

## SE1.110.200.220.4.52M.H.N.51D

Grundfos Pump 98145022



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Please contact us for more information, or visit our website

<https://www.lenntech.com/grundfos/SESLFAM/98145022/SE1-110-200-220-4-52M-H-N-51D.html>

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| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|          | 1    | <p><b>SE1.110.200.220.4.52M.H.N.51D</b></p>  <p><b>Note! Product picture may differ from actual product</b></p> <p>Product No.: <a href="#">98145022</a></p> <p>Non-self-priming, single-stage, centrifugal pump designed for handling wastewater, process water and unscreened raw sewage.</p> <p>The pump is designed for intermittent and continuous operation. The cooling jacket ensures that the pump can operate submerged or dry installed without motor cooling. The revolutionary S-tube® impeller provides free spherical passage of solids up to 110 mm and suitable for wastewater with a dry matter content of up to 3 %.</p> <p>For installation on auto coupling, the Grundfos SmartSeal gasket system provides a leak-proof connection.</p> <p>The pump comes with a high efficient Grundfos blueflux® motor made with IE3 components.</p> <p><b>Further product details</b></p> <p>Typical applications are transfer of liquid, such as:</p> <ul style="list-style-type: none"> <li>- large quantities of drainage and surface water</li> <li>- domestic wastewater with discharge from toilets</li> <li>- wastewater from commercial buildings without discharge from toilets</li> <li>- sludge-containing industrial wastewater.</li> </ul> <p>The pump is ideal for the pumping of the above liquids from for instance:</p> <ul style="list-style-type: none"> <li>- municipal network pumping stations</li> <li>- raw water intake systems</li> <li>- wastewater treatment plants</li> <li>- public buildings</li> <li>- blocks of flats</li> <li>- factories/industry.</li> </ul> <p>The pump is suitable for both temporary and permanent installation. The lifting brackets fitted on the pumps enables easy transportation to and installation on the installation site.</p> <p><b>Pump</b></p> <p>The pump is fitted with an easy-to-clean stainless steel motor sleeve (EN 1.4301) that is extremely robust and impact-resistant. The pump housing and motor top are made in cast iron (EN-GJL-250) and the impeller is made of ductile cast-iron (EN-GJS-500).</p> <p>All surfaces of the cast iron parts are protected with cataphoresis coating. The surface of the cast iron pump parts is afterwards painted with environmental friendly powder coating (type NCS 9000N (black), gloss code 30, thickness 100 µm) which ensures high impact and corrosion protection. The final pump is assembled from already painted parts which ensures that no rust or scale can be formed in grooves between parts, etc.</p> <p>The S-tube® impeller is providing free spherical passage through the impeller and pump housing and creates a natural extension of the pipework connected to the pump. The S-tube® impeller is a wet-balanced and tube-shaped channel impeller placed in a pump housing that matches the smooth tube shape leaving no obstructions or dead zones.</p> <p>The key to the S-tube® design is simplicity, with no cutting or moving functions that can get worn over time, thereby ensuring constant, superior efficiency. The simple design means lower life cycle costs because abrasive wear is reduced and there are fewer clogging incidents.</p>  |

This pump is equipped with the unique SmartTrim impeller clearance adjustment system that enables easy restoring of factory-set impeller clearance. By tightening the adjustment screws on the exterior of the pump housing, peak pumping efficiency can be maintained. This can be done on site, quickly and easily, without dismantling the pump and without using special tools.

The shaft seals of the pump consist of two mechanical seals that ensure a reliable sealing between the pumped liquid and motor. The shaft seal is a cartridge seal that enables easy service.

The combination of the primary and secondary seals in a cartridge shaft seal system results in a shorter assembly length compared to conventional shaft seals. Furthermore, this design minimises the risk of incorrect fitting and can be installed on site without the need for special tools.

- Primary seal: Silicon carbide/silicon carbide (SiC/SiC)
- Secondary seal: Carbon/ceramic

The shaft seal is bidirectional, meaning it operates correctly in case of backflow through the pump.

The pump discharge flange is mounted with the Grundfos SmartSeal auto-coupling gasket, that provides a completely leak-proof connection between the pump and the base unit of the auto-coupling system. This optimises the efficiency of the entire pumping system and keeps operating costs at a minimum.

