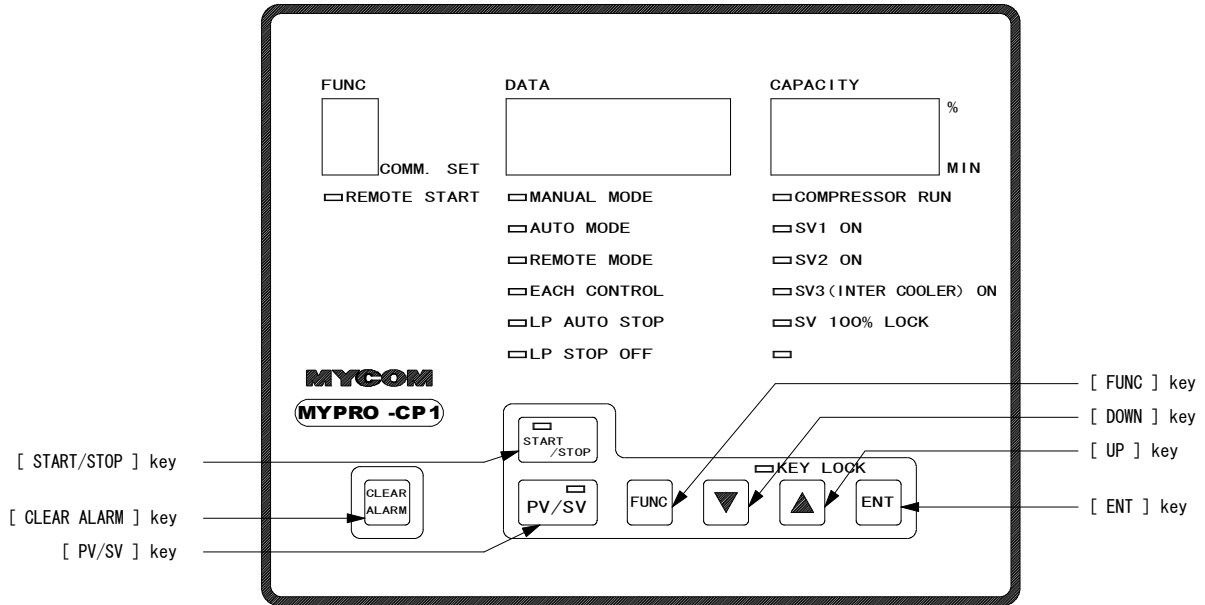

a b c d e f g h I j k l m n o p q r s t u v w x y z  


] . - [(Space)  


Remarks: The above font is used in graphics throughout this manual.

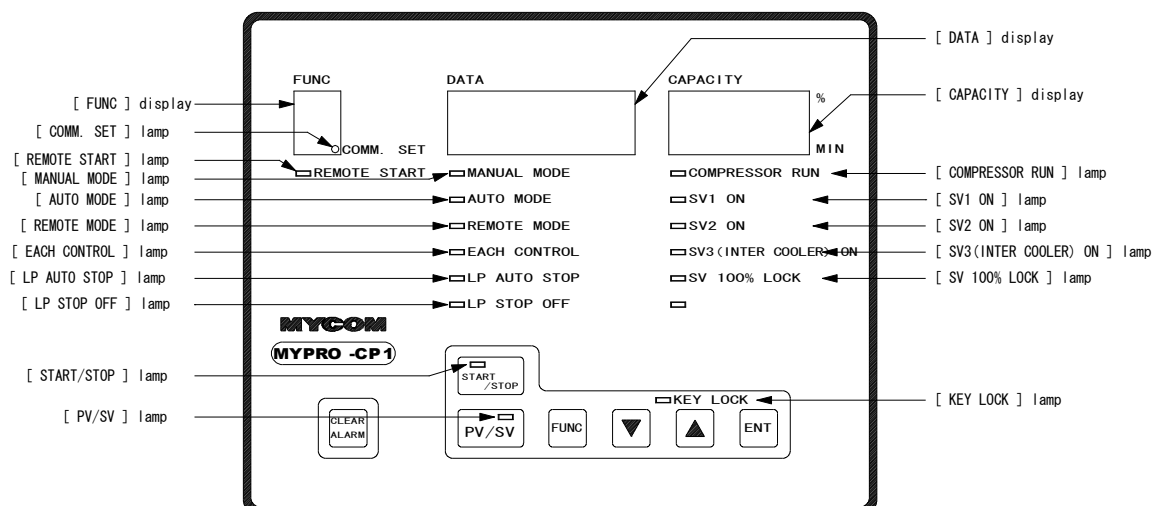
## 2. Name of each part and outline of function

### 2.1. Front panel sheet (key)



Name	Outline of function
[FUNC] key	Function is changed by each push of FUNC key. After 3 seconds push during SV display, ENG setup menu is appeared.
[PV/SV] key	Process value and set value is switch over by each push. (After 5 seconds push, total running time is displayed.)
[UP], [DOWN] key	Set value increases or decreases by each push. (Capacity is increased or decreased if pushed during manual operation.)
[ENT] key	Set value is registered if push the key after set value is changed.
[START/STOP] key	In case of Automatic/Manual Mode, start or stop of compressor is available by pushing the key. (Not available in case of Remote Mode.)
[CLEARALARM] key	Alarm reset and restart is available by pushing the key after alarm stop.

## 2.2. Front panel sheet (display and lamp)

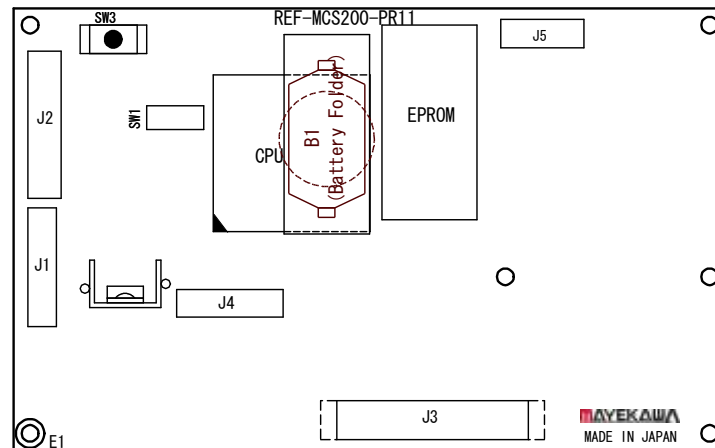


Name	Outline of function
[FUNC] display	Display function.
[DATA] display	Display data of selected function.
[CAPACITY] display	Display capacity of compressor. Display name of item in case of ENG setup menu and configuration setup mode. Display a kind of alarm at alarm condition. Blink while driving compulsion of [REMOTE] Mode. (Only M type Compressor.) (Refer to " <a href="#">Compulsion Running for the mechanical seal protection</a> ".)
[REMOTE START] lamp	Red light is ON when <i>Remote Start-Stop Input</i> is ON regardless of running mode. Or red light blinks when <i>Remote Start-Stop Input</i> is ON during Communication Setup change mode.
[MANUAL MODE] lamp	Green light is ON when Manual Mode is selected.
[AUTO MODE] lamp	Green light is ON when Automatic Mode is selected.
[REMOTE MODE] lamp	Green light is ON when Remote Mode is selected.
[EACH CONTROL] lamp (Mode A operation) lamp	Green light is ON when Mode A is selected. Light blinks from 3 seconds prior to Control Cycle Time under Mode A control.
[LP AUTO STOP] lamp	Green light is ON during automatic stop under Automatic/Remote Mode
[LP STOP OFF] lamp	Green light is ON during LP automatic stop is prohibited.
[COMPRESSOR RUN] lamp	Red light is ON when <i>Compressor Running Output</i> is ON.
[SV1 ON] lamp (Capacity control SV1 operation)	Red light is ON when <i>Capacity Control Solenoid Valve 1 Output</i> is ON.
[SV2 ON] lamp (Capacity control SV2 operation)	Red light is ON when <i>Capacity Control Solenoid Valve 2 Output</i> is ON.
[SV3 (INTERCOOLER) ON] lamp (Capacity control SV2 operation)	Red light is ON when <i>Capacity Control Solenoid Valve 3 Output</i> is ON.
[SV 100% LOCK] lamp	Red light is ON when <i>100% Lock Running Input</i> is ON regardless of running mode. Or red light blinks when <i>100% Lock Running Input</i> is ON during Communication Setup change mode.
[START/STOP] lamp	Red light is ON when START/STOP key is pressed regardless of operation mode.
[PV/SV] lamp	Green light is ON during usual setup menu set value is displayed. Green light blinks during ENG setup menu set value is displayed. Green light is OFF during process value is displayed.
[KEY LOCK] lamp	Set value change is not available when green light is ON.
[COMM. SET] lamp	When decimal point lamp in function display is ON, change of set value and movement from external device is available.



## 2.3. CPU board

REF-MCS200-CP02



Name	Outline of function
<b>SW1</b> (8bits dip switch for each movement)	It is used for start of configuration setup mode or setup of key lock, lamp test movement. (Refer to "3 . 2 . Configuration setup mode" and "3 . 1. Dip switch operation of each movement".)
<b>SW3</b> (Reset switch)	<b>Reset movement</b> *1 is carried out by push and release.
<b>J1</b>	Connector for internal power source connection.
<b>J2</b>	Connector for display panel board connection.
<b>J3</b>	Connector for terminal block board connection.
<b>J4</b>	Connector for R/V board (option) connection.
<b>J5</b>	Connector for communication board (option) connection.
<b>LD10</b> (CPU movement confirmation lamp)	This lamp blinks when CPU works properly.
<b>B1</b> (Battery for Memory Backup)	Back up of setup data when power is not supplied. *2

\*1 **Reset movement** works by **push and release of SW3** or **re-entry of power source**.

\*2 Replace the lithium battery (CR2032) for a new battery **every 3 years**.



MYPRO-CP I operation becomes unstable instantaneously when SW3 reset switch is pressed and same situation follows as just after power is ON.

**Do not touch SW3 reset switch when compressor is running.**

## Battery Replacement Procedures

Carry out battery replacement as follows:

- 1) Battery replacement should always be done with the power source ON.

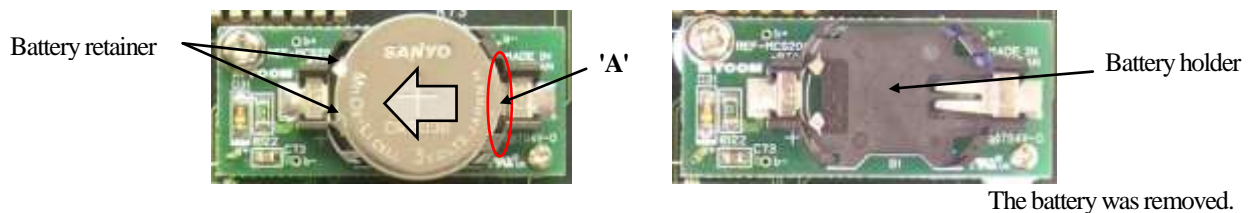
### Caution :

If battery renewed is carried out with the power source turned OFF, data in memory will be lost when the old battery is removed.

Special care must be taken to protect against electric shock when the backup battery is replaced with the main power source ON.

- 2) Remove the old battery from the battery holder.

Referring to the illustrations below, insert a finger at 'A' and press out the battery in the arrow direction, **taking care to avoid dropping the battery.**



- 3) Mount a new battery in the battery holder

**Confirm the polarity of a new battery and install with the positive terminal facing up.**

Slip the battery under the battery retainer and push into place.

Confirm that the new battery is properly seated in the battery holder.



- 4) Change the battery replacement label information.

Cross out the old date indicated for battery replacement and write in a new date, three years from the date of replacement.

Example.)

Battery 次回交換時期	2012.05
Date for next change	<del>2009.05</del>

Battery 次回交換時期	2012.05
Date for next change	2012.05

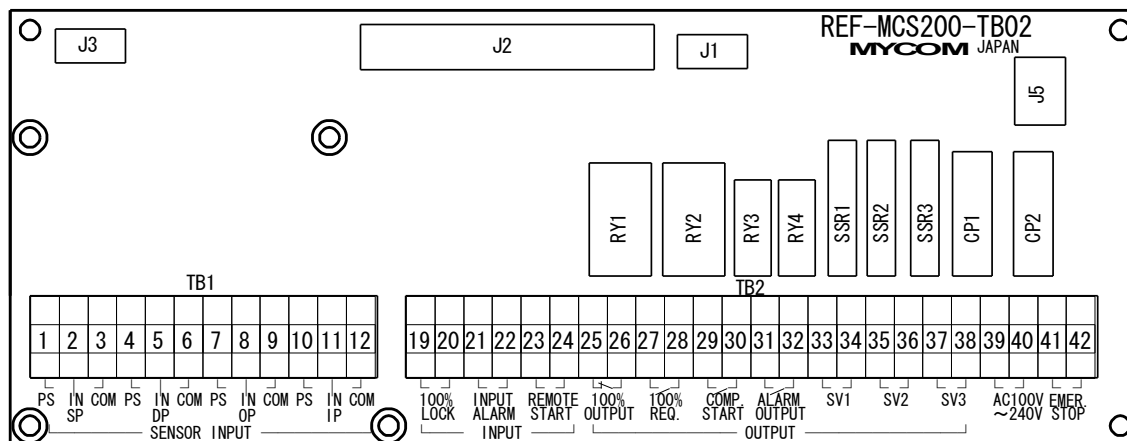
- 5) Dispose of the old battery as hazardous material according to local regulations.

**Cautions :** **When the removing and installing a battery, special care must be taken that the battery does not touch adjacent component or the matter.**

**Care must be taken that the circuit board (REF-MCS200-BT01) is free from excessive power.**

## 2.4. Terminal block board

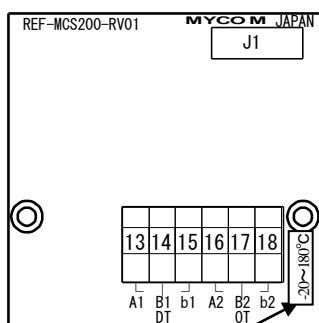
REF-MCS200-TB02



Name	Outline of function
<b>J1</b>	Connector for emergency stop push button connection.
<b>J2</b>	Connector for CPU board connection.
<b>J3</b>	Connector for Power Source Board for the current type pressure sensors. The short-circuit connector is installed for the voltage type pressure sensors.
<b>J5</b>	Connector for internal power source connection.

## 2.5. R/V board (option)

REF-MCS200-RV01



The temperature range is shown in the label.

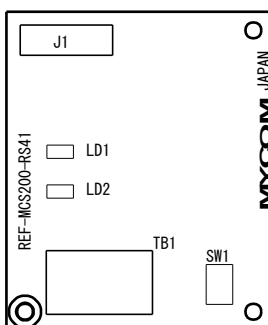
Name	Outline of function
<b>J1</b>	Connector for CPU board connection.



Temperature range is "-60 to 140 °C" in R/V board (temperature converter) of CPI (Ver.1.02.13 former) of shipment before October, 2009.  
Temperature range is "-20 to 180 °C" in R/V board (temperature converter) of CPI (Ver.1.03.01 former) of shipment since November, 2009.

## 2.6. Communication board (option)

REF-MCS200-RS41

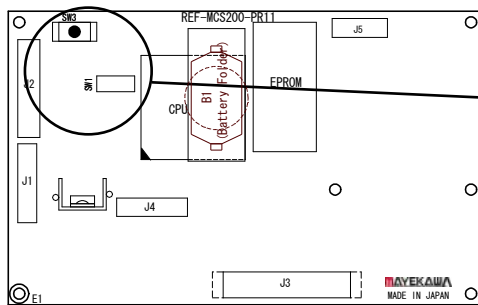


Name	Outline of function
<b>LD1</b> (Red lamp for data receiving)	ON at data receiving by serial communication.
<b>LD2</b> (Green lamp for data sending)	ON at data sending by serial communication.
<b>SW1</b> (Slide switch for terminator)	Select of yes or no of terminator at RS-485 communication port. SW1-1 receiving side terminator SW1-2 sending side terminator (Refer to "6.3. Connection of RS-485 communication port (option)".)
<b>J1</b>	Connector for CPU board connection.

## 3. Operation

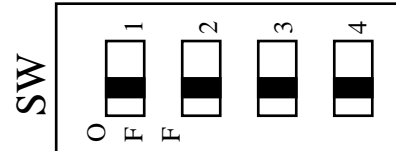
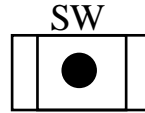
### 3.1. Operation of dip switch for each movement

In MYPRO-CPI, following movements are available by operation of dip switch (CPU board SW1) for each movement.  
Make OFF all SW1-1 to SW1-4 to avoid following movements.



REF-MCS200-CP02









enlargement of upper left



	SW1-1	SW1-2	SW1-3	SW1-4																			
<b>Key Lock</b>	ON	---	OFF	OFF	<p>In this state, [KEY LOCK] lamp is ON. Input of setup completion ([ENT] key) at set value input is not available. By this function, careless change of set value and setup change by unauthorized personnel are avoided.</p> <p>Key lock state and key lock release state are shown below.</p> <table border="1"> <thead> <tr> <th></th> <th>Lock state</th> <th>Lock release</th> </tr> </thead> <tbody> <tr> <td>Selection of function</td> <td>All available</td> <td>All available</td> </tr> <tr> <td>Set value change</td> <td>Not available</td> <td>Available</td> </tr> <tr> <td>Operation mode switchover</td> <td>Available</td> <td>Available</td> </tr> <tr> <td>Run/Stop at [AUTO] or [MANUAL] operation mode</td> <td>Available</td> <td>Available</td> </tr> <tr> <td>Capacity change at [MANUAL] operation mode</td> <td>Available</td> <td>Available</td> </tr> </tbody> </table> <p>Key lock does not require reset movement, so lock and lock release are available during normal running. (Key lock is release at shipment.)</p>		Lock state	Lock release	Selection of function	All available	All available	Set value change	Not available	Available	Operation mode switchover	Available	Available	Run/Stop at [AUTO] or [MANUAL] operation mode	Available	Available	Capacity change at [MANUAL] operation mode	Available	Available
	Lock state	Lock release																					
Selection of function	All available	All available																					
Set value change	Not available	Available																					
Operation mode switchover	Available	Available																					
Run/Stop at [AUTO] or [MANUAL] operation mode	Available	Available																					
Capacity change at [MANUAL] operation mode	Available	Available																					
<b>Lamp Test</b>	---	ON	OFF	OFF	<p>In this state, it is under [LAMP TEST] condition.</p> <p>Lamp test is used for check of 7 segments LED and each lamp. At lamp test, 7 segments LED display is as shown below and each lamp is ON.</p> <pre>       8.  8.8.8.  8.8.8.  All ON (for about 5 seconds)       ↓       8.  8.8.8.  3.8.8  Version information display                           (for about 5 seconds)       ↓       5  8.8.8.  8.8.8  Process value display       ↓       After that, refer to "3. Operation".           </pre> <p>Lamp test does not require reset movement, so test and test release are available during normal running. To repeat lamp test, make SW1-2 ON from OFF.</p>																		
<b>Configuration setup mode</b>	---	OFF	OFF	ON	<p>In MYPRO-CPI, several functions are selectable by user. These selections are available by configuration setup mode. To shift to configuration setup mode, reset action is required. (Refer to "2.3. CPU board" and "3.2. Configuration setup mode".)</p>																		



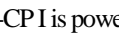

Item	Content	Display	Display content	Initial value	Explanation
E88	Compressor model	F488, F688, F888, N488	6888	6888	Select Compressor model Select proper model of compressor. Select F4K, F6K, F8K, N4K, N6K, N8K, 4L, 6L, 8L, 4W, 42W, 6W, 62W, 8W, F4C, F6C, F62C, F8C, N4C, N6C, N62C, N8C, 10S/11S, 1290, 1410, 6HK, 6HK E, 4M, 6M, 8M, 62M. (When 6HK and 6HK E is selected, the pressure measurement range is different.)
		8888, 8888, 9088, 6088			
		8088, 9088, 9288, 6088			
		6288, 8088, 6488, 6688			
		6628, 8888, 6488, 6688			
		6628, 6888			
		8888, 8888			
		8088, 6088, 8088, 6288			
858	Number of Capacity control SV	8888	1 piece	8888	Select number of capacity control solenoid valve and max. 3 pieces. * 3 pieces setup for 62C, 62A, 62B is not available and max. number is depending upon compressor model. This item is not displayed when selected K, L, 4W, F4C, N4C, 10S, 11S, 1290, 1410, 6HK, 6HK E.
		2888	2 pieces		
		3888	3 pieces		
888	Display unit of Pressure/Temperature	6666	Press. : kgf/cm <sup>2</sup> Temp. : °C	6666	Select display unit of pressure and temperature. * Display unit can be setup regardless of measured unit, but display range is depending upon measurement range.
		8888	Press. : MPa Temp. : °C		
		8888	Press. : bar Temp. : °C		
		8588	Press. : psi, "Hg Temp. : °F		
E88	Control mode	8888	Mode A	8888	Select control mode.
		6888	Mode B		
888	Operation of contact input	8888	A contact	8888	Select operation of contact input.
		8888	B contact		
		8888	Alarm input B contact		
85	Measure unit of pressure sensor	8888	MPa unit sensor	8888	Select measurement unit of pressure sensor.
		6666	Kgf/cm <sup>2</sup> unit sensor		
828	Range of Suction Pressure sensor	8888	-0.100 to 1.000 MPa	8888	Select the range of suction pressure sensor. * It is 1.0MPa sensor in the standard. Specification is necessary for 3.0MPa sensor for the order.
		8888	-0.100 to 3.000 MPa		
888	Use of Intermediate pressure sensor	8888	No Use	8888	Select use or no use of Intermediate Pressure sensor. This item is displayed when 42W, 62W, F62C, N62C, 62M is selected. * This item is not displayed for 1290 and 1410 because intermediate pressure sensor is required to measure intermediate pressure.
		8588	Use		
858	Use of Temperature sensor	8888	No Use	8888	Select use or no use of temperature sensor. * Temperature transducer and RTD (Pt100Ω) are required separately to measure temperature.
		8588	Use		
888 *1	Range of Temperature sensor	8888	-20 to 180°C	8888	Select the range of temperature sensor. * Temperature transducer and RTD (Pt100Ω) are required separately to measure temperature.
		8888	-60 to 140°C		
888	Mode change after Alarm	5888	Stay at current mode.	5888	Select operation mode after alarm stop.
		8888	Manual Mode.		
888 *1	Kind of data communication protocol.	8888	Original protocol 0	8888	Select kind of communication protocol.
		8888	Original protocol 1		
		8888	MODBUS RTU protocol		
		8888	MODBUS ASCII protocol		
888 *3	0% load operation	8888	Prohibit	8888	Setting of 0% load operation (Only the model that can operate at 0% load (4M, 6M, 8M))
		8588	Permit		
888 *4	Kind of Refrigerant (0% load limit time)	8838	Ammonia (limit time : 10min.)	8838	Kind of Refrigerant (0% load operation limit time) (Only the model that can operate at 0% load)
		8888	Freon (limit time : 5min.)		
E88	Alarm Clear on communication	8888	Prohibit	8888	Setting of Alarm Clear on Communication
		8588	Permit		


- \*1 In item of "  " (Use of Temperature sensor) of configuration setup mode, when "  " (Use) set, display is available. The range of the temperature sensor depends on the conversion range of the R/V board, and confirm the R/V board actually used. Assume "  " (Range of Temperature sensor) to be set to "  " (-20 to 180°C) on this book at the following.
- \*2 It is not displayed if communication board is not installed.
- \*3 When model (4M, 6M, 8M) that can operate at 0% load is selected by the compressor kind, and In item of "  " (Use of Temperature sensor) of configuration setup mode, when "  " (Use) set, it display/sets it.
- \*4 In item of "  " (0% load operation) of configuration setup mode, when "  " (Yes) set, display is available.



In M type compressor, 0% loading driving has not permitted the principle (0% start is possible). But, only the Botoring usage has 0% loading operation special specification model. (three models (4M, 6M, and 8M))  
 However, there is the restriction conditions in 0% loading operation.  
 (To operate the compressor at 0% load, contact our sales offices or service centers.)

### 3.3. Fuction

When MYPRO-CPI is powered in, "  " → "  X.XX.XX " (X.XX.XX are numerical.) is displayed.

After that,  in [FUNC] display and Suction Pressure Process Value in [DATA] display are displayed.

In [CAPACITY] display, current capacity is displayed. When compressor is not running, "  " is shown.

When pressed [FUNC] key, next item is displayed.

When pressed [PV/SV] key, it changes to usual setup menu. ([PV/SV] lamp is ON.)

When pressed [FUNC] key, next item is displayed. When pressed [FUNC] key for 3 seconds, it changes to ENG setup menu set value. ([PV/SV] lamp blinks.)

Same as other MYPRO series, usual setup menu is setup regarding compressor operation.

ENG setup menu is setup for alarm, control constant and so on.

To return to usual setup menu from ENG setup menu, press [FUNC] key for 3 seconds.

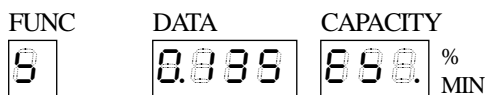
When pressed [PV/SV] key in ENG setup menu, it returns to process value display. ([PV/SV] lamp is OFF.)

Item of process value and set value and initial value and setup range of set value varies by setup of item in configuration setup made.

Display unit (measurement unit) and available setup range of individual process value are shown in the table.

Moreover, Display the latest alarm as a history when you push [PV/SV] key + [FUNC] key at the same time while displaying the Process Value.

(Display it by pushing the [CLEAR ALARM] key for 2 seconds or more. )



Alarm History : The decimal point lights.

The decimal point of the right digit of the CAPACITY display part lights while displaying the alarm history.

When you push [PV/SV] key + [FUNC] key at the same time again, Display the Process Value.

(Display it by pushing the [CLEAR ALARM] key for 2 seconds or more. )

### 3.3.1. Process value display

[FUNC] Display	Display content	Explanation
5	Suction Pressure Process Value	Process value of suction pressure sensor.
6	Intermediate Pressure Process Value	Process value of intermediate pressure sensor. *1
7	Discharge Pressure Process Value	Process value of discharge pressure sensor.
8	Oil-Suction Differential Pressure Calculated Value	Calculated value of (Oil Pressure Process Value - Suction Pressure Process Value)
	Discharge-Oil Differential Pressure Calculated Value	Calculated value of (Discharge Pressure Process Value - Oil Pressure Process Value) *2
9	Oil-Intermediate Differential Pressure Calculated Value	Calculated value of (Oil Pressure Process Value - Intermediate Pressure Process Value) *3
10 *4	Discharge Temperature Process Value	Process value of discharge temperature sensor. Temperature transducer and temperature sensor (RTD Pt100Ω) are required.
11 *4	Oil Temperature Process Value	Process value of oil temperature sensor. Temperature transducer and temperature sensor (RTD Pt100Ω) are required.
12 *5	Communication State	Display of current communication error.

- \*1 In item of " 6 6 6 " (Use of Intermediate Pressure sensor) of configuration setup mode, when " 5 5 5 " (Use) set, display is available.
- \*2 In item of " 7 7 7 " (Compressor type) of configuration setup mode, when " 10S/11S ", " 1290 ", " 1410 " set, display is available.
- \*3 In item of " 7 7 7 " (Compressor type) of configuration setup mode, when " 1290 ", " 1410 " set, display is available.
- \*4 In item of " 10 5 5 " (Use of Temperature sensor) of configuration setup mode, when " 10 5 5 " (Use) set, display is available.  
Moreover, the temperature measurement range must depend on " 10 10 " of the initialization mode (Range of Temp. sensor).  
Use " 10 10 " of the initialization mode (Range of Temperature sensor) by " 10 10 " (-20 to 180°C) when you select M type Reciprocating compressor to meet the specification of the compressor.
- \*5 It is not displayed when communication board is not installed.



Since Ver.1.03.10 for MYPRO-CPI, The range of suction pressure sensor is a selection type.

-0.100 to 1.000 Mpa or -0.100 to 3.000 MPa

Please confirm whether an actual sensor is suitable for the setting of sensor range.

(However, it is fixation in 6HK and 6HK\_E.)

Range of a process value and a set value on the manual might be different at the following according to the selection of range.  
Please acknowledge it.

- Please note dependence on above-mentioned sensor range for the setting range of a set value when changing.



### 3.3.2. Usual setup menu display

[FUNC] display	Display content	Explanation
	Running Start Pressure Set Value	Set value to make <i>Compressor Running Output</i> ON. Set Value $\leq$ Suction Pressure Process Value There are other compressor running start conditions.
	Running Stop Pressure Set Value	Set value to make <i>Compressor Running Output</i> OFF. Set Value $>$ Suction Pressure Process Value There is other compressor running stop conditions.
*1	Target Suction Pressure Set Value	Set value to the capacity control target. Suction Pressure Process Value exceeds (Set Value + Dead Band), capacity increases. Suction Pressure Process Value exceeds (Set Value - Dead Band), capacity decreases. In Control mode A, set value exists in each capacity step. In Control mode B, Set Value exists only one.  (* The numerical value displayed in [CAPACITY] depends on the Compressor type.)
*2	Capacity Control 1 Pressure Set Value	
*2	Capacity Control 2 Pressure Set Value	
*2	Capacity Control 3 Pressure Set Value	
*2	Capacity Control 4 Pressure Set Value	
	Capacity Control Dead Band Set Value	In case of Control mode A and B, it is set value of capacity control dead band to prevent frequent capacity change at near Target Suction Pressure Set Value or Capacity Control Pressure Set Value.
	Control Cycle Set Value	Set value of capacity control cycle. In Control mode A, judgment to increase or decrease capacity after comparison Suction Pressure Process Value and Capacity Control Set Value at beginning of control cycle. In Control mode B, it is a set value that becomes the standard though the control cycle changes depending on Suction Pressure Process Value.
*3	Operation Mode Setup	Select operation mode of compressor RUN/STOP. Set up permission / prohibition of set value change by communication.

(Refer to "4.1. Control mode" and "4.2. Operation mode".)

- \*1 In item of " " (Control mode) of configuration setup mode, when " " (Mode B) set, display / setup is available.  
During setup " " (Mode A), display / setup is not available.
- \*2 In item of " " (Control mode) of configuration setup mode, when " " (Mode A) set, display / setup is available.  
During setup " " (Control mode B), display / setup is not available.
- \*3 When communication board is not installed, display / setup of " " ([COMM] mode) is not available.

### 3.3.3. ENG setup menu display

[CAPACITY] display	Display content	Explanation
888	High Discharge Pressure Alarm Set Value	(set value $\leq$ Discharge Pressure Process Value) issues "High Discharge Pressure Alarm"
888	Low Oil Pressure Alarm Set Value	Low Oil-Suction Differential Pressure Alarm (for reciprocating compressor) (set value $\leq$ Oil-Suction Differential Press. Calculated Value) continues over 30 seconds, "Low Oil Press. Alarm (Low Oil-Suction Differential Press. Alarm)" is issued. or High Discharge-Oil Differential Pressure Alarm (for 10S/11S, 1290, 1410) (set value $\geq$ Dis.-Oil Differential Press. Calculated Value) continues over 30 seconds, "Low Oil Press. Alarm (High Discharge-Oil Differential Press. Alarm)" is issued.
888*1	High Intermediate Pressure Alarm Set Value	No alarm monitor for 3 minutes after compressor start. After that, if (set value $\geq$ Intermediate Pressure Process Value) continues over 30 seconds, "High Intermediate Pressure Alarm" is issued.
858*2	High Suction Pressure Alarm Set Value	At [AUTO] mode or [REMOTE] mode, When compressor start, (set value $\leq$ Suction Pressure Process Value) issues "High suction pressure alarm". During compressor running, (set value $\leq$ Suction Pressure Process Value) continues over 60 seconds, "High suction pressure alarm" is issued.
588	Low Suction Pressure Alarm Set Value	During compressor running, (set value $\geq$ Suction Pressure Process Value) continues over 30 seconds, "Low suction pressure alarm" is issued. (858 > 588)
888*3	High Discharge Temperature Alarm Set Value	(set value $\leq$ Discharge Temperature Process Value) issues "High discharge temperature alarm".
888*3	High Oil Temperature Alarm Set Value	(set value $\leq$ Oil Temperature Process Value) issues "High oil temperature alarm".
888*4	Low Discharge-Suction Differential Pressure Alarm Set Value	No alarm monitor for 5 minutes after compressor start. After that, if (set value $\geq$ Discharge-Suction Differential Pressure Calculated Value) continues over 2 minutes, "Low Discharge-Suction Differential Pressure Alarm" is issued.
888*5	Low Oil-Intermediate Differential Pressure Alarm Set Value	No alarm monitor for 5 minutes after compressor start. After that, if (set value $\geq$ Oil-Intermediate Differential Pressure Calculated Value) continues over 2 minutes, "Low Oil-Intermediate Differential Pressure Alarm" is issued.
888*2	Oil Cooler Liquid-Supply Oil Temperature Set Value	At (set value $\leq$ Oil Temperature Process Value), <i>Oil cooler Liquid Supply SV Output</i> becomes ON.
888	Pump Down stop pressure Set Value	During pump down, if (set value > Suction Pressure Process Value) occurs, <i>Compressor Running Output</i> becomes OFF.
888	Capacity control delay time Set Value	Time to start capacity control after compressor start in [AUTO] or [REMOTE] operation mode.
888	LP stop delay time set value	Time to LP stop / pump down after lowest stage running in [AUTO] or [REMOTE] operation mode.
888	Pump down stop time set value	Time to continue pump down in [AUTO] or [REMOTE] operation mode. When this Setup time passes, <i>Compressor Running Output</i> and <i>100% Request Output</i> becomes OFF.
888	Restart interval time set	Setup of restart(stop->start) timer after LP stop.
888	Hunting prevention time set	Setup of hunting prevention(start->start) timer after LP stop.
888*6	Loading prohibition Intermediate pressure Set value	(set value $\leq$ Intermediate Pressure Process value), Do not load it even if other loading conditions are satisfied.
888*6	Compulsion unloading Intermediate pressure Set value	(set value $\leq$ Intermediate Pressure Process value), Unload one step compulsorily every control cycle even if other loading conditions are satisfied.

(To be continued to next page)

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[CAPACITY]	Display content	Explanation
888	Loading prohibition Discharge pressure Setup value	(set value $\leq$ Discharge Pressure Process value), Do not load it even if other loading conditions are satisfied.
888	Compulsion unloading Discharge pressure Setup value	(set value $\leq$ Discharge Pressure Process value), Unload one step compulsorily every control cycle even if other loading conditions are satisfied.
588*7	Compulsion Running Start Suction Pressure Set Value	For M type Compressor, When the operation mode is [REMOTE] mode, the compulsion running starts if the compressor is stopping (Setup Value < Suction Pressure Process Value).
588*7	Compulsion Running Stop Suction Pressure Set Value	For M type Compressor, When the operation mode is [REMOTE] mode, the compulsion running stops if the compressor is stopping (Setup Value $\geq$ Suction Pressure Process Value).
858*7	Compulsion Running Maximum Run Time Set Value	For M type Compressor, Setup of the maximum run time of the compulsion running.
888*9	0% load shift Discharge temp. Set Value	Shifting to 0% loading operation becomes possible in the case in 0% loading operation corresponding model (Set Value $\geq$ Discharge Temperature Process Value). (A set value is different depending on the refrigerative kind, and contact our sales offices or service centers, please.)
888*9	0% load shift Oil temp. Set Value	Shifting to 0% loading operation becomes possible in the case in 0% loading operation corresponding model (Set Value $\geq$ Oil Temperature Process Value). (A set value is different depending on the refrigerative kind, and contact our sales offices or service centers, please.)
888*9	0% load High Dis. Temp. Alarm Delay time Set Value	Delays High Discharge Temperature Alarm while operating at 0% load for allowed time (sec)
888	LP stop permission setup	Setup of permission / prohibition of LP stop by Suction Pressure Process Value.
888	Restart time release permission setup	Setup of permission / prohibition of reset of restart timer and hunting prevention timer after LP stop.
888*7	Comm. address set value	Setup of communication address in serial communication.
858*7	Comm. speed set value	Setup of communication speed in serial communication.
888*7	Communication character format set value	Setup of character format in serial communication.
858*7	Communication response delay time set value	Delay time between after receiving the query message and start sending the response message by MYPRO-CPI itself in serial communication.

- \*1 In item of "888" (Use of Intermediate Pressure sensor) of configuration setup mode, when "858" (Use) set, display is available.
- \*2 In item of "888" (Compressor type) of configuration setup mode, when "888" (6HK) and "888" (6HKE) set, or In item of "888" (Range of Suction Pressure Sensor) of configuration setup mode, when "888" (High) set, display is available.
- \*3 In item of "858" (Use of Temperature sensor) of configuration setup mode, when "858" (Use) set, display is available.
- \*4 In item of "888" (Compressor type) of configuration setup mode, when "888" (10S/11S) set, display is available.
- \*5 In item of "888" (Compressor type) of configuration setup mode, when "8298" (1290), "8888" (1410), set, display is available.
- \*6 In item of "888" (Use of Intermediate Pressure sensor) of configuration setup mode, when "858" (Use) set, and in item of "888" (Control Mode) of configuration setup mode, when "888" (Mode B) set, display is available.
- \*7 In item of "888" (Compressor type) of configuration setup mode, when "888" (4M), "888" (6M), "888" (8M), "8288" (62M) set, and when operation mode is [REMOTE] mode, display is available.
- \*8 It is not displayed when communication board is not installed.
- \*9 In item of "888" (0% load operation) of configuration setup mode, when "858" (Yes) set, display is available.

