# TPE3 50-180-S-A-F-A-GQQE

## Grundfos pump 98416707



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https://www.lenntech.com/grundfos/TPE0S2/98416707/TPE3-50-180-S-A-F-A-GQQE.html

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| Position | Qty. | Description |
|---|---|---|
| | 1 | **TPE3 50-180-S A-F-A-GQQE** |



Product No.: On request

Single-stage, close-coupled, volute pump with in-line suction and discharge ports of identical diameter. The pump is of the top-pull-out design, i.e. the power head (motor, pump head and impeller) can be removed for maintenance or service while the pump housing remains in the pipework.

The shaft seal is according to EN 12756. Pipework connection is via PN 16 DIN flanges (EN 1092-2 and ISO 7005-2).

The pump is fitted with a fan-cooled, permanent-magnet synchronous motor. The motor includes a frequency converter and PI controller in the motor terminal box. This enables continuously variable control of the motor speed, which again enables adaptation of the performance to a given requirement.

The pump is fitted with a combined temperature- and differential-pressure sensor.

## Further product details

The pump is suitable for applications requiring pressure or temperature control and offers following control modes:

- AUTOADAPT. This function continuously adjusts the proportional-pressure curve and automatically sets a more efficient curve without compromising comfort demands.
- FLOWADAPT. This control mode combines AUTOADAPT with a flow-limitting function. The pump continuously monitors the flow rate to ensure the desired maximum flow is not exceeded. This will save the cost of a separate pump-throttling valve.
- Constant differential pressure. The pump head is kept constant, independent of the flow in the system.
- Proportional pressure. The head of the pump will increase proportionally to the flow in the system to compensate for the large pressure losses in the distribution pipes.
- Constant temperature. The return-pipe temperature is kept constant. Note: If the pump is intalled in the flow pipe, an external temperature sensor must be installed in the return pipe of the system.
- Constant differential temperature. The differential temperature can be measured by a differential-temperature sensor or two separate temperature sensors.
- Constant curve. The pump can be set to run at a constant speed in the range of 25 to 100 % of the maximum speed.

The operating panel on the motor terminal box features a four-inch TFT display, push-buttons and the Grundfos Eye indicator.

The display gives an intuitive and user-friendly interface to all functions. The push-buttons are used to navigate through the menu structure to access pump and performance data on site and enable setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop".

Communication with the pump is also possible by means of Grundfos GO Remote (accessory). The remote control enables further settings as well as reading out of a number of parameters such as "Actual value", "Speed", "Power input" and total "Power consumption".

The Grundfos Eye indicator on the operating panel provides visual indication of pump status:

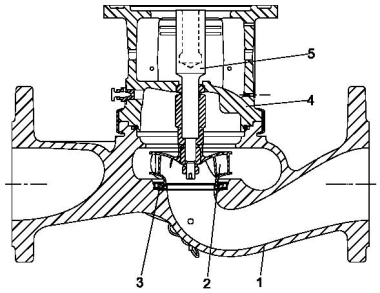
- "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights)
- "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights)
- "Alarm": Motor has stopped (flashing red indicator lights).

The product's minimum efficiency index (MEI) is greater or equal to 0.70. This is by the Commission Regulation (EU) considered as an indicative benchmark for best-performing water pump available on the market as from 1 January 2013.

## Pump

Pump housing and pump head are electrocoated to improve the corrosion resistance.

| Position | Qty. | Description |
|---|---|---|
| | | Electrocoating includes:<br>1) Alkaline-based cleaning.<br>2) Pretreatment with zinc phosphate coating.<br>3) Cathodic electrocoating (epoxy).<br>4) Curing of paint film at 200-250 °C. |




1: Pump housing
2: Impeller
3: Neck ring
4: Pump head/motor stool
5: Stub shaft

The pump housing is provided with a replaceable stainles steel/PTFE neck ring to reduce the amount of liquid running from the discharge side of the impeller to the suction side. The impeller is secured to the shaft with a nut.

The shaft seal is an unbalanced rubber bellows seal with reduced seal face. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft. The narrow seal face makes the seal perform well in high-viscosity and anti-freezing liquids.

Primary seal:

- Rotating seal ring material: silicon carbide (SiC)
- Stationary seat material: silicon carbide (SiC)

This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.

Secondary seal material: EPDM (ethylene-propylene rubber)

EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.