## Motor

The product carries the Grundfos blueflux® label. It represents the best from Grundfos within energy-efficient motors and frequency converters. Grundfos blueflux® solutions ensures that the motor is built out of high efficiency components.



The motor is a watertight, totally encapsulated motor supplied with a 10 m power cable. A watertight stainless-steel cable entry with soft shape and sealing rings to prevent damage of the cable or leaks.

The motor construction is compact with short shaft which reduces vibrations resulting in increased efficiency and lifetime of the shaft seal and ball bearings.

Thermal switches are incorporated in the motor windings to protect the motor against overheating.

The pump has a closed motor cooling system and can be installed either dry or submerged. The motor is factory-filled with Grundfos motor liquid SML-3 which is a propylene glycol mixture. The motor liquid ensures both cooling of the motor and lubrication of the shaft seal. The shaft seal has a built-in impeller ensuring circulation of the cooling liquid.

The pump is designed for speed-controlled operation to keep the energy consumption at a minimum. To avoid the risk of sedimentation in the pipes, we recommend that you operate the speed-controlled pump within a speed range of 30 % to 100 % and at a flow rate above 1 m/s.

### Controls:

|                      |                       |
|----------------------|-----------------------|
| Moisture sensor:     | with moisture sensors |
| Water-in-air sensor: | N                     |

### Liquid:

|                           |                         |
|---------------------------|-------------------------|
| Liquid temperature range: | 0 .. 40 °C              |
| Density:                  | 998.2 kg/m <sup>3</sup> |

### Technical:

|                        |                 |
|------------------------|-----------------|
| Type of impeller:      | S-TUBE          |
| Maximum particle size: | 110 mm          |
| Primary shaft seal:    | SIC-SIC         |
| Secondary shaft seal:  | SIC-CARBON      |
| Curve tolerance:       | ISO9906:2012 3B |

### Materials:

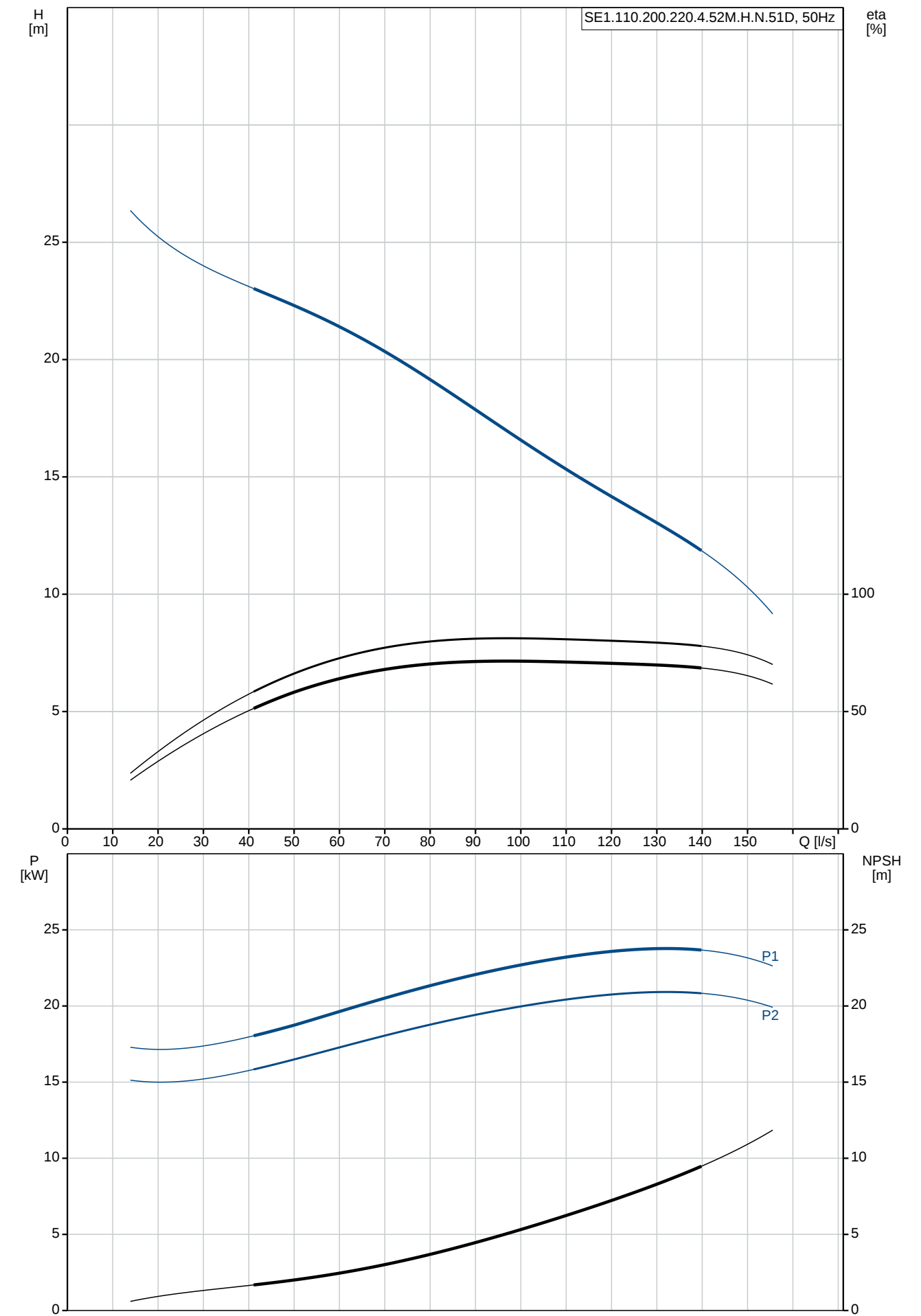
|               |                                 |
|---------------|---------------------------------|
| Pump housing: | Cast iron<br>EN 1561 EN-GJL-250 |
| Impeller:     | Cast iron<br>EN 1561 EN-GJL-250 |
| Motor:        | Cast iron<br>EN 1561 EN-GJL-250 |