\* As for detail of each alarm set value, refer to "4.6. Alarm".

\* As for detail of each set value regarding communication, refer to "5.2. Communication setup".

### 3.3.4. Display according to Compressor type

#### 1. F4K, F8K

[PV/SV] Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	0	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	6 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	---- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	6	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	000	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	0	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	000	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	000	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	050	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	075	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	000	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	0	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	000	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	0	Control Cycle Set Value	1 to 120 sec	000	30 sec
	0	Operation Mode Setup	8888 (AUTO) mode 8888 (REMOTE) mode 8888 (MANUAL) mode 0000 (COMM) mode *2	000	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 24.5 kgf/cm <sup>2</sup> -0.10 to 2.40 MPa -1.0 to 24.0 bar -30 "Hg to 348 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	888 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Restart time release permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	888 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	888 *2	0 msec

- \*1 In item of " 8 5 8 " (Use of Temperature sensor) of configuration setup mode, when " 8 5.8 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 8 8 8 " (Control mode) of configuration setup mode, when " 8 8 8 " (Mode B) set, display / setup is available.
- \*4 In item of " 8 8 8 " (Control mode) of configuration setup mode, when " 8 8 8 " (Mode A) set, display / setup is available.
- \*5 In item of " 8 8 8 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8 8 8 " (High) set, display / setup is available.

2. F6K

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	S	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	H	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	0	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	0 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *2	Communication State	----	0000	Capacity Display
When lamp ON, Usual Setup Menu Display	0	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	0000	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	0	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	0000	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	S *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	0000	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	S *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 67% Setvalue -0.100 MPa to 67% Setvalue -1.00 bar to 67% Setvalue -29.5 "Hg to 67% Setvalue	050	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	S *4	Capacity Control 67% Pressure Set Value	50% Setvalue to 83% Setvalue	060	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	S *4	Capacity Control 83% Pressure Set Value	67% Setvalue to 100% Setvalue	083	2.04 kgf/cm <sup>2</sup> 0.200 MPa 2.00 bar 29.0 psi
	S *4	Capacity Control 100% Pressure Set Value	83% Setvalue to 10.20 kgf/cm <sup>2</sup> 83% Setvalue to 1.000 MPa 83% Setvalue to 10.00 bar 83% Setvalue to 145.0 psi	000	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	0	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	0000	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	0	Control Cycle Set Value	1 to 120 sec	0000	30 sec
	0	Operation Mode Setup	0000 ([AUTO] mode) 0000 ([REMOTE] mode) 0000 ([MANUAL] mode) 0000 ([COMM] mode) *2	0000	0000

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 24.5 kgf/cm <sup>2</sup> -0.10 to 2.40 MPa -1.0 to 24.0 bar -30 "Hg to 348 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

3. N4K

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 23.5 kgf/cm <sup>2</sup> -0.10 to 2.30 MPa -1.0 to 23.0 bar -30 "Hg to 334 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Restart time release permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 858 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8000 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8000 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 888 " (High) set, display / setup is available.

4. N6K

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	888	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	5 *4	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 (AUTO) mode 8888 (REMOTE) mode 8888 (MANUAL) mode 8888 (COMM) mode *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 23.5 kgf/cm <sup>2</sup> -0.10 to 2.30 MPa -1.0 to 23.0 bar -30 "Hg to 334 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

5. N8K

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	858	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	888	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 23.5 kgf/cm <sup>2</sup> -0.10 to 2.30 MPa -1.0 to 23.0 bar -30 "Hg to 334 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

6. 4L

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	---- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

7. 6L

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8 8 E 8	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	8 8 8	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	8 8 8	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	8 8 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	8 5 8	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	5 *4	Capacity Control 100% Pressure Set Value	50% Setvalue to 10.20 kgf/cm <sup>2</sup> 50% Setvalue to 1.000 MPa 50% Setvalue to 10.00 bar 50% Setvalue to 145.0 psi	8 8 8	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	8 8 8	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	8 8 8	30 sec
	8	Operation Mode Setup	8 8 8 8 ([AUTO] mode) 8 8 8 E ([REMOTE] mode) 8 8 8 8 ([MANUAL] mode) 8 8 8 8 ([COMM] mode) *2	8 8 8	8 8 8 8



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

8. 8L

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	858	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	885	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

9. 4W (4J, 4A, 4B)

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

10. 42W (42A, 42B)

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	6 *1	Intermediate Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	6 *2	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	6 *2	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *3	Communication State	---	Capacity Display	---
When lamp ON, Usual Setup Menu Display	6	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	6666	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	6	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	6666	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *4	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	6666	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *5	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	8888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	6666	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	6	Control Cycle Set Value	1 to 120 sec	6666	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 6666 ([REMOTE] mode) 8888 ([MANUAL] mode) 6666 ([COMM] mode) *3	6666	6666

- \*1 In item of "6666" (Use of Inter. Press. sensor) of configuration setup mode, when "85.66" (Use) set, display is available.
- \*2 In item of "6666" (Use of Temperature sensor) of configuration setup mode, when "85.66" (Use) set, display is available.
- \*3 It is not displayed when communication board is not installed.
- \*4 In item of "6666" (Control mode) of configuration setup mode, when "6666" (Mode B) set, display / setup is available.
- \*5 In item of "6666" (Control mode) of configuration setup mode, when "8666" (Mode A) set, display / setup is available.
- \*6 In item of "6666" (Use of Inter. Press. sensor) of configuration setup mode, when "85.66" (Use) set, and  
In item of "6666" (Control mode) of configuration setup mode, when "6666" (Mode B) set, display / setup is available.
- \*7 In item of "6666" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Intermediate Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 276 psi	888 *1	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *7	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *2	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *2	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Intermediate pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888 *6	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	Compulsion unloading Intermediate pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888 *6	5.6 kgf/cm <sup>2</sup> 0.55 MPa 5.5 bar 80 psi
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 or 8088	888	9858
	☉	Restart time release permission set	9858 or 8088	888	9858
	☉	Comm. address set value	0 to 31	888 *3	0
	☉	Comm. speed set value	30 to 3840	858 *3	1920
	☉	Comm. character format set value	8988 to 8882	888 *3	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *3	0 msec

11. 6W (6J, 6A, 6B)

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of "858" (Use of Temperature sensor) of configuration setup mode, when "8588" (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*4 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.
- \*5 In item of "888" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

12. 62W (62A, 62B)

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	6 *1	Intermediate Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *2	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *3	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	8888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	8888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *4	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	8888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *5	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	8888	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	5 *5	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	8888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	8888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	8888	30 sec
	8	Operation Mode Setup	8888 (AUTO) mode 8888 (REMOTE) mode 8888 (MANUAL) mode 8888 (COMM) mode *3	8888	8888

- \*1 In item of "8888" (Use of Inter. Press. sensor) of configuration setup mode, when "8888" (Use) set, display is available.
- \*2 In item of "8888" (Use of Temperature sensor) of configuration setup mode, when "8888" (Use) set, display is available.
- \*3 It is not displayed when communication board is not installed.
- \*4 In item of "8888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*5 In item of "8888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.
- \*6 In item of "8888" (Use of Inter. Press. sensor) of configuration setup mode, when "8888" (Use) set, and  
In item of "8888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*7 In item of "8888" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Intermediate Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 276 psi	888 *1	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *7	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *2	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *2	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Intermediate pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888 *6	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	Compulsion unloading Intermediate pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888 *6	5.6 kgf/cm <sup>2</sup> 0.55 MPa 5.5 bar 80 psi
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 or 8888	888	9858
	☉	Restart time release permission set	9858 or 8888	888	9858
	☉	Comm. address set value	0 to 31	888 *3	0
	☉	Comm. speed set value	30 to 3840	858 *3	1920
	☉	Comm. character format set value	8888 to 8882	888 *3	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *3	0 msec

13. 8W (8J, 8A, 8B)

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8 8 8 8	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	8 8 8	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	8 8 8	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	8 8 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	8 5 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	8 7 5	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	8 0 0	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	8 8 8	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	8 8 8	30 sec
	8	Operation Mode Setup	8 8 8 8 ([AUTO] mode) 8 8 8 8 ([REMOTE] mode) 8 8 8 8 ([MANUAL] mode) 8 8 8 8 ([COMM] mode) *2	8 8 8	8 8 8 8

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	888 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Restart time release permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	888 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	888 *2	0 msec

- \*1 In item of "858" (Use of Temperature sensor) of configuration setup mode, when "85.8" (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of "888" (Control mode) of configuration setup mode, when "8000" (Mode B) set, display / setup is available.
- \*4 In item of "888" (Control mode) of configuration setup mode, when "8000" (Mode A) set, display / setup is available.
- \*5 In item of "888" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

14. F4C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 125.0 °C 32.0 to 257.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of "858" (Use of Temperature sensor) of configuration setup mode, when "8588" (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*4 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.
- \*5 In item of "888" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

15. F6C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	888	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	5 *4	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 (AUTO) mode 8888 (REMOTE) mode 8888 (MANUAL) mode 8888 (COMM) mode *2	888	8888



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	888*5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 125.0 °C 32.0 to 257.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Restart time release permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	888 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	888 *2	0 msec

- \*1 In item of "858" (Use of Temperature sensor) of configuration setup mode, when "85.88" (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*4 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.
- \*5 In item of "888" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

16. F62C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	S	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	E *1	Intermediate Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	E	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	E	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	E *2	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	E *2	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	E *3	Communication State	---	Capacity Display	---
When lamp ON, Usual Setup Menu Display	E	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	EEEE	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	E	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	EEEE	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	S *4	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	EEEE	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	S *5	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	EEEE	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	S *5	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	EEEE	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	E	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	EEEE	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	E	Control Cycle Set Value	1 to 120 sec	EEEE	30 sec
	E	Operation Mode Setup	EEEE (AUTO) mode EEEE (REMOTE) mode EEEE (MANUAL) mode EEEE (COMM) mode *3	EEEE	EEEE

- \*1 In item of "EEEE" (Use of Inter. Press. sensor) of configuration setup mode, when "EEEE" (Use) set, display is available.
- \*2 In item of "EEEE" (Use of Temperature sensor) of configuration setup mode, when "EEEE" (Use) set, display is available.
- \*3 It is not displayed when communication board is not installed.
- \*4 In item of "EEEE" (Control mode) of configuration setup mode, when "EEEE" (Mode B) set, display / setup is available.
- \*5 In item of "EEEE" (Control mode) of configuration setup mode, when "EEEE" (Mode A) set, display / setup is available.
- \*6 In item of "EEEE" (Use of Inter. Press. sensor) of configuration setup mode, when "EEEE" (Use) set, and  
In item of "EEEE" (Control mode) of configuration setup mode, when "EEEE" (Mode B) set, display / setup is available.
- \*7 In item of "EEEE" (Range of Suction Pressure Sensor) of configuration setup mode, when "EEEE" (High) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Intermediate Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 276 psi	888 *1	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *7	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 125.0 °C 32.0 to 257.0 °F	888 *2	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *2	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Intermediate pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888 *6	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	Compulsion unloading Intermediate pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888 *6	5.6 kgf/cm <sup>2</sup> 0.55 MPa 5.5 bar 80 psi
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	8888 or 8888	888	8888
	☉	Restart time release permission set	8888 or 8888	888	8888
	☉	Comm. address set value	0 to 31	888 *3	0
	☉	Comm. speed set value	30 to 3840	888 *3	1920
	☉	Comm. character format set value	8888 to 8888	888 *3	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	888 *3	0 msec

17. F8C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8 8 8 8	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	8 8 8	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	8 8 8	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	8 8 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	8 5 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	8 7 5	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	8 8 8	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	8 8 8	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	8 8 8	30 sec
	8	Operation Mode Setup	8 8 8 8 ([AUTO] mode) 8 8 8 8 ([REMOTE] mode) 8 8 8 8 ([MANUAL] mode) 8 8 8 8 ([COMM] mode) *2	8 8 8	8 8 8 8

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 125.0 °C 32.0 to 257.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

18. N4C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Restart time release permission set	9850 (permit) 8000 (prohibit)	888	9850
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8000 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8000 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

19. N6C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	888	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	5 *4	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 (AUTO) mode 8888 (REMOTE) mode 8888 (MANUAL) mode 8888 (COMM) mode *2	888	8888



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

20. N62C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	S	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	E *1	Intermediate Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	E	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	E	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	E *2	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	E *2	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	E *3	Communication State	---	Capacity Display	---
When lamp ON, Usual Setup Menu Display	E	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	EEEE	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	E	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	EEEE	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	S *4	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	EEEE	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	S *5	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	EEEE	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	S *5	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	EEEE	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	E	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	EEEE	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	E	Control Cycle Set Value	1 to 120 sec	EEEE	30 sec
	E	Operation Mode Setup	EEEE (AUTO) mode EEEE (REMOTE) mode EEEE (MANUAL) mode EEEE (COMM) mode *3	EEEE	EEEE

- \*1 In item of "EEEE" (Use of Inter. Press. sensor) of configuration setup mode, when "EEEE" (Use) set, display is available.
- \*2 In item of "EEEE" (Use of Temperature sensor) of configuration setup mode, when "EEEE" (Use) set, display is available.
- \*3 It is not displayed when communication board is not installed.
- \*4 In item of "EEEE" (Control mode) of configuration setup mode, when "EEEE" (Mode B) set, display / setup is available.
- \*5 In item of "EEEE" (Control mode) of configuration setup mode, when "EEEE" (Mode A) set, display / setup is available.
- \*6 In item of "EEEE" (Use of Inter. Press. sensor) of configuration setup mode, when "EEEE" (Use) set, and  
In item of "EEEE" (Control mode) of configuration setup mode, when "EEEE" (Mode B) set, display / setup is available.
- \*7 In item of "EEEE" (Range of Suction Pressure Sensor) of configuration setup mode, when "EEEE" (High) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Intermediate Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 276 psi	888 *1	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *7	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *2	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *2	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Intermediate pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888 *6	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	Compulsion unloading Intermediate pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888 *6	5.6 kgf/cm <sup>2</sup> 0.55 MPa 5.5 bar 80 psi
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 or 8888	888	9858
	☉	Restart time release permission set	9858 or 8888	888	9858
	☉	Comm. address set value	0 to 31	888 *3	0
	☉	Comm. speed set value	30 to 3840	858 *3	1920
	☉	Comm. character format set value	8888 to 8882	888 *3	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *3	0 msec

21. N8C

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8 8 8 8	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	8 8 8	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	8 8 8	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	8 8 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	8 5 8	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	8 7 5	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	8 8 8	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	8 8 8	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	8 8 8	30 sec
	8	Operation Mode Setup	8 8 8 8 ([AUTO] mode) 8 8 8 8 ([REMOTE] mode) 8 8 8 8 ([MANUAL] mode) 8 8 8 8 ([COMM] mode) *2	8 8 8	8 8 8 8

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	120.0 °C 248.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 75.0 °C 32.0 to 167.0 °F	888 *1	50.0 °C 122.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

- \*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.
- \*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.
- \*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

22. 10S/11S

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Discharge-Oil Differential Pressure Calculated Value	-31.6 to 31.6 kgf/cm <sup>2</sup> -3.10 to 3.10 MPa -31.0 to 31.0 bar -450 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 120 sec	888	30 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

\*1 In item of " 8 5 8 " (Use of Temperature sensor) of configuration setup mode, when " 8 5.8 8 " (Use) set, display is available.

\*2 It is not displayed when communication board is not installed.

\*3 In item of " 8 8 8 " (Control mode) of configuration setup mode, when " 8 8 8 8 " (Mode B) set, display / setup is available.

\*4 In item of " 8 8 8 " (Control mode) of configuration setup mode, when " 8 8 8 8 " (Mode A) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 1.90 MPa -1.0 to 19.0 bar -30 "Hg to 276 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Discharge-Oil Differential Pressure ) Alarm Set Value	2.5 to 31.6 kgf/cm <sup>2</sup> 0.25 to 3.10 MPa 2.5 to 31.0 bar 36 to 450 psi	888	2.5 kgf/cm <sup>2</sup> 0.25 MPa 2.5 bar 36 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858*5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 110.0 °C 32.0 to 230.0 °F	888 *1	100.0 °C 212.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	60.0 °C 140.0 °F
	☉	Low Discharge - Suction Differential Pressure Alarm Set Value	3.6 to 10.2 kgf/cm <sup>2</sup> 0.35 to 1.00 MPa 3.5 to 10.0 bar 51 to 145 psi	885	3.6 kgf/cm <sup>2</sup> 0.35 MPa 3.5 bar 51 psi
	☉	Oil Cooler Liquid Supply Oil Temperature Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	30.0 °C 86.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

\*5 In item of " 888 " (Range of Suction Pressure Sensor) of configuration setup mode, when " 8888 " (High) set, display / setup is available.

23. 1290, 1410

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	0	Intermediate Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	0	Discharge - Oil Differential Pressure Calculated Value	-31.6 to 31.6 kgf/cm <sup>2</sup> -3.10 to 3.10 MPa -31.0 to 31.0 bar -450 to 450 psi	Capacity Display	---
	0	Oil - Intermediate Differential Pressure Calculated Value	-31.6 to 31.6 kgf/cm <sup>2</sup> -3.10 to 3.10 MPa -31.0 to 31.0 bar -450 to 450 psi	Capacity Display	---
	0 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	---- to 0000	Capacity Display	---
When lamp ON, Usual Setup Menu Display	0	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	0000	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	0	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	0000	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	0000	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	0000	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	0000	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	0	Control Cycle Set Value	1 to 120 sec	0000	30 sec
	0	Operation Mode Setup	0000 (AUTO) mode 0000 (REMOTE) mode 0000 (MANUAL) mode 0000 (COMM) mode *2	0000	0000

- \*1 In item of "0000" (Use of Temp. sensor) of configuration setup mode, when "0000" (Use) set, display is available.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of "0000" (Control mode) of configuration setup mode, when "0000" (Mode B) set, display / setup is available.
- \*4 In item of "0000" (Control mode) of configuration setup mode, when "0000" (Mode A) set, display / setup is available.
- \*5 In item of "0000" (Range of Suction Pressure Sensor) of configuration setup mode, when "0000" (High) set, display / setup is available.



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 1.90 MPa -1.0 to 19.0 bar -30 "Hg to 276 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure ( High Discharge-Oil Differential Pressure ) Alarm Set Value	2.5 to 31.6 kgf/cm <sup>2</sup> 0.25 to 3.10 MPa 2.5 to 31.0 bar 36 "Hg to 450 psi	888	2.5 kgf/cm <sup>2</sup> 0.25 MPa 2.5 bar 36 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 *5	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	-1.02 kgf/cm <sup>2</sup> -0.100 MPa -1.00 bar -29.5 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 110.0 °C 32.0 to 230.0 °F	888 *1	100.0 °C 212.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	60.0 °C 140.0 °F
	☉	Low Oil - Intermediate Differential Pressure Alarm Set Value	2.0 to 10.2 kgf/cm <sup>2</sup> 0.20 to 1.00 MPa 2.0 to 10.0 bar 29 to 145 psi	888	2.0 kgf/cm <sup>2</sup> 0.20 MPa 2.0 bar 29 psi
	☉	Oil Cooler Liquid Supply Oil Temperature Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	30.0 °C 86.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Intermediate pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	Compulsion unloading Intermediate pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	5.6 kgf/cm <sup>2</sup> 0.55 MPa 5.5 bar 80 psi
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	LP stop permission set	8888 (permit) 8888 (prohibit)	888	8888
	☉	Restart time release permission set	8888 (permit) 8888 (prohibit)	888	8888
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8888	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

24. 6HK

When " E H E E " (6HK) is selected, the Process Value range of each pressure is as follows.

(The pressure sensors range is different from the following " E H E E " (6HK E). The control method is the same.)

- Suction Pressure : -0.100 to 3.000 MPa
- Discharge Pressure, Oil Pressure : 0.00 to 5.00 MPa

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	S	Suction Pressure Process Value	-1.02 to 30.59 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -30 "Hg to 435 psi	Capacity Display	---
	H	Discharge Pressure Process Value	0.0 to 51.0 kgf/cm <sup>2</sup> 0.00 to 5.00 MPa 0.0 to 50.0 bar 0 to 725 psi	Capacity Display	---
	E	Oil-Suction Differential Pressure Calculated Value	-30.6 to 42.0 kgf/cm <sup>2</sup> -3.00 to 5.10 MPa -30.0 to 51.0 bar -435 to 740 psi	Capacity Display	---
	E *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	E *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	H *2	Communication State	---- to E E E E	Capacity Display	---
When lamp ON, Usual Setup Menu Display	E	Running Start Pressure Set Value	Stop Setvalue to 30.59 kgf/cm <sup>2</sup> Stop Setvalue to 3.000 MPa Stop Setvalue to 30.00 bar Stop Setvalue to 435 psi	E E E	4.59 kgf/cm <sup>2</sup> 0.450 MPa 4.50 bar 65 psi
	E	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start.Setvalue -0.100 MPa to Start.Setvalue -1.00 bar to Start.Setvalue -30 "Hg to Start.Setvalue	E E E	4.49 kgf/cm <sup>2</sup> 0.440 MPa 4.40 bar 64 psi
	S *3	Target Suction Pressure Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -30 "Hg to 435 psi	E E E	5.80 kgf/cm <sup>2</sup> 0.580 MPa 5.91 bar 84 psi
	S *4	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -30 "Hg to 100% Setvalue	E E E	5.71 kgf/cm <sup>2</sup> 0.560 MPa 5.60 bar 81 psi
	S *4	Capacity Control 100% Pressure Set Value	67% Setvalue to 30.60 kgf/cm <sup>2</sup> 67% Setvalue to 3.000 MPa 67% Setvalue to 30.00 bar 67% Setvalue to 435 psi	E E E	6.11 kgf/cm <sup>2</sup> 0.600 MPa 6.00 bar 87 psi
	H	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 1 to 73 psi	E E E	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 3 psi
	E	Control Cycle Set Value	1 to 120 sec	E E E	30 sec
	H	Operation Mode Setup	E E E E ([AUTO] mode) E E E E ([REMOTE] mode) E E E E ([MANUAL] mode) E E E E ([COMM] mode) *2	E E E	E E E E

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	0.0 to 51.0 kgf/cm <sup>2</sup> 0.00 to 5.00 MPa 0.0 to 50.0 bar 0 to 725 psi	888	38.7 kgf/cm <sup>2</sup> 3.80 MPa 38.0 bar 551 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	0.0 to 51.0 kgf/cm <sup>2</sup> 0.00 to 5.00 MPa 0.0 to 50.0 bar 0 to 725 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	588 to 30.59 kgf/cm <sup>2</sup> 588 to 3.000 MPa 588 to 30.00 bar 588 to 435 psi	858	20.39 kgf/cm <sup>2</sup> 2.000 MPa 20.00 bar 290 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 858 kgf/cm <sup>2</sup> -0.100 to 858 MPa -1.00 to 858 bar -30 "Hg to 858 psi	588	4.38 kgf/cm <sup>2</sup> 0.430 MPa 4.30 bar 62 psi
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	130.0 °C 266.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 70.0 °C 32.0 to 158.0 °F	888 *1	60.0 °C 140.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -30 "Hg to 435 psi	888	4.49 kgf/cm <sup>2</sup> 0.440 MPa 4.40 bar 64 psi
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	39.8 kgf/cm <sup>2</sup> 3.90 MPa 39.0 bar 566 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 40.8 kgf/cm <sup>2</sup> 888 to 4.00 MPa 888 to 40.0 bar 888 to 569 psi	888	40.3 kgf/cm <sup>2</sup> 3.95 MPa 39.5 bar 573 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

\*1 In item of "858" (Use of Temperature sensor) of configuration setup mode, when "8588" (Use) set, display is available.

\*2 It is not displayed when communication board is not installed.

\*3 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.

\*4 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.

25. 6HK E

When "666E" (6HK E) is selected, the Process Value range of each pressure is as follows.

(The pressure sensors range is different from above-mentioned "666E" (6HK). The control method is the same.)

- Suction Pressure : -0.100 to 3.000 MPa
- Discharge Pressure, Oil Pressure : -0.10 to 4.00 MPa

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 30.59 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 40.8 kgf/cm <sup>2</sup> -0.10 to 4.00 MPa -1.0 to 40.0 bar -30 "Hg to 580 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-31.6 to 41.8 kgf/cm <sup>2</sup> -3.10 to 4.10 MPa -31.0 to 41.0 bar -450 to 595 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	---- to 666E	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	Stop Setvalue to 30.60 kgf/cm <sup>2</sup> Stop Setvalue to 3.000 MPa Stop Setvalue to 30.00 bar Stop Setvalue to 435 psi	666	4.59 kgf/cm <sup>2</sup> 0.450 MPa 4.50 bar 65 psi
	8	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start.Setvalue -0.100 MPa to Start.Setvalue -1.00 bar to Start.Setvalue -30 "Hg to Start.Setvalue	666	4.49 kgf/cm <sup>2</sup> 0.440 MPa 4.40 bar 64 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -30 "Hg to 435 psi	666	5.80 kgf/cm <sup>2</sup> 0.580 MPa 5.91 bar 84 psi
	5 *4	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -30 "Hg to 100% Setvalue	666	5.71 kgf/cm <sup>2</sup> 0.560 MPa 5.60 bar 81 psi
	5 *4	Capacity Control 100% Pressure Set Value	67% Setvalue to 30.60 kgf/cm <sup>2</sup> 67% Setvalue to 3.000 MPa 67% Setvalue to 30.00 bar 67% Setvalue to 435 psi	888	6.11 kgf/cm <sup>2</sup> 0.600 MPa 6.00 bar 87 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 1 to 73 psi	666	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 3 psi
	8	Control Cycle Set Value	1 to 120 sec	666	30 sec
	8	Operation Mode Setup	666E ([AUTO] mode) 888E ([REMOTE] mode) 888E ([MANUAL] mode) E88E ([COMM] mode) *2	666	666E

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 40.8 kgf/cm <sup>2</sup> -0.10 to 4.00 MPa -1.0 to 40.0 bar -30 "Hg to 580 psi	888	38.7 kgf/cm <sup>2</sup> 3.80 MPa 38.0 bar 551 psi
	☉	Low Oil Pressure ( High Oil-Suction Differential Pressure ) Alarm Set Value	0.0 to 40.8 kgf/cm <sup>2</sup> 0.00 to 4.00 MPa 0.0 to 40.0 bar 0 to 580 psi	888	1.5 kgf/cm <sup>2</sup> 0.15 MPa 1.5 bar 22 psi
	☉	High Suction Pressure Alarm Set Value	588 to 30.59 kgf/cm <sup>2</sup> 588 to 3.000 MPa 588 to 30.00 bar 588 to 435 psi	858	20.39 kgf/cm <sup>2</sup> 2.000 MPa 20.00 bar 290 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 858 kgf/cm <sup>2</sup> -0.100 to 858 MPa -1.00 to 858 bar -30 "Hg to 858 psi	588	4.38 kgf/cm <sup>2</sup> 0.430 MPa 4.30 bar 62 psi
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	130.0 °C 266.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 70.0 °C 32.0 to 158.0 °F	888 *1	60.0 °C 140.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 30.59 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -30 "Hg to 435 psi	888	4.49 kgf/cm <sup>2</sup> 0.440 MPa 4.40 bar 64 psi
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	15.0 minute
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	39.8 kgf/cm <sup>2</sup> 3.90 MPa 39.0 bar 566 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 40.8 kgf/cm <sup>2</sup> 888 to 4.00 MPa 888 to 40.0 bar 888 to 569 psi	888	40.3 kgf/cm <sup>2</sup> 3.95 MPa 39.5 bar 573 psi
	☉	LP stop permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Restart time release permission set	9858 (permit) 8888 (prohibit)	888	9858
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	858 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

\*1 In item of " 858 " (Use of Temperature sensor) of configuration setup mode, when " 8588 " (Use) set, display is available.

\*2 It is not displayed when communication board is not installed.

\*3 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode B) set, display / setup is available.

\*4 In item of " 888 " (Control mode) of configuration setup mode, when " 8888 " (Mode A) set, display / setup is available.

26. 4M

When you select M type Reciprocating Compressor, refer to "Compulsion Running for the mechanical seal protection".

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	0	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	---- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	0	Running Start Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	0000	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	0	Running Stop Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	0000	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	0000	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4*5	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	050	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 100% Pressure Set Value	50% Setvalue to 10.20 kgf/cm <sup>2</sup> 50% Setvalue to 1.000 MPa 50% Setvalue to 10.00 bar 50% Setvalue to 145.0 psi	000	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	0	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	0000	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	0	Control Cycle Set Value	1 to 240 sec	0000	180 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 0000 ([COMM] mode) *2	0000	8888

- \*1 In item of "8888" (Use of Temp. sensor) of configuration setup mode, when "85E8" (Use) set, display is available. Use "0000" of the initialization mode (Range of Temperature sensor) by "8888" (-20 to 180°C) when you select M type Reciprocating compressor to meet the specification of the compressor.
- \*2 It is not displayed when communication board is not installed.
- \*3 In item of "0000" (Control mode) of configuration setup mode, when "8000" (Mode B) set, display / setup is available.
- \*4 In item of "8888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.
- \*5 In item of "0000" (0% load operation) of configuration setup mode, when "8E58" (Yes) set, display / setup is available.
- \*6 In item of "0000" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 29.5 kgf/cm <sup>2</sup> -0.10 to 2.90 MPa -1.0 to 29.0 bar -30 "Hg to 420 psi	888	27.5 kgf/cm <sup>2</sup> 2.70 MPa 27.0 bar 391 psi
	☉	Low Oil Pressure (High Oil-Suction Diff. Press.) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.0 kgf/cm <sup>2</sup> 0.10 MPa 1.0 bar 15 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858%	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	0.30 kgf/cm <sup>2</sup> 0.030 MPa 0.30 bar 4.35 psi
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	160.0 °C 320.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *1	60.0 °C 140.0 °F
	☉	Pump Down Stop Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	20.0 minute
	☉	Loading Prohibition Discharge Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	28.5 kgf/cm <sup>2</sup> 2.80 MPa 28.0 bar 406 psi
	☉	Compulsion Unloading Discharge Pressure Set Value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	29.0 kgf/cm <sup>2</sup> 2.85 MPa 28.5 bar 413 psi
	☉	Compulsion Running Start Suction Pressure Set Value	588 to 10.20 kgf/cm <sup>2</sup> 588 to 1.000 MPa 588 to 10.00 bar 588 to 145.0 psi	588	8.15 kgf/cm <sup>2</sup> 0.800 MPa 8.00 bar 116.0 psi
	☉	Compulsion Running Stop Suction Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 588 -0.10 MPa to 588 -1.0 bar to 588 -30 "Hg to 588	588	4.07 kgf/cm <sup>2</sup> 0.400 MPa 4.00 bar 79.7 psi
	☉	Compulsion Running Maximum Run Time Set Value	0 to 300 sec	888	120 sec
	☉	0% load shift Discharge temp. Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *5	140.0 °C 284.0 °F
	☉	0% load shift Oil temp. Set Value	0.0 to 60.0 °C 32.0 to 140.0 °F	888 *5	50.0 °C 122.0 °F
	☉	0% load High Dis. Temp. Alarm Delay time Set Value	0 to 180 sec	888 *5	60 sec
	☉	LP stop permission	888 (permit)/888 (prohibit)	888	888
	☉	Restart time release permission	888 (permit)/888 (prohibit)	888	888
	☉	Comm. address set value	0 to 31	888 *2	0
	☉	Comm. speed set value	30 to 3840	888 *2	1920
	☉	Comm. character format set value	8888 to 8882	888 *2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	888 *2	0 msec

27. 6M

When you select M type Reciprocating Compressor, refer to "Compulsion Running for the mechanical seal protection".

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	S	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	H	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	0	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	B *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	H *2	Communication State	----	to B B B B	Capacity Display
When lamp ON, Usual Setup Menu Display	0	Running Start Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	B B B	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	0	Running Stop Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	B B B	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	S *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	B B B	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	S *4*5	Capacity Control 33% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 67% Setvalue -0.100 MPa to 67% Setvalue -1.00 bar to 67% Setvalue -29.5 "Hg to 67% Setvalue	B B B	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	S *4	Capacity Control 67% Pressure Set Value	33% Setvalue to 100% Setvalue	B B B	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	S *4	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	B B B	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	0	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	B B B	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	0	Control Cycle Set Value	1 to 240 sec	B B B	180 sec
	0	Operation Mode Setup	B B B B ([AUTO] mode) B B B B ([REMOTE] mode) B B B B ([MANUAL] mode) B B B B ([COMM] mode) *2	B B B	B B B B

\*1 In item of "B B B" (Use of Temp. sensor) of configuration setup mode, when "B S E" (Use) set, display is available. Use "B B B" of the initialization mode (Range of Temperature sensor) by "B B B B" (-20 to 180°C) when you select M type Reciprocating compressor to meet the specification of the compressor.

\*2 It is not displayed when communication board is not installed.

\*3 In item of "B B B" (Control mode) of configuration setup mode, when "B B B B" (Mode B) set, display / setup is available.

\*4 In item of "B B B" (Control mode) of configuration setup mode, when "B B B B" (Mode A) set, display / setup is available.

\*5 In item of "B B B" (0% load operation) of configuration setup mode, when "B E S" (Yes) set, display / setup is available.

\*6 In item of "B B B" (Range of Suction Pressure Sensor) of configuration setup mode, when "B B B B" (High) set, display / setup is available.



[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.		High Discharge Pressure Alarm Set Value	-1.0 to 29.5 kgf/cm <sup>2</sup> -0.10 to 2.90 MPa -1.0 to 29.0 bar -30 "Hg to 420 psi	888	27.5 kgf/cm <sup>2</sup> 2.70 MPa 27.0 bar 391 psi
		Low Oil Pressure (High Oil-Suction Diff. Press.) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	088	1.0 kgf/cm <sup>2</sup> 0.10 MPa 1.0 bar 1 psi
		High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858 %	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
		Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	0.30 kgf/cm <sup>2</sup> 0.030 MPa 0.30 bar 4.35 psi
		High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *1	160.0 °C 320.0 °F
		High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	088 *1	60.0 °C 140.0 °F
		Pump Down Stop Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
		Cap. control delay time set value	0 to 600 sec	888	30 sec
		LP stop delay time set value	0 to 600 sec	888	20 sec
		Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
		Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
		Hunting prevention time set value	0.0 to 30.0 minute	888	20.0 minute
		Loading Prohibition Discharge Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	28.5 kgf/cm <sup>2</sup> 2.80 MPa 28.0 bar 406 psi
		Compulsion Unloading Discharge Pressure Set Value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	29.0 kgf/cm <sup>2</sup> 2.85 MPa 28.5 bar 413 psi
		Compulsion Running Start Suction Pressure Set Value	588 to 10.20 kgf/cm <sup>2</sup> 588 to 1.000 MPa 588 to 10.00 bar 588 to 145.0 psi	588	8.15 kgf/cm <sup>2</sup> 0.800 MPa 8.00 bar 116.0 psi
		Compulsion Running Stop Suction Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 588 -0.10 MPa to 588 -1.0 bar to 588 -30 "Hg to 588	588	4.07 kgf/cm <sup>2</sup> 0.400 MPa 4.00 bar 79.7 psi
		Compulsion Running Maximum Run Time Set Value	0 to 300 sec	888	120 sec
		0% load shift Discharge temp. Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *5	140.0 °C 284.0 °F
		0% load shift Oil temp. Set Value	0.0 to 60.0 °C 32.0 to 140.0 °F	888 *5	50.0 °C 122.0 °F
		0% load High Dis. Temp. Alarm Delay time Set Value	0 to 180 sec	888 *5	60 sec
		LP stop permission set	888 (permit)/888 (prohibit)	888	888
		Restart time release permission	888 (permit)/888 (prohibit)	888	888
		Comm. address set value	0 to 31	888 *2	0
		Comm. speed set value	30 to 3840	858 *2	1920
		Comm. character format set value	8888 to 8882	888 *2	8888
		Comm. response delay time set value	0 to 255 (x10)msec	858 *2	0 msec

28. 8M

When you select M type Reciprocating Compressor, refer to "[Compulsion Running for the mechanical seal protection](#)".

In MYPRO-CP I, the capacity control of "8M" is "0%- 50%- 75%- 100%". "25% control" should be not able to be done.

(There is not "capacity control 25% pressure Set value" either.)