The motor stool forms connection between the pump housing and the motor, and is equipped with a manual air vent screw for venting of the pump housing and the shaft seal chamber. The sealing between motor stool and pump housing is an O-ring.

The central part of the motor stool is provided with guards for protection against the shaft and coupling. The pump shaft is fastened directly on the motor shaft with key and set screws.

## Motor

The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. Electrical tolerances comply with IEC 60034.

The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

The terminal box holds terminals for these connections:

- one dedicated digital input
- two analog inputs, 0(4)-20 mA, 0-10 V
- one configurable digital input or open-collector output
- Grundfos combined temperature and differential pressure sensor (separate connected)
- 24 V voltage supply for sensors
- two signal relay outputs (potential-free contacts)
- GENIbus connection
- interface for Grundfos CIM fieldbus module.

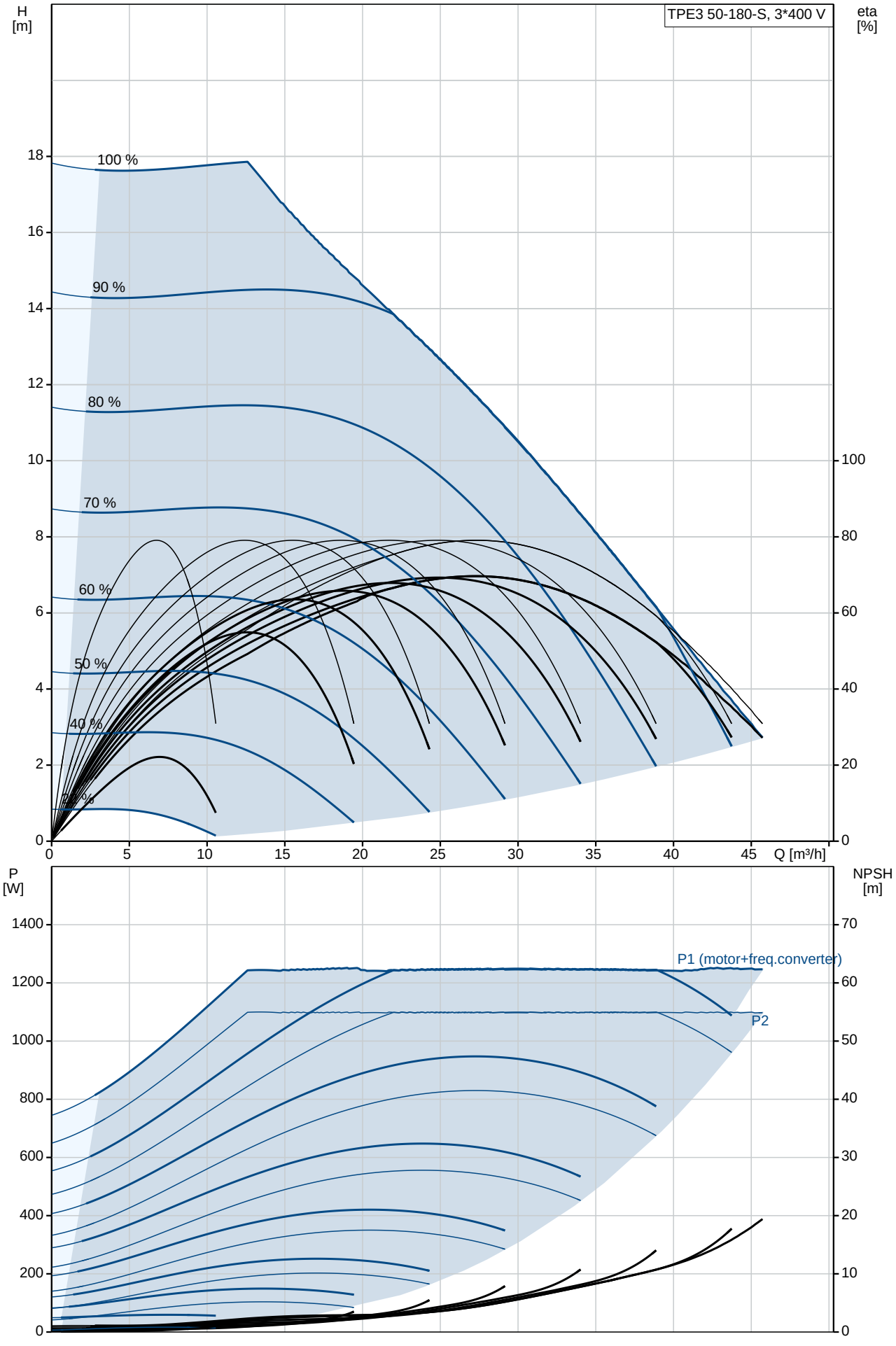
## Technical data

**Liquid:**

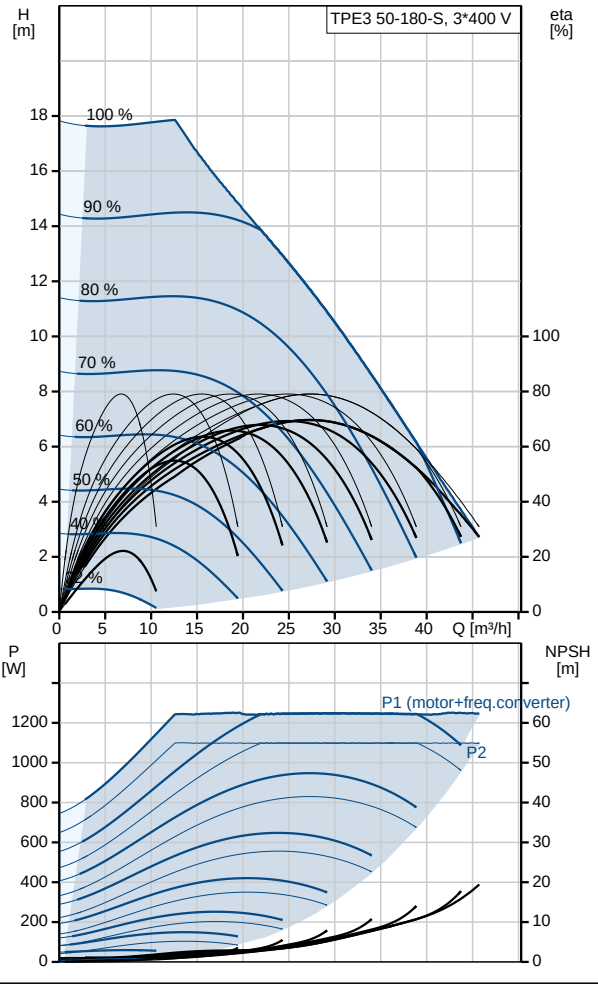
Pumped liquid: Water

