

# Model: SH380

## Data

---

**Type: Hermetic scroll compressors**

**Producer: Danfoss-Maneurop**

**Series: SH**

## Model: SH380

### Technical data

|  |       |
|--|-------|
| Displacement [m <sup>3</sup> /h]:                  | 60    |
| Swept volume [cm <sup>3</sup> /rev]:               | 345   |
| RPM [min <sup>-1</sup> ]:                          | 2900  |
| Weight [kg]:                                       | 164   |
| Oil charge [dm <sup>3</sup> ]:                     | 7,2   |
| Oil type:  | 160SZ |
| Maximum system test pressure low side / high side: | 30/45 |
| Maximum number of starts without softstart [1/h]:  | 12    |
| Refrigerant charge limit [dm <sup>3</sup> ]:       | 14,5  |
| Sound power [dB]:                                  | 84    |
| Refrigerant:                                       | R410A |

### Connections

|  | <u>milimeters</u> | <u>inches</u> |
|--|-------------------|---------------|
| Suction connection with supplied sleeve:   | 41                | 1 5/8"        |
| Discharge connection with supplied sleeve: | 35                | 1 3/8"        |

# Model: SH380

## Capacity

R410A

### Cooling capacity [W]

| $t_c \setminus t_e$ | -25    | -20    | -15    | -10    | -5     | 0       | 5       | 10      | 15      |
|---------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 20                  | 38 730 | 47 538 | 57 973 | 70 235 | 84 525 | 101 046 | 119 998 | -       | -       |
| 25                  | 36 775 | 45 464 | 55 692 | 67 662 | 81 574 | 97 629  | 116 028 | 136 973 | -       |
| 30                  | 34 685 | 43 197 | 53 162 | 64 780 | 78 255 | 93 786  | 111 574 | 131 822 | 154 731 |
| 35                  | 32 482 | 40 758 | 50 400 | 61 610 | 74 589 | 89 537  | 106 657 | 126 149 | 148 215 |
| 40                  | -      | 38 168 | 47 429 | 58 172 | 70 596 | 84 904  | 101 297 | 119 975 | 141 141 |
| 45                  | -      | 35 446 | 44 269 | 54 485 | 66 298 | 79 907  | 95 514  | 113 320 | 133 527 |
| 50                  | -      | -      | 40 939 | 50 572 | 61 713 | 74 565  | 89 328  | 106 204 | 125 394 |
| 55                  | -      | -      | -      | 46 451 | 56 864 | 68 900  | 82 761  | 98 648  | 116 763 |
| 60                  | -      | -      | -      | -      | 51 770 | 62 932  | 75 833  | 90 673  | 107 653 |
| 65                  | -      | -      | -      | -      | -      | 56 681  | 68 563  | 82 298  | 98 087  |

### Power input [W]

| $t_c \setminus t_e$ | -25    | -20    | -15    | -10    | -5     | 0      | 5      | 10     | 15     |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20                  | 13 659 | 13 676 | 13 709 | 13 741 | 13 753 | 13 729 | 13 652 | -      | -      |
| 25                  | 15 199 | 15 211 | 15 253 | 15 307 | 15 356 | 15 383 | 15 371 | 15 303 | -      |
| 30                  | 16 862 | 16 855 | 16 892 | 16 956 | 17 028 | 17 093 | 17 132 | 17 130 | 17 068 |
| 35                  | 18 703 | 18 664 | 18 683 | 18 742 | 18 824 | 18 912 | 18 989 | 19 039 | 19 043 |
| 40                  | -      | 20 692 | 20 678 | 20 719 | 20 798 | 20 896 | 20 998 | 21 085 | 21 142 |
| 45                  | -      | 22 993 | 22 934 | 22 944 | 23 005 | 23 100 | 23 212 | 23 324 | 23 420 |
| 50                  | -      | -      | 25 505 | 25 470 | 25 499 | 25 578 | 25 687 | 25 810 | 25 931 |
| 55                  | -      | -      | -      | 28 352 | 28 337 | 28 384 | 28 477 | 28 598 | 28 730 |
| 60                  | -      | -      | -      | -      | 31 572 | 31 575 | 31 638 | 31 743 | 31 873 |
| 65                  | -      | -      | -      | -      | -      | 35 204 | 35 223 | 35 299 | 35 413 |

