Hydraulic data

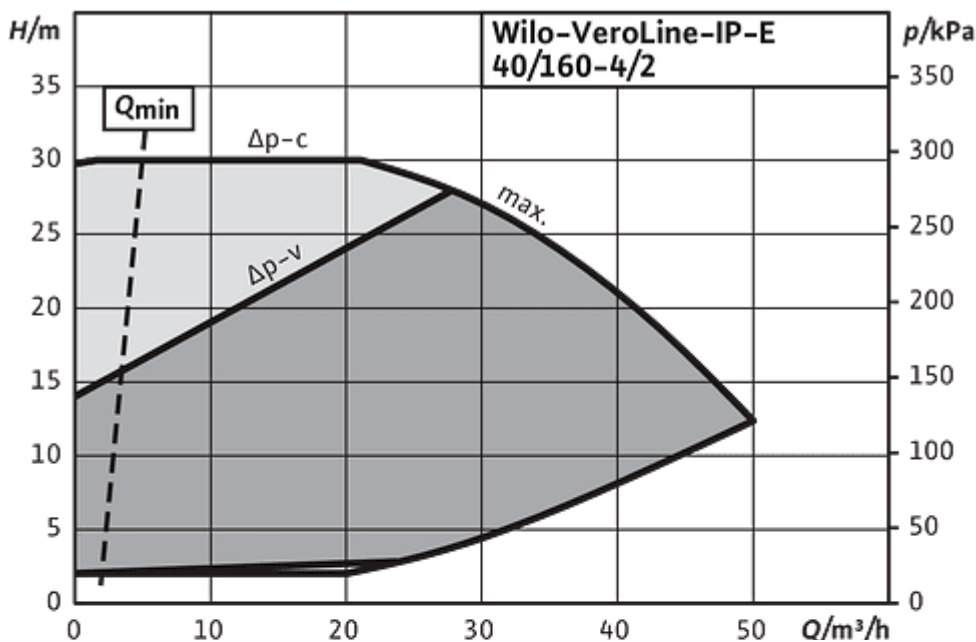|	
Minimum efficiency index (MEI)	0.4
Maximum operating pressure PN	10 bar
Min. fluid temperature T_{min}	-20 °C
Max. fluid temperature T_{max}	120 °C
Min. ambient temperature T_{min}	0 °C
Max. ambient temperature T_{max}	40 °C

Motor data

Mains connection	3~380 V, 50/60 Hz
Motor efficiency class	IE4
Rated power P_2	4.00 kW
Rated current I_N	12.00 A
Rated speed n	2900 1/min
Max. speed n_{max}	2900 1/min
Interference emission	EN 61800-3
Interference immunity	EN 61800-3
Insulation class	F
Protection class motor	IP55
Integrated full motor protection	-
Threaded cable connection	1 x M16x1.5

Materials

Pump housing	Cast iron
Impeller	PPE/PS-GF30
Shaft	Stainless steel
Shaft seal	AQ1EGG
Lantern	Cast iron

Approved liquids (other liquids upon request)

Heating water (as per VDI 2035)	yes
Heat carrier oil	Special version at additional charge
Cooling and cold water circulation systems	yes
Water-glycol mixtures (at 20 – 40 vol. % glycol and fluid temperature ≤ 40 °C)	yes

Installation dimensions

Port-to-port length $L0$	320 mm
Pipe connection on the suction side DNs	DN 40
Pipe connection on the pressure side DNd	DN 40