[PV/SV] Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *1	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *1	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *2	Communication State	---- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	8	Running Start Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	8	Running Stop Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	0.00 kgf/cm <sup>2</sup> 0.000 MPa 0.00 bar 0.0 psi
	5 *3	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4 *5	Capacity Control 50% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 75% Setvalue -0.100 MPa to 75% Setvalue -1.00 bar to 75% Setvalue -29.5 "Hg to 75% Setvalue	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *4	Capacity Control 75% Pressure Set Value	50% Setvalue to 100% Setvalue	888	1.84 kgf/cm <sup>2</sup> 0.180 MPa 1.80 bar 26.1 psi
	5 *4	Capacity Control 100% Pressure Set Value	75% Setvalue to 10.20 kgf/cm <sup>2</sup> 75% Setvalue to 1.000 MPa 75% Setvalue to 10.00 bar 75% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	8	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	8	Control Cycle Set Value	1 to 240 sec	888	180 sec
	8	Operation Mode Setup	8888 ([AUTO] mode) 8888 ([REMOTE] mode) 8888 ([MANUAL] mode) 8888 ([COMM] mode) *2	888	8888

\*1 In item of "888" (Use of Temp. sensor) of configuration setup mode, when "888" (Use) set, display is available. Use "888" of the initialization mode (Range of Temperature sensor) by "8888" (-20 to 180°C) when you select M type Reciprocating compressor to meet the specification of the compressor.

\*2 It is not displayed when communication board is not installed.

\*3 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.

\*4 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.

\*5 In item of "888" (0% load operation) of configuration setup mode, when "888" (Yes) set, display / setup is available.

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 29.5 kgf/cm <sup>2</sup> -0.10 to 2.90 MPa -1.0 to 29.0 bar -30 "Hg to 420 psi	888	27.5 kgf/cm <sup>2</sup> 2.70 MPa 27.0 bar 391 psi
	☉	Low Oil Pressure (High Oil-Suction Diff. Press.) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	000	1.0 kgf/cm <sup>2</sup> 0.10 MPa 1.0 bar 1 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	858*6	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	588	0.30 kgf/cm <sup>2</sup> 0.030 MPa 0.30 bar 4.35 psi
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888*1	160.0 °C 320.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	000*1	60.0 °C 140.0 °F
	☉	Pump Down Stop Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	20.0 minute
	☉	Loading Prohibition Discharge Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	28.5 kgf/cm <sup>2</sup> 2.80 MPa 28.0 bar 406 psi
	☉	Compulsion Unloading Discharge Pressure Set Value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	29.0 kgf/cm <sup>2</sup> 2.85 MPa 28.5 bar 413 psi
	☉	Compulsion Running Start Suction Pressure Set Value	588 to 10.20 kgf/cm <sup>2</sup> 588 to 1.000 MPa 588 to 10.00 bar 588 to 145.0 psi	588	8.15 kgf/cm <sup>2</sup> 0.800 MPa 8.00 bar 116.0 psi
	☉	Compulsion Running Stop Suction Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 588 -0.10 MPa to 588 -1.0 bar to 588 -30 "Hg to 588	588	4.07 kgf/cm <sup>2</sup> 0.400 MPa 4.00 bar 79.7 psi
	☉	Compulsion Running Maximum Run Time Set Value	0 to 300 sec	858	120 sec
	☉	0% load shift Discharge temp. Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888*5	140.0 °C 284.0 °F
	☉	0% load shift Oil temp. Set Value	0.0 to 60.0 °C 32.0 to 140.0 °F	888*5	50.0 °C 122.0 °F
	☉	0% load High Dis. Temp. Alarm Delay time Set Value	0 to 180 sec	888*5	60 sec
	☉	LP stop permission set	888 (permit)/888 (prohibit)	888	888
	☉	Restart time release permission	888 (permit)/888 (prohibit)	888	888
	☉	Comm. address set value	0 to 31	888*2	0
	☉	Comm. speed set value	30 to 3840	658*2	1920
	☉	Comm. character format set value	8888 to 8882	888*2	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	858*2	0 msec

\*6 In item of "888" (Range of Suction Pressure Sensor) of configuration setup mode, when "8888" (High) set, display / setup is available.

29. 62M

When you select M type Reciprocating Compressor, refer to "Compulsion Running for the mechanical seal protection".

[PV/SV]Lamp	[FUNC] Display	Display content	[DATA] Display	[CAPACITY] Display	Initial Value
When lamp OFF, Process Value Display	5	Suction Pressure Process Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	Capacity Display	---
	8 *1	Intermediate Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	8	Discharge Pressure Process Value	-1.0 to 30.6 kgf/cm <sup>2</sup> -0.10 to 3.00 MPa -1.0 to 30.0 bar -30 "Hg to 435 psi	Capacity Display	---
	0	Oil-Suction Differential Pressure Calculated Value	-11.2 to 31.6 kgf/cm <sup>2</sup> -1.10 to 3.10 MPa -11.0 to 31.0 bar -159 to 450 psi	Capacity Display	---
	8 *2	Discharge Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	0 *2	Oil Temperature Process Value	-20.0 to 180.0 °C -4.0 to 356.0 °F	Capacity Display	---
	8 *3	Communication State	--- to 8888	Capacity Display	---
When lamp ON, Usual Setup Menu Display	0	Running Start Pressure Set Value	Stop Setvalue to 10.20 kgf/cm <sup>2</sup> Stop Setvalue to 1.000 MPa Stop Setvalue to 10.00 bar Stop Setvalue to 145.0 psi	888	0.82 kgf/cm <sup>2</sup> 0.080 MPa 0.80 bar 11.6 psi
	0	Running Stop Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to Start Setvalue -0.100 MPa to Start Setvalue -1.00 bar to Start Setvalue -29.5 "Hg to Start Setvalue	888	0.41 kgf/cm <sup>2</sup> 0.040 MPa 0.40 bar 5.8 psi
	5 *4	Target Suction Pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	1.02 kgf/cm <sup>2</sup> 0.100 MPa 1.00 bar 14.5 psi
	5 *5	Capacity Control 67% Pressure Set Value	-1.02 kgf/cm <sup>2</sup> to 100% Setvalue -0.100 MPa to 100% Setvalue -1.00 bar to 100% Setvalue -29.5 "Hg to 100% Setvalue	888	1.53 kgf/cm <sup>2</sup> 0.150 MPa 1.50 bar 21.8 psi
	5 *5	Capacity Control 100% Pressure Set Value	67% Setvalue to 10.20 kgf/cm <sup>2</sup> 67% Setvalue to 1.000 MPa 67% Setvalue to 10.00 bar 67% Setvalue to 145.0 psi	888	2.55 kgf/cm <sup>2</sup> 0.250 MPa 2.50 bar 36.3 psi
	0	Capacity Control Dead Band Set Value	0.01 to 5.00 kgf/cm <sup>2</sup> 0.001 to 0.500 MPa 0.01 to 5.00 bar 0.1 to 72.5 psi	888	0.20 kgf/cm <sup>2</sup> 0.020 MPa 0.20 bar 2.9 psi
	0	Control Cycle Set Value	1 to 240 sec	888	180 sec
	0	Operation Mode Setup	8888 (AUTO) mode 8888 (REMOTE) mode 8888 (MANUAL) mode 8888 (COMM) mode *3	888	8888

- \*1 In item of "888" (Use of Inter. Press. sensor) of configuration setup mode, when "85.88" (Use) set, display is available.
- \*2 In item of "888" (Use of Temperature sensor) of configuration setup mode, when "85.88" (Use) set, display is available. Use "888" of the initialization mode (Range of Temperature sensor) by "8888" (-20 to 180°C) when you select M type Reciprocating compressor to meet the specification of the compressor.
- \*3 It is not displayed when communication board is not installed.
- \*4 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*5 In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode A) set, display / setup is available.
- \*6 In item of "888" (Use of Inter. Press. sensor) of configuration setup mode, when "85.88" (Use) set, and In item of "888" (Control mode) of configuration setup mode, when "8888" (Mode B) set, display / setup is available.
- \*7 In item of "888" (Range of Suc. Press. Sensor) of config. mode, when "8888" (High) set, display / setup is available.

[PV/SV]Lamp	[FUNC]	Display content	[DATA] Display	[CAPACITY]	Initial Value
When lamp blinks, ENG Setup Menu Display.	☉	High Discharge Pressure Alarm Set Value	-1.0 to 20.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 290 psi	888	16.3 kgf/cm <sup>2</sup> 1.60 MPa 16.0 bar 232 psi
	☉	Low Oil Pressure (High Oil-Suction Differential Pressure) Alarm Set Value	1.0 to 31.6 kgf/cm <sup>2</sup> 0.10 to 3.10 MPa 1.0 to 31.0 bar 15 to 450 psi	888	1.0 kgf/cm <sup>2</sup> 0.10 MPa 1.0 bar 15 psi
	☉	High Intermediate Pressure Alarm Set Value	-1.0 to 19.4 kgf/cm <sup>2</sup> -0.10 to 2.00 MPa -1.0 to 20.0 bar -30 "Hg to 276 psi	888 *1	5.1 kgf/cm <sup>2</sup> 0.50 MPa 5.0 bar 73 psi
	☉	High Suction Pressure Alarm Set Value	-1.02 to 30.60 kgf/cm <sup>2</sup> -0.100 to 3.000 MPa -1.00 to 30.00 bar -29.5 "Hg to 435.0 psi	888 *7	10.20 kgf/cm <sup>2</sup> 1.000 MPa 10.00 bar 145.0 psi
	☉	Low Suction Pressure Alarm Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	0.30 kgf/cm <sup>2</sup> 0.030 MPa 0.30 bar 4.3 "Hg
	☉	High Discharge Temperature Alarm Set Value	0.0 to 180.0 °C 32.0 to 356.0 °F	888 *2	160.0 °C 320.0 °F
	☉	High Oil Temperature Alarm Set Value	0.0 to 65.0 °C 32.0 to 149.0 °F	888 *2	60.0 °C 140.0 °F
	☉	Pump Down stop pressure Set Value	-1.02 to 10.20 kgf/cm <sup>2</sup> -0.100 to 1.000 MPa -1.00 to 10.00 bar -29.5 "Hg to 145.0 psi	888	-0.41 kgf/cm <sup>2</sup> -0.040 MPa -0.40 bar -11.8 "Hg
	☉	Cap. control delay time set value	0 to 600 sec	888	30 sec
	☉	LP stop delay time set value	0 to 600 sec	888	20 sec
	☉	Pump down stop time set value	0.1 to 54.0 minute	888	1.0 minute
	☉	Restart interval time set value	0.0 to 30.0 minute	888	5.0 minute
	☉	Hunting prevention time set value	0.0 to 30.0 minute	888	20.0 minute
	☉	Loading prohibition Intermediate pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888 *6	561 kgf/cm <sup>2</sup> 0.60 MPa 6.0 bar 87 psi
	☉	Compulsion unloading Intermediate pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888 *6	6.6 kgf/cm <sup>2</sup> 0.65 MPa 6.5 bar 94 psi
	☉	Loading prohibition Discharge pressure Setup value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	17.3 kgf/cm <sup>2</sup> 1.70 MPa 17.0 bar 247 psi
	☉	Compulsion unloading Discharge pressure Setup value	888 to 30.6 kgf/cm <sup>2</sup> 888 to 3.00 MPa 888 to 30.0 bar 888 to 435 psi	888	17.8 kgf/cm <sup>2</sup> 1.75 MPa 17.5 bar 254 psi
	☉	Compulsion Running Start Suction Pressure Set Value	888 to 10.20 kgf/cm <sup>2</sup> 888 to 1.000 MPa 888 to 10.00 bar 888 to 145.0 psi	888	8.15 kgf/cm <sup>2</sup> 0.800 MPa 8.00 bar 116.0 psi
	☉	Compulsion Running Stop Suction Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 888 -0.10 MPa to 888 -1.0 bar to 888 -30 "Hg to 888	888	4.07 kgf/cm <sup>2</sup> 0.400 MPa 4.00 bar 79.7 psi
	☉	Compulsion Running Maximum Run Time Set Value	0 to 300 sec	888	120 sec
	☉	LP stop permission set	888 or 8888	888	8888
	☉	Restart time release permission set	8888 or 8888	888	8888
	☉	Comm. address set value	0 to 31	888 *3	0
	☉	Comm. speed set value	30 to 3840	888 *3	1920
	☉	Comm. character format set value	8888 to 8888	888 *3	8888
	☉	Comm. response delay time set value	0 to 255 (x10)msec	888 *3	0 msec

### 3.4. Change of set value

Set to usual setup menu by pressing [PV/SV] key ([PV/SV] lamp is ON) or set to ENG setup menu by pressing [FUNC] key for 3 seconds ([PV/SV] lamp blinks).

Select desired function by [FUNC] key and set up desired value by [UP] key or [DOWN] key and press [ENT] key. Setup is completed after [DATA] display blink once.

- \* During [COMM] mode ([COMM. SET] lamp is ON), there are some items not to be changed by key.  
(Refer to "4.2.4. [COMM] mode", "5.3.2. MYCOM original protocol" and "5.3.3. MODBUS protocol".)

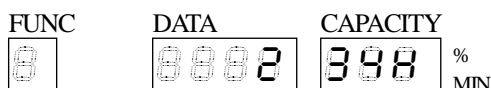


Set value is not changed without pressing [ENT] key and MYPRO-CP I operation is based on set value before change.

### 3.5. Display of total running time

Total running time is displayed when pressed [PV/SV] key for 5 seconds. It is displayed at [DATA] display and together with [CAPACITY] display by unit of hour. (It is not possible to display it in the state of the key lock.)

Example shown below means "234 Hr".



Amendment of total running time is available by [UP] key or [DOWN] key. After change by [ENT] key, it returns to process value display or usual setup menu.

Even in case of no change, it returns to process value display or usual setup menu by pressing [ENT] key.

### 3.6. Alarm reset

In case of alarm, process value at alarm is shown in [DATA] display and content of alarm is displayed in [CAPACITY] display.

Alarm is reset by pressing [CLEAR ALARM] key after removing alarm cause.

("Alarm Clear Order by the communication" is effective only assumption by "E E E" of the initialization mode (communication alarm clear order, ), "S E S" (permission), and can do the alarm clear from remoteness according to the instruction from an external communication.)

Alarm reset is not available without removing alarm cause.

Alarm state is memorized even when power is off without alarm reset.

To know current process value during alarm state, press [PV/SV] key and [FUNC] key simultaneously.

Current process value is displayed by canceling hold process value at alarm.



Caution is required because compressor starts right away when pressing [CLEAR ALARM] key under satisfactory conditions for starting after alarm stop.

Compressor does not start right away, if "S S S S" (change to [MANUAL] operation mode) is selected in item of "S S S" (Operation mode after alarm) of configuration setup mode.

### 3.7. Display of communication error log (option)

When communication board (option) is installed in MYPRO-CPI, display of communication error log is available.

When pushed [ENT] key for 2 seconds while process value is displayed, communication error log in the past is displayed. However, it is not displayed during alarm state.

Way of display is the same as communication status, however communication error log is remained even after communication became normal after communication error occurrence.

To distinguish communication error log from communication status display, "E E E" is displayed in [CAPACITY] display. Communication state display is trend display and communication error log is logging display.

Example below is shown for framing error and parity error occurred in the past.



When pushed [CLEAR ALARM] key, error log can be cleared. When pushed [ENT] key, it returns to normal display showing process value display.

In communication error log display, contents of [DATA] display are as follows.

7 segments LED display	Kind of communication error occurred in the past
00000	No communication error
00000	Receiving buffer overflow error
00000	Overrun error
00000	Framing error
00000	Parity error
00000	* Framing error and parity error

\* When plural different kinds errors occurred, plural errors are displayed.  
(When plural same kind errors occurred, only one error is displayed.)

\* For coping method with communication error, refer to "7. Trouble shooting".  
MYPRO-CPI does not handle communication error as alarm.

# 4. Movement

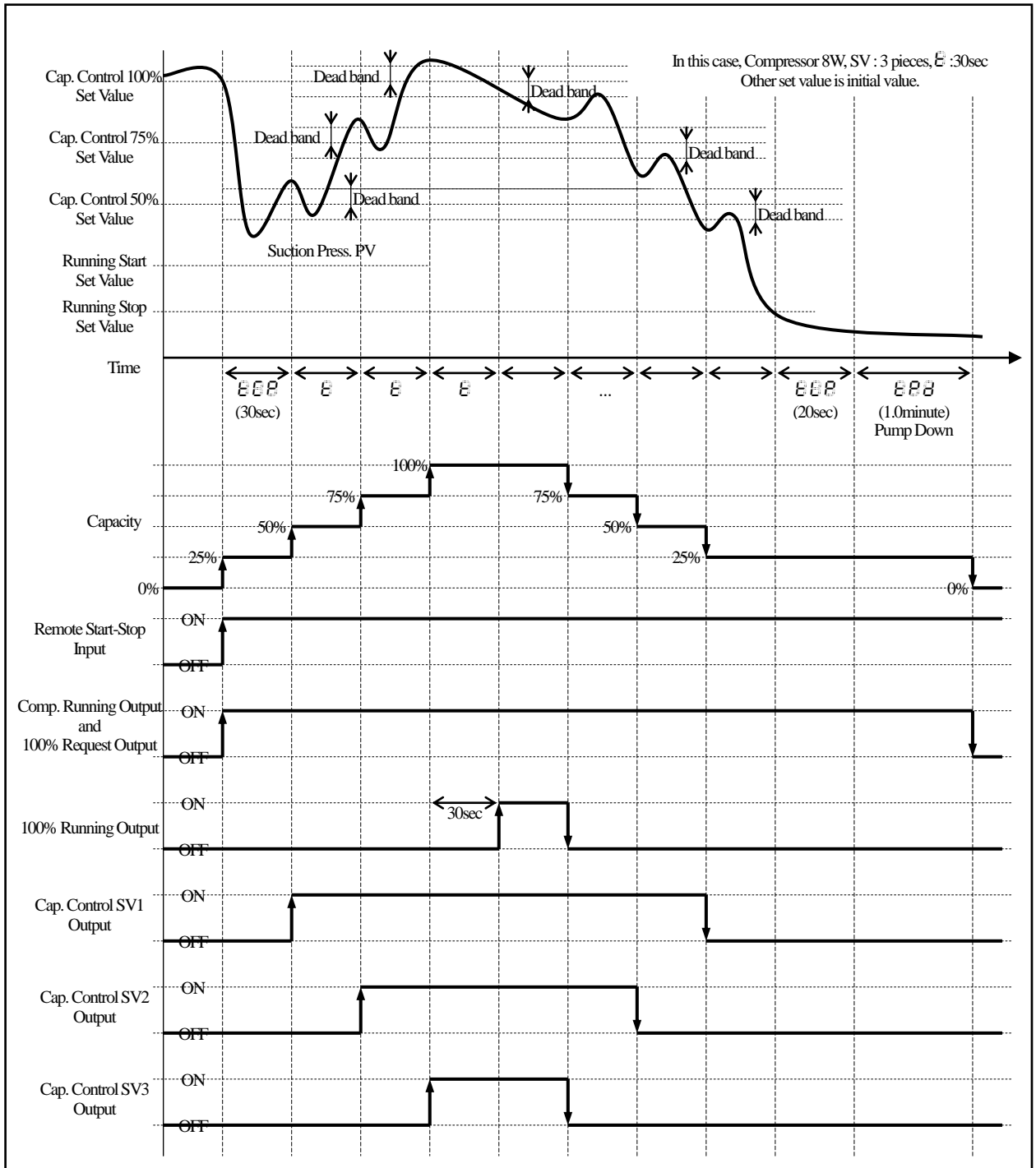
## 4.1. Control mode

MYPRO-CPI has two control methods to control capacity automatically.

- (control mode A) : Method to set up suction pressure for each step of capacity control.
- (control mode B) : Method to make capacity control to meet suction pressure to target.

### 4.1.1. Control mode A

Assume a lot of pressure switch are prepared for capacity control to understand setting up suction pressure at each capacity control step. Actually besides suction pressure, time is also used as capacity control condition. The operation example is shown below.





If  $S$  (Suction Pressure Process Value) is above  $F$  (Running Start Pressure Set Value) when *Remote Start-Stop Input* is ON, *Compressor Running Output* and *100% Request Output* become ON and MYPRO-CP I becomes running state.

Capacity control is at the minimum step for control delay time  $E$  (initial value : 30 sec.) after *Remote Start-Stop Input* is ON.

Later on, comparison of set value and process value is carried out every control cycle  $E$  (initial value : 30 sec.) and capacity is controlled depending upon up or down pressure comparison.

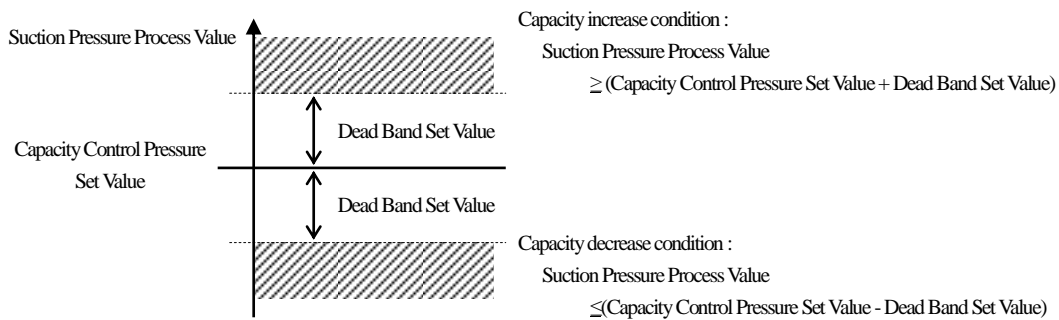
There are set value at each capacity control step (50%, 75%, 100% in this example "8W, SV=3") in control mode A. Each set value is set at shipment and set value can be changed during running if necessary.

In actual capacity control besides capacity control pressure set value at each step, dead band set value is also involved. This is set value to avoid excessive capacity control at around set value.

At beginning of control cycle  $E$ ,

when Suction Pressure Process Value  $S \geq$  (capacity control pressure set value + dead band  $D$ ), capacity control increases, and

when Suction Pressure Process Value  $S \leq$  (capacity control pressure set value - dead band  $D$ ), capacity decreases.



Example, when Capacity Control Set Value = 0.150MPa, Dead Band Set Value = 0.020MPa,

incase of Suction Pressure Process Value is 0.170MPa and above, capacity increase condition is realized,

incase of Suction Pressure Process Value is 0.130MPa and below, capacity decrease condition is realized, and capacity changes under these conditions in next control cycle.

*100% Request Output* and *Compressor Running Output* become OFF when *Remote Start-Stop Input* is OFF or during LP stop. *100% Running Output* becomes ON when capacity is 100% and continued for 30 seconds and above, it becomes OFF, when capacity is less than 100%.

Relation between combination of *Capacity Control SV Output* ON/OFF and capacity is decided by model of compressor.

Refer to "4.4.1. Movement Capacity Control SV Output".

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In example of previous page,

Minimum step (capacity 25%) continues for Capacity Control Delay Time  $t_{CD}$  (initial value : 30 sec.) after *Remote Start-Stop Input* ON.

Then Suction Pressure Process Value is higher than (Capacity Control 50% Pressure Set Value + Dead Band Set Value), capacity increases 25% → 50%.

After Control Cycle  $t_{CC}$  (initial value : 30 sec.), Suction Pressure Process Value is higher than (Capacity Control 75% Pressure Set Value + Dead Band Set Value), capacity increases 50% → 75%.

After Control Cycle  $t_{CC}$  (initial value : 30 sec.), Suction Pressure Process Value is higher than (Capacity Control 100% Pressure Set Value + Dead Band Set Value), capacity increases 75% → 100%.

After Control Cycle  $t_{CC}$ , Suction Pressure Process Value is below Capacity Control 100% Pressure Set Value, but still inside of dead band, capacity does not change. At this time, capacity 100% state passed 30 seconds, *100% Running Output* becomes ON.

After Control Cycle  $t_{CC}$ , Suction Pressure Process Value is below (Capacity Control 100% Pressure Set Value - Dead Band Set Value), capacity decreases 100% → 75%. At this time, it is not capacity 100% state, *100% Running Output* becomes OFF.

After Control Cycle  $t_{CC}$ , Suction Pressure Process Value is below (Capacity Control 75% Pressure Set Value - Dead Band Set Value), capacity decreases 75% → 50%.

After Control Cycle  $t_{CC}$ , Suction Pressure Process Value is below (Capacity Control 50% Pressure Set Value - Dead Band Set Value), capacity decreases 50% → 25%.

When Suction Pressure Process Value is below Running Stop Pressure Set Value, it is not the minimum step (capacity 25%) operation, compressor run in the minimum step operation. After LP stop Delay Time  $t_{LPSD}$  (initial value : 20 sec.), Pump down starts.

After Pump Down End Time  $t_{PDE}$  (initial value : 1.0 min.) expired, it is LP stop and *Compressor Running Output* and *100% Request Output* become OFF.

- \* The Unloader operation interval is recommended to be installed appropriately by the specification of each compressor. In the control, install the interval of the capacity control (interval of time) appropriately. In a control mode A, the capacity of each Setup value of the control cycle is controlled, and **note the Setup at the control cycle**. Moreover, in a control mode B, capacity is controlled as the control cycle dynamically changing by the change of pressure, and **note the change in the control cycle**. According to circumstances, it might not meet the specification of each compressor.

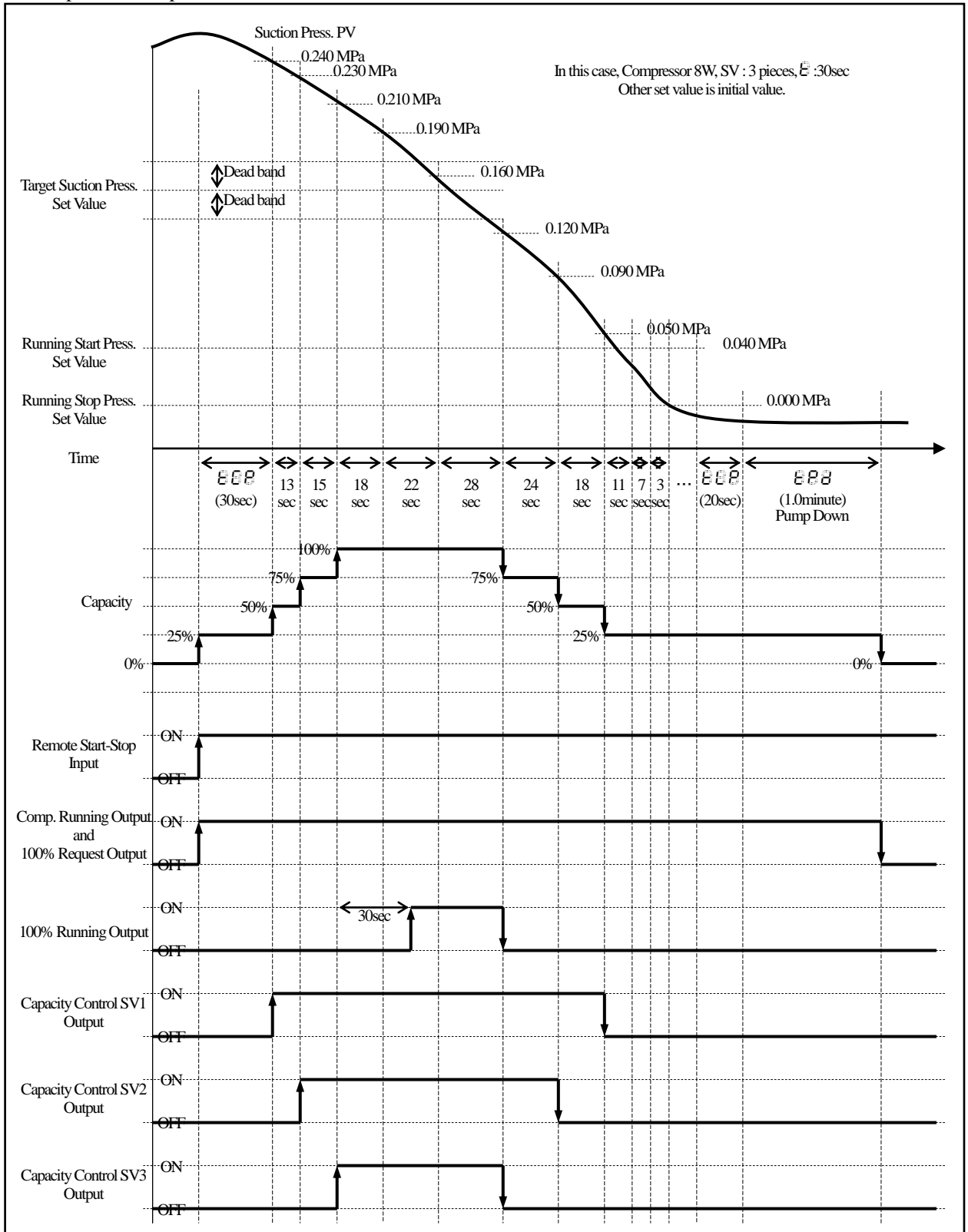
### 4.1.2. Control mode B

In control mode A, "higher the suction pressure process value, higher the capacity and lower the suction pressure process value, lower the capacity" and Suction Pressure Process Value varies depending upon load state.

Therefore control mode A does not have function of pressure adjustment to keep Suction Pressure Process Value constant.

Assume control mode B is control mode A with function of pressure adjustment. Actually besides suction pressure, time is also used as capacity control condition.

The operation example is shown below.



$S$  (Suction Pressure Process Value) is above  $P$  (Running Start Pressure Set Value) when *Remote Start-Stop Input* is ON, *Compressor Running Output* and *100% Request Output* become ON and MYPRO-CPI become running state. Capacity control is at the minimum step for Capacity Control Delay Time  $E$  (initial value : 30 sec.) after *Remote Start-Stop Input* is ON same as control mode A.

Later on capacity controlled at each control cycle. However control cycle is different from control mode A.

At beginning of Control Cycle  $E$ ,

when Suction Pressure Process Value  $S \geq$  (Target Suction Pressure Set Value + Dead Band Set Value  $D$ ), capacity control increases, and

when Suction Pressure Process Value  $S \leq$  (Target Suction Pressure Set Value – Dead Band Set Value  $D$ ), capacity control decreases.

This is same as control mode A, but in control mode B next control cycle varies depending upon difference between Target Suction Pressure Set Value and Suction Pressure Process Value. Actual control cycle T can be obtained by following formula.

$$\text{Actual control cycle } T = E - \frac{|\text{Suction Pressure Process Value} - \text{Target Suction Pressure Set Value}|}{0.15} \times (E - 1)$$

$E$  : control cycle set value

(T = 1 sec. When  $|\text{Suction Pressure Process Value} - \text{Target Suction Pressure Set Value}|$  is above Target Suction Pressure Set Value.)

Therefore, actual control cycle T is larger the deviation of  $|\text{Suction Pressure Process Value} - \text{Target Suction Pressure Set Value}|$ , faster and smaller the deviation, slower. However only once at beginning of control cycle, above deviation and actual control cycle T are calculated.

In example of previous page,

After Capacity Control Delay Time  $E$  (initial value : 30 sec.) since *Remote Start-Stop Input* ON, Suction Pressure Process Value is 0.240MPa and higher than Target Suction Pressure Set Value, capacity increases form 25% to 50% and next control cycle is set.  $T = 30 - (0.240 - 0.150) / 0.150 \times (30 - 1) =$  about 13 seconds

13 sec. later, Suction Pressure Process Value is 0.230MPa and higher than Target Suction Pressure Set Value, capacity increases from 50% to 75% and next control cycle is set.  $T = 30 - (0.230 - 0.150) / 0.150 \times (30 - 1) =$  about 15 seconds

15 sec. later, Suction Pressure Process Value is 0.210MPa and higher than Target Suction Pressure Set Value, capacity increases from 75% to 100% and next control cycle is set.  $T = 30 - (0.210 - 0.150) / 0.150 \times (30 - 1) =$  about 18 seconds

18 sec. later, Suction Pressure Process Value is 0.190MPa but capacity is 100% and next control cycle is just set.

$$T = 30 - (0.190 - 0.150) / 0.150 \times (30 - 1) = \text{about 22 seconds}$$

18 sec. later, Suction Pressure Process Value is 0.160MPa but it is capacity control dead band, next control cycle is just set.

$$T = 30 - (0.160 - 0.150) / 0.150 \times (30 - 1) = \text{about 28 seconds}$$

28 sec. later, suction pressure process value is 0.120MPa and lower than target suction pressure set value, capacity decreases from 100% to 75% and next control cycle is set.  $T = 30 - |0.120 - 0.150| / 0.150 \times (30 - 1) =$  about 24 seconds

24 sec. later, suction pressure process value is 0.090MPa and lower than target suction pressure set value, capacity decreases from 75% to 50% and next control cycle is set.  $T = 30 - |0.090 - 0.150| / 0.150 \times (30 - 1) =$  about 18 seconds

18 sec. later, suction pressure process value is 0.050MPa and lower than target suction pressure set value, capacity decreases from 50% to 25% and next control cycle is set.  $T = 30 - |0.050 - 0.150| / 0.150 \times (30 - 1) =$  about 11 seconds

11 sec. later, Suction Pressure Process Value is 0.030MPa but it is minimum step operation and next control cycle is set.

$$T = 30 - |0.030 - 0.150| / 0.150 \times (30 - 1) = \text{about 7 seconds}$$

7 sec. later, Suction Pressure Process Value is 0.010MPa but it is minimum step operation and next control cycle is set.

$$T = 30 - |0.010 - 0.150| / 0.150 \times (30 - 1) = \text{about 3 seconds}$$

3 sec. later, Suction Pressure Process Value is 0.000MPa but it is minimum step operation and next control cycle is set.

$$T = 30 - |0.000 - 0.150| / 0.150 \times (30 - 1) = \text{about 1 seconds}$$


Later on control is made by each actual control cycle 1 second, when  $S$  (Suction Pressure Process Value) becomes below  $P$  (Running Stop Pressure Set Value), it immediately becomes pump down without waiting at LP Stop Delay Time  $E$  (initial value : 20 sec.) because it runs in the minimum step longer than LP Stop Delay Time.

After Pump Down Stop Time  $E$  (initial value : 1.0 min.) expired, it is LP stop condition and *Compressor Running Output* and *100% Request Output* become OFF.

## 4.2. Operation mode

MYPRO-K I, W I have function of manual capacity control but not for manual running of compressor. MYPRO-CP I adopted the concept of running mode same as CP II & CP III.

In operation mode, there are 3 modes of [REMOTE], [AUTO], [MANUAL] + [COMM] mode.

Operation mode can be changed by  (Operation Mode) of usual setup menu. Setup desired mode using [UP] key or [DOWN] key.

In [REMOTE] mode, compressor's start/stop is carried out by external contact signal (*Remote Start-Stop Input*) similar to MYPRO-K I, W I. Or it is available to make Running Order ON/OFF by communication. Capacity control, LP stop and alarm watch are also available.




In [AUTO] mode, compressor's start/stop is done by [START/STOP] key of MYPRO-CP I panel. Other functions are same as [REMOTE] mode.

In [MANUAL] mode, compressor's start/stop is done by [START/STOP] key also. However start/stop is done right away after pressing key. Alarm watch is available, but capacity control and LP stop are not available. Capacity control is by manual action.

In [COMM] mode, when communication board (option) is installed in MYPRO-CP I, set value or movement of MYPRO-CP I can be changed from external communication device.

### 4.2.1. [REMOTE] operation mode


[REMOTE MODE] lamp is ON during [REMOTE] mode. Start and stop of compressor is carried out by ON/OFF of *Remote Start-Stop Input* or remote start-stop through communication during [COMM] mode ([COMM. SET] lamp ON).

When *Remote Start-Stop Input* is ON ( (N.O.) or  (N.C.) can be selected in item of  (Contact input movement) of configuration setup mode), [REMOTE START] lamp is ON. *Remote Start-Stop Input* is ON through communication, [REMOTE START] lamp blinks. Either of these *Remote Start-Stop Inputs* is ON and starting conditions are satisfied, compressor starts.


When starting conditions are not satisfied, [LP STOP OFF] lamp is ON and displays LP stop.


When both *Remote Start-Stop Input* and remote start-stop through communication are OFF, compressor stops after pump down. (No restart.)

[COMPRESSOR RUN] lamp is ON during running.

Immediately after starting, it becomes the minimum step or starting step (0% for 4L or 42W and 17% for F6K) and capacity control starts after Capacity Control Delay Time  (initial value : 30 sec.) expired.

When capacity control started, starting step (0%, 17%) changes to the minimum step (50%, 33%).

Capacity control mode follows " " (Control mode) by configuration setup mode.

*Intercooler liquid-supply SV* of two-stage machine becomes ON after " "(Capacity Control Delay Time).

LP stop is carried out when LP stop conditions are realized in case of the minimum step during capacity control.

[LPAUTO STOP] lamp is ON during LP stop and displays it is under LP stop.

*Compressor Running Output* and *100% Request Output* become OFF and capacity is set to 0% and *Intercooler liquid-supply SV Output* becomes OFF.

Remaining time to restart is displayed on [DATA] display. (minute unit above 1 minute and second unit less than 1 minute)

Remaining time becomes 0 second and when starting conditions are satisfied, it starts.