### Current [A]

| $t_c \setminus t_e$ | -25   | -20   | -15   | -10   | -5    | 0     | 5     | 10    | 15    |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 20                  | 28.67 | 28.76 | 28.78 | 28.74 | 28.66 | 28.55 | 28.42 | -     | -     |
| 25                  | 30.53 | 30.67 | 30.75 | 30.77 | 30.75 | 30.71 | 30.66 | 30.61 | -     |
| 30                  | 32.49 | 32.67 | 32.78 | 32.85 | 32.88 | 32.89 | 32.89 | 32.91 | 32.95 |
| 35                  | 34.65 | 34.85 | 34.99 | 35.08 | 35.15 | 35.19 | 35.24 | 35.30 | 35.39 |
| 40                  | -     | 37.34 | 37.49 | 37.59 | 37.67 | 37.74 | 37.81 | 37.90 | 38.02 |
| 45                  | -     | 40.24 | 40.38 | 40.48 | 40.56 | 40.64 | 40.72 | 40.82 | 40.96 |
| 50                  | -     | -     | 43.78 | 43.87 | 43.93 | 43.99 | 44.07 | 44.17 | 44.31 |
| 55                  | -     | -     | -     | 47.85 | 47.89 | 47.92 | 47.98 | 48.06 | 48.19 |
| 60                  | -     | -     | -     | -     | 52.54 | 52.54 | 52.55 | 52.60 | 52.70 |
| 65                  | -     | -     | -     | -     | -     | 57.95 | 57.91 | 57.91 | 57.96 |

# Model: SH380

## Capacity

### Mass flow [kg/h]

| $t_c \setminus t_e$ | -25    | -20    | -15      | -10      | -5       | 0        | 5        | 10       | 15       |
|---------------------|--------|--------|----------|----------|----------|----------|----------|----------|----------|
| 20                  | 679.85 | 830.60 | 1 003.93 | 1 203.42 | 1 432.68 | 1 695.30 | 1 994.89 | -        | -        |
| 25                  | 673.12 | 826.36 | 1 002.11 | 1 203.99 | 1 435.57 | 1 700.47 | 2 002.28 | 2 344.60 | -        |
| 30                  | 663.81 | 818.88 | 996.42   | 1 200.01 | 1 433.27 | 1 699.79 | 2 003.17 | 2 347.00 | 2 734.89 |
| 35                  | 651.96 | 808.20 | 986.86   | 1 191.53 | 1 425.80 | 1 693.29 | 1 997.58 | 2 342.27 | 2 730.97 |
| 40                  | -      | 794.34 | 973.47   | 1 178.55 | 1 413.20 | 1 680.99 | 1 985.54 | 2 330.44 | 2 719.29 |
| 45                  | -      | 777.34 | 956.28   | 1 161.12 | 1 395.47 | 1 662.93 | 1 967.08 | 2 311.53 | 2 699.88 |
| 50                  | -      | -      | 935.31   | 1 139.26 | 1 372.67 | 1 639.12 | 1 942.22 | 2 285.57 | 2 672.77 |
| 55                  | -      | -      | -        | 1 113.00 | 1 344.80 | 1 609.61 | 1 911.00 | 2 252.59 | 2 637.98 |
| 60                  | -      | -      | -        | -        | 1 311.91 | 1 574.41 | 1 873.44 | 2 212.62 | 2 595.54 |
| 65                  | -      | -      | -        | -        | -        | 1 533.55 | 1 829.57 | 2 165.68 | 2 545.48 |