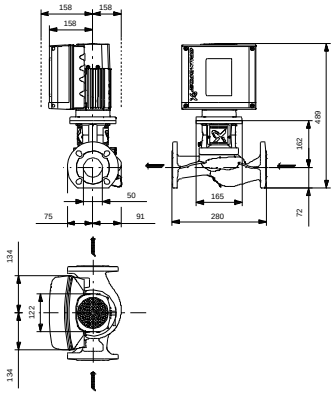
| Position | Qty. | Description |
|---|---|---|
| | | Liquid temperature range: -25 .. 60 °C<br>Liquid temperature during operation: 20 °C<br>Density: 998.2 kg/m³<br><br>**Technical:**<br>Rated flow: 26.1 m³/h<br>Rated head: 12.2 m<br>Primary shaft seal: GQQE<br>Curve tolerance: ISO9906:2012 3B<br><br>**Materials:**<br>Pump housing: Cast iron<br>Impeller: Composite PES/PP 30% GF<br><br>**Installation:**<br>Range of ambient temperature: -20 .. 50 °C<br>Maximum operating pressure: 16 bar<br>Flange standard: DIN<br>Pipe connection: DN 50<br>Pressure rating: PN 16<br>(@): 280 mm<br>Flange size for motor: 56C<br><br>**Electrical data:**<br>Motor type: 80A<br>Rated power - P2: 1.1 kW<br>Mains frequency: 50 Hz<br>Rated voltage: 3 x 380-500 V<br>Rated current: 2.30-2.05 A<br>Cos phi - power factor: 0.88-0.74<br>Rated speed: 480-5900 rpm<br>Efficiency: 88.5%<br>Motor efficiency at full load: 88.5 %<br>Enclosure class (IEC 34-5): IP55<br>Insulation class (IEC 85): F<br><br>**Others:**<br>Minimum efficiency index, MEI ≥: 0.7<br>ErP status: EuP Standalone/Prod.<br>Net weight: 27.2 kg<br>Gross weight: 34.4 kg<br>Shipping volume: 0.1 m³ |