\* In [REMOTE] mode, [START/STOP] key is not effective.

## Compulsion Running for mechanical seal protection

When M type Reciprocating Compressor is used, "Automatic Compulsion Running" is done because of the protection of a mechanical seal by the rise of the suction pressure process value while the compressor is stopping.

- Condition that Compulsion Running becomes effective  
 In " 8 8 8 " (compressor model) of the initialization mode, Only when " 9 8 8 8 ", " 6 8 8 8 ", " 8 8 8 8 " and " 6 2 8 8 " (M type Reciprocating Compressor) has been selected, and [REMOTE] mode has been selected by the operation mode, it is effective. (The compulsion running doesn't operate in [MANUAL] mode and [AUTO] mode.)
- Setup value and operation of Compulsion Running  
 The compulsion running operates by the Compulsion Running Start Suction Pressure Set Value 5 8 8 , the Compulsion Running Stop Suction Pressure Set Value 5 8 8 , and the Compulsion Running Maximum Time Set Value 8 8 8 .  
 (Display these Set Value only when you satisfy above-mentioned "Condition that the Compulsion Running becomes effective".)

[FUNC] Display	Content of display	[DATA] Display	[CAPACITY] Display	Initial value
8	Compulsion Running Start Suction Pressure Set Value	5 8 8 to 10.20 kgf/cm <sup>2</sup> 5 8 8 to 1.000 MPa 5 8 8 to 10.00 bar 5 8 8 to 145.0 psi	5 8 8	8.15 kgf/cm <sup>2</sup> 0.800 MPa 8.00 bar 116.0 psi
8	Compulsion Running Stop Suction Pressure Set Value	-1.0 kgf/cm <sup>2</sup> to 5 8 8 -0.10 MPa to 5 8 8 -1.0 bar to 5 8 8 -30 "Hg to 5 8 8	5 8 8	4.07 kgf/cm <sup>2</sup> 0.400 MPa 4.00 bar 79.7 psi
8	Compulsion Running Maximum Run Time Set Value	0 to 300 sec	8 8 8	120 sec

\* An initial value is different for "62M".

When the M type Compressor is stopping (It is not a alarm stop) in [REMOTE] mode, (Suction Pressure Process Value > Compulsion Running Start Suction Pressure Setup Value 5 8 8 ), the compulsion running starts.

The compulsion running starts by 0% in capacity, and drive in the minimum step that excludes 0% after the capacity control delay time passes.

The compulsion running is different from a usual run, do not control capacity while compulsion running.

Alarm is detected by the kind and the judgment method as well as usually run.

When alarm is generated, the compulsion running is stopped, and alarm is output as well as usually driving.

While compulsion running,

- Suction Pressure Process Value ≤ Compulsion Running Stop Suction Pressure Setup Value 5 8 8
  - Compulsion Running Time ≥ Compulsion Running Maximum Time Setup Value 8 8 8
- Stop the compulsion running when either of above-mentioned condition is satisfied.

When the compulsion running stops, the Pump Down Running is not done. Stop at once.

- Remote Start-Stop Input that is operating condition of [REMOTE] mode
- Comm. running Order in [REMOTE]-[COMM] mode

When the condition of either the above-mentioned is turned on, the compulsion running is discontinued, and shifts to usually running while continuing running.

While compulsion running,

Control mode A, B: [CAPACITY] display (light for 0.5 seconds and turn off for 0.5 seconds) blinks.

- \* If you want to invalidate the function of the compulsion running, set above-mentioned "Compulsion Running Start Suction Pressure Set value 5 8 8 " to "1.000MPa", or set "Compulsion Running Maximum Time 8 8 8 " to "0 seconds".

#### 4.2.2. [AUTO] operation mode

[AUTO MODE] lamp is ON during [AUTO] mode. Start-stop is carried out by [START/STOP] key. If [START/STOP] key is pressed during compressor is standstill, [START/STOP] lamp becomes ON and compressor starts when starting conditions are satisfactory. If [START/STOP] key is pressed again, [START/STOP] lamp becomes OFF and compressor stops after pump down. (No restart.)

Others are same as [REMOTE] mode.

\* In [AUTO] mode, ON/OFF of *Remote Start-Stop Input* and Running Order through communication are not effective.

#### 4.2.3. [MANUAL] operation mode

During [Manual] Mode, [MANUAL MODE] lamp is ON. Start-stop is carried out by [START/STOP] key. If [START/STOP] key is pressed during compressor is standstill, [START/STOP] lamp becomes ON and compressor starting immediately. If [START/STOP] key is pressed again, [STAR/STOP] lamp becomes OFF and compressor stopping immediately.

[COMPRESSOR RUN] lamp is ON during running. It becomes minimum step immediately after starting and it can always be changed by [UP] key or [DOWN] key.

Capacity can be changed by [UP] key or [DOWN] key also during compressor is standstill.

However, the limitation protection function of 0% loading operation doesn't work though running in 0% loading is possible in 0% loading operation corresponding model.

If compressor is running, capacity be set to starting step (0% for 4L or 42W and 17% for F6K, all solenoid valves are off.) *Intercooler liquid-supply SV output (SV3)* and *oil cooler liquid-supply SV output (SV2)* can be operation by [ENT] key. However, it restricts during compressor is standstill.

During compressor running, control of liquid-supply solenoid valve works effectively.

\* In [MANUAL] mode, ON/OFF of *Remote Start-Stop Input* and Running Order through communication is not effective.



In [AUTO] mode or [MANUAL] mode, compressor starts or stops if [START/STOP] key is pressed. Therefore press key after confirmation of circumferential situation and safety.

#### 4.2.4. [COMM] mode

When optional communication board is installed in MYPRO-CP I, communication is available with external communication devices.

By this communication not only read of MYPRO-CP I process value, set value movement and alarm state data but also set value or movement change (write) is available. (For detail, refer to "5. Data Communication".)

[COMM] mode is mode to permit set value change by communication. As for read data, it is available not in [COMM] mode.

[COMM. SET] lamp is ON during [COMM] mode.

[COMM] mode is nothing to do with compressor operation mode, [REMOTE], [AUTO], [MANUAL] all operation modes can be selected. However without communication board, it is not selectable.

Changeable set value by communication during [COMM] mode are as follows.

(Set value by usual setup menu)

- (1) Running Start Pressure Set Value
- (2) Running Stop Pressure Set Value
- (3) Target Suction Pressure Set Value (for control mode B)
- (4) Capacity Control Pressure Set Value (for control mode A, max 4 items)
- (5) Capacity Control Dead Band Set Value

\* **These set values cannot be changed by front panel key operation during [COMM] mode.** (Input of change register by [ENT] key is not available.)

And setup by following movements through communication is available.

(Movement)

- (1) Running Order by communication (same role as *Remote Start-Stop Input*)
- (2) 100% LOCK Running Order by communication (same role as *100% LOCK Running Input*)
- (3) Alarm Clear Order by communication (same role as [Clear Alarm] key)

However, as kind of protocol "P P P", MYPRO original protocol type 0 (P P P P) or type 1 (P P P P) are set up in configuration setup mode, these movement change by communication **is available even not in [COMM] mode.**

When a kind of protocol "P P P", MODBUS Protocol RTU mode (P P P P) or MODBUS Protocol ASCII mode (P P P P) are set up, these movement change by communication **is available only in [COMM] mode.**

"Alarm Clear Order by the communication" is effective only assumption by "P P P" of the initialization mode (communication alarm clear order, ), "P P P" (permission), and can do the alarm clear from remoteness according to the instruction from an external communication.



When selected [COMM] mode, MYPRO-CPI set value change is available from external communication devices. Therefore before operation confirm the state of things around compressor and alarm operations are proper.

"Each control instruction by the communication" is not turned off in the automatic operation. (The bit turned on by the communication can be turned off only by the communication. )



### 4.3. LP start-stop

LP start-stop is available for [REMOTE] mode and [AUTO] mode.

In [REMOTE] mode, MYPRO-CP I starts compressor when *Remote Start-Stop Input* is ON and  $\text{S}$  (Suction Pressure Process Value) is higher than  $\text{R}$  (Running Start Pressure Set Value).

In [AUTO] mode, MYPRO-CP I starts compressor when [START/STOP] key is pressed, [START/STOP] lamp is ON and  $\text{S}$  (Suction Pressure Process Value) is higher than  $\text{R}$  (Running Start Pressure Set Value).

When  $\text{S}$  (Suction Pressure Process Value) is less than  $\text{R}$  (Running Start Pressure Set Value), it becomes LP stop state and [LP AUTO STOP] lamp is ON.

In running state, *Compressor Running Output* and *100% Request Output* is ON.

During compressor running, when  $\text{S}$  (Suction Pressure Process Set Value) becomes below  $\text{R}$  (Running Stop Pressure Set Value),

- When compressor is at minimum step longer than LP Stop Delay Time  $\text{E}$   $\text{E}$   $\text{E}$  (initial value : 20 sec.).

Pump down immediately starts without waiting at LP Stop Delay Time  $\text{E}$   $\text{E}$   $\text{E}$ .

- When compressor runs without the minimum step.

Capacity is controlled at minimum step, and after LP Stop Delay Time  $\text{E}$   $\text{E}$   $\text{E}$ , pump down starts for LP stop.

[COMPRESSOR RUN] lamp blinks during pump down.

After either  $\text{S}$  (Suction Pressure Process Set Value) becomes below  $\text{P}$   $\text{P}$   $\text{P}$  (Pump Down Stop Pressure Set Value), or  $\text{E}$   $\text{E}$   $\text{E}$  (Pump Down Stop Time)(initial value : 1.0 min.) elapses, *Compressor Running Output* and *100% Request Output* become OFF and LP stop state.

[LP AUTO STOP] lamp is ON during LP stop. Remaining time of restarting timer is displayed on [CAPACITY] display. Remaining time whichever longer "  $\text{E}$   $\text{E}$   $\text{E}$  " (Restart Interval Time)(initial value 5.0 min.) or "  $\text{E}$   $\text{E}$   $\text{E}$  " (Hunting Prevention Time)(initial value : 15.0 min.) is displayed. Remaining time is displayed in 0.1 minute unit and second unit in case of less than 1 minute.

When remaining time elapsed and restarting conditions are satisfied compressor restarts.

Although in MYPRO-K I, W I restarting timer has function of only restart interval timer, MYPRO-CP I has function of hunting prevention timer and restart interval timer same as MYPRO-CP II, CP III.

"  $\text{E}$   $\text{E}$   $\text{E}$  " (Restart Interval Time)(initial value : 5.0 min.) is waiting time from LP stop to next start time and "  $\text{E}$   $\text{E}$   $\text{E}$  " (Hunting Prevention Time)(initial value : 15.0 min.) is waiting time for start to next start available.

Restarting conditions after LP stop one

<< *Remote Start-stop Input* is ON

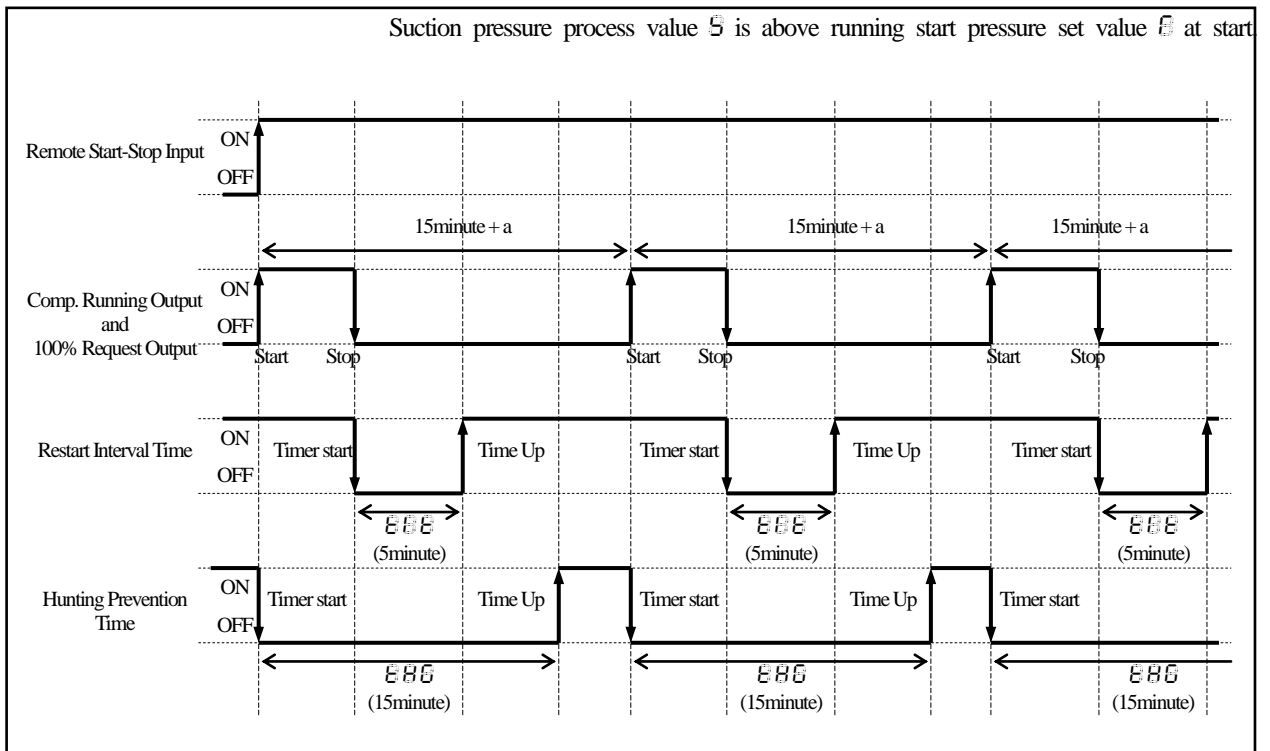
(and)  $\text{S}$  (Suction Pressure Process Value)  $\geq$   $\text{R}$  (Running Start Pressure Set Value)

(and)  $\text{E}$   $\text{E}$   $\text{E}$  (Hunting Prevention Time) is time up

(and)  $\text{E}$   $\text{E}$   $\text{E}$  (Restart Interval Time) is time up >>.

Therefore when "  $\text{E}$   $\text{E}$   $\text{E}$  " is 5.0 min. and "  $\text{E}$   $\text{E}$   $\text{E}$  " is 15.0 min. are set up even under the condition of compressor stopped just after started, compressor actually 15 min. later, so maximum number of starts is 4 times per hour.

(Refer to diagram of next page.)



Each timer for restarting can be cancelled by turning OFF *Remote Start-Stop Input* in [REMOTE] mode and by pushing [UP] key and [DOWN] key simultaneously in [AUTO] mode.

After cancellation of timer, it returns to state before running.

When "  $\bar{0} \bar{0} \bar{0} \bar{0}$  " (Reset Prohibition) is selected for Restart Timer Reset Permission Setup "  $\bar{0} \bar{0} \bar{0}$  ", reset is not available even *Remote Start-Stop Input* is made OFF. When LP Stop Permission Setup "  $\bar{0} \bar{0} \bar{0}$  " is "  $\bar{0} \bar{0} \bar{0} \bar{0}$  " (Stop Prohibited), running is continued even when it becomes below  $\bar{R}$  (Running Stop Pressure Set Value).

The timer for restarting after the compulsion running ends can be released (reset) by pushing [UP] key and [DOWN] key simultaneously in [REMOTE] mode.

(The release of the timer for restarting must operate on the panel side even the [REMOTE] mode.)

**However, it is recommended to reactivation to install the interval (interval of time) by the specification of compressor, and note reset of the timer for restarting.**

#### 4.4. Movement of solenoid valve

In MYPRO-CPI, there are maximum three capacity control solenoid valve outputs.

MYPRO-CP I provides two liquid-supply solenoid valve output using unused capacity control solenoid valve output, which not required for some compressor model.

- *Intercooler Liquid-Supply SV Output (SV3)*
- *Oil cooler Liquid-Supply SV Output (SV2)*

Movement of these SV outputs are explained below.

\* *three Capacity Control SV Output* can be made ON/OFF any time by pressing [UP] key or [DOWN] key on front panel whether or not compressor run/stop in [MANUAL] mode.

\* *Intercooler Liquid-Supply SV / Oil cooler Liquid-Supply SV Output* can be made ON/OFF by pressing [ENT] key only when compressor is stop in [MANUAL] mode.

(Refer to "4.2.3. [MANUAL] operation mode".)

#### 4.4.1. Movement of Capacity Control SV Output

In MYPRO-CP I, *Capacity Control SV1 Output* is allocated to contact output SV1 (terminal block No.33, 34) and *Capacity Control SV2 Output* is allocated to contact output SV2 (terminal block No.35, 36) and *Capacity Control SV3 Output* is allocated to contact output SV3 (terminal block No.37, 38).

Movement of *Capacity Control SV Output* and panel display differ depend upon model of compressor.

Panel display and SV output state of run/stop in each control mode in [REMOTE], [AUTO] operation mode are shown below.

As for output movement example, refer to "4.1.1. Control mode A" and "4.1.2. Control mode B".

(1) for F4K

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
25%	025	OFF	OFF	---
50%	050	ON	OFF	---
75%	075	OFF	ON	---
100%	100	ON	ON	---

ON = Load  
OFF = Unload

(2) for F6K

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	OFF
17%(starting)	017	OFF	OFF	OFF
33%	033	ON	OFF	OFF
50%	050	OFF	OFF	ON
67%	067	ON	OFF	ON
83%	083	OFF	ON	ON
100%	100	ON	ON	ON

ON = Load  
OFF = Unload

(Notes) Capacity 17% is only at the starting.

(3) for 8K, N8K, 8L

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	OFF
25%	025	OFF	OFF	OFF
50%	050	OFF	OFF	ON
75%	075	OFF	ON	ON
100%	100	ON	ON	ON

ON = Load  
OFF = Unload

(4) for N4K

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	---	---
50%	050	OFF	---	---
100%	100	ON	---	---

ON = Load  
OFF = Unload

(5) for N6K

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
33%	033	OFF	OFF	---
67%	067	OFF	ON	---
100%	100	ON	ON	---

ON = Load  
OFF = Unload

(6) for 4L

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
0%(starting)	000	OFF	OFF	---
50%	050	ON	OFF	---
100%	100	ON	ON	---

ON = Load  
OFF = Unload

(Notes) Capacity 0% is only at the starting.

(7) for 6L

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
33%	033	OFF	OFF	---
67%	067	ON	OFF	---
100%	100	ON	ON	---

ON = Load  
OFF = Unload

(8) for 4W, F4C, N4C

Compressor model : 4J, 4A, 4B, F4C, N4C

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	---	---
50%	050	ON	---	---
100%	100	OFF	---	---

ON = Unload  
OFF = Load

(9) for 42W with one solenoid valve used (Compressor model : 42A, 42B)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output (Inter Cooler)
standstill	000	OFF	---	OFF
50%(starting)	050	ON	---	OFF
50%	050	ON	---	ON
100%	100	OFF	---	ON

ON = Unload  
OFF = Load

(Notes) SV3 output synchronizes with capacity control.

(10) for 42W with two solenoid valves used (Compressor model : 42A, 42B)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output (Inter Cooler)
standstill	000	OFF	OFF	OFF
0%(starting)	000	ON	ON	OFF
50%	050	ON	OFF	ON
100%	100	OFF	OFF	ON

ON = Unload  
OFF = Load

(Notes) Capacity 0% is only at the starting. SV3 output synchronizes with capacity control.

(11) for 6W, F6C, N6C with one solenoid valve used (Compressor model : 6J, 6A, 6B, F6C, N6C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	---	---
67%	067	ON	---	---
100%	100	OFF	---	---

ON = Unload  
OFF = Load

(12) for 6W, F6C, N6C with two solenoid valves used (Compressor model : 6J, 6A, 6B, F6C, N6C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
33%	033	ON	ON	---
67%	067	ON	OFF	---
100%	100	OFF	OFF	---

ON = Unload  
OFF = Load

- (13) for 62W, F62C, N62C with one solenoid valve used (Compressor model : 62A, 62B, F62C, N62C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output (Inter Cooler)
standstill	000	OFF	OFF	OFF
67%(starting)	069	ON	OFF	OFF
67%	069	ON	OFF	ON
100%	100	OFF	OFF	ON

ON = Unload  
OFF = Load

(Notes) SV3 output synchronizes with capacity control.

- (14) for 62W, F62C, N62C with two solenoid valves used (Compressor model : 62A, 62B, F62C, N62C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output (Inter Cooler)
standstill	000	OFF	OFF	OFF
33%(starting)	033	ON	ON	OFF
33%	033	ON	ON	ON
67%	069	ON	OFF	ON
100%	100	OFF	OFF	ON

ON = Unload  
OFF = Load

(Notes) Capacity 33% is only at the starting. SV3 output synchronizes with capacity control.

- (15) for 8W, F8C, N8C with one solenoid valve used (Compressor model : 8J, 8A, 8B, F8C, N8C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	---	---
75%	075	ON	---	---
100%	100	OFF	---	---

ON = Unload  
OFF = Load

- (16) for 8W, F8C, N8C with two solenoid valves used (Compressor model : 8J, 8A, 8B, F8C, N8C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
50%	050	ON	ON	---
75%	075	ON	OFF	---
100%	100	OFF	OFF	---

ON = Unload  
OFF = Load

- (17) for 8W, F8C, N8C with three solenoid valves used (Compressor model : 8J, 8A, 8B, F8C, N8C)

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	OFF
25%	025	ON	ON	ON
50%	050	ON	ON	OFF
75%	075	ON	OFF	OFF
100%	100	OFF	OFF	OFF

ON = Unload  
OFF = Load

- (18) for 10S/11S

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
50%	050	OFF	ON	---
100%	100	ON	ON	---

ON = Load  
OFF = Unload

(Notes) SV1 output for capacity control and SV2 output for oil cooler liquid-supply.

(19) for 1290,1410

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output (Inter Cooler)
standstill	000	OFF	OFF	OFF
50%(starting)	050	OFF	ON	OFF
50%	050	OFF	ON	ON
100%	100	ON	ON	ON

ON = Load  
OFF = Unload

(Notes) SV1 for capacity control , SV2 for oil cooler liquid-supply, and SV3 synchronizes with capacity control.

(20) for 6HK, 6HK E

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output
standstill	000	OFF	OFF	---
33%(starting)	033	OFF	OFF	---
67%	067	OFF	ON	---
100%	100	ON	ON	---

ON = Load  
OFF = Unload

(21) for 4M (0% Load Operation : **Yes**)

CAPACITY	[CAPACITY]	SV1	SV2	SV3
standstill	000	OFF	OFF	---
0%(min. step)	000	OFF	OFF	---
50%	050	ON	OFF	---
100%	100	ON	ON	---

for 4M (0% Load Operation : **No**)

CAPACITY	[CAPACITY]	SV1	SV2	SV3
standstill	000	OFF	OFF	---
0%(starting)	000	OFF	OFF	---
50%( min. step)	050	ON	OFF	---
100%	100	ON	ON	---

(SV ON = Load, SV OFF = Unload)

(22) for 6M (0% Load Operation : **Yes**)

CAPACITY	[CAPACITY]	SV1	SV2	SV3
standstill	000	OFF	OFF	OFF
0%(min. step)	000	OFF	OFF	OFF
33%	033	ON	OFF	OFF
67%	067	ON	ON	OFF
100%	100	ON	ON	ON

for 6M (0% Load Operation : **No**)

CAPACITY	[CAPACITY]	SV1	SV2	SV3
standstill	000	OFF	OFF	OFF
0%(starting)	000	OFF	OFF	OFF
33%(min. step)	033	ON	OFF	OFF
67%	067	ON	ON	OFF
100%	100	ON	ON	ON

(SV ON = Load, SV OFF = Unload)

(23) for 8M (0% Load Operation : **Yes**)

CAPACITY	[CAPACITY]	SV1	SV2	SV3
standstill)	000	OFF	OFF	OFF
0%(min. step)	000	OFF	OFF	OFF
50%	050	ON	OFF	OFF
75%	075	ON	ON	OFF
100%	100	ON	ON	ON

for 8M (0% Load Operation : **No**)

CAPACITY	[CAPACITY]	SV1	SV2	SV3
standstill	000	OFF	OFF	OFF
0%(starting)	000	OFF	OFF	OFF
50%(min. step)	050	ON	OFF	OFF
75%	075	ON	ON	OFF
100%	100	ON	ON	ON

(SV ON = Load, SV OFF = Unload)

(Notes) The SV output for bank 1(25% in capacity) doesn't correspond in CPI.

(24) for 62M

CAPACITY	[CAPACITY] display	SV1 Output	SV2 Output	SV3 Output (Inter Cooler)
standstill	000	OFF	OFF	OFF
33%(min. step)	033	OFF	OFF	ON
67%	067	ON	OFF	ON
100%	100	ON	ON	ON

ON = Load  
OFF = Unload

(Notes) It doesn't correspond to all bank unloading in CPI for 62M.

ON/OFF of *Capacity Control SV Output* in [MANUAL] mode are made manually by pressing [UP] key or [DOWN] key on front panel. (ON/OFF is any time available nothing to do with compressor run/stop.)

Front panel display during compressor is running in [MANUAL] mode is same as above table in [REMOTE], [AUTO] operation mode. However, panel display during compressor is standstill is capacity display.

#### 0% Load Operation

In M type compressor, 0% loading driving has not permitted the principle (0% start is possible). But, only the Boring usage has 0% loading operation special specification model. (three models (4M, 6M, and 8M))

However, there is the following restriction conditions in 0% loading operation.

(To operate the compressor at 0% load, contact our sales offices or service centers.)

<< Watch matter for compressor protection >>

#### 1) Limitation at time and oil temperature when 0% loading operation

When either time or the oil temperatures the watch or the following reaches the limitation, the compressor is stopped while 0% loading operation.

1. Limitation at time	(NH3)	10 min or less	* The stop for the time limitation is an automatic stop. (It is possible to return automatically.)
	(Freon)	5 min or less	
2. Limitation of oil temp.		55°C or less	* The measurement place of the temperature of oil is in the oil chamber. * The oil temperature in the oil chamber is warning stop at 55°C. (manual return)

#### 2) About the selection of 0% loading operation and the compressor stop

Meet the following both requirements when you shift to 0% loading driving. Stop the compressor when not satisfying it.

1. Discharge Temp. watch	(NH3)	WBHE : 130°C or less	M : 140°C or less	
	(R404A)	80°C or less	* To use other refrigerant, contact our sales offices or service centers.	
2. Oil Temp. watch		50°C or less	* The measurement place of the temperature of oil is in the oil chamber.	

#### 3) About operation after the limit stops at the time of 0% loading operation

The following limitation is installed at the minimum stop time when stopping for the time limitation when 0% loading operation and the minimum operation time after it automatic operation returns.

1. Minimum stop time	10 min or less
2. The minimum operation time after it automatic operation returns	15 min or less (However, 0% loading is improper for this period. )

\* When the necessity for doing 0% loading driving within 15 minutes after driving restarts is caused, it is stopped.



In M type compressor, 0% loading driving has not permitted the principle (0% start is possible). But, only the Boring usage has 0% loading operation special specification model. (three models (4M, 6M, and 8M))

However, there is the following restriction conditions in 0% loading operation.

(To operate the compressor at 0% load, contact our sales offices or service centers.)

In "MYPRO-CPI", 0% loading operation can be permitted by meeting all the following requirements.

- In the configuration mode, "0% loading operation special specification model is selected" is done by the compressor kind.
- In the configuration mode, it sets it to "The temperature sensor is used".  
(When the temperature sensor is set to "no", permission cannot be selected by 0% loading operation.)  
(The attachment to the R/V board of the option (discharge temperature input and oil temperature input) is a precondition.)
- In the configuration mode, it sets it to "0% loading operation is permitted".

---

The condition of "0% Loading operation" (setting and control) in MYPRO-CPI is as follows.

- It is enabled that it is correspondence only with 0% loading driving corresponding model (special specification).  
Current state and CPI : Three models (4M, 6M, and 8M) (However, 8M is assumed to be a capacity control of 0-50-75-100%.)
- The use of the temperature sensor (R/V board of the option) is assumed to be indispensable.  
Two points (the discharge temperature sensor and the oil temperature sensor) are necessary.  
However, the oil temperature sensor is assumed to be "In the oil chamber" installation for 0% loading operation of M type compressor.
- 0% loading operation is assumed to be a selection type of "Prohibition/Permission".  
"Permission" of 0% loading operation cannot be selected when not setting to use "0% loading operation corresponding model" and the temperature sensor (R/V board of the option). (An initial value is "Prohibition. ".)
- It is necessary to observe the discharge temperature and the oil temperature for 0% loading operation.  
It doesn't shift to 0% loading more than the above-mentioned watch temperature. (It drives in the capacity of one high stage.)  
Please a set value of the discharge temperature watch and the oil temperature watch must be different according to the use refrigerant, and contact our sales offices or service centers.
- About the discharge temperature rise for a short time immediately after release of "0% Loading operation"  
The discharge temperature might rise though a short time to an increase of the capacity of the compressor from "0% Loading operation".  
To correspond to this, a judgment delay time set value of 0-180 minutes has been installed about "High Discharge Temperature Alarm".  
(However, there is no judgment delay at a capacity increase immediately after "0% start".)
- The limitation of the oil temperature of the above-mentioned is assumed to be "High Oil Temperature Alarm".  
The upper bound of the High Oil Temperature Alarm set value is assumed to be 60°C, and it corresponds in initial value "55°C".
- The above-mentioned time limitation is assumed to be "Automatic stop".  
The condition of "Automatic start when stopping to limit at time when 0% is loaded"
  - Both the hunting prevention time (start -> start) and the restart interval time (stop -> start) of the interval end.
  - Suction Pressure Process Value > (number of lowest steps) Capacity control set value + Capacity Control Dead Band Set ValueIt starts by 0%, and it operates more than the capacity of one high stage.  
0% loading operation is assumed to be the restriction about 'Number of Start/stop times : 3 times/hour (or less)' about the number of start/stop times as shown in the manual of the compressor.  
It limits to 'number of Start/stop times : 3 times/hour (or less)' when assuming, "Hunting prevention time (start -> start) set value = 20 minutes (more over)".  
'Minimum stop time' is assumed to be "Restart interval time (stop -> start) set value = 10 minutes (more over)".  
The judgment delay time of 3 seconds (fixation) is installed, and 'The necessity loaded by 0% within 15 minutes in the minimum running time after it returns automatically of the stop for the limitation at time when 0% is loaded is caused' is assumed to be an automatic stop.  
The LP AUTO STOP lamp blinks with 1Hz Duty75% for "Automatic stop in the limitation at time when 0% is loaded".  
(To distinguish from a usual automatic stop.)



#### 4.4.2. Movement of Capacity Control Limiter function

MYPRO-CP I has the capacity control of limiter function by Discharge Pressure and Intermediate Pressure.  
This is called a capacity control limiter function.

##### 1. Limiter function by Discharge pressure (loading prohibition and compulsion unloading)

- Condition that limiter function by Discharge pressure becomes effective

**Each Setup of the initialization mode becomes effective.**

**Any control mode become effective.**

However, only [AUTO] and [REMOTE] operation mode become effective as for the operation mode.

- Setup value and operation of limiter function by Discharge pressure

In ENG menu, display/Setup of the following Setup values can be done.

[FUNC] Display	Content of display	[DATA] Display	[CAPACITY] Display	Initial value
☺	Loading prohibition	-1.0 to 000 kgf/cm <sup>2</sup>	000	17.3 kgf/cm <sup>2</sup>
	Discharge pressure	-0.10 to 000 MPa		1.70 MPa
	Setup value	-1.0 to 000 bar		17.0 bar
		-30 "Hg to 000 psi		247 psi
☺	Compulsion unloading	000 to 30.6 kgf/cm <sup>2</sup>	000	17.8 kgf/cm <sup>2</sup>
	Discharge pressure	000 to 3.00 MPa		1.75 MPa
	Setup value	000 to 30.0 bar		17.5 bar
		000 to 435 psi		254 psi

\* When "0000", "000E", "9000", "0000" and "0000" is selected, an upper limit value and an initial value of the Setup value are different.

( $000 \leq$  Discharge Press. PV), It becomes "Loading prohibition".

Do not load it even if other loading conditions are satisfied.

( $000 \leq$  Discharge Press. PV), It becomes "Compulsion unloading".

Unload one step compulsorily every control cycle even if other loading conditions are satisfied.

- \* Set the above-mentioned Setup value higher than "High Discharge Pressure Alarm Setup value", when you want to invalidate the limiter function by Discharge pressure.  
(An initial value is set higher than "High Discharge Pressure Alarm Setup value".)

When 100% Lock Running Input or "Comm. 100% lock running order" is turned on, the limiter function by Discharge pressure becomes effective.

(When becoming "Discharge pressure  $\geq$  compulsion unloading Setup value" while 100% running, do the compulsion unloading as turning on with 100% Running Output turned on.)

When 100% Lock Running Input or "Comm. 100% lock running order" is turned off and "Discharge pressure  $\leq$  loading prohibition Setup value" and capacity becomes less than 100%,  
100% Running Output is turned off.

When the limiter function by the Discharge pressure works,

Control mode A, B: [CAPACITY] Display (light for 0.75 seconds and turn off for 0.25 seconds) blinks.

2. Limiter function by Intermediate Pressure (loading prohibition and compulsion unloading)

- Condition that limiter function by Intermediate Pressure becomes effective

It becomes effective only when "Intermediate Pressure sensors is used" have been selected in the Configuration mode.

When the control mode is only B mode, it becomes effective.

However, only [AUTO] and [REMOTE] operation mode become effective as for the operation mode.

- Setup value and operation of limiter function by Intermediate pressure

In ENG menu, display/Setup of the following Setup values can be done.

[FUNC] Display	Content of display	[DATA] Display	[CAPACITY] Display	Initial value
0	Loading prohibition	-1.0 to 000 kgf/cm <sup>2</sup>	000	5.1 kgf/cm <sup>2</sup>
	Intermediate pressure	-0.10 to 000 MPa		0.50 MPa
	Setup value	-1.0 to 000 bar		5.0 bar
		-30 "Hg to 000 psi		73 psi
0	Compulsion unloading	000 to 30.6 kgf/cm <sup>2</sup>	000	5.6 kgf/cm <sup>2</sup>
	Intermediate pressure	000 to 3.00 MPa		0.55 MPa
	Setup value	000 to 30.0 bar		5.5 bar
		000 to 435 psi		80 psi

\* When "0000" and "0000" is selected, an upper limit value and an initial value of the Setup value are different.

(000 ≤ Intermediate Press. PV), It becomes "Loading prohibition".

Do not load it even if other loading conditions are satisfied.

(000 ≤ Intermediate Press. PV), It becomes "Compulsion unloading".

Unload one step compulsorily every control cycle even if other loading conditions are satisfied.

- \* Set the above-mentioned Setup value higher than "High Intermediate Pressure Alarm Setup value", when you want to invalidate the limiter function by Intermediate pressure. (An initial value is set higher than "High Intermediate Pressure Alarm Setup value".)

When *100% Lock Running Input* or "Comm. 100% lock running order" is turned on, the limiter function by Intermediate Pressure becomes effective.

(When becoming "Intermediate Pressure ≥ compulsion unloading Setup value" while 100% running, do the compulsion unloading as turning on with *100% Running Output* turned on.)

When *100% Lock Running Input* or "Comm. 100% lock running order" is turned off and "Intermediate Pressure ≤ loading prohibition Setup value" and capacity becomes less than 100%,

*100% running Output* is turned off.

When the limiter function by Intermediate Pressure works,

[CAPACITY] display (light for 0.75 seconds and turn off for 0.25 seconds) blinks.

### 4.4.3. Movement of Intercooler Liquid-Supply Solenoid Valve Output

When two-stage machine is selected (including 1290, 1410), MYPRO-CP I assigns SV3 to intercooler liquid-supply solenoid valve in all modes. SV3 become ON when  $\text{E E E}$  (Capacity Control Delay Time) expired after compressor start and OFF during standstill.

\* In case of [MANUAL] mode and only during compressor is standstill, SV2 can be ON/OFF controlled by pressing [ENT] key. (Refer to "4.2.3. [MANUAL] operation mode")

### 4.4.4. Movement of Oil cooling Liquid-Supply Solenoid Valve Output

When 10S/11S, 1290, 1410 is selected, MYPRO-CP I assigns SV2 to oil cooler liquid-supply solenoid valve in all modes. Movement of solenoid valve output differs whether or not temperature sensor is used.

When temperature sensor is not used ("  $\text{E E E E}$  " is set up to "  $\text{E S E}$  " at configuration setup mode), *Oil cooler Liquid-Supply SV Output* become ON during compressor is running and become OFF during standstill.

When temperature sensor is used ("  $\text{S E S E}$  " is set up to "  $\text{E S E}$  " at configuration setup mode), *Oil cooler Liquid-Supply SV Output* is ON/OFF controlled by Oil Temperature.