### Installation:

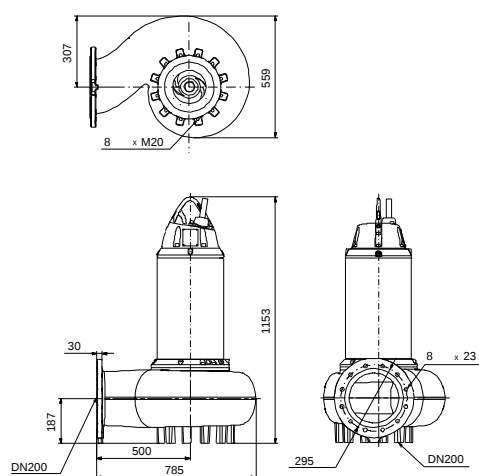
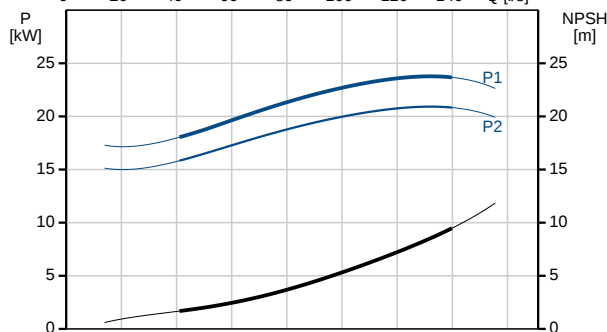
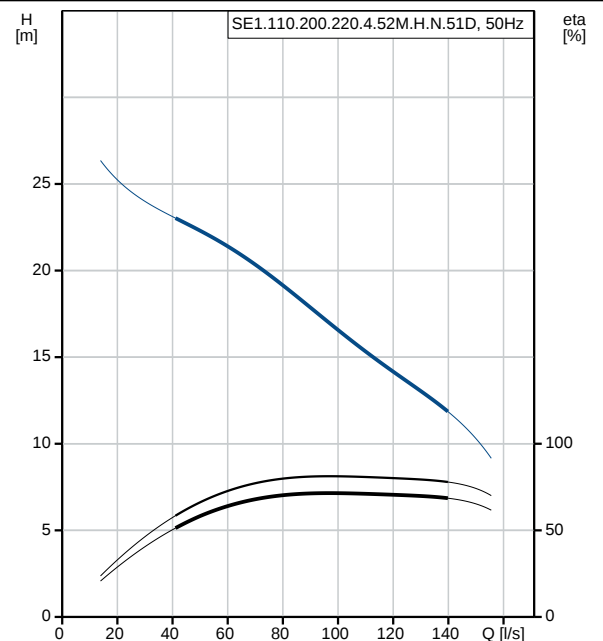
|                              |       |
|------------------------------|-------|
| Maximum ambient temperature: | 40 °C |
| Flange standard:             | DIN   |

| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | Pump inlet: DN 200<br>Pump outlet: DN 200<br>Pressure rating: PN 10<br>Maximum installation depth: 20 m<br>Inst horizontal: 98113366<br>Frame range: 52<br><br><b>Electrical data:</b><br>Power input - P1: 25 kW<br>Rated power - P2: 22 kW<br>Mains frequency: 50 Hz<br>Rated voltage: 3 x 380-415/660-690 V<br>Voltage tolerance: +10/-10 %<br>Max starts per. hour: 20<br>Rated current: 45-41/26-25 A<br>Maximum current consumption: 43 A<br>Starting current: 381/209 A<br>Rated current at no load: 20.1 A<br>Rated speed: 1476 rpm<br>Motor efficiency at full load: 88 %<br>Motor efficiency at 3/4 load: 88 %<br>Motor efficiency at 1/2 load: 86 %<br>Number of poles: 4<br>Start. method: star/delta<br>Enclosure class (IEC 34-5): IP68<br>Insulation class (IEC 85): H<br>Explosion proof: no<br>Ex-protection standard: N<br>Length of cable: 10 m<br>Cable type: S1BN8-F<br>Winding resistance: 0,390 Ohm<br>Cos phi 1/1: 0,85<br>Cos phi 1/2: 0,70<br>Cos phi 3/4: 0,76<br><br><b>Others:</b><br>Net weight: 447 kg |

98145022 SE1.110.200.220.4.52M.H.N.51D 50 Hz



| Description                    | Value                           |
|--------------------------------|---------------------------------|
| <b>General information:</b>    |                                 |
| Product name:                  | SE1.110.200.220.4.52M.H.N.51 D  |
| Product No:                    | 98145022                        |
| EAN number:                    | 5711490434798                   |
| <b>Technical:</b>              |                                 |
| Max flow:                      | 139 l/s                         |
| Head max:                      | 23 m                            |
| Type of impeller:              | S-TUBE                          |
| Maximum particle size:         | 110 mm                          |
| Primary shaft seal:            | SIC-SIC                         |
| Secondary shaft seal:          | SIC-CARBON                      |
| Curve tolerance:               | ISO9906:2012 3B                 |
| Cooling jacket:                | with cooling jacket             |
| <b>Materials:</b>              |                                 |
| Pump housing:                  | Cast iron<br>EN 1561 EN-GJL-250 |
| Impeller:                      | Cast iron<br>EN 1561 EN-GJL-250 |
| Motor:                         | Cast iron<br>EN 1561 EN-GJL-250 |
| <b>Installation:</b>           |                                 |
| Maximum ambient temperature:   | 40 °C                           |
| Flange standard:               | DIN                             |
| Pump inlet:                    | DN 200                          |
| Pump outlet:                   | DN 200                          |
| Pressure rating:               | PN 10                           |
| Maximum installation depth:    | 20 m                            |
| Installation:                  | H                               |
| Inst dry/wet:                  | D                               |
| Installation:                  | horizontal                      |
| Inst horizontal:               | 98113366                        |
| Frame range:                   | 52                              |
| <b>Liquid:</b>                 |                                 |
| Liquid temperature range:      | 0 .. 40 °C                      |
| Density:                       | 998.2 kg/m <sup>3</sup>         |
| <b>Electrical data:</b>        |                                 |
| Power input - P1:              | 25 kW                           |
| Rated power - P2:              | 22 kW                           |
| Mains frequency:               | 50 Hz                           |
| Rated voltage:                 | 3 x 380-415/660-690 V           |
| Voltage tolerance:             | +10/-10 %                       |
| Max starts per. hour:          | 20                              |
| Rated current:                 | 45-41/26-25 A                   |
| Maximum current consumption:   | 43 A                            |
| Starting current:              | 381/209 A                       |
| Rated current at no load:      | 20.1 A                          |
| Rated speed:                   | 1476 rpm                        |
| Motor efficiency at full load: | 88 %                            |
| Motor efficiency at 3/4 load:  | 88 %                            |
| Motor efficiency at 1/2 load:  | 86 %                            |
| Number of poles:               | 4                               |
| Start. method:                 | star/delta                      |
| Enclosure class (IEC 34-5):    | IP68                            |
| Insulation class (IEC 85):     | H                               |
| Explosion proof:               | no                              |
| Ex-protection standard:        | N                               |
| Motor protec:                  | KLIXON                          |
| Length of cable:               | 10 m                            |
| Cable type:                    | S1BN8-F                         |
| Cable size:                    | 7X6 + 5X1,5                     |
| Cable resistance:              | 3,30 mOhm/m                     |
| Winding resistance:            | 0,390 Ohm                       |
| Cos phi 1/1:                   | 0,85                            |