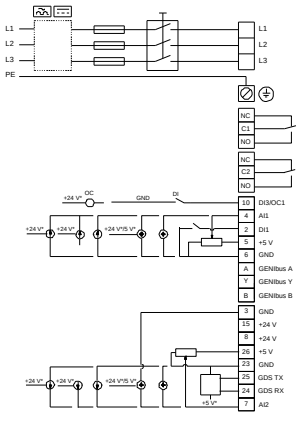
# On request TPE3 50-180-S A-F-A-GQQE 50 Hz



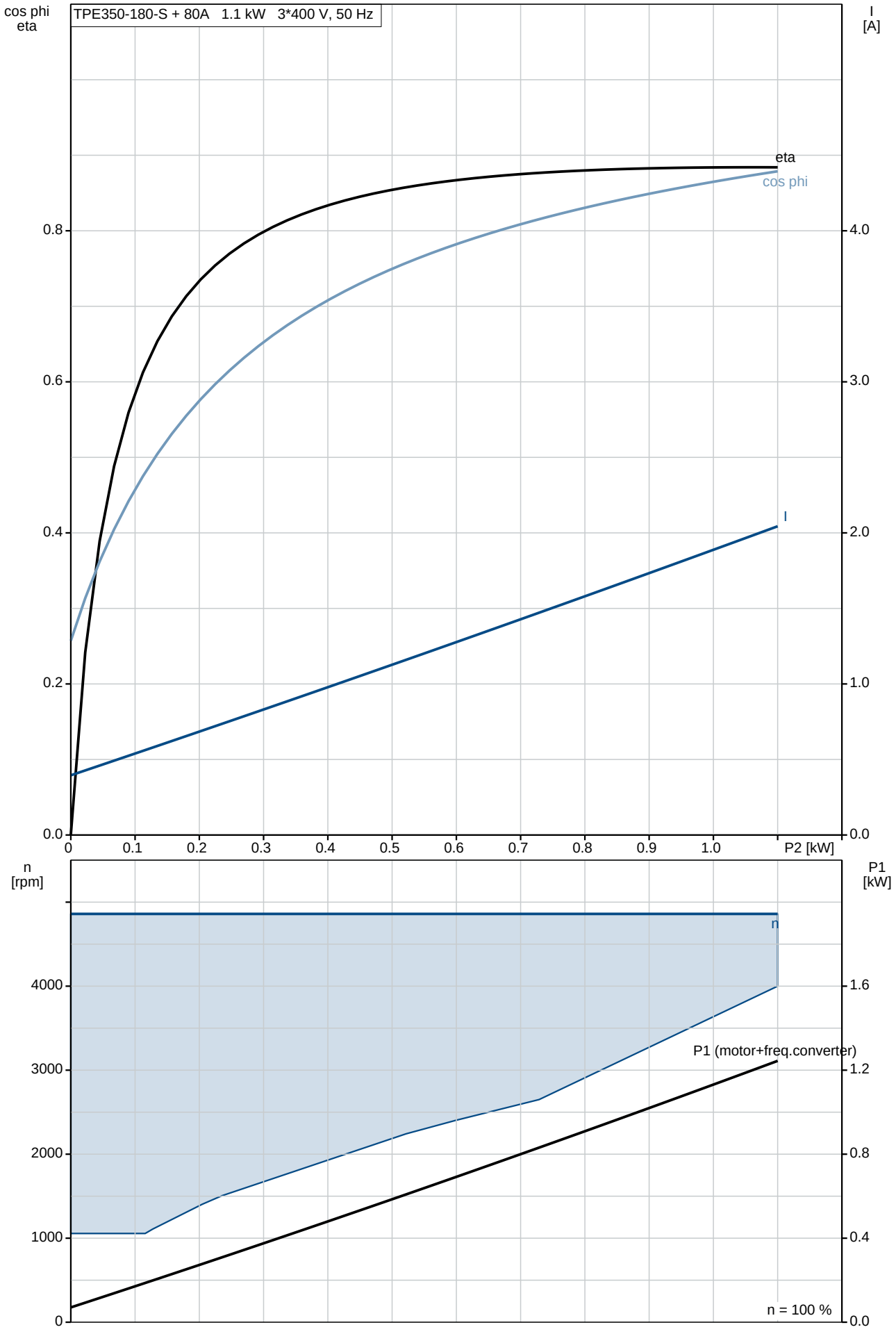
| Description | Value |
|---|---|
| **General information:** | |
| Product name: | TPE3 50-180-S A-F-A-GQQE |
| Product No: | On request |
| EAN number: | On request |
| **Technical:** | |
| Rated flow: | 26.1 m³/h |
| Rated head: | 12.2 m |
| Head max: | 180 dm |
| Primary shaft seal: | GQQE |
| Curve tolerance: | ISO9906:2012 3B |
| Pump version: | A |
| Model: | A |
| **Materials:** | |
| Pump housing: | Cast iron |
| Impeller: | Composite PES/PP 30% GF |
| Material code: | A |
| **Installation:** | |
| Range of ambient temperature: | -20 .. 50 °C |
| Maximum operating pressure: | 16 bar |
| Flange standard: | DIN |
| Pipe connection: | DN 50 |
| Pressure rating: | PN 16 |
| (@) | 280 mm |
| Flange size for motor: | 56C |
| Connect code: | F |
| **Liquid:** | |
| Pumped liquid: | Water |
| Liquid temperature range: | -25 .. 60 °C |
| Liquid temperature during operation: | 20 °C |
| Density: | 998.2 kg/m³ |
| **Electrical data:** | |
| Motor type: | 80A |
| Rated power - P2: | 1.1 kW |
| Mains frequency: | 50 Hz |
| Rated voltage: | 3 x 380-500 V |
| Rated current: | 2.30-2.05 A |
| Cos phi - power factor: | 0.88-0.74 |
| Rated speed: | 480-5900 rpm |
| Efficiency: | 88.5% |
| Motor efficiency at full load: | 88.5 % |
| Enclosure class (IEC 34-5): | IP55 |
| Insulation class (IEC 85): | F |
| Motor protec: | YES |
| Motor No: | 98362401 |
| **Controls:** | |
| Control panel: | HMI300 - Graphical |
| Function Module: | FM200 - Standard |
| **Others:** | |
| Minimum efficiency index, MEI ≥: | 0.7 |
| ErP status: | EuP Standalone/Prod. |
| Net weight: | 27.2 kg |
| Gross weight: | 34.4 kg |
| Shipping volume: | 0.1 m³ |
| Config. file no: | 98484783 |