When compressor is running and Oil Temperature is above "  $\text{E E E}$  " (Oil Cooler Liquid-Supply Oil Temperature set value), *Oil cooler Liquid-Supply SV Output* become ON. Oil Temperature decreased below "  $\text{E E E}$  " (Oil Cooler Liquid-Supply Oil Temperature set value) and passed 60 sec. it become OFF.

These movements are shown below.

Compressor state		Liquid-Supply SV Output	
		Temperature Sensor not use	Temperature Sensor use
standstill		OFF	OFF
Running	$\text{E} < \text{E E E}$ (passed 60 sec)	OFF	OFF
	$\text{E} \geq \text{E E E}$	OFF	ON
(pump down)		OFF	ON

\* In case of [MANUAL] mode and only during compressor is standstill, SV2 can be ON/OFF controlled by pressing [ENT] key. (Refer to "4.2.3. [MANUAL] operation mode")

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## 4.5. Emergency Stop Input

Remote emergency stop of compressor is available by utilizing MYPRO-CPI *Emergency Stop Input*. *Emergency Stop Input* consists of the circuit which one phase of MYPRO-CPI power source can be open or closed by external contact.

Electronic components are not used in *Emergency Stop Input* circuit. Therefore compressor stop is reliably available in any operation mode.

To make emergency shut off during compressor is running, disconnect *Emergency Stop Input* connection.

When using MYPRO-CPI and not using remote emergency stop, keep connection is short-circuited. (Factory shipment state)

\* *Emergency Stop Input* shuts off MYPRO-CPI power source, so process value at alarm is not memorized not like general alarm as explained in "4.6. Alarm".

Further it is not necessary to push [CLEAR ALARM] key because it is not realized as alarm inside of MYPRO-CPI.



Caution is required because compressor starts right away if emergency stop is short circuited when starting conditions are satisfactory after emergency shut off.

When above mentioned situation is not avoidable during running in [REMOTE] mode, *Emergency Stop Input* is OFF (at factory shipment, it is open because "0000" (Movement of Contact Input) of configuration setup mode is "0000" (Normally Open Contact)).

Compressor does not start or stop without pressing [START/STOP] key in [MANUAL], [AUTO] mode.

## 4.6. Alarm

As for compressor alarm, conditions differ in reciprocating compressor and 10S/11S, 1290, 1410, 6HK.

Kinds of alarm issued by MYPRO-CP I are following 12 kinds :

- |  |  |
|--|--|
| (a) "Emergency Stop"                                     | (g) "Low Oil - Intermediate Differential Pressure"(for 1290, 1410) |
| (b) "High Discharge Pressure"                            | (h) "High Suction Pressure"(for 6HK, 6HK E and "SP : 3MPa")        |
| (c) "Low Oil Pressure"                                   | (i) "Low Suction Pressure"   |
| (d) "External Alarm"                                     | (j) "High Discharge Temperature"                                   |
| (e) "High Intermediate Pressure"(for two-stage machine)  | (k) "High Oil Temperature"   |
| (f) "Low Dis. – Suc. Differential Pressure"(for 10S/11S) | (l) "Sensor Failure"   |

When any alarm occurred, *Alarm Output* and *100% Running Output* become ON and process value at that time is hold.

These alarm conditions and display examples are shown below.

- \* If alarm conditions are removed, alarm reset is available by pushing [CLEAR ALARM] key.

Alarm reset is not available by power source off.

("Alarm Clear Order by the communication" is effective only assumption by "E E E" of the initialization mode (communication alarm clear order, ), "E E E" (permission), and can do the alarm clear from remoteness according to the instruction from an external communication.)

- (a) "Emergency Stop"

When emergency stop button is pressed, it becomes "Emergency stop" alarm.



- (b) "High Discharge Pressure"

When  $\bar{E}$  (Discharge Pressure Process Value) exceeds  $\bar{E} \bar{E} \bar{E}$  (High Discharge Pressure Set Value), it becomes "High Discharge Pressure" alarm.



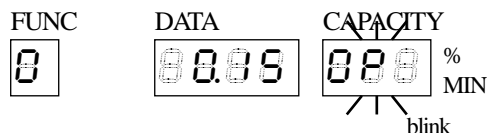
- (c) "Low Oil Pressure"

For Reciprocating compressor

In compressor running, when  $\bar{E}$  (Oil Differential Pressure Calculated Value) becomes under  $\bar{E} \bar{E} \bar{E}$  (Low Oil Pressure Alarm Set Value (Low Oil-Suction Differential Pressure Alarm Set Value)) and continues for 30 seconds, it becomes "Low Oil Pressure" ("Low Oil-Suction Differential Pressure") alarm.

Oil differential pressure calculation formal is

$$\bar{E} \text{ (Oil Differential Pressure Calculated Value)} = \text{Oil Pressure Process Value} - \bar{E} \text{ (Suction Pressure Process Value).}$$

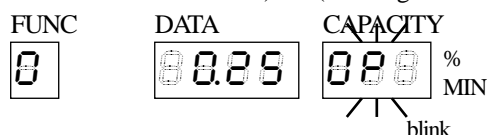


For 10S/11S, 1290, 1410

In compressor running, when  $\bar{E}$  (Oil Differential Pressure Calculated Value) becomes above  $\bar{E} \bar{E} \bar{E}$  (Low Oil Pressure Alarm Set Value (High Discharge-Oil Differential Pressure Alarm Set Value)) and continues for 30 seconds, it becomes "Low Oil Pressure" ("High Discharge-Oil Differential Pressure") alarm.

Oil differential pressure calculation formal is

$$\bar{E} \text{ (Oil Differential Pressure Calculated Value)} = \bar{E} \text{ (Discharge Pressure Process Value)} - \text{Oil Pressure Process Value.}$$



(d) "External Alarm"

When *External Alarm Input* becomes ON (Setting of movement of contact input to  $\overline{0000}$  (N.O.) or  $0000$  (N.C.) is available by configuration setup mode  $000$ .), it becomes "External alarm".



(e) "High Intermediate Pressure" (effective for two stage machine)

Alarm monitoring is not available for 3 minutes after compressor start.

After that, in compressor running, when  $\overline{0}$  (Intermediate Pressure Process Value) becomes above  $\overline{000}$  (High Intermediate Pressure Alarm Set Value) and continues for 30 seconds, it becomes "High Intermediate Pressure" alarm.



(f) "Low Discharge-Suction Pressure" (effective for 10S/11S)

Alarm monitoring is not available for 5 minutes after compressor start.

After that, in compressor running, when Discharge-Suction Differential Pressure Calculated Value becomes below  $\overline{000}$  (Low Discharge-Suction Differential Pressure Alarm Set Value) and continues for 2 minutes, it becomes "Low Discharge-Suction Differential Pressure" alarm.



(g) "Low Oil-Intermediate Differential Pressure" (effective for 1290, 1410)

Alarm monitoring is not available for 5 minutes after compressor start.

After that, in compressor running, when Oil-Intermediate Differential Pressure Calculated Value becomes below  $\overline{000}$  (Low Oil-Intermediate Differential Pressure Alarm Set Value) and continues for 2 minutes, it becomes "Low Oil-Intermediate Differential Pressure" alarm.



(h) "High Suction Pressure" (effective for 6HK, 6HK E and "SP : 3MPa Sensor")

When compressor start, (set value  $\leq$  Suction Pressure Process Value) issues "High suction pressure alarm".

In compressor running, when  $\overline{5}$  (Suction Pressure Process Value) becomes above  $\overline{000}$  (High Suction Pressure Alarm Set Value) and continues for 60 seconds, it becomes "High Suction Pressure" alarm.

"High Suction Pressure" alarm is not notified while the compressor is stopping.



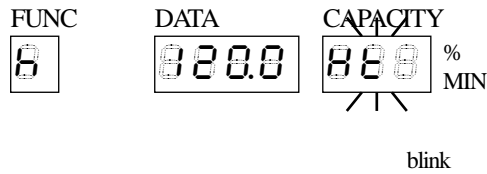
(i) "Low Suction Pressure"

In compressor running, when  $\overline{5}$  (Suction Pressure Process Value) becomes below  $\overline{000}$  (Low Suction Pressure Alarm Set Value) and continues for 30 seconds, it becomes "Low Suction Pressure" alarm.



(j) "High Discharge Temperature"

When  $\overline{H}$  (Discharge Temperature Process Value) becomes above  $\overline{H\overline{H}\overline{H}}$  (High Discharge Temperature Alarm Set Value), it becomes "High Discharge Temperature" alarm.



(k) "High Oil Temperature"

When  $\overline{O}$  (Oil Temperature Process Value) becomes above  $\overline{O\overline{O}\overline{O}}$  (High Oil Temperature Alarm Set Value), it becomes "High Oil Temperature" alarm.



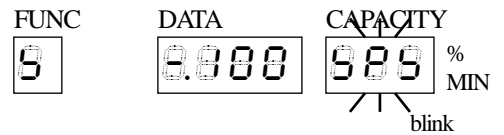
(l) "Sensor failure" --- It becomes alarm if it continues for 30 seconds when each pressure and temperature sensor is breakdown or out of range of each sensor.

- "Suction Pressure Sensor Failure"

when over voltage or over range



when under voltage or under range

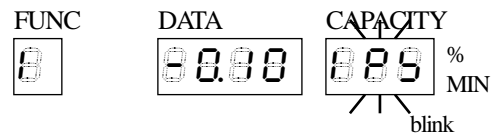


- "Intermediate Pressure Sensor Failure"

when over voltage or over range



when under voltage or under range



- "Discharge Pressure Sensor Failure"

when over voltage or over range



when under voltage or under range

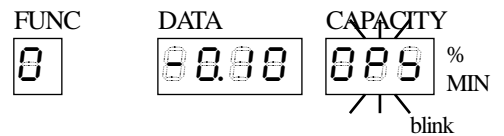


- "Oil Pressure Sensor Failure"

when over voltage or over range



when under voltage or under range

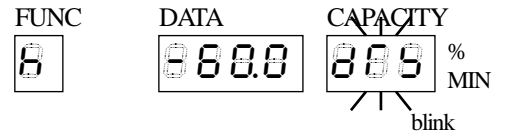


- "Discharge Temperature Sensor Failure"

when over range or open circuit between A1 and B1  
(short circuit between B1 and b1)

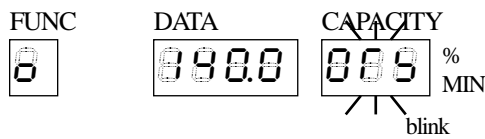


when under range or abnormal temperature sensor other than above column or no temperature transducer, no temperature sensor



- "Oil Temperature Sensor Failure"

when over range or open circuit between A1 and B1  
(short circuit between B1 and b1)



when under range or abnormal temperature sensor other than above column or no temperature transducer, no temperature sensor



If sensor is kept over range or under range for long time period, **it might be permanently destroyed**. And if faulty sensor state continues for long time, MYPRO-CPI itself **might be permanently destroyed**.



Since Ver.1.03.10 for MYPRO-CPI, The range of suction pressure sensor is a selection type.  
-0.100 to 1.000 Mpa or -0.100 to 3.000 MPa

Please note "Rise of the suction pressure" enough though an abnormal sensor is detected with "over-range" or "under-range".



## 4.7. Cascade operation

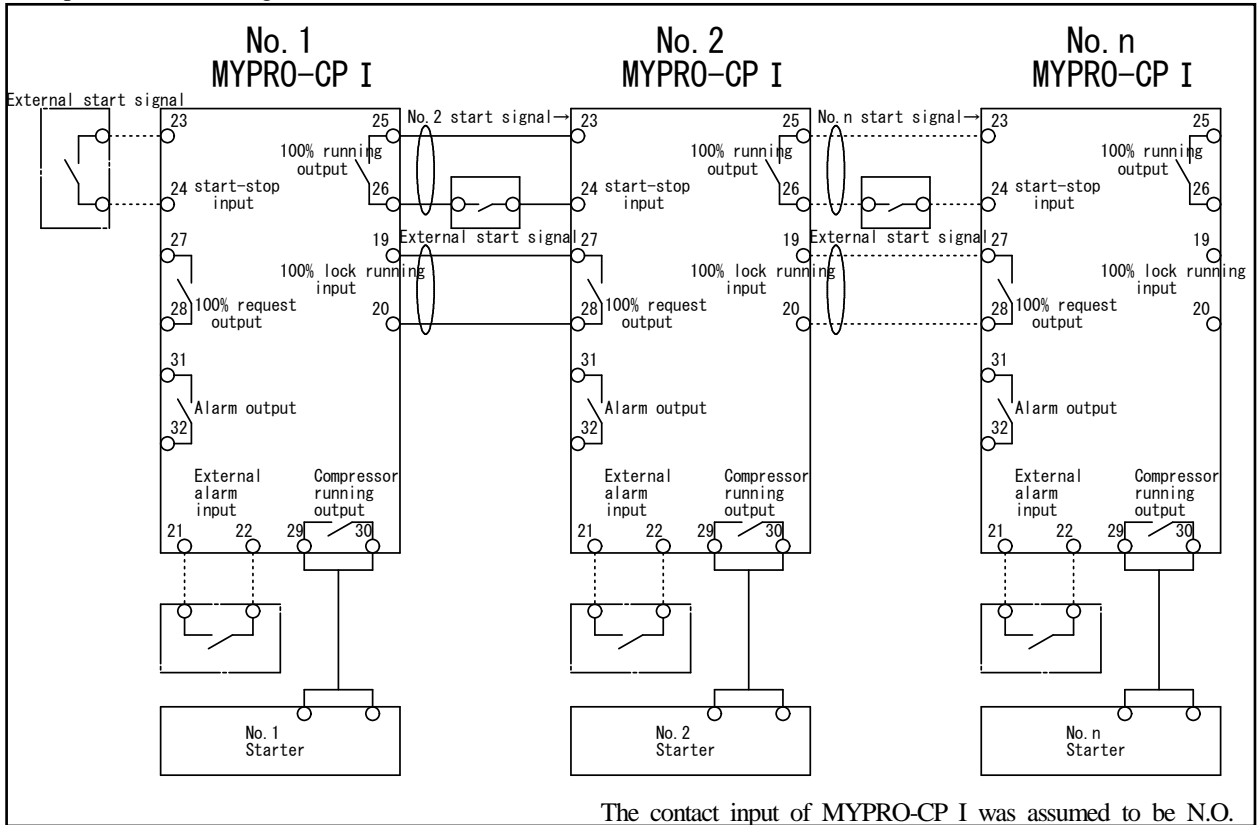
After 100% LOCK Running Input for MYPRO-CPI becomes ON, capacity is increased every 5 seconds and 100% running continues until 100% LOCK Running Input becomes OFF.

100% Request Output becomes ON when compressor is running.

100% Running Output becomes ON when capacity keeps 100% load for more than 30 seconds. (Refer to "4.1. Control mode".)

By utilizing this MYPRO-CPI running movement cascade operation is available.

Example of connection diagram is shown below.



Contact 100% Running Output of No.1 to Remote Start-Stop Input of No.2. Connect 100% Request Output of No.2 to 100% LOCK Running Input of No.1. Each Compressor Running Output is connected to each starter. For other units following No.2, connect each other in same manner as above.

<< Sequence start >>

Remote Start-Stop Input for No.1 becomes ON and running in 100% load. 30 seconds later, 100% Running Output of No.1 becomes ON and Remote Start-Stop Input of No.2 becomes ON.

If  $\bar{S}$  (Suction Pressure Process Value) becomes above  $\bar{S}$  (Running Start Pressure Set Value) for No.2, No.2 starts. To prevent in dependent capacity control of 2 sets of MYPRO-CPI, 100% LOCK Running Input of No.1 is made ON by No.2 and 100% running of No.1 is fixed. When No.2 continues 100% load running, next MYPRO-CPI starts.

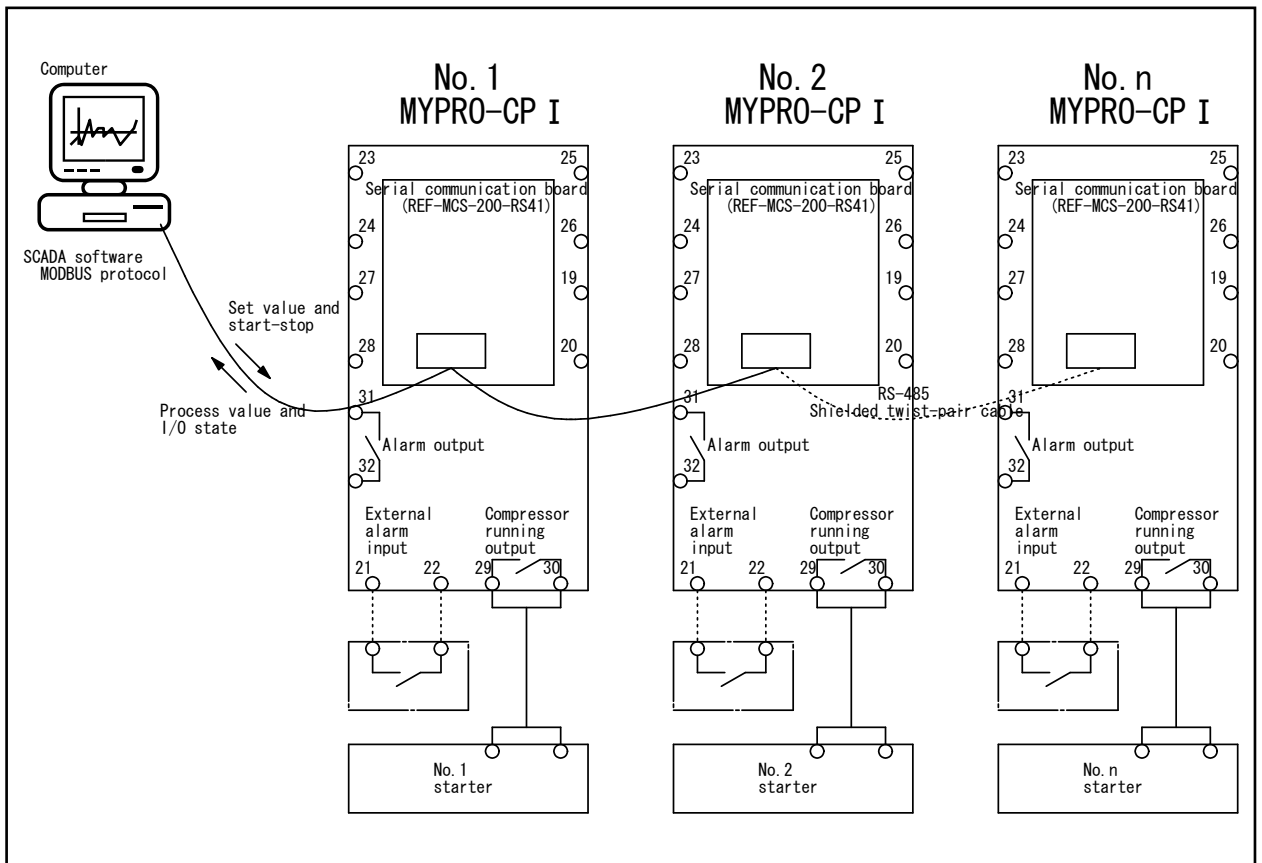
<< Sequence stop >>

In case of stop, MYPRO-CPI that started last stops first and when No.2 stopped, 100% LOCK Running Input becomes OFF and No.1 is under automatic capacity control and LP stops when  $\bar{S}$  (Suction Pressure Process Value) becomes below  $\bar{S}$  (Running Stop Pressure Set Value).

As mentioned above, start in turn and stop in turn is available by connection of each MYPRO-CPI.



**Provide interlock by external device for Remote Start-Stop Input of 2nd unit and after.  
Provide external interlock circuit for External Alarm Input.**



Instead of cascade operation by hard wiring in the previous page, when communication board (option) is installed in MYPRO-CP I, start-stop or 100% lock running can be indicated to plural MYPRO-CP I by only one communication cable. Set value change and read of process value and compressor running time is also available.

Computer controlled by MYPRO-CP I is usable when SCADA software is conformed to MODBUS protocol.

By utilizing SCADA software, functions which available only at machine side before such as making up running schedule to average running time, changing capacity control set value, knowing kind of alarm of alarm stopped compressor can be achieved from computer display at hand.

\* As for detail of communication board or set value change and movement change by communication, refer to "5 . Communication".



Above diagram is only explanation of cascade operation by communication and **we do not guarantee actual use.**

#### 4.8. Fail-safe

Each contact output of MYPRO-CPI aims to fail-safe side when power failure or at each alarm state as shown table below.

Contact output	Power down	Alarm	Running
100% Running Output	ON	ON	OFF/ON
100% Request Output	OFF	OFF	ON
Compressor Running Output	OFF	OFF	ON
Alarm Output	OFF	OFF	OFF
Capacity Control Solenoid Valve Output	OFF	OFF	OFF/ON



Provide external interlock circuit for *External Alarm Input*.

#### 4.9. Initial set value (recommended set value) of each alarm / compressor running limitation

Initial set values of each alarm and running limitation of compressor are shown below.

(1) W(A, B) model

Alarm item	MYPRO-CPI Initial set value	Compressor running limitation	Unit
888 (High Discharge Pressure Alarm Set Value)	16.0	20.0	kgf/cm <sup>2</sup>
858 (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
888 (Low Oil Pressure(OP-SP) Alarm Set Value)	1.5	1.0	kgf/cm <sup>2</sup>
888 (High Discharge Temperature Alarm Set Value)	120.0	R22 135.0	°C
		NH3 140.0	
888 (High Intermediate Pressure Alarm Set Value)	5.0	B model two stage for R22 5.5 *2	kgf/cm <sup>2</sup>
588 (Low Suction Pressure Alarm Set Value)	-1.000 *1	Single stage 0.38	kgf/cm <sup>2</sup>
		Two stage -0.75	
888 (High Oil Temperature Alarm Set Value)	50.0	50.0	°C

(2) C model

Alarm item	CPI Init value	Comp. limitation	Unit
888 (High Discharge Pressure Alarm Set Value)	16.0	R22 Single stage 22.0	kgf/cm <sup>2</sup>
		R22 Two stage 20.0	
		NH3 20.0	
858 (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
888 (Low Oil Pressure(OP-SP) Alarm Set Value)	1.5	1.0	kgf/cm <sup>2</sup>
888 (High Discharge Temperature Alarm Set Value)	120.0	R22 120.0	°C
		NH3 140.0	
888 (High Intermediate Pressure Alarm Set Value)	-1.0	Regulation-less	kgf/cm <sup>2</sup>
588 (Low Suction Pressure Alarm Set Value)	-1.000 *1	Single stage 0.38	kgf/cm <sup>2</sup>
		Two stage -0.75	
888 (High Oil Temperature Alarm Set Value)	50.0	70.0	°C

(3) K model

Alarm item	CPI Init value	Comp. limitation	Unit
888 (High Discharge Pressure Alarm Set Value)	16.0	R22 24.0	kgf/cm <sup>2</sup>
		NH3 23.0	
858 (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
888 (Low Oil Pressure(OP-SP) Alarm Set Value)	1.5	1.0	kgf/cm <sup>2</sup>
888 (High Discharge Temperature Alarm Set Value)	120.0	R22 135.0	°C
		NH3 140.0	
588 (Low Suction Pressure Alarm Set Value)	-1.000 *1	0.38	kgf/cm <sup>2</sup>
888 (High Oil Temperature Alarm Set Value)	50.0	R22 70.0	°C
		NH3 50.0	

(4) L model

Alarm item	CPI Init value	Comp. limitation	Unit
888 (High Discharge Pressure Alarm Set Value)	16.0	20.0	kgf/cm <sup>2</sup>
858 (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
888 (Low Oil Pressure(OP-SP) Alarm Set Value)	1.5	1.5	kgf/cm <sup>2</sup>
888 (High Discharge Temperature Alarm Set Value)	120.0	R22 135.0	°C
		NH3 140.0	
588 (Low Suction Pressure Alarm Set Value)	-1.000 *1	0.38	kgf/cm <sup>2</sup>
888 (High Oil Temperature Alarm Set Value)	50.0	55.0	°C

## (5) 10S/11S

Alarm item	CPI Init value	Comp. limitation	Unit
$\overline{H}P\overline{P}$ (High Discharge Pressure Alarm Set Value)	16.0	19.0	kgf/cm <sup>2</sup>
$\overline{H}S\overline{P}$ (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
$\overline{O}P\overline{P}$ (Low Oil Pressure Alarm Set Value) (High Discharge-Oil Differential Pressure Alarm Set Value)	2.5	2.5	kgf/cm <sup>2</sup>
$\overline{H}T\overline{P}$ (High Discharge Temperature Alarm Set Value)	100.0	100.0	°C
$\overline{S}P\overline{P}$ (Low Suction Pressure Alarm Set Value)	-1.000 *1	-0.8	kgf/cm <sup>2</sup>
$\overline{D}S\overline{P}$ (Low Discharge-Suction Diff. Press. Alarm Set Value)	3.5	3.5	kgf/cm <sup>2</sup>
$\overline{O}T\overline{P}$ (High Oil Temperature Alarm Set Value)	60.0	60.0	°C

## (6) 1290,1410

Alarm item	CPI Init value	Comp. limitation	Unit
$\overline{H}P\overline{P}$ (High Discharge Pressure Alarm Set Value)	16.0	19.0	kgf/cm <sup>2</sup>
$\overline{H}S\overline{P}$ (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
$\overline{O}P\overline{P}$ (Low Oil Pressure Alarm Set Value) (High Discharge-Oil Differential Pressure Alarm Set Value)	2.5	2.5	kgf/cm <sup>2</sup>
$\overline{H}T\overline{P}$ (High Discharge Temperature Alarm Set Value)	100.0	100.0	°C
$\overline{S}P\overline{P}$ (Low Suction Pressure Alarm Set Value)	-1.000 *1	-0.8	kgf/cm <sup>2</sup>
$\overline{O}I\overline{P}$ (Low Oil-Intermediate Differential Press. Alarm Set Value)	2.0	2.0	kgf/cm <sup>2</sup>
$\overline{O}T\overline{P}$ (High Oil Temperature Alarm Set Value)	60.0	R22 / NH3 : 70.0 / 60.0	°C

## (7) HK model

Alarm item	CPI Init value	Comp. limitation	Unit
$\overline{H}P\overline{P}$ (High Discharge Pressure Alarm Set Value)	3.40	4.0	MPa
$\overline{H}S\overline{P}$ (High Suction Pressure Alarm Set Value)	10.20 *3	(---)	kgf/cm <sup>2</sup>
$\overline{S}P\overline{P}$ (Low Suction Pressure Alarm Set Value)	-0.100 *1	0.38	MPa
$\overline{O}P\overline{P}$ (Low Oil Pressure Alarm Set Value) (High Oil-Suction Differential Pressure Alarm Set Value)	0.15	2.0	MPa
$\overline{H}T\overline{P}$ (High Discharge Temperature Alarm Set Value)	120.0	R22 / NH3 : 120.0 / 140.0	°C
$\overline{O}T\overline{P}$ (High Oil Temperature Alarm Set Value)	60.0	60.0	°C

## (8) M model

Alarm item (Refrigerant : NH3)	CPI Init value	Comp. limitation	Unit
$\overline{H}P\overline{P}$ (High Discharge Pressure Alarm Set Value)	2.70	Single-stage : 2.60	MPaG
	1.60	Double-stage : 1.90	
$\overline{H}S\overline{P}$ (High Suction Pressure Alarm Set Value)	1.000 *3	Single-stage : 0.80	MPaG
	1.000 *3	Double-stage : 0.14	
$\overline{S}P\overline{P}$ (Low Suction Pressure Alarm Set Value)	0.030	0.020	MPaG
Maximum Differential Pressure	---	2.00	MPa
Maximum Oil Supply Pressure	---	Ps + 0.4	MPa
$\overline{O}P\overline{P}$ (Low Oil Pressure(OP-SP) Alarm Set Value)	0.10	Ps + 0.1	MPa
Minimum Suction Temperature	---	-30.0 / -60.0	°C
$\overline{H}T\overline{P}$ (High Discharge Temperature Alarm Set Value)	160.0	160.0	°C
$\overline{O}T\overline{P}$ (High Oil Temperature Alarm Set Value)	60.0	60.0	°C
Minimum Oil Temperature	---	30.0	°C

Ps : Suction Pressure

\*1 An initial value of " $\overline{S}P\overline{P}$ " (Low Suction Pressure Alarm Set Value) about MYPRO-CP I is a lower limit value of the measurement range. Change a set value according to the usage condition.

\*2 When used at 1,000 rpm and 1,200 rpm, it is up to 6.7kgf/cm2G and when used at 1,000 rpm, it is up to 8.4kgf/cm2G

\*3 Suction pressure rise warning setting value " $\overline{H}S\overline{P}$ " of MYPRO-CP I is effective when set to "The range of suction pressure sensor is 3MPa". Change a set value according to the usage condition.

## 5. Communication

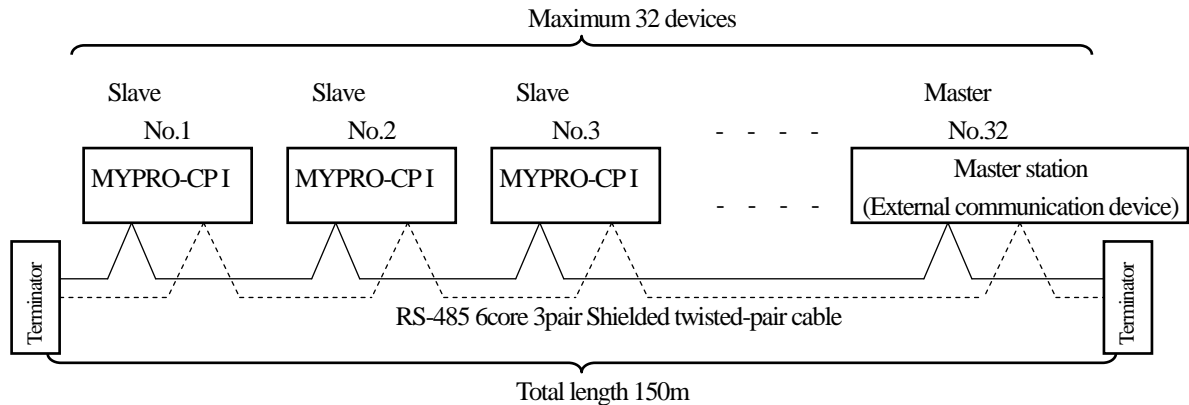
One communication port can be installed in MYPRO-CPI by option.

By using RS-485 communication port, serial communication is available with external device.

Serial communication of MYPRO-CPI can be achieved by bus network of maximum 32 devices within range of total length 150m.

Communication system is EIA RS-485 compatible and 4 wire half-duplex system.

System configuration is 1:n master/slave communication. Inter-MYPRO-CPI serial communication is not available with master of MYPRO-CPI itself. Computer, PLC or MYPRO-NP4 as master is required as external device.



By serial communication, process value of MYPRO-CPI (each process value and calculated value of each differential pressure), set value (running start pressure, running stop pressure, target suction pressure, capacity control pressure dead band), internal data (Total running time, capacity, operation mode), DI/O or kind of alarm can be read from external device. Set value change, compressor start / stop or 100% lock running is instructed from external device.

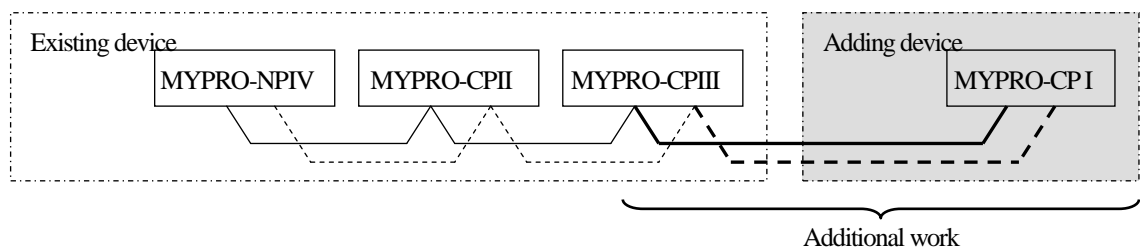
Communication protocol corresponds to 4 protocols for communication with MYPRO series of MYCOM original protocol type 0, 1, MODBUS protocol RTU mode and MODBUS protocol ASCII mode.

- MYCOM original protocol Type 0, 1 are mainly used for communication with MYPRO-NP4.

MYCOM original protocol is installed in MYPRO-NP4 as standard and program less serial communication with MYPRO-CPI as available.

When making communication program by computer, PLC etc., if program for communication with MYPRO-CP2 and MYPRO-CP3 is previously prepared, serial communication with MYPRO-CPI is available with minimum modification because it is similar to these communication protocol.

When wanted to add MYPRO-CPI to existing system using MYPRO-CP2, MYPRO-CP3 and MYPRO-NP4, it is easy work to connect MYPRO-CPI to same communication port of MYPRO-CP2, MYPRO-CP3 and MYPRO-NP4.



- MODBUS protocol RTU mode, MODBUS protocol ASCII mode are used for communication with communication device corresponded to MODBUS protocol.

By using MODBUS protocol corresponded SCADA software available in the market, program less serial communication between computer and MYPRO-CPI is available.

---

## 5.1. System construction


There are two ways to use optional communication board in MYPRO-CPI.

- A. To select the product with communication function at purchase.
- B. To purchase communication board as option and add to existing MYPRO-CPI.

To select A is most reliable, however here B is explained.

MYPRO-CPI self-recognizes with or without communication board installation, so setup items regarding data communication are added to configuration setup mode and each menu setup item after next power on.


Install communication board by following procedure.

1. Power off MYPRO-CPI.
2. Open cover of MYPRO-CPI.
3. Install communication board with terminal block TB1 downward onto CPU board to match J5 and J1 of communication board firmly.  
(Refer to "2.6. Communication board (option)".)
4. Fix communication board using three M3 screws.
5. Connect communication cable to terminal block TB1 of communication board.  
(Refer to "6.3. Connection of RS-485 communication port (option)".)
6. Keep No.4 of SW1 on CPU board to ON side. (To start by configuration setup mode.)  
(Refer to "3.2. Configuration setup mode".)
7. Power on MYPRO-CPI.
8. Select "  " (Kind of Communication Protocol) of configuration setup mode, and select wanted communication protocol.  
(Refer to "3.3.3. ENG setup menu display".)
9. Keep all of SW1 on CPU board to OFF and push and release SW3 (reset switch).  
(Refer to "2.3. CPU board".)
10. Push [FUNC] key for 3 seconds and set up each set value of serial communication of ENG setup menu.  
(Refer to "3.3.3. ENG setup menu display".)
11. Connect communication cable to terminal block and close MYPRO-CPI cover.

## 5.2. Communication setup

Serial communication setups of MYPRO-CPI are made by each communication setup item of ENG setup menu.

### 5.2.1. Communication address (station number) setup

Setup of communication address (station number) are made by "  " (Communication Address Set Value) of ENG setup menu.


Communication address (station number) can be set up in range of "0 to 31". (Initial value is 0.)

Set up not to duplicate with communication address (station number) of connected devices (MYPRO-CPI or MYPRO series) to the same communication port.









And there is the case communication address (station number) is subject to restriction by external communication device side (communication master side) to be connected to MYPRO-CPI, therefore refer to instruction manual of external communication device also without fail.

\* When communication address is set up "0", communication is not available.

### 5.2.2. Communication speed setup

Setup of communication speed is made by "  " (Communication Speed Set Value) of ENG setup menu.



Communication speed can be selected from table below.

[DATA] display	Speed [bps]
	300
	600
	1200
	2400
	4800
	9600
	19200
	38400

\* Communication speed of devices (MYPRO-CPI or MYPRO series) connected to the same communication port shall be set up same speed. Otherwise, proper communication is not available.















### 5.2.3. Setup of Communication Character Format

Setup of communication character format is made by "   " (Communication Character Format Set Value) of ENG. setup menu.

Character format of sending and receiving data consists of 3 elements of data length, parity bit and stop bit. Selectable elements are as shown below.

Data length : 7 (7bits) , 8 (8bits)  
Parity bit : N (None) , E (Even) , O (Odd)  
Stop bit : 1 (1bit) , 2 (2bits)

Character format are specified by combination of these 3 elements. Selectable combinations are shown below.

Character format	[DATA] display
Data : 7bits , Parity : None , Stop bit : 1bit	
Data : 7bits , Parity : Even , Stop bit : 1bit	
Data : 7bits , Parity : Odd , Stop bit : 1bit	
Data : 8bits , Parity : None , Stop bit : 1bit	
Data : 8bits , Parity : Even , Stop bit : 1bit	
Data : 8bits , Parity : Odd , Stop bit : 1bit	
Data : 7bits , Parity : None , Stop bit : 2bits	
Data : 7bits , Parity : Even , Stop bit : 2bits	
Data : 7bits , Parity : Odd , Stop bit : 2bits	
Data : 8bits , Parity : None , Stop bit : 2bits	
Data : 8bits , Parity : Even , Stop bit : 2bits	
Data : 8bits , Parity : Odd , Stop bit : 2bits	

\* Character format of devices (MYPRO-CP I or MYPRO series) connected to the same communication port shall be set up same character format. Otherwise, proper communication is not available.