VeroLine-IP-E 40/160-4/2

Wilo-VeroLine-IP-E 40/160-4/2
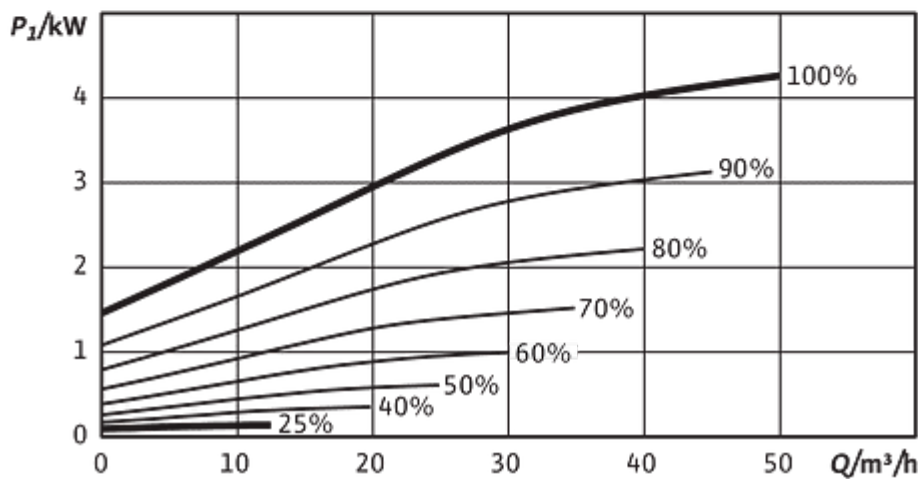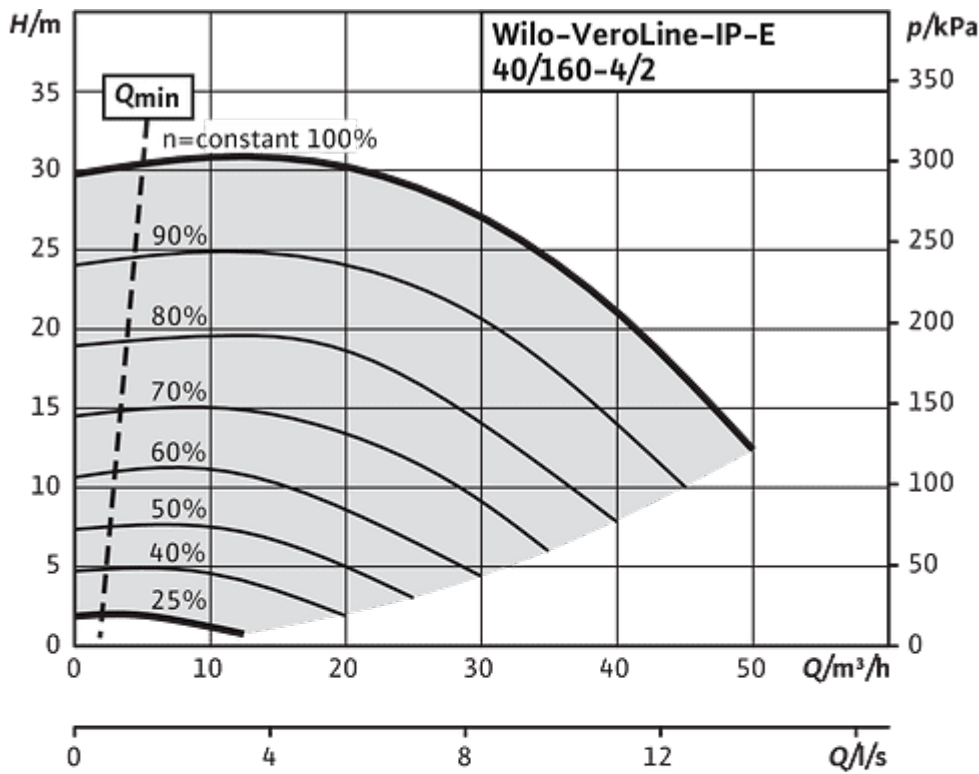