### C.O.P. [W/W]

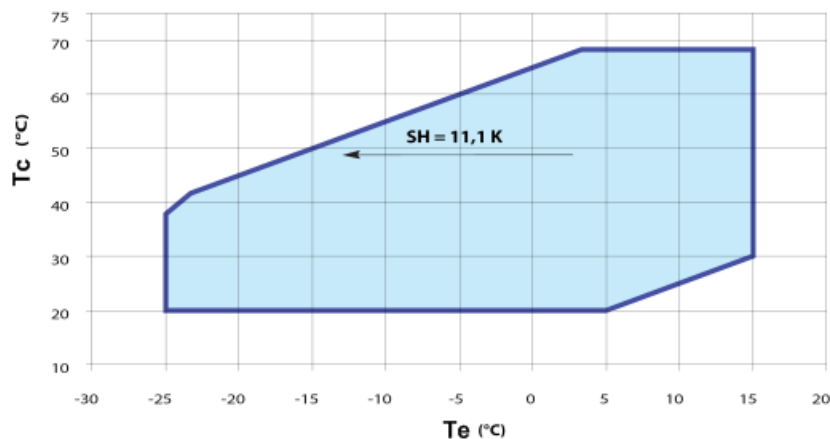
| $t_c \setminus t_e$ | -25  | -20  | -15  | -10  | -5   | 0    | 5    | 10   | 15   |
|---------------------|------|------|------|------|------|------|------|------|------|
| 20                  | 2.84 | 3.48 | 4.23 | 5.11 | 6.15 | 7.36 | 8.79 | -    | -    |
| 25                  | 2.42 | 2.99 | 3.65 | 4.42 | 5.31 | 6.35 | 7.55 | 8.95 | -    |
| 30                  | 2.06 | 2.56 | 3.15 | 3.82 | 4.60 | 5.49 | 6.51 | 7.70 | 9.07 |
| 35                  | 1.74 | 2.18 | 2.70 | 3.29 | 3.96 | 4.73 | 5.62 | 6.63 | 7.78 |
| 40                  | -    | 1.84 | 2.29 | 2.81 | 3.39 | 4.06 | 4.82 | 5.69 | 6.68 |
| 45                  | -    | 1.54 | 1.93 | 2.37 | 2.88 | 3.46 | 4.11 | 4.86 | 5.70 |
| 50                  | -    | -    | 1.61 | 1.99 | 2.42 | 2.92 | 3.48 | 4.11 | 4.84 |
| 55                  | -    | -    | -    | 1.64 | 2.01 | 2.43 | 2.91 | 3.45 | 4.06 |
| 60                  | -    | -    | -    | -    | 1.64 | 1.99 | 2.40 | 2.86 | 3.38 |
| 65                  | -    | -    | -    | -    | -    | 1.61 | 1.95 | 2.33 | 2.77 |

Operating conditions: superheating: 11.1 K, subcooling: 8.3 K

$t_c$  - Condensing temperature [°C]