### 5.2.4. Setup of Communication Response Delay Time

Setup of communication response delay time is made by "   " (Communication Response Delay Time Set Value) of ENG. setup menu.

It is delay time to start sending response message after MYPRO-CPI received query message.

In external communication device to send query message to MYPRO-CP I, if response message cannot be received properly because response from MYPRO-CPI is too fast, there is the case proper communication is available by delaying response.

It can be set up in the range of 0 to 255 (x 10 msec.).

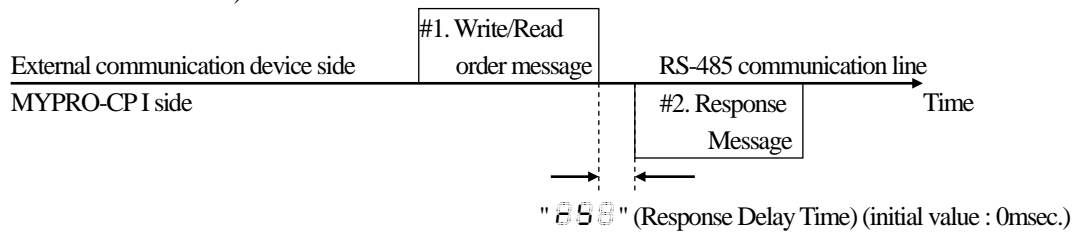
\* When response delay time set value is too large, there is a possibility that receiving time out error occurs in external communication device.

So, change of this set value shall be done carefully.

### 5.3. Communication with external communication device

When query message of write or read data is transmitted from external communication device, MYPRO-CPI appointed by "050" (Communication Address Set Value) of ENG setup menu sends response message. This is a procedure of one communication. Therefore, never begin sending message from MYPRO-CPI voluntarily.

(Data flow in communication line)



- #1 Query message from external communication device is transmitted to MYPRO-CPI.
- #2 After MYPRO-CPI received the message, if the query message is for this MYPRO-CPI, MYPRO-CPI transmits the response message after evaluation of the query message.

Arrangement for both query message and response message used in #1 and #2 is called communication protocol and there are several kinds of protocols.

MYPRO-CPI corresponds to four protocols of MYPRO original protocol type 0 and 1, MODBUS protocol ASCII mode and MODBUS protocol RTU mode.

MYPRO original protocol 0 and 1 are prepared by MAYEKAWA MFG CO., LTD. And used for mainly communication with MYPRO-NP4.

MODBUS protocol ASCII mode and MODBUS protocol RTU mode are industry standard protocols and when MODBUS corresponded SCADA software and PLC communication unit are used, easy communication without program is available.

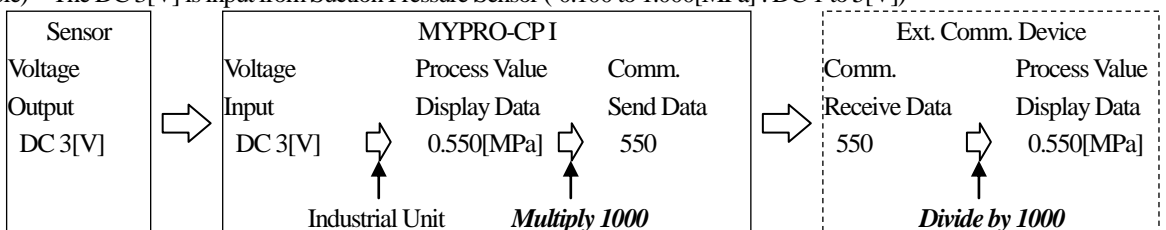
#### 5.3.1. The numerical data handled in communication

Numerical data handled in communication are data converted based on arrangement.

In communication data, real number of temperature, pressure, time etc. (process value, set value, operated value) is handled after conversion to integer. Conversion method in MYPRO-CPI is shown below.

- Temperature : multiply 10 (x10) (effective one figure below decimal point).
- Pressure : divided to 3 kinds by display unit.
  - 1) PSI unit : Multiply 10 (x10) for set value and process value of suction pressure (effective one figure below decimal point) and others are multiplied 1 (x1).
  - 2) Kg/cm<sup>2</sup>, bar unit : Multiply 100 (x100) for set value and process value of suction pressure (effective two figures below decimal point) and multiply 10 (x10) for others (effective one figure below decimal point).
  - 3) MPa unit : Multiply 1000 (x1000) for set value and process value of suction pressure (effective three figures below decimal point) and multiply 100 (x100) for others (effective two figures below decimal point).
- Capacity : multiply 1 (x1).
- Time : divided to 4 kinds by display unit.
  - 1) Minute display unit : Multiply 10 (x10) for set value and process value (effective one figure below decimal point).
  - 2) Second display unit : Multiply 1 (x1) for set value and process value.
  - 3) For Remain time of restarting timer : Convert remaining time of restarting timer to unit of second and multiply 1 (x1).
  - 4) For total running time : Multiply 1 (x1) and handled by 4 byte data because number range is 0 to 999,999.

Example) The DC 3[V] is input from Suction Pressure Sensor (-0.100 to 1.000[MPa]) : DC 1 to 5[V]





[Data A block] number of characters : 64 characters

It is used for change of 8 set values.

One set value consists of 6 characters and when value is less than 6 characters, fill with "0" from the first of set value.

Add sign "-" at leading figure when negative number and sign "+" for positive number is not used.

Pause character between data is 2 "SPC" characters.

When set value is not changed, fill "SPC" all six characters.

Setvalue	S	S	Setvalue	S	S	Setvalue	S	S	Setvalue	S	S	Setvalue	S	S	Setvalue	S	S	Setvalue	S	S			
1/8	P	P	2/8	P	P	3/8	P	P	4/8	P	P	5/8	P	P	6/8	P	P	7/8	P	P	8/8	P	P
6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C

(Ex.) In case of Set value -0.100

						S	S
-	0	0	1	0	0	P	P
						C	C

In case of set value 1.000

						S	S
0	0	1	0	0	0	P	P
						C	C

Changeable set values by communication are shown below.

- Set value 1/8 : Running Start Pressure Set Value
- Set value 2/8 : Running Stop Pressure Set Value
- Set value 3/8 : Target Suction Pressure Set Value (for control mode B)
- Set value 4/8 : Capacity Control 1 Pressure Set Value(for control mode A)
- Set value 5/8 : Capacity Control 2 Pressure Set Value(for control mode A)
- Set value 6/8 : Capacity Control 3 Pressure Set Value(for control mode A)
- Set value 7/8 : Capacity Control 4 Pressure Set Value(for control mode A)
- Set value 8/8 : Dead Band Set Value

\* Set value 1/8 (Running Start Pressure Set Value) and set value 2/8 (Running Stop Pressure Set Value) cannot be changed unless the following condition is satisfied.

set value 1/8 (Running Start Pressure Set Value) > set value 2/8 (Running Stop Pressure Set Value)

And set value 4/8 to 7/8(Capacity Control Pressure Set Value) cannot be changed unless the following condition is satisfied.

set value 4/8 (Cap. 1) < set value 5/8 (Cap. 2) < set value 6/8 (Cap. 3) < set value 7/8 (Cap. 4)

\* Set value for control mode A and set value of control mode B cannot be changed simultaneously. Only set value of currently selected control mode can be changed. (Set value of not selected control mode shall be in no change condition. (fill out with "SPC"))

\* Condition of set value is changeable by communication from external device is MYPRO-CP I shall be in [COMM] mode. ([COMM. SET] lamp is ON.) As for detail, refer to "4. 2. 4. [COMM] mode".

[Data B block]

Number of Characters : 8 characters

It is used for ON/OFF of 16 bits flag allocated to control switchover. Specify by hexadecimal numerals 4 characters (16 bits). When less than 4 characters, fill "0" from the first column. For rest 4 characters, fill 4 "SPC" characters. In case of specified character is "A" to "F", specify by capital letter. When control switchover is not changed, fill 8 "SPC" characters.

Data B block 8 characters
---------------------------------

(Ex.) To specify "Communication Running Order"

				S	S	S	S
0	0	0	2	P	P	P	P
				C	C	C	C

Contents of 16 bits flag allocated to control switchover are shown below. (b : bit)

b00 (LSB)	Comm. 100% LOCK Running Order	b04	not used	b08	not used	b12	not used
b01	Comm. Running Order	b05	not used	b09	not used	b13	not used
b02	Comm. Alarm Clear Order	b06	not used	b10	not used	b14	not used
b03	not used	b07	not used	b11	not used	b15 (MSB)	not used

\* Above control switchover is changeable even when MYPRO-CPI is not [COMM] mode. ([COMM. SET] lamp is OFF.)

[Data C block]

Number of characters : 128 characters

Process value of analog input and 0.0 to 100.0% of analog input are used.

One data consists of 6 characters and in case of value of less than 6 characters, fill "0" from the first column.

Add sign "-" at leading figure when negative number and sign "+" for positive number is not used.

Pause character between data is 2 "SPC" characters.

A/D 01	S	S	A/D 02	S	S	A/D 03	S	S	-	-	-	A/D 14	S	S	A/D 15	S	S	A/D 16	S	S
	P	P		P	P		P	P					P	P		P	P		P	P
6 characters	C	C	6 characters	C	C	6 characters	C	C				6 characters	C	C	6 characters	C	C	6 characters	C	C

(Ex.) In case of data 12.3

					S	S	
0	0	0	1	2	3	P	P
						C	C

In case of data -0.050

					S	S	
-	0	0	5	0		P	P
						C	C

Contents of A/D 01 to A/D 16 are shown below.

- A/D 01 : Suction Pressure Process Value
- A/D 02 : Discharge Pressure Process Value
- A/D 03 : Oil Pressure Process Value
- A/D 04 : Intermediate Pressure Process Value (option : display range lower limit when no existence)
- A/D 05 : Discharge Temperature Process Value (option : display range lower limit when no existence)
- A/D 06 : Oil Temperature Process Value (option : display range lower limit when no existence)
- A/D 07 : Not used (always 0)
- A/D 08 : Not used (always 0)
- A/D 09 : Suction Pressure Process Value (0.0 to 100.0% of measurement range)
- A/D 10 : Discharge Pressure Process Value (0.0 to 100.0% of measurement range)
- A/D 11 : Oil Pressure Process Value (0.0 to 100.0% of measurement range)
- A/D 12 : Intermediate Pressure Process Value (0.0 to 100.0% of measurement range, option:0 when no existence)
- A/D 13 : Discharge Temperature Process Value (0.0 to 100.0% of measurement range, option:0 when no existence)
- A/D 14 : Oil Temperature Process Value (0.0 to 100.0% of measurement range, option:0 when no existence)
- A/D 15 : Not used (always 0)
- A/D 16 : Not used (always 0)

[Data D block]

Number of characters : 48 characters

Controller operated values such as compressor total running time, capacity, etc. are used.

One data consists of 6 characters and in case of value of less than 6 characters, fill "0" from the first column.

Pause characters between data is 2 "SPC" characters.

Operand	S	S	Operand	S	S	Operand	S	S	Operand	S	S	Operand	S	S	Operand	S	S
1/6	P	P	2/6	P	P	3/6	P	P	4/6	P	P	5/6	P	P	6/6	P	P
6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C

(Ex.) In case of data 100

						S	S
0	0	0	1	0	0	P	P
						C	C

In case of data 50.0

						S	S
0	0	0	5	0	0	P	P
						C	C

Contents of operand 1/6 to operand 6/6 are shown below.

- Operand 1/6 : Compressor total running time lower 16 bits
- Operand 2/6 : Compressor total running time upper 16 bits
- Operand 3/6 : Compressor capacity
- Operand 4/6 : Not used (always 0)
- Operand 5/6 : Not used (always 0)
- Operand 6/6 : Not used (always 0)

[Data E block]

Number of characters : 64 characters

Current set values are used. Format and data line are same as data A block of query message.

Set Value	S	S	Set Value	S	S	Set Value	S	S	Set Value	S	S	Set Value	S	S	Set Value	S	S	Set Value	S	S			
1/8	P	P	2/8	P	P	3/8	P	P	4/8	P	P	5/8	P	P	6/8	P	P	7/8	P	P	8/8	P	P
6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C	6 characters	C	C

- Set value 1/8 : Running Start Pressure Set Value
- Set value 2/8 : Running Stop Pressure Set Value
- Set value 3/8 : Target Suction Pressure Set Value (for control mode B)
- Set value 4/8 : Capacity Control 1 Pressure Set Value (for control mode A)
- Set value 5/8 : Capacity Control 2 Pressure Set Value (for control mode A)
- Set value 6/8 : Capacity Control 3 Pressure Set Value (for control mode A)
- Set value 7/8 : Capacity Control 4 Pressure Set Value (for control mode A)
- Set value 8/8 : Dead Band Set Value



[Data F block] Number of characters : 8 characters

Data of operation mode are used.

Data F block is different for MYCOM original protocol type 0 and 1.

One data consists of 6 characters and in case of value of less than 6 characters, fill "0" from the first column. For rest 2 characters, fill 2 "SPC" characters.

Data F block 8 characters
---------------------------------

### MYCOM original protocol type 0

In MYCOM original protocol type 0, operation mode is expressed by decimal 6 characters as shown below.

Operation mode	[COMM] mode	Value
MANUAL	Not in the mode	10
	In the mode	15
AUTO	Not in the mode	20
	In the mode	25
REMOTE	Not in the mode	30
	In the mode	35

(Ex.) In case of  
not in [COMM] mode of [REMOTE] mode

0	0	0	0	3	0	S	S
						P	P
						C	C

In case of  
in [COMM] mode of [AUTO] mode

0	0	0	0	2	5	S	S
						P	P
						C	C

### MYCOM original protocol type 1

In MYCOM original protocol type 1, operation mode is allocated to following bit.

All 16 bits are expressed by 6 decimal characters.

b00 (LSB)	Comm. 100% LOCK Running Order	b08	[MANUAL] operation mode
b01	Comm. Running Order	b09	[AUTO] operation mode
b02	Comm. Alarm Clear Order	b10	[REMOTE] operation mode
b03	Not used	b11	LP stop prohibition
b04	Not used	b12	Restart timer reset prohibition
b05	Not used	b13	[COMM] mode
b06	Not used	b14	Not used
b07	Not used	b15 (MSB)	Not used

(Ex.) In case of [MANUAL] operation mode ON, rest all OFF

0	0	0	2	5	6	S	S
						P	P
						C	C

In case of On for Communication 100% LOCK Running Order, Communication Running Order, [REMOTE] mode, LP stop prohibition, restart timer reset prohibition, [COMM] mode and rest all OFF

0	1	5	3	6	3	S	S
						P	P
						C	C

[Data G block]

Number of characters : 8 characters

Status of current contact input and contact output (DI/O) are used and expressed by hexadecimal 8 characters (32bits).

In case of value of less than 8 characters, fill "0" from the first column.

Data G block 8 characters
---------------------------------

Contents of 32 bits string are shown below.

b00 (LSB)	<i>100% LOCK Running Input</i>	b16	Not used
b01	<i>External Alarm Input</i>	b17	Not used
b02	<i>Remote Start-Stop Input</i>	b18	Not used
b03	<i>Emergency Stop Input (N.C.)</i>	b19	Not used
b04	<i>100% Running Output</i>	b20	Not used
b05	<i>Compressor Running Output</i>	b21	Not used
b06	<i>Alarm Output</i>	b22	Not used
b07	<i>Capacity Control SV1 Output</i>	b23	Not used
b08	<i>Capacity Control SV2 Output</i>	b24	Not used
b09	<i>Capacity Control SV2 Output</i>	b25	Not used
b10	Not used	b26	Not used
b11	Not used	b27	Not used
b12	Not used	b28	Not used
b13	Not used	b29	Not used
b14	Not used	b30	Not used
b15	Not used	b31 (MSB)	Not used

When state is ON, bit is 1. When state is OFF, bit is 0. Unused bit is 0.

(Ex.) In case of ON for *100% LOCK Running Input*, *Remote Start-Stop Input*, *Emergency Stop Input (N.C.)*, *100% Running Output (N.O.)*, *Compressor Running Output*, *Capacity Control SV1 Output*, *Capacity Control SV2 Output*, *Capacity Control SV3 Output*, rest all OFF.

0	0	0	0	0	3	B	D
---	---	---	---	---	---	---	---

[Data H block]

Number of characters : 8 characters

States of current alarm are used and expressed by hexadecimal 8 characters (32bits). In case of value of less than 8 characters, fill "0" from the first column.

Data H block 8 characters
---------------------------------

Contents of 32 bits string are shown below.

b00 (LSB)	[ H H H ]	High Discharge Pressure Alarm
b01	[ 0 0 0 ]	Low Oil Pressure Alarm
b02	[ E S 0 ]	Emergency Stop Alarm
b03	[ H H H ]	High Discharge Temperature Alarm (In case of no option, OFF)
b04	[ 0 0 0 ]	High Intermediate Pressure Alarm (In case of no option, OFF)
b05	[ S 0 0 ]	Low Suction Pressure Alarm
b06	[ 0 0 0 ]	External Alarm
b07	[ 0 5 0 ]	Low Discharge-Suction Differential Pressure Alarm (effective for 10S/11S)
b08	[ 0 0 0 ]	Low Oil-Intermediate Differential Pressure Alarm (effective for 1290, 1410)
b09	[ 0 0 0 ]	High Oil Temperature Alarm (In case of no option, OFF)
b10	[ H S 0 ]	High Suction Pressure Alarm (effective for 6HK, 6HK E and "SP:3MPa sensor")
b11	Not used	
b12	Not used	
b13	Not used	
b14	Not used	
b15	Not used	
b16	Not used	
b17	Not used	
b18	Not used	
b19	Not used	
b20	Not used	
b21	Not used	
b22	Not used	
b23	Not used	
b24	Not used	
b25	Not used	
b26	[ 0 0 5 ]	Oil Temperature Sensor Failure
b27	[ 0 0 5 ]	Discharge Temperature Sensor Failure
b28	[ 0 0 5 ]	Intermediate Pressure Sensor Failure
b29	[ 0 0 5 ]	Oil Pressure Sensor Failure
b30	[ 0 0 5 ]	Discharge Pressure Sensor Failure
b31 (MSB)	[ S 0 5 ]	Suction Pressure Sensor Failure

When abnormal input ON, bit is 1. When abnormal input OFF, bit is 0. Unused bit is 0.

(Ex.) in case of HP, OP, ES, HT, IP, SP, AL, OT, OTS, DTS, IPS, OPS, DPS, SPS and rest all OFF.

F	C	0	0	0	2	7	F
---	---	---	---	---	---	---	---

### 5.3.3. MODBUS protocol

MODBUS protocol is industry standard protocol.

There are two modes of RTU mode (BINARY system) and ASCII mode (ASCII system) in MODBUS protocol.

Differences of these two modes are shown below.

	RTU mode	ASCII mode
Bit number of data	8 bits (BINARY)	7 bits (ASCII)
Start mark of message	Not necessary	: (3Ah) (Colon)
End mark of message	Not necessary	CRLF (0Dh, 0Ah) (Carriage Return, Line Feed)
Message length <sup>*1</sup>	N	2N + 1
Time interval of data <sup>*2</sup>	24 bit time <sup>*3</sup> or less	1second or less
Error check code	CRC-16 : Cyclic Redundancy Check	LRC : Longitudinal Redundancy Check

(h means hexadecimal numeral.)

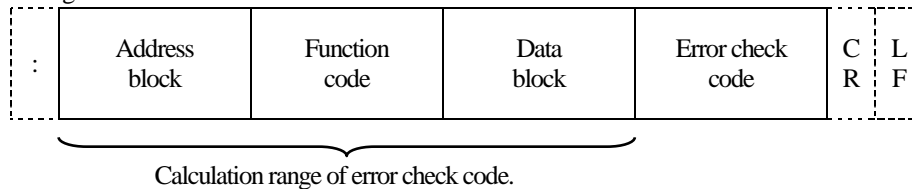
\*1 Message length is the case of that RTU mode message length is "N".

\*2 When sending message, if interval time of data constructed message is longer than this time, receiving side assumed that sending is completed and consequently it is not correct message and neglect receiving message. Therefore there is the case communication error is detected.

\*3 Bit time is time to send 1 bit by settled communication speed.

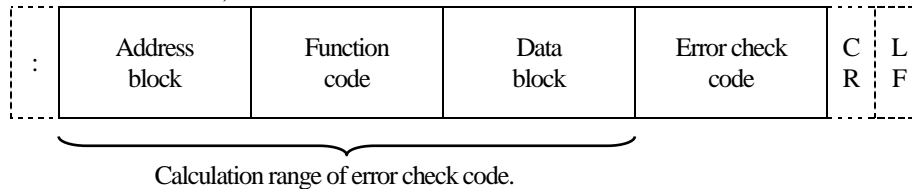
Character block of MODBUS protocol explained below shows query message or response message are sent to communication line from left to right. However there is difference between RTU mode and ASCII mode as shown above, note the difference. (Dotted line part is added for ASCII mode.)

Query message from external communication device

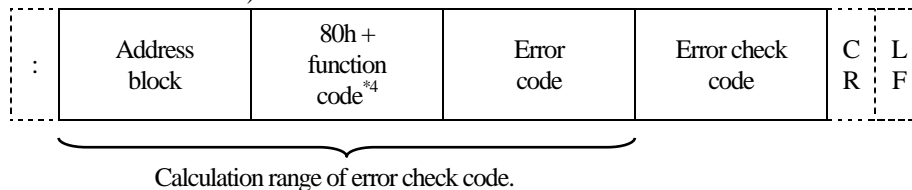


Response message of MYPRO-CPI --- In MODBUS protocol, response message has different construction for normal communication and abnormal communication.

(Normal communication)



(Abnormal communication)



\*4 Logical add of 80h and function code.



List of reference number and specified number of coil and holding register that defined in MYPRO-CPI is shown below.

Reference number list of coil (bit)

No.	Reference No.	Specified No. (h:hex)	Content
1	00001	0000 (00h)	100% LOCK Running Input
2	00002	0001 (01h)	External Alarm Input
3	00003	0002 (02h)	Remote Start-Stop Input
4	00004	0003 (03h)	Emergency Stop Input (N.O.)
5	00005	0004 (04h)	---
6	00006	0005 (05h)	---
7	00007	0006 (06h)	---
8	00008	0007 (07h)	---
9	00009	0008 (08h)	---
10	00010	0009 (09h)	---
11	00011	0010 (0Ah)	---
12	00012	0011 (0Bh)	---
13	00013	0012 (0Ch)	---
14	00014	0013 (0Dh)	---
15	00015	0014 (0Eh)	---
16	00016	0015 (0Fh)	---
17	00017	0016 (10h)	* Communication 100% Request
18	00018	0017 (11h)	* Communication Running Order
19	00019	0018 (12h)	* Communication Alarm Clear
20	00020	0019 (13h)	---
21	00021	0020 (14h)	---
22	00022	0021 (15h)	---
23	00023	0022 (16h)	---
24	00024	0023 (17h)	---
25	00025	0024 (18h)	---
26	00026	0025 (19h)	---
27	00027	0026 (1Ah)	---
28	00028	0027 (1Bh)	---
29	00029	0028 (1Ch)	---
30	00030	0029 (1Dh)	---
31	00031	0030 (1Eh)	---
32	00032	0031 (1Fh)	---
33	00033	0032 (20h)	100% Running Output (N.C.)
34	00034	0033 (21h)	Compressor Running Output
35	00035	0034 (22h)	Alarm Output
36	00036	0035 (23h)	Capacity Control 1 SV Output
37	00037	0036 (24h)	Capacity Control 2 SV Output
38	00038	0037 (25h)	Capacity Control 3 SV Output
39	00039	0038 (26h)	---
40	00040	0039 (27h)	---

No.	Reference No.	Specified No. (h:hex.)	Content
41	00041	0040 (28h)	---
42	00042	0041 (29h)	---
43	00043	0042 (2Ah)	---
44	00044	0043 (2Bh)	---
45	00045	0044 (2Ch)	---
46	00046	0045 (2Dh)	---
47	00047	0046 (2Eh)	---
48	00048	0047 (2Fh)	---
49	00049	0048 (30h)	[REMOTE START] lamp
50	00050	0049 (31h)	[MANUAL MODE] lamp
51	00051	0050 (32h)	[AUTO MODE] lamp
52	00052	0051 (33h)	[REMOTE MODE] lamp
53	00053	0052 (34h)	[EACH CONTROL] lamp
54	00054	0053 (35h)	[LP AUTO STOP] lamp
55	00055	0054 (36h)	[LP STOP OFF] lamp
56	00056	0055 (37h)	[START/STOP] lamp
57	00057	0056 (38h)	[COMPRESSOR RUN] lamp
58	00058	0057 (39h)	[SV1 ON] lamp
59	00059	0058 (3Ah)	[SV2 ON] lamp
60	00060	0059 (3Bh)	[SV3 (INTER COOLER) ON] lamp
61	00061	0060 (3Ch)	[SV 100% LOCK] lamp
62	00062	0061 (3Dh)	---
63	00063	0062 (3Eh)	---
64	00064	0063 (3Fh)	---
65	00065	0064 (40h)	[  ] Oil Temp. Sensor Failure
66	00066	0065 (41h)	[  ] Discharge Temp. Sensor Failure
67	00067	0066 (42h)	[  ] Intermediate Press. Sensor Failure
68	00068	0067 (43h)	[  ] Oil Press. Sensor Failure
69	00069	0068 (44h)	[  ] Discharge Press. Sensor Failure
70	00070	0069 (45h)	[  ] Suction Press. Sensor Failure
71	00071	0070 (46h)	[  ] *1 Low Oil-Intermediate Diff. Press. Alarm
72	00072	0071 (47h)	[  ] *2 Low Discharge-Suction Diff. Press. Alarm
73	00073	0072 (48h)	[  ] External Alarm
74	00074	0073 (49h)	[  ] High Intermediate Press. Alarm
75	00075	0074 (4Ah)	[  ] High Oil Temp. Alarm
76	00076	0075 (4Bh)	[  ] High Discharge Temp. Alarm
77	00077	0076 (4Ch)	[  ] High Discharge Press. Alarm
78	00078	0077 (4Dh)	[  ] Low Suction Press. Alarm
79	00079	0078 (4Eh)	[  ] Low Oil Press. Alarm
80	00080	0079 (4Fh)	[  ] Emergency Stop

(To be continued to next page)

\*1 Effective for 10S/11S.

\*2 Effective for 1290, 1410.

\*3 Effective for 6HK, 6HK E. (Next page.)

(Continued from previous page)

No.	Refer. No.	Specified No.	Content
81	00081	0080 (50h)	Alarm Stop
82	00082	0081 (51h)	[H S P] High Suction Press. Alarm *3
83	00083	0082 (52h)	---
84	00084	0083 (53h)	---
85	00085	0084 (54h)	---
86	00086	0085 (55h)	---
87	00087	0086 (56h)	---
88	00088	0087 (57h)	---
89	00089	0088 (58h)	[MANUAL] mode
90	00090	0089 (59h)	[AUTO] mode
91	00091	0090 (5Ah)	[REMOTE] mode
92	00092	0091 (5Bh)	LP Stop prohibition
93	00093	0092 (5Ch)	Reset prohibition restart timer
94	00094	0093 (5Dh)	[COMM] mode
95	00095	0094 (5Eh)	---
96	00096	0095 (5Fh)	---
97	00097	0096 (60h)	(Cfg.) Use of Temperature Sensor
98	00098	0097 (61h)	(Cfg.) Mode change After Alarm
99	00099	0098 (62h)	(Cfg.) Use of intermediate Press. Sensor
100	00100	0099 (63h)	(Cfg.) Oil Diff. Press. Calculation formula
101	00101	0100 (64h)	(Cfg.) Control Mode
102	00102	0101 (65h)	(Cfg.) Measurement unit of Press. Sensor
103	00103	0102 (66h)	(Cfg.) Range of Temperature Sensor
104	00104	0103 (67h)	(Cfg.) Permission of 0% load operation
105	00105	0104 (68h)	(Cfg.) Kind of refrigerant
106	00106	0105 (69h)	(Cfg.) Permission of Comm. Alarm Clear
107	00107	0106 (6Ah)	(Cfg.) Range of Suction Pressure Sensor
108	00108	0107 (6Bh)	---
109	00109	0108 (6Ch)	---
110	00110	0109 (6Dh)	---
111	00111	0110 (6Eh)	---
112	00112	0111 (6Fh)	---
113	00113	0112 (70h)	(Config.) F4K
114	00114	0113 (71h)	(Config.) F6K
115	00115	0114 (72h)	(Config.) F8K
116	00116	0115 (73h)	(Config.) N4K
117	00117	0116 (74h)	(Config.) N6K
118	00118	0117 (75h)	(Config.) N8K
119	00119	0118 (76h)	(Config.) 4L
120	00120	0119 (77h)	(Config.) 6L

No.	Refer. No.	Specified No.	Content
121	00121	0120 (78h)	(Config.) 8L
122	00122	0121 (79h)	(Config.) 4W
123	00123	0122 (7Ah)	(Config.) 42W
124	00124	0123 (7Bh)	(Config.) 6W
125	00125	0124 (7Ch)	(Config.) 62W
126	00126	0125 (7Dh)	(Config.) 8W
127	00127	0126 (7Eh)	(Config.) F4C
128	00128	0127 (7Fh)	(Config.) F6C
129	00129	0128 (80h)	(Config.) F62C
130	00130	0129 (81h)	(Config.) F8C
131	00131	0130 (82h)	(Config.) N4C
132	00132	0131 (83h)	(Config.) N6C
133	00133	0132 (84h)	(Config.) N62C
134	00134	0133 (85h)	(Config.) N8C
135	00135	0134 (86h)	(Config.) 10S/11S
136	00136	0135 (87h)	(Config.) 1290
137	00137	0136 (88h)	(Config.) 1410
138	00138	0137 (89h)	(Config.) 6HK
139	00139	0138 (8Ah)	(Config.) 6HKE
140	00140	0139 (8Bh)	(Config.) 4M
141	00141	0140 (8Ch)	(Config.) 6M
142	00142	0141 (8Dh)	(Config.) 8M
143	00143	0142 (8Eh)	(Config.) 62M
144	00144	0143 (8Fh)	---
145	00145	0144 (90h)	---
146	00146	0145 (91h)	---
147	00147	0146 (92h)	---
148	00148	0147 (93h)	---
149	00149	0148 (94h)	---
150	00150	0149 (95h)	---
151	00151	0150 (96h)	---
152	00152	0151 (97h)	---
153	00153	0152 (98h)	---
154	00154	0153 (99h)	---
155	00155	0154 (9Ah)	---
156	00156	0155 (9Bh)	---
157	00157	0156 (9Ch)	---
158	00158	0157 (9Dh)	---
159	00159	0158 (9Eh)	---
160	00160	0159 (9Fh)	---

Start number of coil can be specified only in the range of 0000 to 0159 (9Fh). (The item of "\*" sign can be written.)

Because "---" is unused, it always becomes "0". (As for bit information, 0 shows "OFF" and 1 shows "ON".)

Oil Diff. Press. calculation formula	0 : Oil - Suction ,	1 : Discharge - Oil
Control Mode	0 : Mode A ,	1 : Mode B
Measurement unit of Press. Sensor	0 : kgf/cm2G ,	1 : MPaG
Mode change after Alarm	0 : no change,	1 : change to [Manual] mode
Range of Temperature Sensor	0 : High(-20 to 180°C),	1 : Low(-60 to 140°C)
Permit of 0% load operation	0 : prohibit,	1 : Permit
Kind of Refrigerant (0% load operation limit time)		0 : NH3 (10min.), 1 : Freon (5min.)
Comm. Alarm Clear	0 : prohibit,	1 : permit
Range of Suction Pressure Sensor	0 : Low(-0.100 to 1.000 MPa),	1 : High(-0.100 to 3.000 MPa)

Reference number list of holding register (byte)

No.	Reference No.	Specified No. (h:hex)	Content
1	40001	0000 (00h)	Suction Pressure Process Value
2	40002	0001 (01h)	Discharge Pressure Process Value
3	40003	0002 (02h)	Oil Pressure Process Value
4	40004	0003 (03h)	Intermediate Pressure Process Value
5	40005	0004 (04h)	Discharge Temperature Process Value
6	40006	0005 (05h)	Oil Temperature Process Value
7	40007	0006 (06h)	---
8	40008	0007 (07h)	---
9	40009	0008 (08h)	---
10	40010	0009 (09h)	---
11	40011	0010 (0Ah)	---
12	40012	0011 (0Bh)	---
13	40013	0012 (0Ch)	---
14	40014	0013 (0Dh)	---
15	40015	0014 (0Eh)	---
16	40016	0015 (0Fh)	---
17	40017	0016 (10h)	(Config.) Display unit of Press. and Temp *1
18	40018	0017 (11h)	(Config.) Number of Capacity control SV
19	40019	0018 (12h)	Total running time(lower byte)
20	40020	0019 (13h)	Total running time(upper byte)
21	40021	0020 (14h)	Compressor Capacity
22	40022	0021 (15h)	Remaining of restart timer (sec)
23	40023	0022 (16h)	---
24	40024	0023 (17h)	---
25	40025	0024 (18h)	---
26	40026	0025 (19h)	---
27	40027	0026 (1Ah)	---
28	40028	0027 (1Bh)	---
29	40029	0028 (1Ch)	---
30	40030	0029 (1Dh)	---
31	40031	0030 (1Eh)	---
32	40032	0031 (1Fh)	---
33	40033	0032 (20h)	* Running Start Pressure Set Value
34	40034	0033 (21h)	* Running Stop Pressure Set Value
35	40035	0034 (22h)	* Target Suction Press. Set Value (mode B)
36	40036	0035 (23h)	* Capacity Control 1 Press. Set Value (modeA)
37	40037	0036 (24h)	* Capacity Control 2 Press. Set Value (modeA)
38	40038	0037 (25h)	* Capacity Control 3 Press. Set Value (modeA)
39	40039	0038 (26h)	* Capacity Control 4 Press. Set Value (modeA)
40	40040	0039 (27h)	* Dead band Set Value

No.	Reference No.	Specified No. (h:hex)	Content
41	40041	0040 (28h)	Control Cycle Time Set Value (sec)
42	40042	0041 (29h)	High Discharge Press. Alarm Set Value
43	40043	0042 (2Ah)	Low Oil Press. Alarm Set Value *4
44	40044	0043 (2Bh)	High Intermediate Press. Alarm Set Value
45	40045	0044 (2Ch)	Low Suction Press. Alarm Set Value
46	40046	0045 (2Dh)	High Discharge Temp. Alarm Set Value
47	40047	0046 (2Eh)	High Oil Temp. Alarm Set Value
48	40048	0047 (2Fh)	Low Dis.-Suc. Diff. Press. Alarm Set Value *5
49	40049	0048 (30h)	Low Oil-Int. Diff. Press. Alarm Set Value *6
50	40050	0049 (31h)	Oil cooler Liquid-Supply Temp. Set Value
51	40051	0050 (32h)	Pump Down Stop Press. Set Value
52	40052	0051 (33h)	Capacity Control Delay Time Set Value (sec)
53	40053	0052 (34h)	LP Stop Delay Time Set Value (sec)
54	40054	0053 (35h)	Pump Down Stop Time Set Value (minute)
55	40055	0054 (36h)	Restart interval Timer Set Value (minute)
56	40056	0055 (37h)	Hunting prevention Timer Set Value (minute)
57	40057	0056 (38h)	Loading prohibition Int. Press. Set Value *7
58	40058	0057 (39h)	Compulsion unloading Int. Press. Set Value *7
59	40059	0058 (3Ah)	Loading prohibition Dis. Press. Set Value
60	40060	0059 (3Bh)	Compulsion unloading Dis. Press. Set Value
61	40061	0060 (3Ch)	High Suction Press. Alarm Set Value *8
62	40062	0061 (3Dh)	Compulsion Running Start Set Value *9
63	40063	0062 (3Eh)	Compulsion Running Stop Set Value *9
64	40064	0063 (3Fh)	Compulsion Running Max. Time Set Value *9
65	40065	0064 (40h)	Comm. Address Set Value
66	40066	0065 (41h)	Comm. Speed Set Value *2
67	40067	0066 (42h)	Comm. Character Format Set Value *3
68	40068	0067 (43h)	Comm. Response Time Set Value (second)
69	40069	0068 (44h)	0% load shift Discharge Temp. Set Value *10
70	40070	0069 (45h)	0% load shift Oil Temp. Set Value *10
71	40071	0070 (46h)	0% load [dT] Alarm Delay time (sec) *10
72	40072	0071 (47h)	---
73	40073	0072 (48h)	---
74	40074	0073 (49h)	---
75	40075	0074 (4Ah)	---
76	40076	0075 (4Bh)	---
77	40077	0076 (4Ch)	---
78	40078	0077 (4Dh)	---
79	40079	0078 (4Eh)	---
80	40080	0079 (4Fh)	---

Start number of holding register can be specified only in the range of 0000 to 0079 (4Fh). (The item of "\*" sign can be written.)

Because "---" is unused, it always becomes "0".