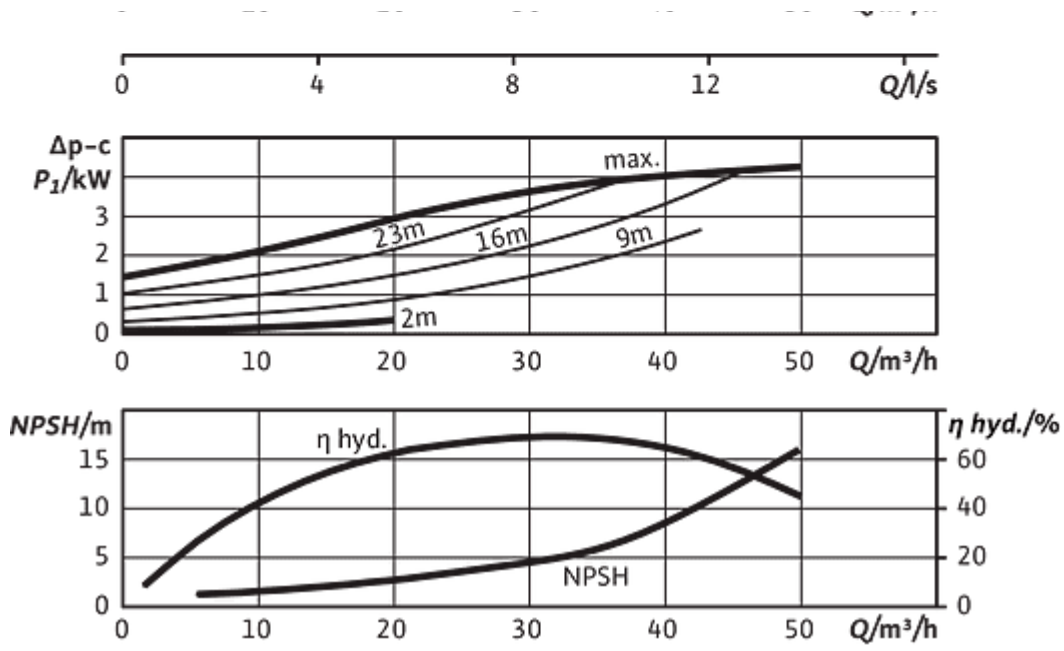
VeroLine-IP-E 40/160-4/2
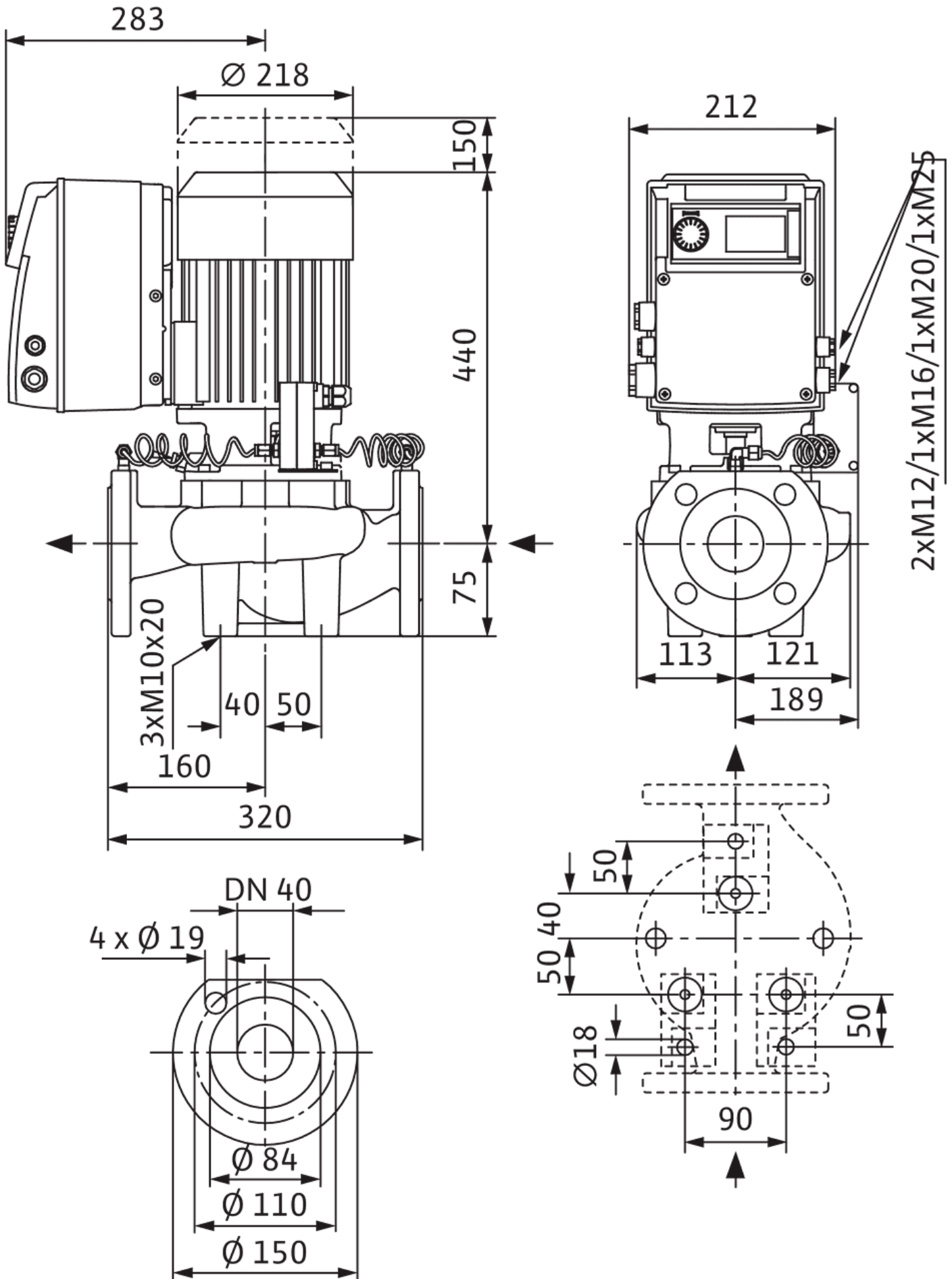
Note:

Housing with feet for installation on a base and drilled holes M10, brackets on request.
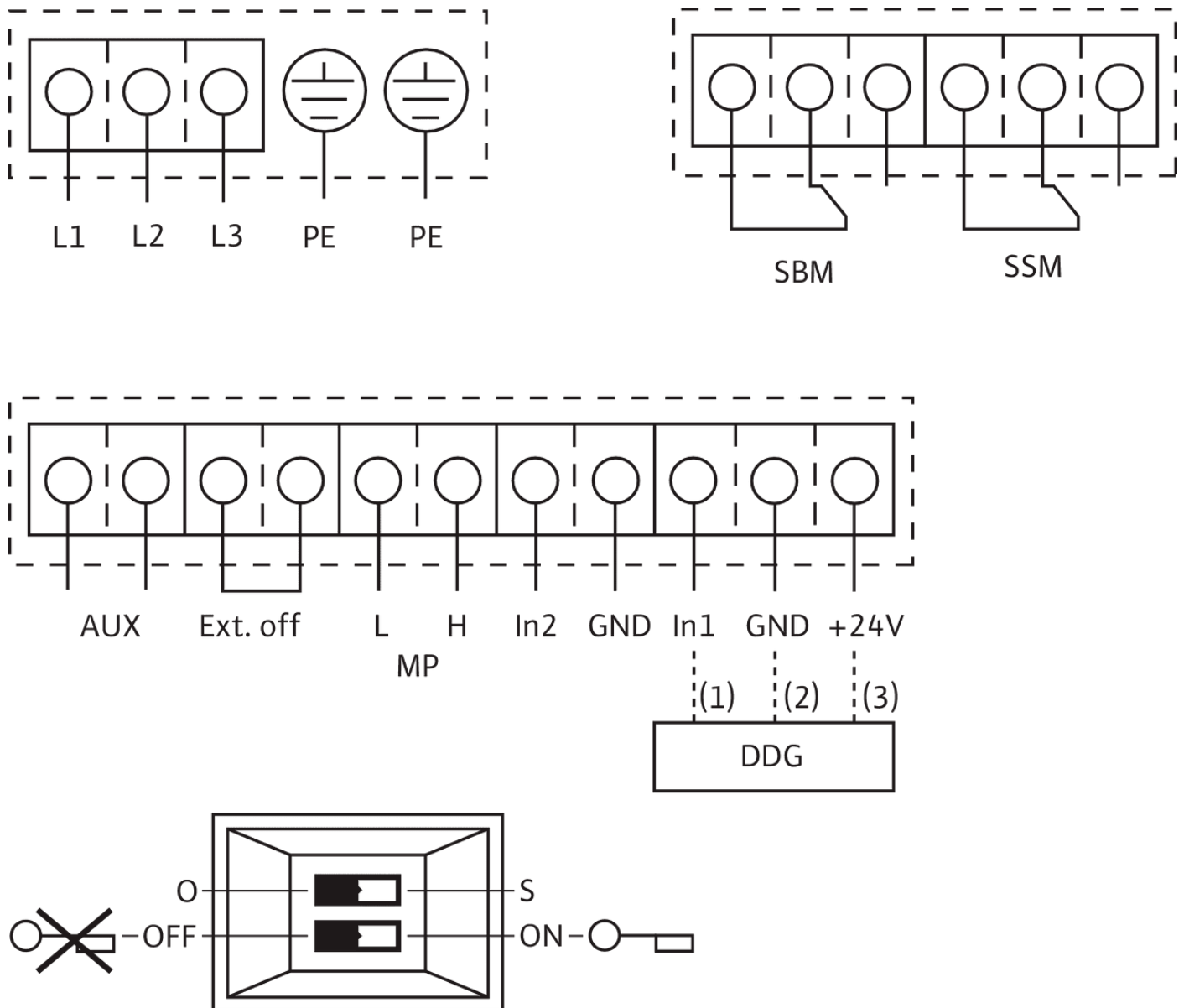
IL-E