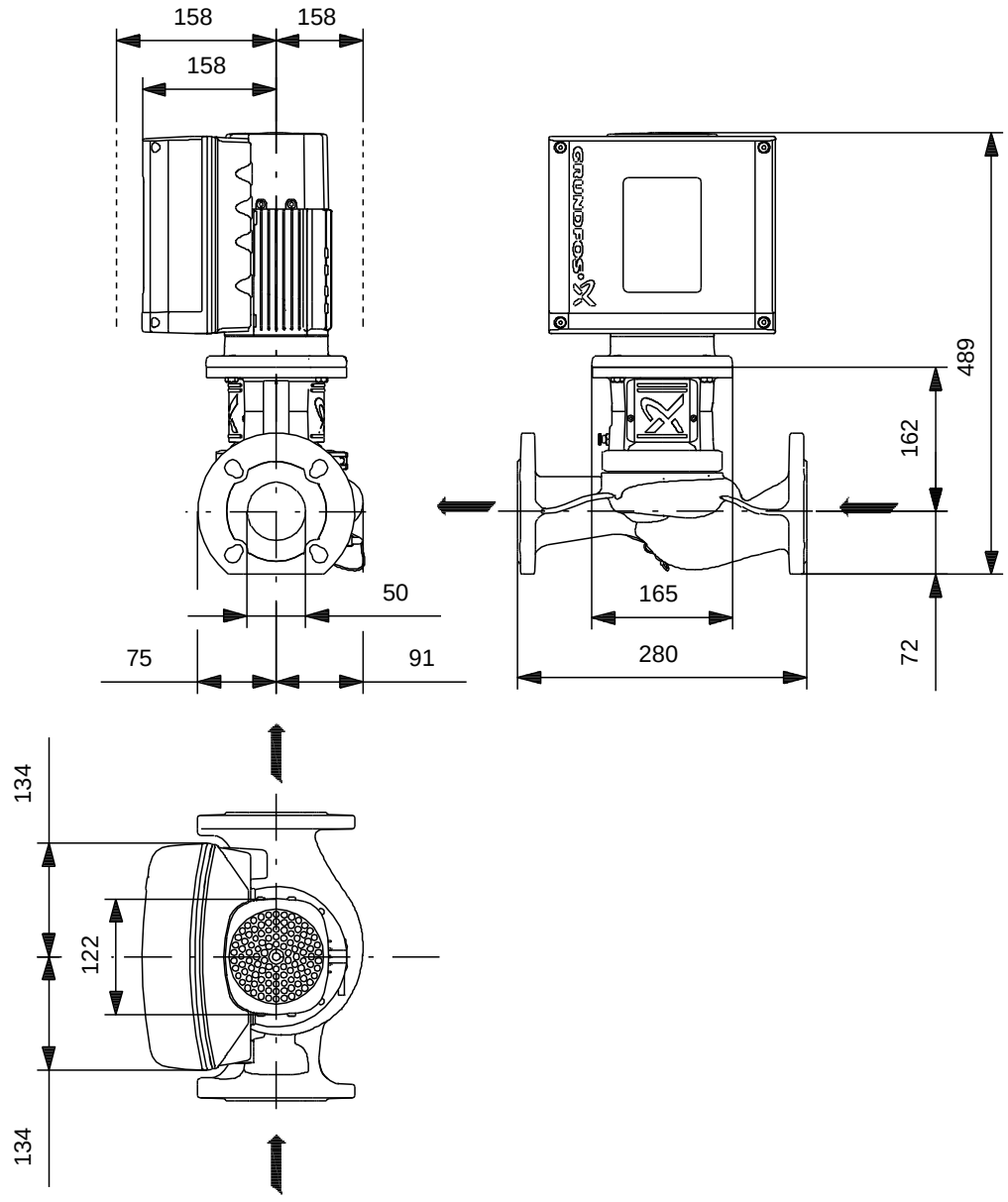





# On request TPE3 50-180-S A-F-A-GQQE 50 Hz

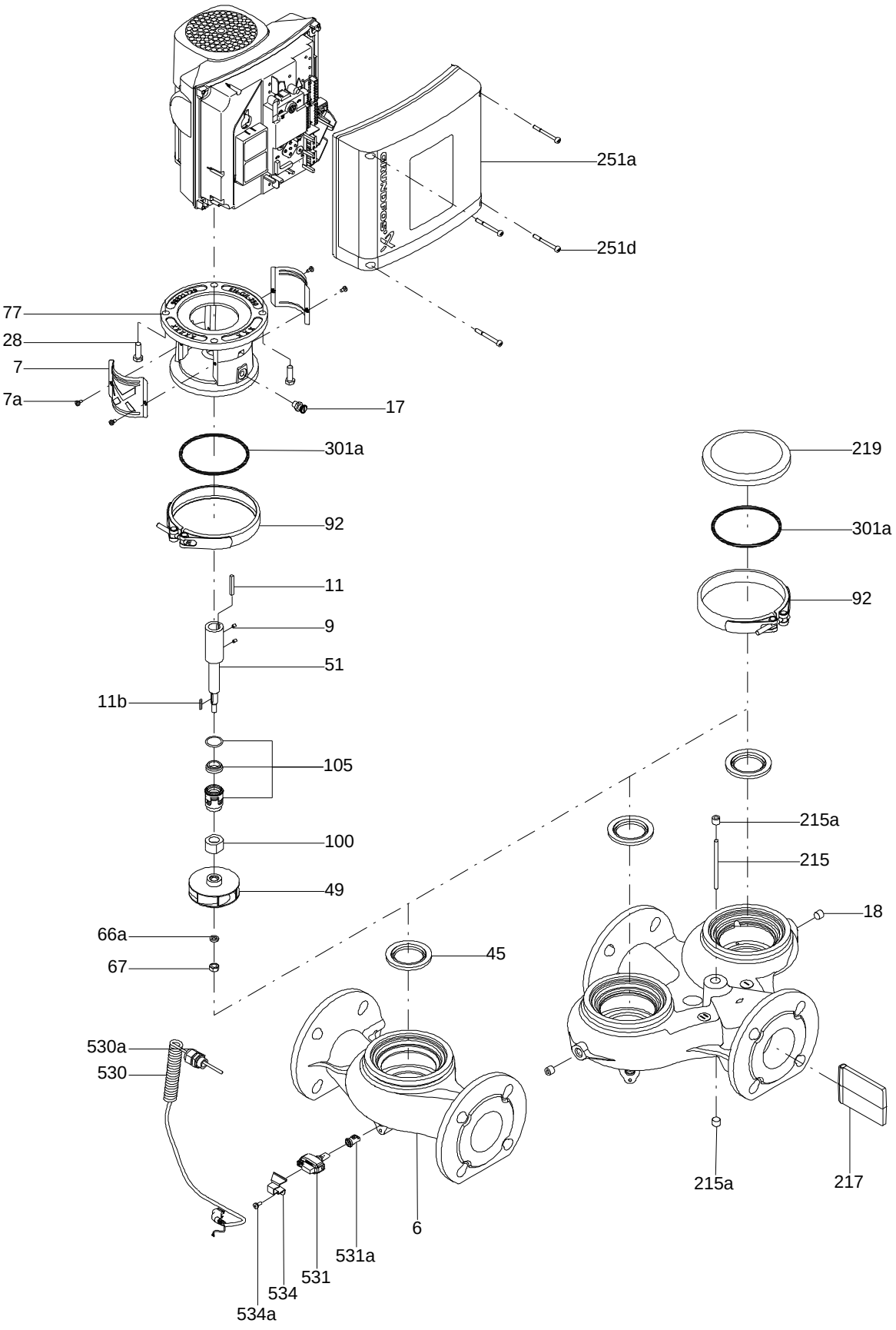