Total running time = (upper byte x 65536) + lower byte(0 to 65535)

- \*1 Display unit of Press. and Temp. 0 : kgf/cm<sup>2</sup>.°C, 1 : MPa.°C, 2 : bar.°C, 3 : psi.°F
- \*2 Comm. Speed 0 : 300, 1 : 600, 2 : 1200, 3 : 2400, 4 : 4800, 5 : 9600, 6 : 19200, 7 : 38400
- \*3 Comm. Character Format 0 : C7N1, 1 : C7E1, 2 : C7O1, 3 : C8N1, 4 : C8E1, 5 : C8O1, 6 : C7N2, 7 : C7E2, 8 : C7O2, 9 : C8N2, 10 : C8E2, 11 : C8O2



- \*4 The computational method of the differential oil pressure is different according to configuration setup mode " 0 0 0 0 " (Compressor model).
- \*5 Effective for 10S/11S.
- \*6 Effective for 1290, 1410.
- \*7 In item of " 0 0 0 " (Use of Intermediate Pressure sensor) of configuration setup mode, when " 0 0 0 0 " (Use) set, and in item of " 0 0 0 " (Control Mode) of configuration setup mode, when " 0 0 0 0 " (B-mode) set, display is available.
- \*8 Effective for 6HK, 6HK E.
- \*9 Effective for 4M, 6M, 8M, 62M and [REMOTE] mode.
- \*10 In item of " 0 0 0 " (0% load operation) of configuration setup mode, when " 0 0 0 0 " (Yes) set, display / setup is available.

[Error Code]

Number of characters : 2 characters

Additional code when there are some problems in contents of query message and expressed by hexadecimal numerals.

Error code	Content
01h	Incorrect function code (not corresponded function code)
02h	Incorrect start number of coil and holding register (out of range)
03h	Incorrect number of coil and holding register. (out of range) Write to not changeable coil and holding register. MYPRO-CP I is not in [COMM] mode. ([COMM. SET] lamp off.)

- \* However, in case of shown below, **MYPRO-CP I does not respond** even when external device sent query message.
  - When communication error (receiving buffer overflow error, overrun error, framing error, not coincidence of error check code) is detected.
  - When specified address of query message is not self station.
  - When interval of character string which composed query message exceed 1 second.
- \* When write of other than writable item is made, error code (02h or 03h) is returned.

[Error check code]

Error check code is data for error check added to message to detect mistake (bit change) of message by signal transmission.

In MODBUS protocol, error is check code is calculated by method of CRC-16 in case of RTU mode and by method of LRC in case of ASCII mode.

Signal transmission error is checked by comparison of error check code is added to message at transmission sending and error check code is calculated at receiving side.

When error check code did not coincide, it is considered there is mistake by signal transmission and receiving message is neglected.

As for calculating method of CRC-16 and LRC, refer to literatures regarding "Numeric operation" and so on.

[Query message and response message format by function code]

In MODBUS protocol, construction and length of query message and response message are different by function code.

A) Function code 01h : Read coil status

Read coil states of continuous specified number from specified start number. Coil status becomes data in response message by arranging 8 pieces per one data (1byte) in numerical sequence. LSB of each data (8bit) shows coil status of the lowest specified number. When coil number is multiple of 8, MSB of last data shows coil status of last specified number, and in other case, unnecessary bit (MSB side) of last data becomes all "0".

(Ex.) Read coil status of total 20 (14h) from coil No.5 (assigned number 0004h) to No.24 from MYPRO-CPI of address 1.

Query message

RTU mode

Address	Function code	Start Number		Number of point		CRC-16							
		Upper	Lower	Upper	Lower	Lower	Upper						
0	1	0	0	0	4	0	0	1	4	7	D	C	4

ASCII mode

Address	Function code	Start Number		Number of point		LRC		C	R	L	F					
		Upper	Lower	Upper	Lower											
:	0	1	0	0	0	4	0	0	1	4	E	6				

Response message of MYPRO-CPI (normal response)

RTU mode

Address	Function code	Data Number	State of first 8 coils	State of next 8 coils	State of last 8 coils	CRC-16							
						Lower	Upper						
0	1	0	3	0	6	A	0	0	5	6	4	4	C

ASCII mode

Address	Function code	Data Number	State of first 8 coils	State of next 8 coils	State of last 8 coils	LRC		C	R	L	F					
:	0	1	0	3	0	6	A	0	0	5	5	0				

Array of coil status

In case of this example, array of coil status is as shown below.

State of first 8 coils	"06"	MSB	0	0	0	0	0	0	1	1	0	LSB	Coil state of start number
State of next 8 coils	"A0"	1	1	0	0	0	0	0	0	0	0		
State of last 8 coils	"05"	0	0	0	0	0	1	0	1				

In case of specified number is not multiple of 8, unnecessary bit becomes "0".

Response message of MYPRO-CPI (error response)

RTU mode

Address	80h + Function code	Error code	CRC-16						
			Lower	Upper					
0	1	8	1	0	2	C	1	9	1

ASCII mode

Address	80h + Function code	Error code	LRC		C	R	L	F				
:	0	1	8	1	0	2	7	C				

B) Function code 03h : Read holding register content

Read holding registers content of continuous specified number from specified start number.

Contents of holding register are divided to upper 8 bits and lowest 8 bits and specified in numerical sequence and become data in response message.

(Ex.) Read holding register content of total 3 (03h) from holding register No.1 (specified number 0000h) to No.3 from MYPRO-CPI address 2.

Query message

RTU mode

Address	Function code	Start Number		Number of point		CRC-16	
		Upper	Lower	Upper	Lower	Lower	Upper
0 2	0 3	0 0	0 0	0 0	0 3	0 5	F 8

ASCII mode

Address	Function code	Start Number		Number of point		LRC		C R	L F
		Upper	Lower	Upper	Lower	Upper	Lower		
:	0 2	0 0	0 0	0 0	0 3	F 8			

Response message of MYPRO-CPI (normal response)

RTU mode

Address	Function code	Data Number	Content of first register		Content of next register		Content of last register		CRC-16	
			Upper	Lower	Upper	Lower	Upper	Lower	Lower	Upper
0 2	0 3	0 6	0 4	C E	0 1	C 8	F F	9 C	9 C	4 A

ASCII mode

Address	Function code	Data Number	Content of first register		Content of next register		Content of last register		LRC		C R	L F
			Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower		
:	0 2	0 3	0 6	0 4	C E	0 1	C 8	F F	9 C	B F		

How to read register content.

In case of this example, holding register content is as shown below.

	Hexadecimal notation	→	decimal notation
Content of first register	04CE h	→	1230
Content of next register	01C8 h	→	456
Content of last register	FF9C h	→	-100

It becomes this with the data of an original real number , considering conversion (Refer to "5.3.1. The numerical data handled in communication") into making to the integer by display unit etc. .

Response message of MYPRO-CPI (error response)

RTU mode

Address	80h + Function code	Error code	CRC-16	
			Lower	Upper
0 2	8 3	0 3	F 1	3 1

ASCII mode

Address	80h + Function code	Error code	LRC		C R	L F
			Upper	Lower		
:	0 2	8 3	0 3	7 8		

C) Function code 05h : state change of single coil

Change state of coil of specified number to specified state (ON or OFF).

Specified state of coil is ON by "FF00" and OFF by "0000".

(Ex.) To make ON state of coil No.10 (specified number 0009h) of MYPRO-CPI in address 1.

Query message

RTU mode

Address		Function code		Coil number		Specified state		CRC-16					
				Upper	Lower	Upper	Lower	Lower	Upper				
0	1	0	5	0	9	F	F	0	0	5	C	3	8

ASCII mode

Address		Function code		Coil number		Specified state		LRC		C	L					
				Upper	Lower	Upper	Lower									
:	0	1	0	5	0	9	F	F	0	0	F	2	C	R	L	F

Response message of MYPRO-CPI (normal response)

RTU mode

Address		Function code		Coil number		Specified state		CRC-16					
				Upper	Lower	Upper	Lower	Lower	Upper				
0	1	0	5	0	C	F	F	0	0	5	C	3	8

ASCII mode

Address		Function code		Coil number		Specified state		LRC		C	L					
				Upper	Lower	Upper	Lower									
:	0	1	0	5	0	C	F	F	0	0	F	2	C	R	L	F

Response message of MYPRO-CPI (error response)

RTU mode

Address		80h + Function code		Error code		CRC-16			
						Lower	Upper		
0	1	8	5	0	2	C	3	5	1

ASCII mode

Address		80h + Function code		Error code		LRC		C	L	
:	0	1	8	5	0	2	7			8

\* When specified state other than "FF00" and "0000" is specified, error code 03h is returned.

D) Function code 06h : Write single holding register content

Write specified content (data) to specified holding register.

(Ex.) Write content (data) "0.050" to holding register No.25 (specified number 0018h) of MYPRO-CPI address1.

Query message

RTU mode

Address		Function code		Holding register number		Content (data)		CRC-16	
				Upper	Lower	Upper	Lower	Lower	Upper
0	1	0	6	0	8	0	3	8	1

ASCII mode

Address		Function code		Holding register number		Content (data)		LRC					
				Upper	Lower	Upper	Lower						
:	0	1	0	6	0	8	0	3	2	A	F	C	L
										R	F		

Response message of MYPRO-CPI (normal response)

RTU mode

Address		Function code		Holding register number		Content (data)		CRC-16	
				Upper	Lower	Upper	Lower	Lower	Upper
0	1	0	6	0	8	0	3	8	1

ASCII mode

Address		Function code		Holding register number		Content (data)		LRC					
				Upper	Lower	Upper	Lower						
:	0	1	0	5	0	8	0	3	2	A	F	C	L
										R	F		

Response message of MYPRO-CPI (error response)

RTU mode

Address		80h + Function code		Error code		CRC-16	
						Lower	Upper
0	1	8	6	0	2	C	A

ASCII mode

Address		80h + Function code		Error code		LRC				
						Lower	Upper			
:	0	1	8	6	0	2	7	7	C	L
									R	F

\* When write content is other than writable holding register by communication, error code 03h is returned.

\* When MYPRO-CPI is not [COMM] mode ([COMM. SET] lamp is OFF), error code 03h is returned.

E) Function code 08h : Loop back test

Query message is returned as response message as it is.

Usually it is not used, but it can be used for communication status check.

(Ex.) Loop back test with MYPRO-CPI of address 31.

Query message

RTU mode

Address	Function code	Test code		Data		CRC-16							
		Upper	Lower	Upper	Lower	Lower	Upper						
1	F	0	8	0	0	1	2	3	4	E	E	C	2

ASCII mode

Address	Function code	Test code		Data		LRC		C	L							
		Upper	Lower	Upper	Lower	Upper	Lower									
:	1	F	0	8	0	0	0	0	1	2	3	4	9	3	R	F

Response message of MYPRO-CPI (normal response)

RTU mode

Address	Function code	Test code		Data		CRC-16							
		Upper	Lower	Upper	Lower	Lower	Upper						
1	F	0	8	0	0	1	2	3	4	E	E	C	2

ASCII mode

Address	Function code	Test code		Data		LRC		C	L							
		Upper	Lower	Upper	Lower	Upper	Lower									
:	1	F	0	8	0	0	0	0	1	2	3	4	9	3	R	F

Response message of MYPRO-CPI (error response)

RTU mode

Address	80h + Function code	Error code	CRC-16						
			Lower	Upper					
1	F	8	8	0	2	A	7	C	7

ASCII mode

Address	80h + Function code	Error code	LRC		C	L				
			Upper	Lower						
:	1	F	8	8	0	2	5	7	R	F

- \* To achieve proper loop back test, assign 0000h as test code without fail.  
When assigned other than 0000h as test code, error code 02h is returned.
- \* As for data, any value can be setup.

F) Function code 0Fh : State change of multiple coils

State change of continuous specified number of coils from specified start number is done.

ON, OFF assignment of coil become one specified data by arranging 8 per one data in numerical sequence. At this point assign state of coil that has the youngest assigned LSB number of each data (8 bits). When number of coils is multiple of 8, MSB of last data specifies state of last coil specified, but number of coils is not unnecessary bit occurs at MSB side, MYPRO-CPI neglects these unnecessary bit.

(Ex.) State change of total 4 (4h) coils of coil No.13 (000Ch) to No.16 of MYPRO-CPI in address 1.

Query message

RTU mode

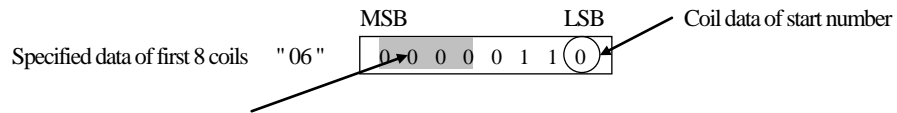
Address	Function code	Start number		Number of point		Data number	Specified data of first 8 coils	CRC-16	
		Upper	Lower	Upper	Lower			Lower	Upper
0   1	0   F	0   0	0   C	0   0	0   4	0   1	0   6	A   E	9   5

ASCII mode

Address	Function code	Start number		Number of point		Data number	Specified data of first 8 coils	LRC	
		Upper	Lower	Upper	Lower			C	L
:   0   1	0   0	0   0	0   C	0   0	0   4	0   1	0   6	D   9	C   L

Row of specified data of coil

In this example, row of specified data of coil is as shown below



In case of specified number is not multiple of 8, unnecessary bit occurs, but MYPRO-CPI neglect it.

Response message of MYPRO-CPI (normal response)

RTU mode

Address	Function code	Start number		Number of point		CRC-16	
		Upper	Lower	Upper	Lower	Lower	Upper
0   1	0   F	0   0	0   C	0   0	0   4	9   4	0   B

ASCII mode

Address	Function code	Start number		Number of point		LRC	
		Upper	Lower	Upper	Lower	C	L
:   0   1	0   F	0   0	0   C	0   0	0   4	E   0	C   L

Response message of MYPRO-CPI (error response)

RTU mode

Address	80h + Function code	Error code	CRC-16	
			Lower	Upper
0   1	8   F	0   2	C   5	F   1

ASCII mode

Address	80h + Function code	Error code	LRC	
			C	L
:   0   1	8   F	0   2	6   E	C   L

\* When specified to write content other than writable coil by communication, error code 03h is returned.

G) Function code 10h : Write content of multiple holding registers

Write specified data to holding registers of continuous specified number from specified start number.

Write data shall be arranged in query message by numerical sequence by holding registers each upper 8 bits and then lower 8 bits.

(Ex.) Write content of total 3 (3h) from coil No.25 (specified number 0018h) to No.27 of MYPRO-CPI in address 1.

Query message

RTU mode

Address	Function code	Start number		Number of point		Data number	Specified data of first		Specified data of next		Specified data of last		CRC-16	
		Upper	Lower	Upper	Lower		Upper	Lower	Upper	Lower	Lower	Upper		
0 1	1 0	0 0	1 8	0 0	0 3	0 6	0 0	3 2	0 0	0 A	0 0	A 0	7 F	4 1

ASCII mode

Address	Function code	Start number		Number of point		Data number	Specified data of first		Specified data of next		Specified data of last		LRC	
		Upper	Lower	Upper	Lower		Upper	Lower	Upper	Lower	Upper	Lower		
:	0 1	1 0	0 0	1 8	0 0	0 3	0 6	0 0	3 2	0 0	0 A	0 0	A 0	F 2 C R L F

Response message of MYPRO-CPI (normal message)

RTU mode

Address	Function code	Start number		Number of point		CRC-16	
		Upper	Lower	Upper	Lower	Lower	Upper
0 1	1 0	0 0	1 8	0 0	0 3	0 0	0 F

ASCII mode

Address	Function code	Start number		Number of point		LRC	
		Upper	Lower	Upper	Lower	Upper	Lower
:	0 1	1 0	0 0	1 8	0 0	0 3	D 4 C R L F

Response message of MYPRO-CPI (error message)

RTU mode

Address	80h + Function code	Error code	CRC-16	
			Lower	Upper
0 1	9 0	0 2	C D	C 1

ASCII mode

Address	80h + Function code	Error code	LRC	
			Upper	Lower
:	0 1	9 0	0 2	6 D C R L F

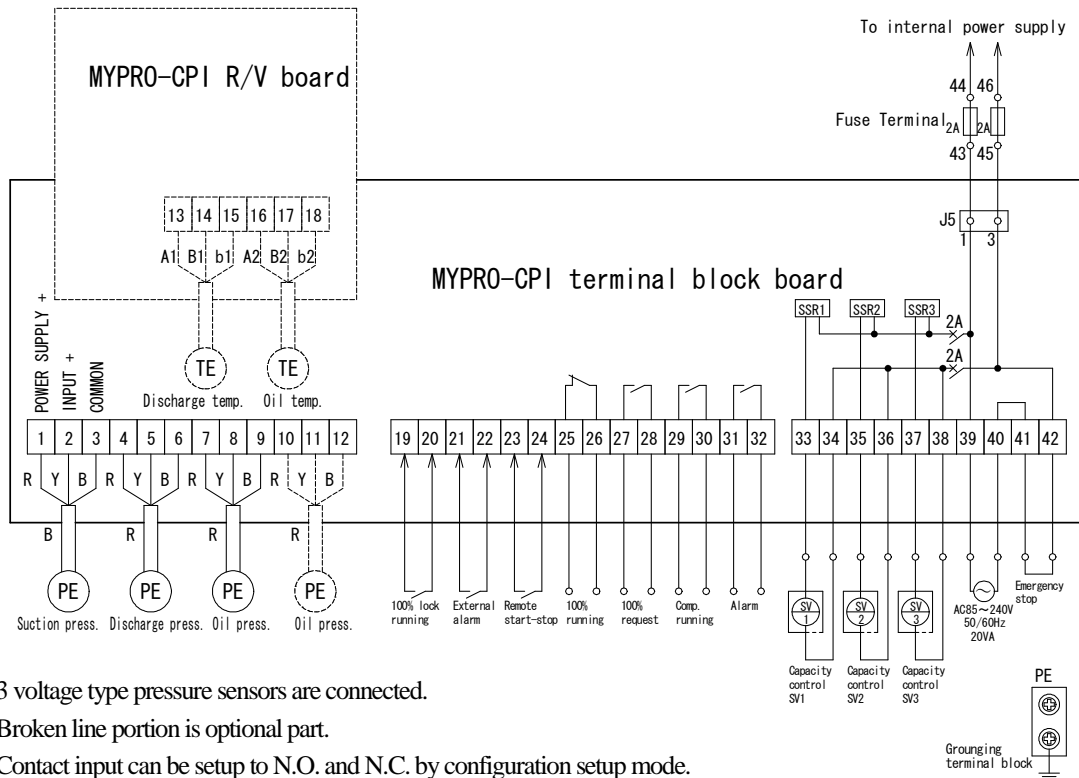
\* When specified to write content other than writable holding register by communication, error code 03h is returned.

\* When MYPRO-CPI is not [COMM] mode ([COMM. SET] lamp is OFF), error code 03h is returned.



## 6. Connection

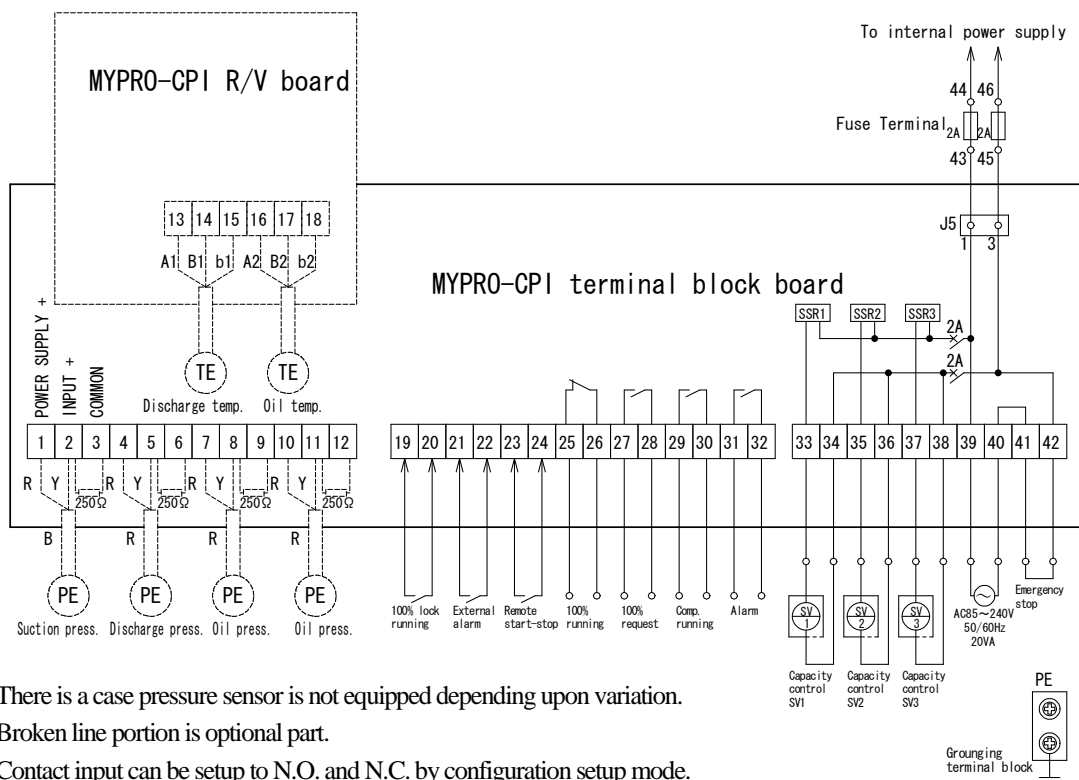
### 6.1. Connection of MYPRO-CPI (voltage type pressure sensor)



- 3 voltage type pressure sensors are connected.
- Broken line portion is optional part.
- Contact input can be setup to N.O. and N.C. by configuration setup mode.
- There is a case fuse terminal block is not equipped depending upon variation.
- *Emergency Stop Input* (terminal No.41, 42) is short circuited at shipment.

### 6.2. Connection of MYPRO-CPI (current type pressure sensor : optional)

When the current type sensor is used, the power supply board for current sensor is necessary.



- There is a case pressure sensor is not equipped depending upon variation.
- Broken line portion is optional part.
- Contact input can be setup to N.O. and N.C. by configuration setup mode.
- There is a case fuse terminal block is not equipped depending upon variation.
- *Emergency Stop Input* (terminal No.41, 42) is short circuited at shipment.

### 6.3. Connection of RS-485 communication port (option)

Cable between RS-485 communication port of MYPRO-CPI and external communication devices shall satisfy conditions shown below. **Otherwise there is a case proper communication is not available.**

2-wire system :

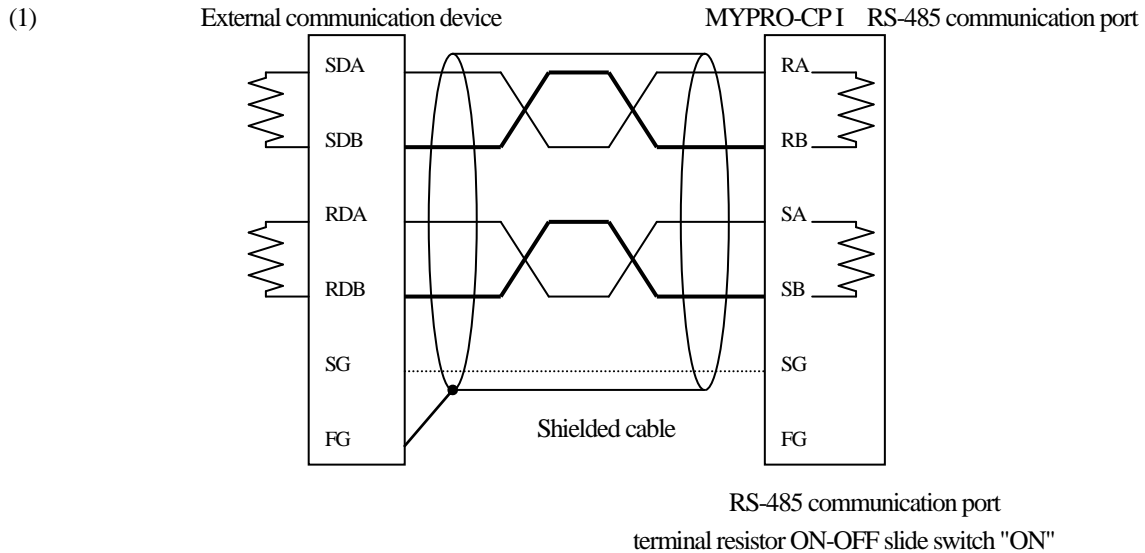
- Shielded 4 cores 2 pairs twisted pair cable.
- Cross section  $0.2\text{mm}^2$  to  $0.3\text{mm}^2$
- Characteristic impedance  $110\Omega + 10\Omega$

Recommended wire : Mitsubishi wire Co., LTD. SPEV (SB)-0.2 x 2P

4-wire system :

- Shielded 6 cores twisted pair cable
- Cross section  $0.2\text{mm}^2$  to  $0.3\text{mm}^2$
- Characteristic impedance  $110\Omega + 10\Omega$

Recommended wire : Mitsubishi wire Co., LTD. SPEV (SB)-0.2 x 3P



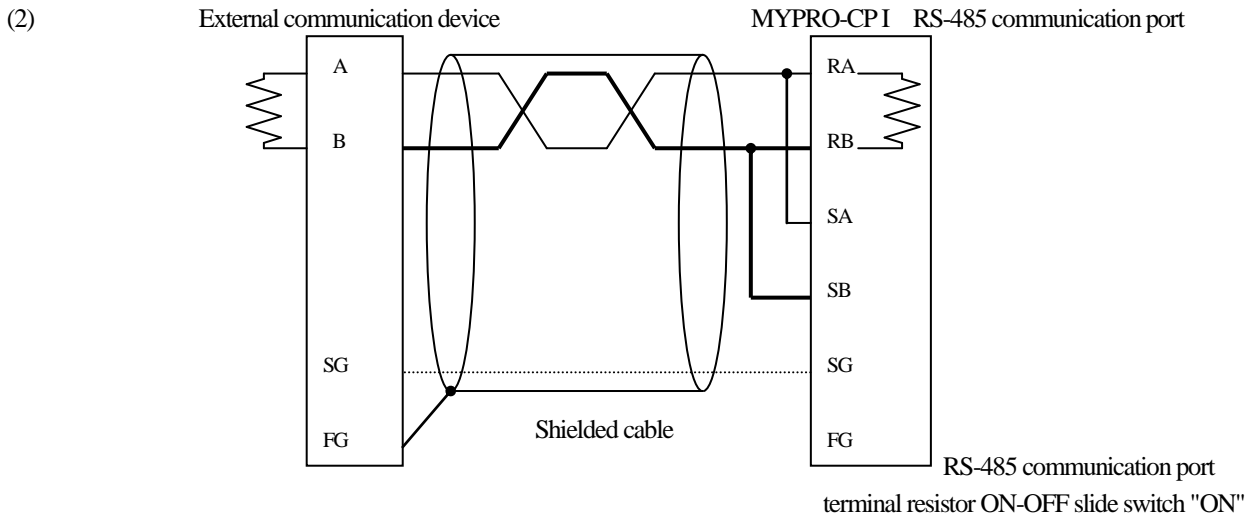
In this connection, MYPRO-CP I RS-485 communication port and external communication device are physical both ends of connected stations and terminating resistors are required for both RS-485 communication port and external communication device.

At MYPRO-CP I RS-485 communication port, by sliding RS-485 communication port terminal resistor ON-OFF slide switch (both 1 and 2 of SW1 on communication board) to ON, terminating resistor ( $110\Omega$  1/4W) is effective.

At external communication device, connect terminating resistors between SDA-SDB and RDA-RDB.

As for resistance value of terminating resistor, refer to instruction manual of external communication device.

Make one point grounding for shield of connection cable.



In this case, external device is 2 wire RS-485 communication system, so short circuit RA and SA, RB and SB of MYPRO-CPI RS-485 communication port and connect each of these to A and B of external device.

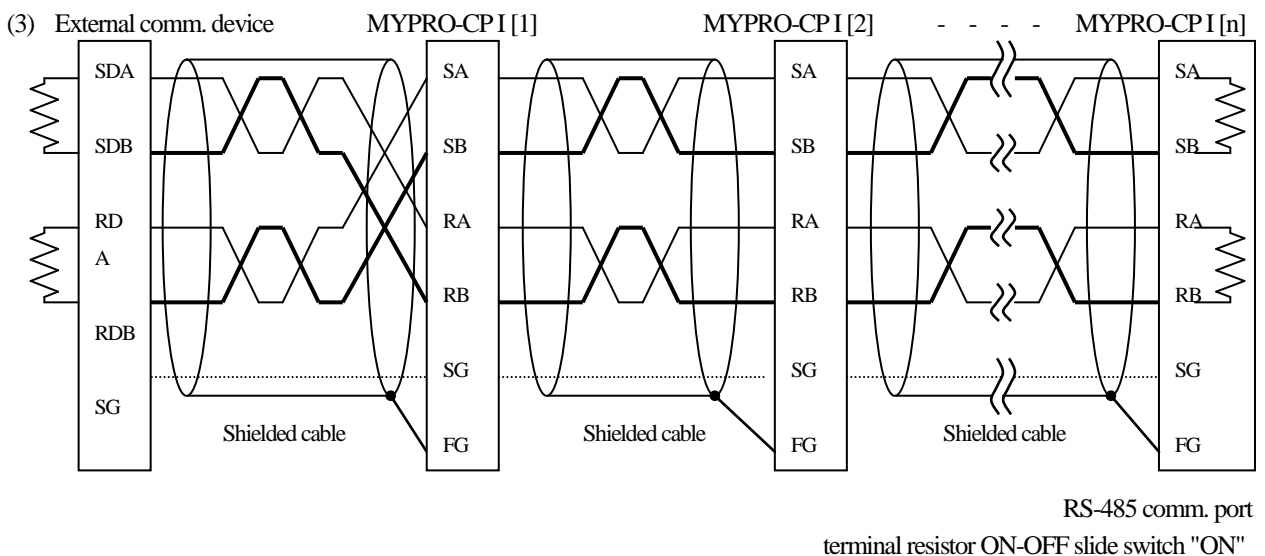
MYPRO-CPI RS-485 communication port and external device are physical both ends of connected stations and terminating resistors are required for both MYPRO-CPI RS-485 communication port and external communication device.

At MYPRO-CPI RS-485 communication port, by sliding RS-485 communication port terminal resistor ON-OFF slide switch (either 1 or 2 of SW1 on communication board) to ON, terminating resistor ( $110\Omega$  1/4W) is effective.

At external communication device, connect terminating resistor between A and B.

As for resistance value of terminating resistor, refer to instruction manual of external communication device.

Make one point grounding for shield of connection cable.



When connecting plural sets of MYPRO-CPI as shown above, external communication device and MYPRO-CPI [n] are physical both ends of connected stations and terminating resistors are required for both external communication device and MYPRO-CPI [n] RS-485 communication port. (n is maximum up to 31.)

At MYPRO-CPI [n] RS-485 communication port, by RS-485 communication port terminal resistor ON-OFF slide switch (both 1 and 2 of SW1 on communication board) to ON, terminating resistor ( $110\Omega$  1/4W) is effective.

Other MYPRO-CPI is not physical end and they are without terminating resistor.

At external communication device, connect terminating resistors between SDA and SDB, RDA and RDB.

As for resistance value of terminating resistor, refer to instruction manual of external communication device.

Make one point grounding for shield of connection cable.

Note) **Do not connect cables of plural sets of MYPRO-CPI to external communication device get together.**

\* At connection, refer to this manual and instruction manual of external communication device without fail.

## 6.4. Notice for wiring

**Carry out wiring after power off regardless kinds of cables to avoid electric shock.**

At wiring of input/output line and communication line, wiring to minimize effect of noise is required.

- (1) To avoid effect of noise, signal wire of attached pressure sensor is short. **Do not bundle with power line, other input/output lines and communication lines.**
- (2) Even when pressure sensor is installed apart MYPRO-CPI, **do not bundle with power line. Other input/output lines and communication lines and avoid noise as much as possible.**  
(The pressure sensor is recommended neither separation from the main body of MYPRO-CPI nor to be installed.)
- (3) For wiring of RTD, use shielded wire and ground shield.
- (4) When wire of RTD is long, error is expected. Make wiring resistance less than 5Ω.
- (5) At wiring for communication line, **do not bundle or lay closely with power line and input/output line.**
- (6) As wire for receiving side (RA, RB) and sending side (SA, SB) of communication line, **do not fail to use paired twisted wire.** Otherwise communication error might be expected.
- (7) **Make one point grounding** for communication wire shield.  
FG terminal of communication board terminal block (TB1) is connected to FG terminal of power terminal block.
- (8) SG terminal of Tb1 is not necessary to connect, but if connection is made, use twisted pair (1 pair 2 wire) wire. **Do not use shield (crust).**
- (9) To FG terminal of TB1, **do not connect any wire other than shield (crust).**
- (10) Wire of power supply shall be 600V vinyl insulated wire or better.
- (11) Voltage contact for each SV Output (SV1 to SV3) is common to power supply to MYPRO-CPI.
- (12) **Confirm no miss wiring before power on.**



**Grounding terminal block shall be grounded to grounding wire with grounding resistance of less than 100Ω to avoid electric shock.**

**Do not supply AC voltage to terminal number 1 to 24.**

---

## 6.5. Main body mounting

MYPRO-CPI shall be mounted **to avoid following environment.**

- Display panel plane to face downward.
- Place other than recommended operating conditions in specifications.  
(Refer to "8. Specifications".)
- Place with direct sunlight.
- Place under strong electric field and strong magnetic field.
- Place vibration and shock act product directly.



**When installed in place other than above conditions, not only malfunction of product but also injury by dropping of product might be expected.**

**There are sharp edges on product and be careful during and after mounting.**

**This product is a structure that the display panel part can be opened like the door.**

**Note that the finger is not placed enough when you close the door.**

## 7. Trouble shooting

First of all trouble shooting when "something wrong?", "any damage?".

- (1) No display on front panel.
  - - Confirm disconnection of connector between front panel and CPU board
  - Confirm wiring of terminal No.39 and 40 and supply voltage.
  - Confirm connection of J5 of terminal block board.
  - Confirm short circuit wire or wiring of terminal No.41,42. (Refer to "4.5. Emergency Stop Input".)
  
- (2) `SPS`, `SPS`, `SPS`, `SPS`, `SPS`, `SPS` are shown in state display.
  - - Pressure/temperature sensor is faulty. Check sensor it self or wiring.
  - Power source of voltage type pressure sensor is 12V. Check voltage of terminal No.1,4,7,10.  
To check pressure sensor is voltage type, confirm label attached on sensor. It can be also confirmed same label is affixed on MYPRO-CPI body.
  - It is alarm if setting " `SSS` " (Use of temperature sensor) to " `SEE` " (Use) at configuration setup mode without connection of sensor on R/V board (option).
  - When using current type pressure sensor, check wiring of external 250Ω resistor and resistance value.  
Or confirm power source for current type pressure sensor and connector J3 on terminal block board.
  
- (3) Display of pressure sensor differs from pressure gauge and so on.
  - - There is possibility of miss-allocation of suction, discharge and oil pressure sensor. Check pressure sensor itself or wiring.
  - When using current type pressure sensor, check wiring of external 250Ω resistor and resistance value.
  
- (4) Display of temperature sensor differs from thermometer and so on.
  - - There is possibility of miss-allocation of discharge and oil temperature sensor. Check temperature sensor itself or wiring.
  - Only Pt100Ω, IEC Pub 751-1983, JIS C1604-1989, JIS C1606-1989 can be used as temperature sensor. Pt100Ω conformed to other regulations other than above, Pt50Ω, Pt1000Ω, thermistor and thermo couple cannot be used.
  
- (5) Intermediate Pressure, Discharge Temperature, Oil Temperature are not displayed and no alarm for these.
  - - If " `SSS` " (compressor model) of configuration setup mode is changed, " `SEE` " (Use of intermediate sensor) and " `SSS` " (Use of temperature sensor) are returned to " `SSSS` " (No use).  
Setup " `SEE` " and " `SSS` " to " `SSSS` " (Use).
  
- (6) Change of set value is not available.
  - - Check key-lock state or not.
  - Confirm it is [COMM] mode. ([COMM. SET] lamp is ON.)
  
- (7) Capacity control does not work.
  - - Check [MANUAL] mode ([MANUAL MODE] lamp is ON) or not.
  - Capacity control is not available during capacity control delay time " `SEE` " (initial value : 30sec.) after start signal becomes ON.
  
- (8) An actual each SV doesn't work though the operation lamp of each SV is ON in front panel. (contact output is not issued.)
  - - Check CP1, CP2 (circuit protector) installed in terminal block board. If white button is lifted up, circuit is cut off. Push down white button.
  
- (9) Over-run error occurred at serial communication.
  - - Over-run error occurs when internal processing of MYPRO-CPI is late. Decrease " `SSS` " (Communication Speed Set value) or set up query message sending interval longer.
  - In 2-wire communication system in MODBUS protocol RTU mode, over-run error might occur rarely. If possible, change to 4-wire communication system or change to MODBUS protocol ASCII mode.