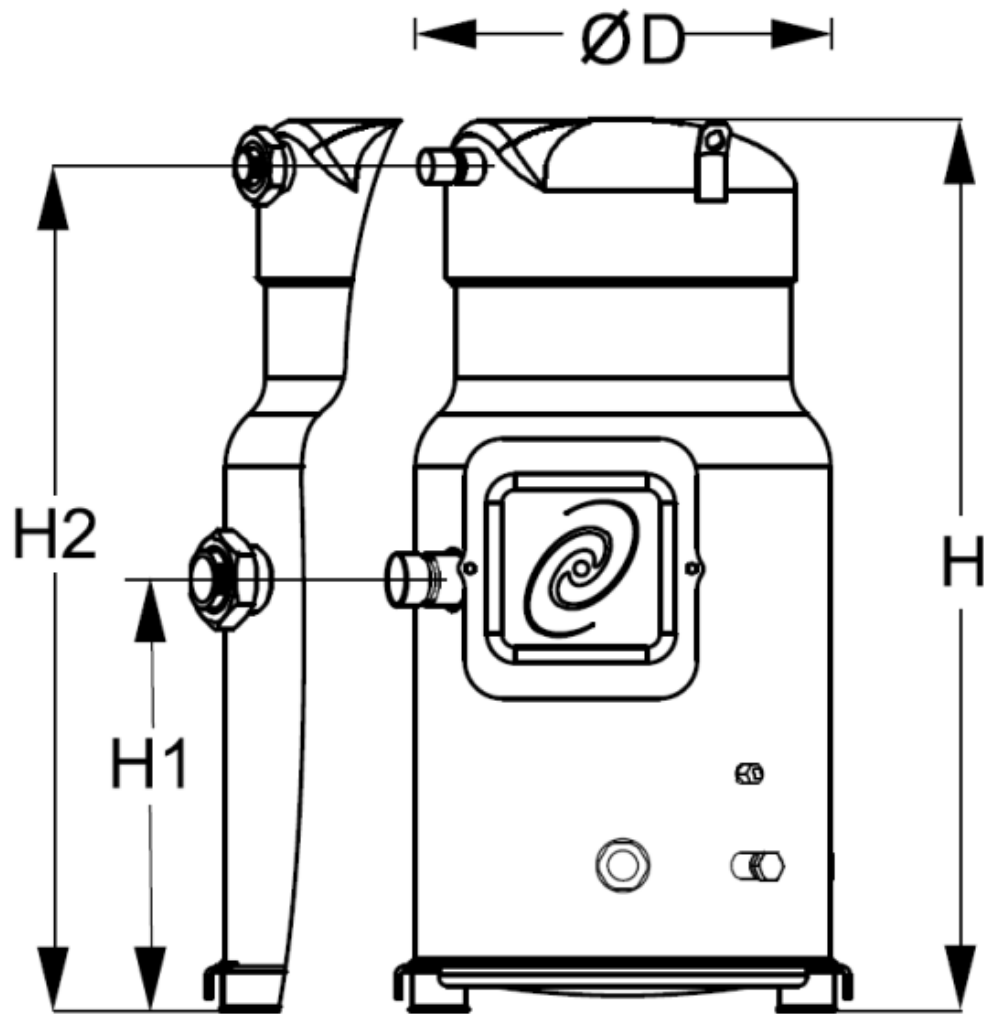
$t_e$  - Evaporating temperature [°C]

### Application range



# Model: SH380

## Dimensions



|          |       |
|----------|-------|
| D [mm]:  | 333,2 |
| H [mm]:  | 754,8 |
| H1 [mm]: | 330,5 |
| H2 [mm]: | 695,8 |