L1, L2, L3:   Mains connection: 3~440 V ±10%, 50/60 Hz; 3~400 V ±10%, 50/60 Hz; 3~380 V -5%/+10%, 50/60 Hz

PE: Protective conductor connection

DDG: Connection for differential pressure sensor

In1 (1):   Actual value input 0-10 V/0-20 mA; 2-10 V/4-20 mA

GND (2):   Ground connection for In1 and In2

+ 24 V (3):   DC voltage output for an external consumer/sensor. Max load 60 mA

In2:   Setpoint input 0-10 V/0-20 mA; 2-10 V/4-20 mA

MP: Multi-pump, interface for dual pump management

Ext. off: Control input "Overriding Off"￼The pump can be switched on or off via an external, potential-free contact (24 V DC/10 mA).

SBM:*   Potential-free collective run signal (changeover contact according to VDI 3814)

SSM:*   Potential-free collective fault signal (changeover contact according to VDI 3814)

aux: External pump cycling (only with dual pump ⬜operation). Pump cycling can be performed using an external, potential-free contact (24 VDC/10 mA)

DIP switch: 1: Switchover between operation (O) and service mode (S)⬜2: Activate/deactivate the menu for access disable

Optional: IF-Modules for connection to the building automation

* Load capacity of contacts for SBM and SSM:

min.: 12 V DC/10 mA

max.: 250 V AC/1 A

Product data

Brand	Wilo
Product description	VeroLine-IP-E 40/160-4/2
Article number	2158819
EAN number	4048482647210
Colour	Green
Minimum order quantity	1
Date of sales availability	2016-03-01

Dimension, weight

Length with packaging	795 mm
Length L	515 mm
Height with packaging	615 mm
Height H	443 mm
Width with packaging	515 mm
Width W	302 mm
Gross weight, approx. m	61.3 kg
Net weight, approx. m	52 kg

Packaging

Number per layer	1
Packaging property	Transport packaging
Packaging type	Cardboard box
Pieces per pallet	1

Glanded centrifugal pump with in-line design for pipe installation with built-in frequency converter for electronic control for constant or variable differential pressure (dp-c/dp-v). Three-phase AC motor with frequency converter.