(10) Parity error and framing error occurred at serial communication.

- - Parity error mainly occurs setup of character format did not coincide. Check " 0 0 0 " (Communication Character Format Set Value) of all device connected are all same set value.
- Framing error mainly occurs setup of communication speed did not coincide. Check " 0 0 0 " (Communication Speed Set Value) of all device connected are all same set value.
- Check aren't there any device which " 0 0 0 " (Communication Address Set Value) is setup same value.
- Check connection of communication cables (poor contact, polarity, cable specifications) and terminating method are properly made or not.
- Is setup regarding communication of external devices done properly?
- Even after above check done and satisfactory, parity and framing error occurred. In that case, connect SG terminal of communication circuit terminal block of all devices by using communication cable.

(11) Data sending lamp (SD) of MYPRO-CPI does not light.

- - Is data receiving lamp (RD) of communication board is ON?
- Are external communication devices communication protocol and " 0 0 0 " (Kind of Communication Protocol) of configuration setup mode agreed?
- Are query message agreed to communication protocol sent?
- Check " 0 0 0 " (Communication Address Set Value), when " 0 0 0 " is set 0, communication is not available.
- Isn't address assignment in query message wrong?
- Are error check codes correct?

(12) Response message sent from MYPRO-CPI is incorrect.

- - Check connection of communication cables (poor contact, polarity, cable specifications) and terminating method are properly made or not.
- Is setup regarding communication of external communication devices done properly?
- Even after above check done and satisfactory, response message is still incorrect, connect SG terminal of communication circuit terminal block of all devices by using communication cable.

(13) Content of response message in MODBUS protocol is error code 01h.

- - Is no-corresponding function code included in query message?

(14) Content of response message in MODBUS protocol is error code 02h.

- - Are out of range start number of coil or holding register included in query message?  
Only 0000h(0) to 009Fh(159) for coil and 0000h(0) to 004Fh(79) for holding register can be assigned to start number.

(15) Content of response message in MODBUS protocol is error code 03h.

- - Is MYPRO-CPI in [COMM] mode? ([COMM.SET] lamp is ON.)
- Isn't number which exceeding permitted for communication number per one communication included in query message? (Refer to "5.3.3. MODBUS protocol".)
- Didn't write to read only coil and holding register?
- Didn't write set value which  $\text{Running Start Pressure Set Value} \leq \text{Running Stop Pressure Set Value}$ ?
- When selected control mode A for " 0 0 0 " (Control Mode), didn't write values to 0 (Target Suction Pressure Set Value : specified number 0022h (34) ) for control mode B ?
- When selected control mode B for " 0 0 0 " (Control Mode), didn't write values to four Capacity Control Pressure Set Values (specified number 0023h (35) to 0026h (39) ) for control mode A ?
- Even when selected control mode A for " 0 0 0 " (Control Mode), writing of Capacity Control Pressure Set Values that neglected comparison of largeness is not available.

(16) Set value cannot be written.

- - Is MYPRO-CPI in [COMM] mode? ([COMM.SET] lamp is ON.)
- In MYPRO original protocol type 0 and 1, did external device send query message conformed to protocol ?
- In MYCOM original protocol type 0 and 1, didn't write by conditions described is above (15) ?

## 8. Specifications

Absolute maximum rating			
Supply voltage	AC 85 to 264 V		
Frequency	47 to 440 Hz		
Operation temperature	0°C to 55°C		
Storage temperature	-10°C to 70°C		
Ambient humidity	85%RH or less (No dew)		
Vibration	XYZ direction 1.0G		
Noise endurance	Power supply line	1500V	100ns 1μs 5minutes
	I/O line	1000V	100ns 1μs 5minutes
	Communication line	500V	50ns 5minutes
Dielectric strength	AC1000V	1minute (between power terminal and connecting terminal)	
	AC 500V	1minute (between I/O terminal and connecting terminal)	
Insulation resistance	DC 500V	20MΩ and above (between power terminal and connecting terminal)	
	DC 500V	20MΩ and above (between I/O terminal and connecting terminal)	
When absolute maximum rating value and above is applied, device might be seriously damaged.			
When absolute maximum rating value is applied for long time of period, reliability of device might be decreased.			

Recommended operation conditions	
Supply voltage	AC 100 / 200V
Frequency	50 / 60 Hz
Operation temperature	5 °C to 50 °C
Ambient humidity	70%RH or less (No dew)
Atmosphere	No corrosive gas, few dust

Specifications			
<< Input / output >>			
Analog input	Pressure sensor	DC1 to 5V (Input impedance 100kΩ) DC4 to 20mA (Input impedance 250Ω) (optional)	Max. 4 points
	Temp. sensor	(Pt100Ω IEC Pub 751-1983, JIS C1604-1989, JIS C1606-1989) (optional)	Max. 2 points
Measuring range	Suction pressure	Display unit : MPa	-0.100 to 1.000MPa ( -0.100 to 3.000MPa ) *1
		Display unit : kgf/cm <sup>2</sup>	-1.02 to 10.20 kgf/cm <sup>2</sup> ( -1.02 to 30.60 kgf/cm <sup>2</sup> ) *1
		Display unit : bar	-1.00 to 10.00 bar ( -1.00 to 30.00 bar ) *1
		Display unit : PSI	-29.5 "Hg to 145.0 psi ( -30 "Hg to 435 psi ) *1
	Discharge Press., Oil Press., Intermediate Press. (optional)	Display unit : MPa	-0.10 to 3.00 MPa (0.00 to 5.00 MPa ) ( -0.10 to 4.00 MPa ) *1
		Display unit : kgf/cm <sup>2</sup>	-1.0 to 30.6 kgf/cm <sup>2</sup> (0.0 to 51.0 kgf/cm <sup>2</sup> ) ( -1.0 to 40.8 kgf/cm <sup>2</sup> ) *1
		Display unit : bar	-1.0 to 30.0 bar (0.0 to 50.0 bar ) ( -1.0 to 40.0 bar ) *1
		Display unit : PSI	-30 "Hg to 435 psi (0 to 725 psi ) ( -30 "Hg to 580 psi ) *1
	Discharge Temp., Oil Temp.	Display unit : °C	-20.0 to 180.0 °C (optional) (or -60.0 to 140.0 °C (optional))
		Display unit : °F	-4.0 to 356.0 °F (optional) (or -76.0 to 284.0 °C (optional))
Measuring accuracy		±0.5% / Full-Scale (not included sensor error)	
Power supply for sensor		DC12V , DC24V(optional) (can be supplied from MYPRO-CPI)	
Contact	Contact input	No voltage N.O. contact (100% lock running, external alarm, start-stop)	3 points
		No voltage N.C. contact (emergency stop)	1 point
	Contact output	No voltage N.O. contact (100% request, compressor run, alarm)	3 points
		No voltage N.C. contact (100% running)	1 point
		Voltage N.O. contact (capacity control SV1,2,3)	3 points
Contact load		Maximum AC 264V, 0.7A for both no voltage contact and voltage contact.	
Sampling cycle		32 Sample/sec (per 1channel)	

\*1 In item of " " (Compressor model) of configuration setup mode, when " " (6HK) and " " (6HK E) set, or In item of " " (Range of Suc. Press. Sensor) of configuration setup mode, when " " (-0.100 to 3.000 MPa) set.

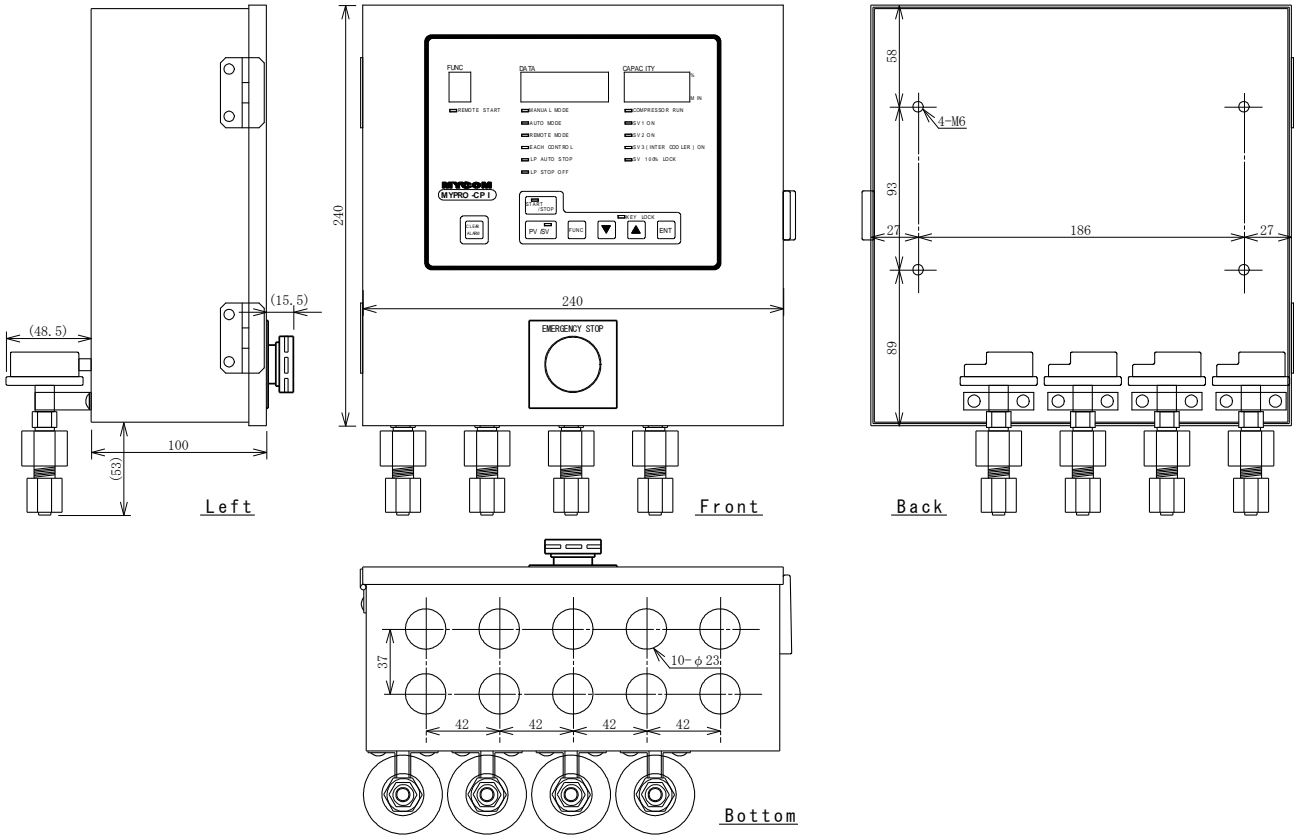


Specifications		
<< Communication >> (optional)		
Interface	Conformed to RS-485	
Communication system	4 wire Half-duplex (communication is available for 2 wire also)	
Synchronism	Asynchronous	
Band rate (bit/sec)	Selectable [ 300, 600, 1200, 2400, 4800, 9600, 19200, 38400 ]bps	
Character Format	Start bit	1 bit fixed
	Character bit	Select from [ 7,8 ]
	Parity bit	Select from [ N(None), O(Odd), E(Even) ]
	Stop bit	Select from [ 1,2 ]
Signal transmission Error detection	Parity check	Select from [ Yes(Odd/Even) / No ]
	CRC-16	[Yes] fixed (only MODBUS protocol RTU mode)
	LRC	[Yes] fixed (only MODBUS protocol ASCII mode)
Transmission distance	Total 150 m or less	
Communication protocol (communication code)	MYCOM original protocol type 0, 1 (both ASCII code) MODBUS protocol RTU mode (BINARY code) MODBUS protocol ASCII mode (ASCII code)	

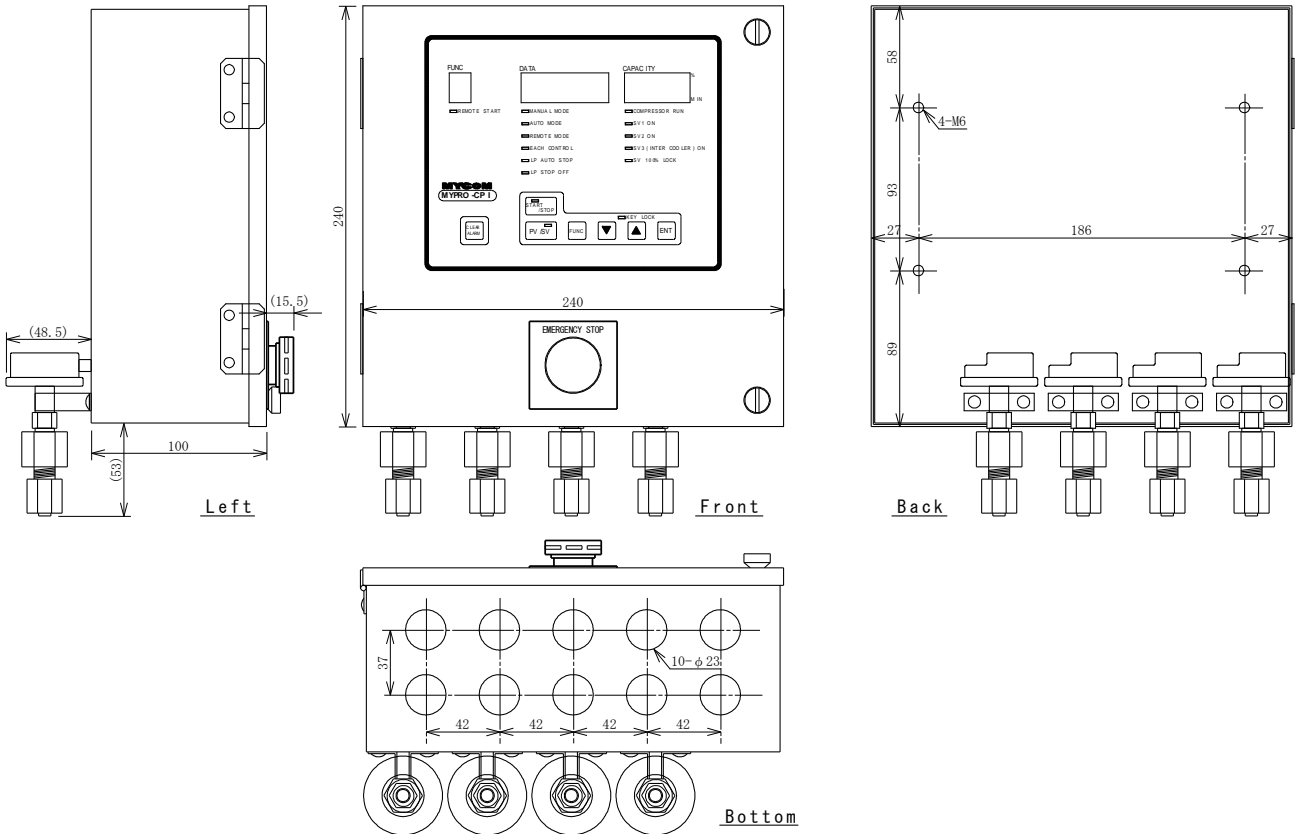
Specifications			
<< Display, key, switch >>			
Display method	7 segment LED display : [FUNC] display 1digit [DATA] display 4digit [CAPACITY] display 3digit  Lamps : [MANUAL MODE] lamp [COMPRESSOR RUN] lamp [AUTO MODE] lamp [SV1 ON] lamp [REMOTE MODE] lamp [SV2 ON] lamp [EACH CONTROL] lamp [SV3(INTERCOOLER) ON] lamp [LP AUTO STOP] lamp [SV 100% LOCK] lamp [LP STOP OFF] lamp [REMOTE START] lamp [START/STOP] lamp [PV/SV] lamp [KEY LOCK] lamp		
	[FUNC] key - - - Selection of function [PV/SV] key - - - Switch over of process value and set value [UP] key - - - Set value increase [DOWN] key - - - Set value decrease [ENT] key - - - Set value registration [START/STOP] key - - - Start and stop compressor [CLEAR ALARM] key - - - Alarm reset		
Dip switch (SW1 on CPU board)	Setup of all kinds of action		
Key lock	Setup by dip switch (SW1-1 on CPU board)		
Lamp test	Setup by dip switch (SW1-2 on CPU board)		
<< Others >>			
Protection device	Between Power supply and Voltage contact	Circuit protector, Thermal trip, rated current 2A	
Set value memory		Battery back up, EEPROM back up of some data	
	Standard model	CSA model	EN model
Power consumption	30VA Max.	40VA Max.	40VA Max
Outline dimensions (pressure sensor included)	H293mm x W240mm x D164mm	H293mm x W240mm x D164mm	H343mm x W240mm x D164mm
Weight (sensor and 3 joints included)	About 4Kg	About 5Kg	About 6kg

## 9. Outline dimensions

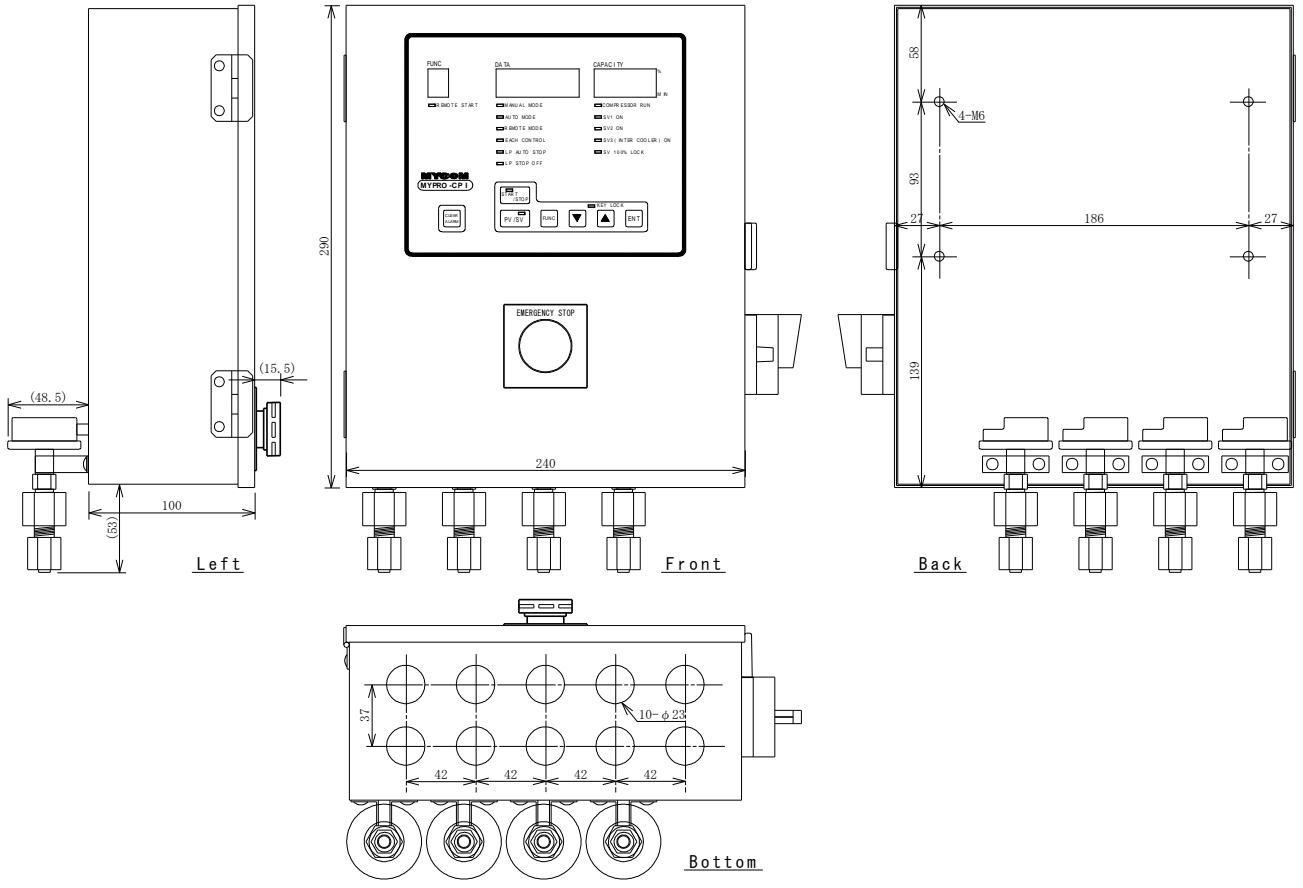
MYPRO -CP I Standard model



MYPRO -CP I CSA model



MYPRO -CP I EN model



**MYPRO-CPI Setup Sheet**

Ver.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_. Rel.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.

Customer : \_\_\_\_\_

Date : y\_\_\_\_\_m\_\_\_\_\_d\_\_\_\_\_

Controller Number : \_\_\_\_\_

**\* Configuration Setup**

		Initial Setup Value	Setup Value at Shipment
1	Compressor model	000 [ 0000 ] (F4K)	[ ]
(2)	Number of Capacity control SV " 0000 "(1) " 2000 "(2) " 3000 "(3)	[ 0000 ] (1)	[ ]
3	Display unit of Pressure/Temperature " 000.0 "(kgf/cm <sup>2</sup> , °C) " 000.0 "(MPa, °C) " 000.0 "(barG, °C) " 000.0 "(PSI/inHg, °F)	[ 0000 ] (kgf/cm <sup>2</sup> , °C)	[ ]
4	Control mode " 0000 "(Mode A) " 0000 "(Mode B)	[ 0000 ] (Mode A)	[ ]
5	Operation of contact input " 0000 "(A contact : Normal Open) " 0000 "(B contact : Normal Close) " 0000 "(Alarm input B contact : Alarm Normal Close)	[ 0000 ] (A contact : N.O.)	[ ]
6	Measure unit of pressure sensor " 0000 "(MPa) " 0000 "(kgf/cm <sup>2</sup> )	[ 0000 ] (MPa)	[ ]
7	Range of Suction Pressure sensor " 0000 "(-0.100 to 1.000 MPa) " 0000 "(-0.100 to 3.000 MPa)	[ 0000 ] (-0.100 to 1.000 MPa)	[ ]
(8)	Use of Intermediate pressure sensor " 0000 "(No Use) " 0000 "(Use)	[ 0000 ] (No Use)	[ ]

(To be continued to next page)

(Continued from previous page)

		Initial Setup Value	Setup Value at Shipment
(9)	Use of Temperature sensor " 0000 "(No Use) " 9999 "(Use)	000 [ 0000 ] (No Use)	[ ]
(10)	Range of Temperature sensor " 8888 "(-20 to 180°C) " 0000 "(-60 to 140°C)	888 [ 8888 ] (-20 to 180°C)	[ ]
11	Mode change after Alarm " 5689 "(stay at current mode) " 8888 "(MANUAL] mode)	888 [ 5689 ] (stay at current mode)	[ ]
(12)	Kind of data communication protocol " 0000 "(MYCOM original protocol 0) " 0001 "(MYCOM original protocol 1) " 0002 "(MODBUS RTU protocol) " 0003 "(MODBUS ASCII protocol)	000 [ 0000 ] (MYCOM original protocol 0)	[ ]
(13)	Permission of 0% load operation " 0000 "(prohibit) " 9999 "(permit)	000 [ 0000 ] (prohibit)	[ ]
(14)	Kind of Refrigerant (0% load operation limit time) " 0030 "(MYCOM original protocol 1) " 0020 "(MODBUS RTU protocol)	000 [ 0030 ] (Ammonia (10 minute))	[ ]
(15)	Alarm Clear on communication " 0000 "(prohibit) " 9999 "(permit)	000 [ 0000 ] (prohibit)	[ ]

### A. Usual Setup

		Initial Setup Value	Setup Value at Shipment
1	Running Start Pressure Set Value	0 [ 0.41 ] kgf/cm <sup>2</sup> , [ 0.040 ] MPa [ 0.40 ] bar , [ 5.8 ] psi	[ ]
2	Running Stop Pressure Set Value	0 [ 0.00 ] kgf/cm <sup>2</sup> , [ 0.000 ] MPa [ 0.00 ] bar , [ 0.0 ] psi	[ ]
(3)	Target Suction Pressure Set Value (for Mode B)	5 [ 1.02 ] kgf/cm <sup>2</sup> , [ 0.100 ] MPa [ 1.00 ] bar , [ 14.5 ] psi	[ ]
(4)	Capacity Control 1 Pressure Set Value (for Mode A)	5 025 (by comp. model) [ 1.02 ] kgf/cm <sup>2</sup> , [ 0.100 ] MPa [ 1.00 ] bar , [ 14.5 ] psi	[ ]
(5)	Capacity Control 2 Pressure Set Value (for Mode A)	5 050 (by comp. model) [ 1.53 ] kgf/cm <sup>2</sup> , [ 0.150 ] MPa [ 1.50 ] bar , [ 21.8 ] psi	[ ]
(6)	Capacity Control 3 Pressure Set Value (for Mode A)	5 095 (by comp. model) [ 2.04 ] kgf/cm <sup>2</sup> , [ 0.200 ] MPa [ 2.00 ] bar , [ 29.0 ] psi	[ ]
(7)	Capacity Control 4 Pressure Set Value (for Mode A)	5 000 (by comp. model) [ 2.55 ] kgf/cm <sup>2</sup> , [ 0.250 ] MPa [ 2.50 ] bar , [ 36.3 ] psi	[ ]
8	Capacity Control Dead Band Set Value	0 [ 0.20 ] kgf/cm <sup>2</sup> , [ 0.020 ] MPa [ 0.20 ] bar , [ 2.9 ] psi	[ ]
9	Control Cycle Set Value	0 [ 30 ] sec	[ ]
10	Operation Mode Setup	0 [ 0000 ]	[ ]

## B. ENG Setup

			Initial Setup Value	Setup Value at Shipment
1	High Discharge Pressure Alarm Set Value	888	[ 16.3 ] kgf/cm <sup>2</sup> , [ 1.60 ] MPa [ 16.0 ] bar , [ 232 ] psi	[ ]
2	Low Oil Pressure Alarm Set Value	888	[ 2.0 ] kgf/cm <sup>2</sup> , [ 0.20 ] MPa [ 2.0 ] bar , [ 29 ] psi	[ ]
3	High Intermediate Pressure Alarm Set Value	888	[ -1.02 ] kgf/cm <sup>2</sup> , [ -0.100 ] MPa [ -1.00 ] bar , [ -29.5 ] psi	[ ]
(4)	High Suction Pressure Alarm Set Value	888	[ -1.02 ] kgf/cm <sup>2</sup> , [ -0.100 ] MPa [ -1.00 ] bar , [ -29.5 ] psi	[ ]
5	Low Suction Pressure Alarm Set Value	888	[ -1.02 ] kgf/cm <sup>2</sup> , [ -0.100 ] MPa [ -1.00 ] bar , [ -29.5 ] psi	[ ]
(6)	High Discharge Temperature Alarm Set Value	888	[ 95.0 ] °C , [ 203.0 ] °F	[ ]
(7)	High Oil Temperature Alarm Set Value	888	[ 55.0 ] °C , [ 131.0 ] °F	[ ]
(8)	Low Discharge-Suction Differential Press. Alarm Set Value	885	[ 5.1 ] kgf/cm <sup>2</sup> , [ 0.50 ] MPa [ 5.0 ] bar , [ 73 ] psi	[ ]
(9)	Low Oil-Suction Differential Pressure Alarm Set Value	885	[ 5.1 ] kgf/cm <sup>2</sup> , [ 0.50 ] MPa [ 5.0 ] bar , [ 73 ] psi	[ ]
(10)	Oil cooler Liquid-Supply Oil Temp. Set Value	888	[ 95.0 ] °C , [ 203.0 ] °F	[ ]
11	Pump Down Stop Pressure Set Value	888	[ -0.41 ] kgf/cm <sup>2</sup> , [ -0.040 ] MPa [ -0.40 ] bar , [ -11.8 ] psi	[ ]
12	Capacity Control Delay Time Set Value	888	[ 30 ] sec	[ ]
13	LP Stop Delay Time Set Value	888	[ 20 ] sec	[ ]
14	Pump Down Stop Time Set Value	888	[ 1.0 ] minute	[ ]
15	Restart Interval Time Set Value	888	[ 5.0 ] minute	[ ]
16	Hunting Prevention Time Set Value	888	[ 15.0 ] minute	[ ]
(17)	Loading prohibition Intermediate Pressure Set Value	888	[ 5.1 ] kgf/cm <sup>2</sup> , [ 0.50 ] MPa [ 5.0 ] bar , [ 73 ] psi	[ ]
(18)	Compulsion unloading Intermediate Pressure Set Value	888	[ 5.6 ] kgf/cm <sup>2</sup> , [ 0.55 ] MPa [ 5.5 ] bar , [ 80 ] psi	[ ]
(19)	Loading prohibition Intermediate Pressure Set Value	888	[ 17.3 ] kgf/cm <sup>2</sup> , [ 1.70 ] MPa [ 17.0 ] bar , [ 247 ] psi	[ ]
(20)	Compulsion unloading Intermediate Pressure Set Value	888	[ 17.8 ] kgf/cm <sup>2</sup> , [ 1.75 ] MPa [ 17.5 ] bar , [ 254 ] psi	[ ]
(21)	Compulsion Running Start Suction Pressure Set Value	888	[ 8.15 ] kgf/cm <sup>2</sup> , [ 0.80 ] MPa [ 8.00 ] bar , [ 116 ] psi	[ ]
(22)	Compulsion Running Stop Suction Pressure Set Value	888	[ 4.07 ] kgf/cm <sup>2</sup> , [ 0.40 ] MPa [ 4.00 ] bar , [ 79.7 ] psi	[ ]
(23)	Compulsion Running Maximum Time Set Value	888	[ 120 ] sec	[ ]
(24)	0% load shift Discharge Temperature Set Value	888	[ 140.0 ] °C, [ 284.0 ] °F	[ ]
(25)	0% load shift Oil Temperature Set Value	888	[ 50.0 ] °C, [ 122.0 ] °F	[ ]
(26)	0% load High Dis. Temp. Alarm delay time Set Value	888	[ 60 ] sec	[ ]
27	LP Stop Permission Setup	888	[ 8888 ] (permit)	[ ]
28	Restart Time Release Permission Setup	888	[ 8888 ] (permit)	[ ]
(29)	Comm. address Set Value	888	[ 0 ]	[ ]
(30)	Comm. speed Set Value	888	[ 9600 ] x 10 bps	[ ]
(31)	Comm. character format Set value	888	[ 8888 ] (C8 PE S1)	[ ]
(32)	Comm. response delay time Set Value	888	[ 0 ] msec	[ ]



\* The item to which ( ) is attached by an Item Number is displayed by option and Setup of the configuration.

\* An initial value might be different according to the setting "888" and (Compressor model) in configuration setup mode.

[ software version history ]

software version	Date	Revision
Ver.1.00.09	1998.12.28	The product first lot.
Ver.1.00.10	1999. 3.12	Formula correction of the industrial unit of PSI/Hg unit. It corresponds to a current type pressure sensor. Initial value change of a pressure sensor. <i>Emergency Stop Input</i> correspondence.
Ver.1.00.11	1999. 7. 5	Correction of the compressor running limitation High oil temperature of K type compressor, and " $\bar{E}$ " setup upper range.
Ver.1.02.00	2001. 7.11	Addition to Communication Function. (PCB Revision : CP02)
Ver.1.02.01	2002. 1.21	Addition to Confirmation display of Configuration Correction of Running hour meter. (-32768~32767 -> 0~65535) Some bugs fixed.
Ver.1.02.02	2002. 7.31	Changed Alarm Upper Limit Setpoints. (for ME, only bar unit)
Ver.1.02.03	2003. 3.25	Addition to Intermediate Pressure Control. (for ME, only bar unit)
Ver.1.02.04	2003. 7.25	Some bugs fixed.
Ver.1.02.04C	2003.10. 2	Changed Discharge Temperature Alarm Upper Limit Setpoint. (for MCV special version)
Ver.1.02.05	2004. 2. 2	Test Version (not Release)
Ver.1.02.06	2005. 1. 6	Test Version (not Release)
Ver.1.02.07	2006. 8. 8	Addition to Discharge Pressure Control.
Ver.1.02.08	2006. 9.21	Test Version (Alarm and Offset) (not Release)
Ver.1.02.09	2006. 9.22	Test Version (Memory Map changed) (not Release)
Ver.1.02.10	2007. 4.16	Addition to Compressor type "6HK"
Ver.1.02.11	2007. 6.13	Changed High Intermediate Pressure Alarm Upper Limit Setpoints. Integration of Upper and Lower limit Setpoints. Addition to Intermediate Pressure Control. (all unit) Some bugs fixed.
Ver.1.02.12	2007. 7.24	Trouble where Low Suction Pressure Alarm Set Value cannot be changed is corrected.
Ver.1.02.13	2008. 4.30	Addition to Compressor type "6HK E" Dis. and Oil pressure sensors range of "6HK" are changed to "0.00 to 5.00 MPa". Dis. and Oil pressure sensors range of "6HK E" are "-0.10 to 4.00 MPa".
Ver.1.03.01	2009.11.20	Addition to Compressor type "4M", "6M", "8M" The temp. range of R/V converter is changed to "-20 to 180°C". The displaying the operation of capacity control limiter function is changed. Addition to "Compulsion Running for mechanical seal protection".
Ver.1.03.02	2010. 6.29	Addition to Compressor type "62M"
Ver.1.03.03	2010. 8.10	Ver.1.03.02 bugs fixed.
Ver.1.03.04	2010. 8.23	Ver.1.03.03 bugs fixed.
Ver.1.03.05	2010. 9.28	Ver.1.03.01 - Ver.1.03.04 bugs fixed. Trouble of the temperature display is corrected. (when display unit "psi, °F" and temp. range "-20 to 180°C")
Ver.1.03.06	2011. 9.22	Ver.1.03.01 - Ver.1.03.04 bugs fixed.
Ver.1.03.07	2013. 5.21	Addition to "0% load operation limit" for M-type.
Ver.1.03.08	2013. 7.30	Revised "0% load operation limit" for M-type. Correction of communication control.
Ver.1.03.09	2013. 8.12	Addition to "Alarm Clear by communication"
Ver.1.03.10	2013. 8.30	The range of Suction Pressure sensor was changed to the selection type.

[ Instruction manual revision history ]

	Date	Revision
First edition, 1st print	1998.12.28	First edition ( Ver.1.00 Dev.0.09 )
Second edition, 1st print	1999. 3.22	Corresponding to Ver.1.00 Dev.0.10
Second edition, 2nd print	1999. 5.15	Revision for improvement
Second edition, 3rd print	1999. 7. 7	Corresponding to Ver.1.00 Dev.0.11
Second edition, 4th print	2000. 9. 4	Revision for drawing of "Cascade Operation"
Third edition, 1st print	2001.11. 1	Corresponding to Ver.1.02 Dev.0.00
		Correction of Set value of "   " (High Intermediate Pressure Alarm)of 42W
		Revision for addition to Communication Function
Third edition, 2nd print	2002. 1.21	Corresponding to Ver.1.02 Dev.0.01
		Revision for English manual making
Forth edition, 1st print	2007. 5.21	Corresponding to Ver.1.02 Dev.0.10
Forth edition, 2nd print	2007. 6.13	Corresponding to Ver.1.02 Dev.0.11
Forth edition, 3rd print	2007. 7.24	Corresponding to Ver.1.02 Dev.0.12
Forth edition, 4th print	2007. 9.18	Revision for improvement
Fifth edition, 1st print	2008. 4.30	Corresponding to Ver.1.02 Dev.0.13
Fifth edition, 2st print	2009. 7.23	Revision for according to CPU board revision (CP02 to PR11)
		Correction of MYCOM original protocol response sentence
		Correction of MODBUS protocol holding register reference number
Fifth edition, 3rd print	2009. 9.29	Correction of MODBUS protocol holding register writable device
Fifth edition, 4th print	2009.10. 1	Correction of "Movement of Capacity Control SV Output"
		Correction of "Connection of RS-485 communication port"
Sixth edition, 1st print	2009.11.20	Corresponding to Ver.1.03 Dev.0.01
Sixth edition, 2nd print	2010. 6.29	Corresponding to Ver.1.03 Dev.0.02
Sixth edition, 3rd print	2010. 8.10	Corresponding to Ver.1.03 Dev.0.03
Sixth edition, 4th print	2010. 8.23	Corresponding to Ver.1.03 Dev.0.04
Sixth edition, 5th print	2010. 9.28	Corresponding to Ver.1.03 Dev.0.05
Sixth edition, 6th print	2012.12. 3	Corresponding to Ver.1.03 Dev.0.06
		Correction of " The sensor failure continuance time"
		Correction of "The explanation of the MODBUS protocol"
Seventh edition, 1st print	2013. 5.21	Corresponding to Ver.1.03 Dev.0.07
Eighth edition, 1st print	2013. 7.30	Corresponding to Ver.1.03 Dev.0.08
Ninth edition, 1st print	2013. 8.12	Corresponding to Ver.1.03 Dev.0.09
Tenth edition, 1st print	2013. 8.30	Corresponding to Ver.1.03 Dev.0.10

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