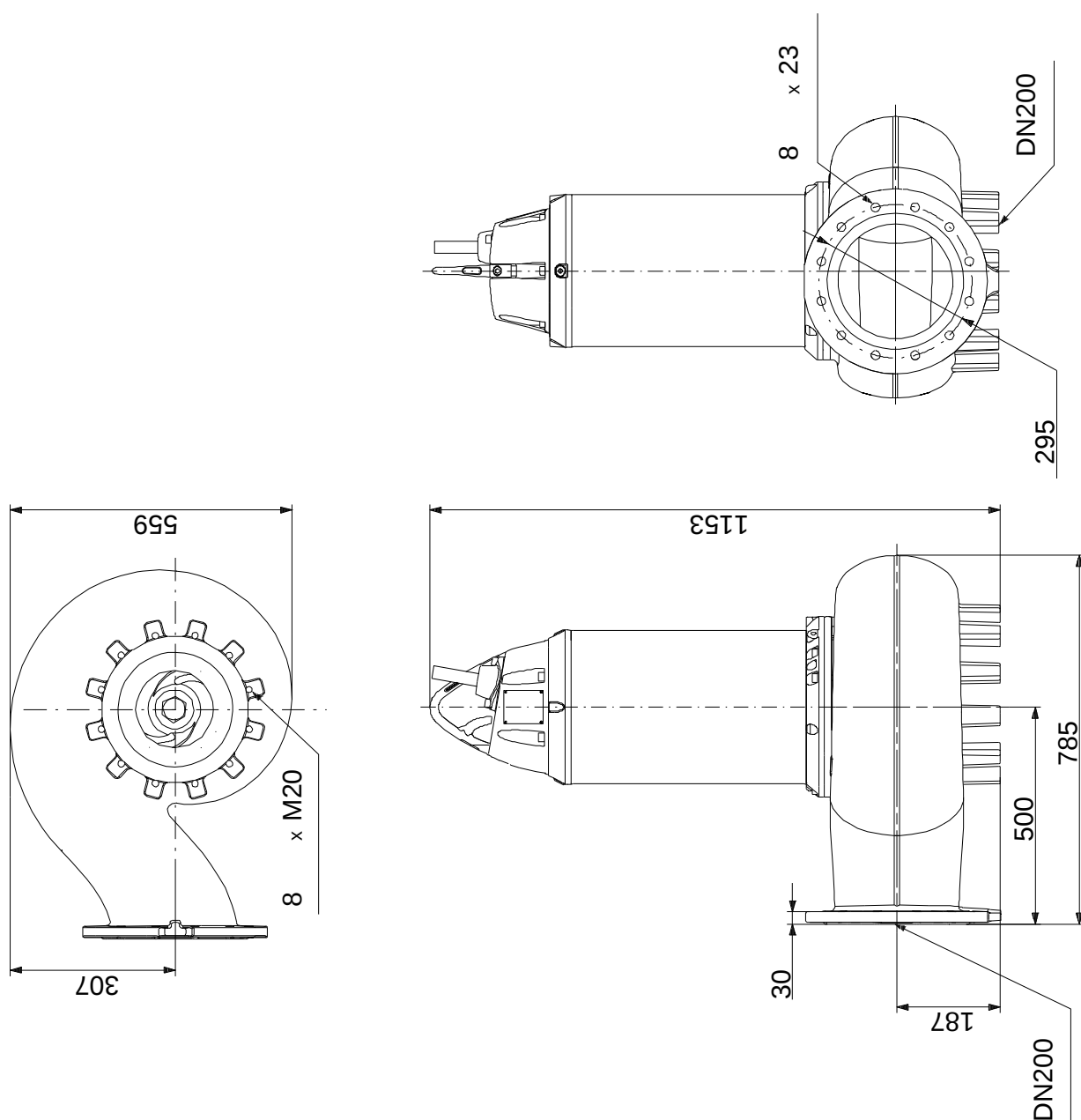


Wiring diagram. 12-wire cable



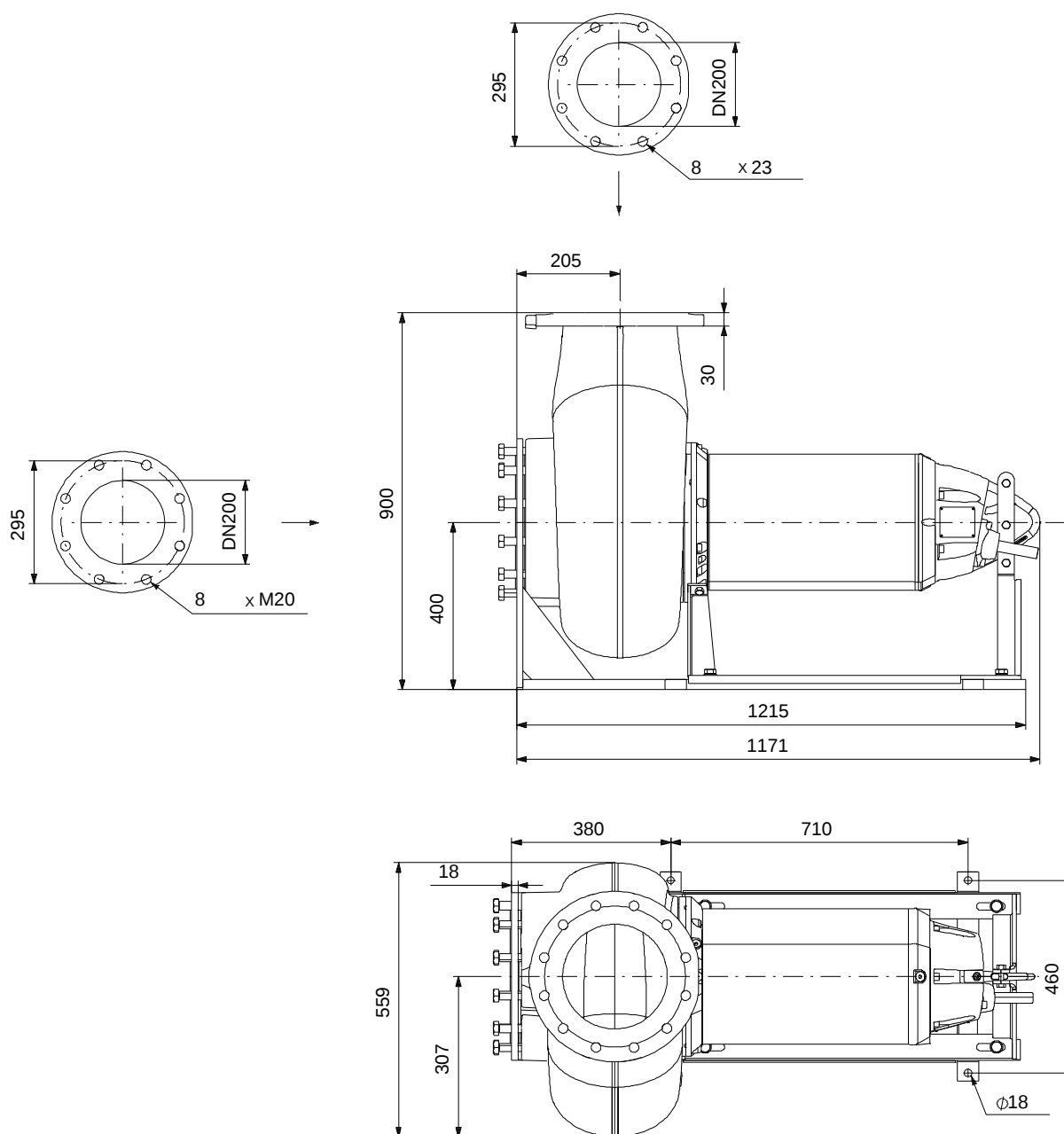
| Description          | Value                 |
|----------------------|-----------------------|
| Cos phi 1/2:         | 0,70                  |
| Cos phi 3/4:         | 0,76                  |
| <b>Controls:</b>     |                       |
| Moisture sensor:     | with moisture sensors |
| Water-in-air sensor: | N                     |
| <b>Others:</b>       |                       |
| Net weight:          | 447 kg                |

# 98145022 SE1.110.200.220.4.52M.H.N.51D 50 Hz



Note! All units are in [mm] unless others are stated.  
Disclaimer: This simplified dimensional drawing does not show all details.