# Model: SH380

Image

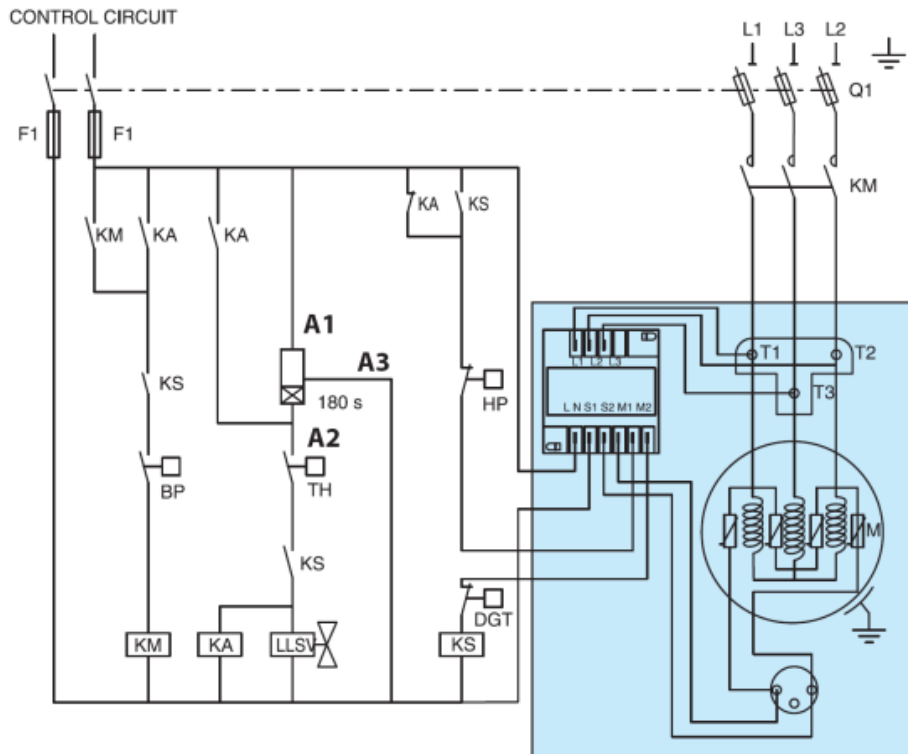
---



### Single phase power supply

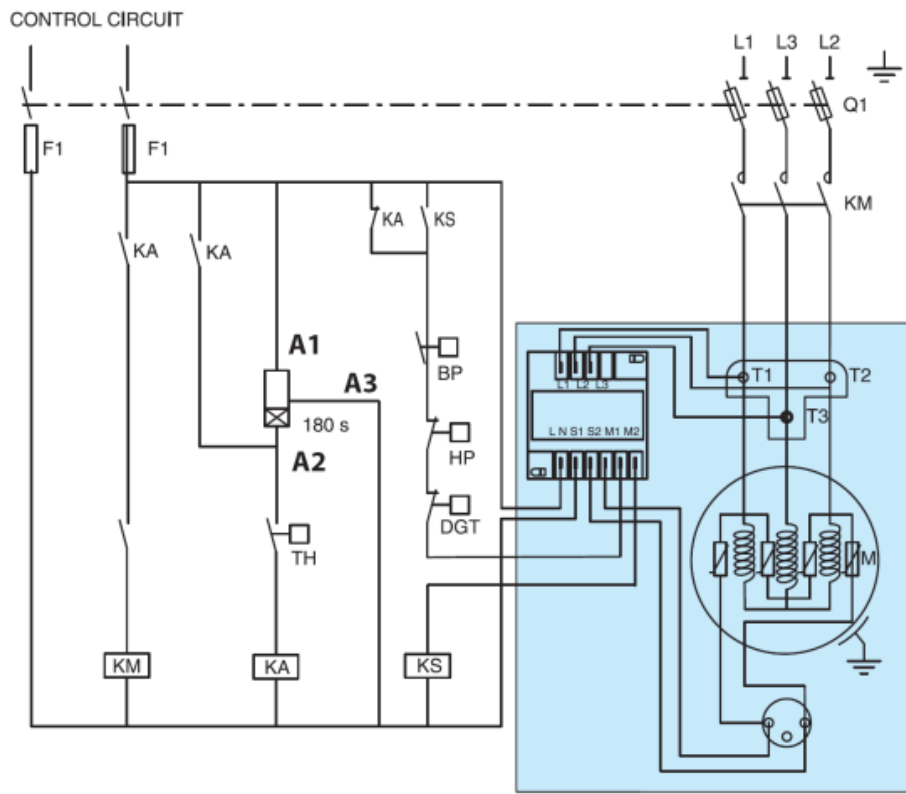
Motor voltage code: 4  
Power supply: 400V/3/50Hz  
Maximum Continuous Current (MCC) [A]: 61,5

### Wiring diagram with pump-down cycle



- TH: Control device
- 180 s: Optional short cycle timer (3min) 5 pts
- KA: Control relay
- LLSV: Liquid Line Solenoid valve
- KM: Compressor contactor
- KS: Safety lock out relay
- BP: Pump-down control and low pressure switch
- HP: High pressure safety switch
- Q1: Fused disconnect
- F1: Fuses / S: External overload protection
- F2: External overload protection
- M: Compressor's engine
- thM: Motor safety thermostat
- DGT: Discharge gas thermostat
- MPM: Motor Protection Module
- S: Thermistor chain

### Wiring diagram without pump-down cycle



TH: Control device

180 s: Optional short cycle timer (3min) 5 pts

KA: Control relay

LLSV: Liquid Line Solenoid valve

KM: Compressor contactor

KS: Safety lock out relay

BP: Pump-down control and low pressure switch

HP: High pressure safety switch

Q1: Fused disconnect

F1: Fuses / S: External overload protection

F2: External overload protection

M: Compressor's engine

thM: Motor safety thermostat

DGT: Discharge gas thermostat

MPM: Motor Protection Module

S: Thermistor chain