Design:

> Single-stage low-pressure centrifugal pump with one-piece shaft

> Spiral housing, in-line design

> PN 16 flange – drilled according to EN 1092-2

> Pressure measuring connections (R 1/8) for mounted differential pressure sensor (version ...-R1 without differential pressure sensor)

> Pump housing and motor flange with cataphoretic coating as standard

> Mechanical seal for water feed up to T=120 °C. A glycol admixture of 20 to 40% by vol. is permitted up to Tmax = +40 °C. Other mechanical seals or other fluids/temperatures on request.

Accessories:

> Mounting brackets for fixing to the foundation

> IR-Monitor

> IR-Stick

> IF module PLR

> IF module LON

> IF module Modbus

> IF module BACnet

> IF module CAN

> Control systems VR-HVAC/CCe-HVAC/SCe-HVAC

> Differential pressure sensor (DDG) sets 0-10 V for pumps in version ...-R1

Standard equipment:

> One-button manual operation level for:
>> Pump On/Off
>> Setpoint and speed adjustment
>> Selecting the control mode: Δp-c (constant differential pressure), Δp-v (variable differential pressure), PID controller, n-constant (constant speed)
>> Selection of operating mode in dual pump operation (main/standby operation, parallel operation)
>> Configuration of operating parameters
>> Fault acknowledgement

> Pump display for displaying:
>> Control mode
>> Setpoint (e.g. differential pressure or speed)
>> Error and warning messages

Operating data

Fluid media	Water
Fluid temperature T	-20 °C
Ambient temperature T	0 °C
Maximum operating pressure PN	10 bar
Minimum efficiency index (MEI)	0.4

Motor data

Motor efficiency class	IE4
Interference emission	EN 61800-3
Interference immunity	EN 61800-3
Mains connection	3~380 V, 50/60 Hz
Rated power P_2	4000.0 W
Max. speed n_{max}	2900 1/min
Rated current I_N	12.00 A
Insulation class	F
Protection class motor	IP55
Motor protection	

Materials

Pump housing	Cast iron
Impeller	PPE/PS-GF30
Shaft	Stainless steel
Shaft seal	AQ1EGG
Lantern	Cast iron

Installation dimensions

Pipe connection on the suction side DNs	DN 40
Pipe connection on the pressure side DNd	DN 40
Port-to-port length $L0$	320 mm

Information for order placements

Brand	Wilo
Product description	VeroLine-IP-E 40/160-4/2
Net weight, approx. m	52 kg
Article number	2158819

> Actual values (e.g. power consumption, actual value of the sensor)

> Operating data (e.g. operating hours, energy consumption)

> Status data (e.g. status of SSM and SBM relay)

> Device data (e.g. pump name)

Additional functions:

> Interfaces: Control input "Overriding Off", "External pump cycling" (effective only in dual pump operation), analogue input 0–10 V, 2–10 V, 0–20 mA, 4–20 mA for control mode (DDC) or for remote setpoint adjustment, analogue input 0–10 V, 2–10 V, 0–20 mA, 4–20 mA for actual value signal of the pressure sensor, Infrared interface for wireless communication with the operating and service unit Wilo-IR-Stick/IR-Monitor, plug-in position for Wilo IF-Module Modbus, BACnet, CAN, PLR, LON for connecting to the building automation, configurable, potential-free fault and operating/ready message, interface for dual pump communication

> Adjustable time interval for pump cycling (in dual pump mode)

> Integrated full motor protection

> Different operating modes for heating mode (HV) or air-conditioning mode (AC)

> Access disable

> Different operation levels: Standard / Service