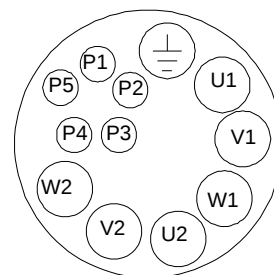
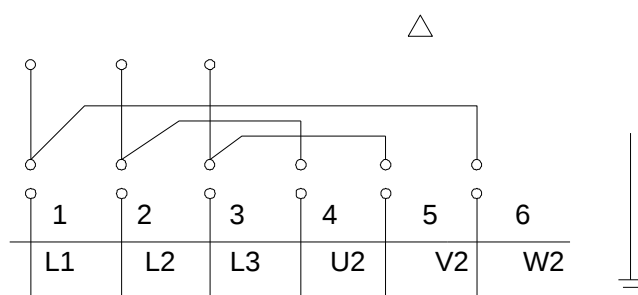
# 98145022 SE1.110.200.220.4.52M.H.N.51D 50 Hz



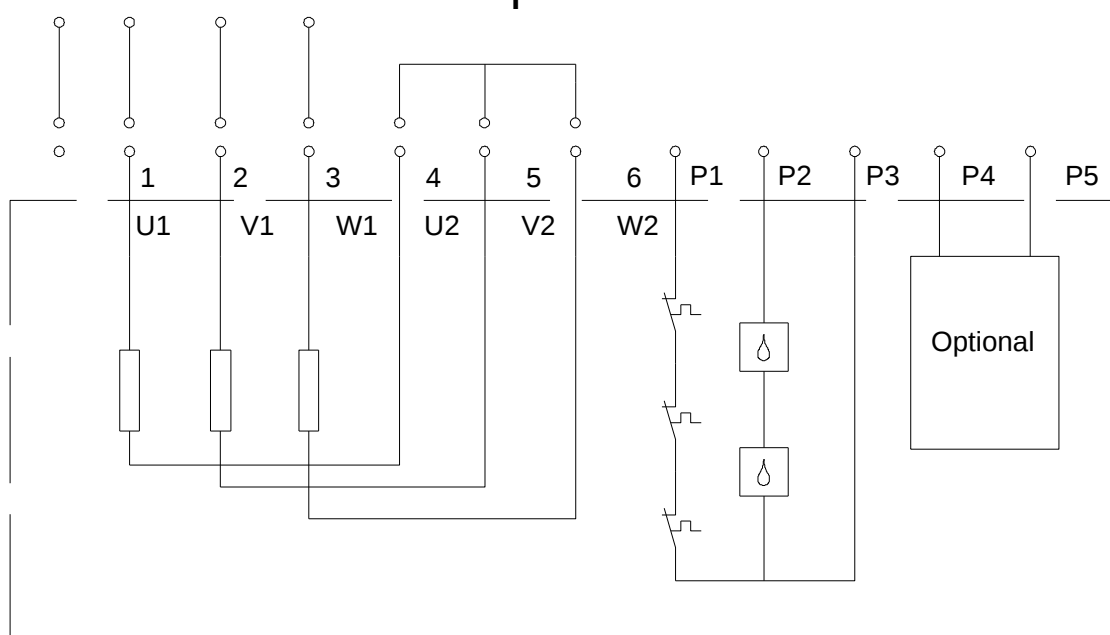
Note! All units are in [mm] unless others are stated.  
Disclaimer: This simplified dimensional drawing does not show all details.

## Wiring diagram. 12-wire cable

L1 L2 L3 Delta



L1 L2 L3 Star  
Y



Note! All units are in [mm] unless others are stated.

*Disclaimer: The information about the Grundfos pump in this document may be outdated.  
Data may be subject to alterations without further notice.  
Please contact us to verify the data above is still accurate/up-to-date.*

*All information is copyright Grundfos.*



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