# On request TPE3 50-180-S A-F-A-GQQE 50 Hz

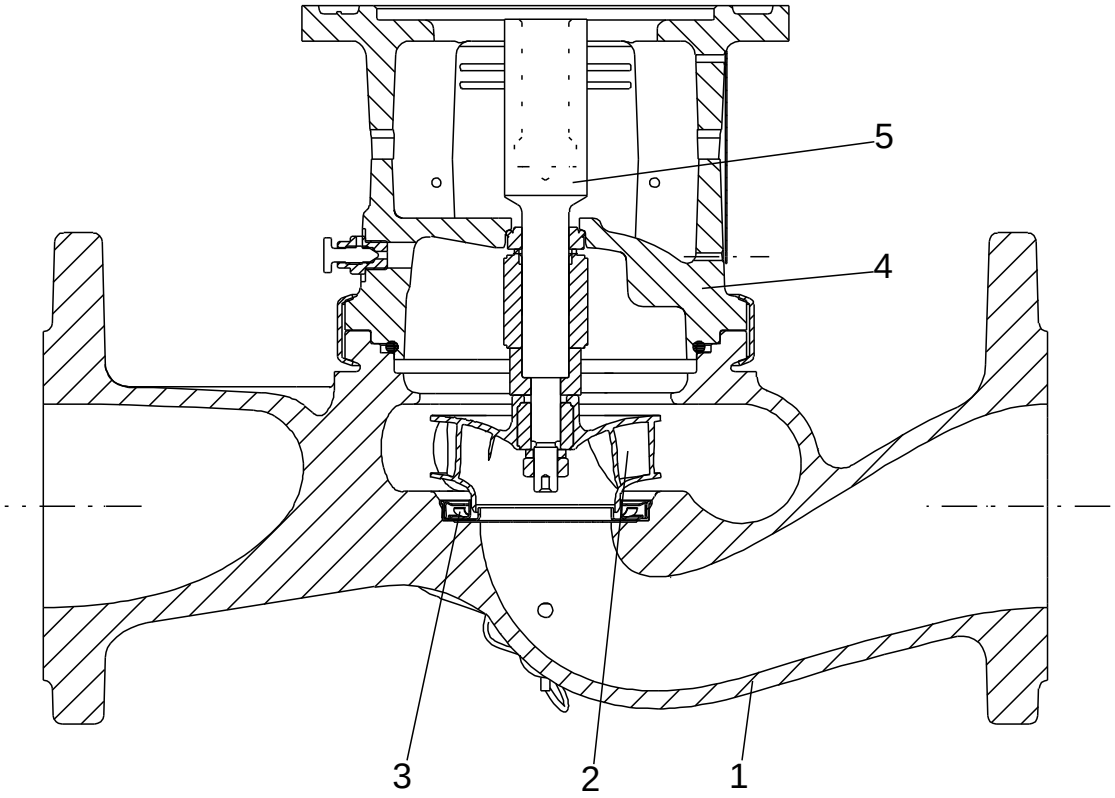



Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.

## Exploded view

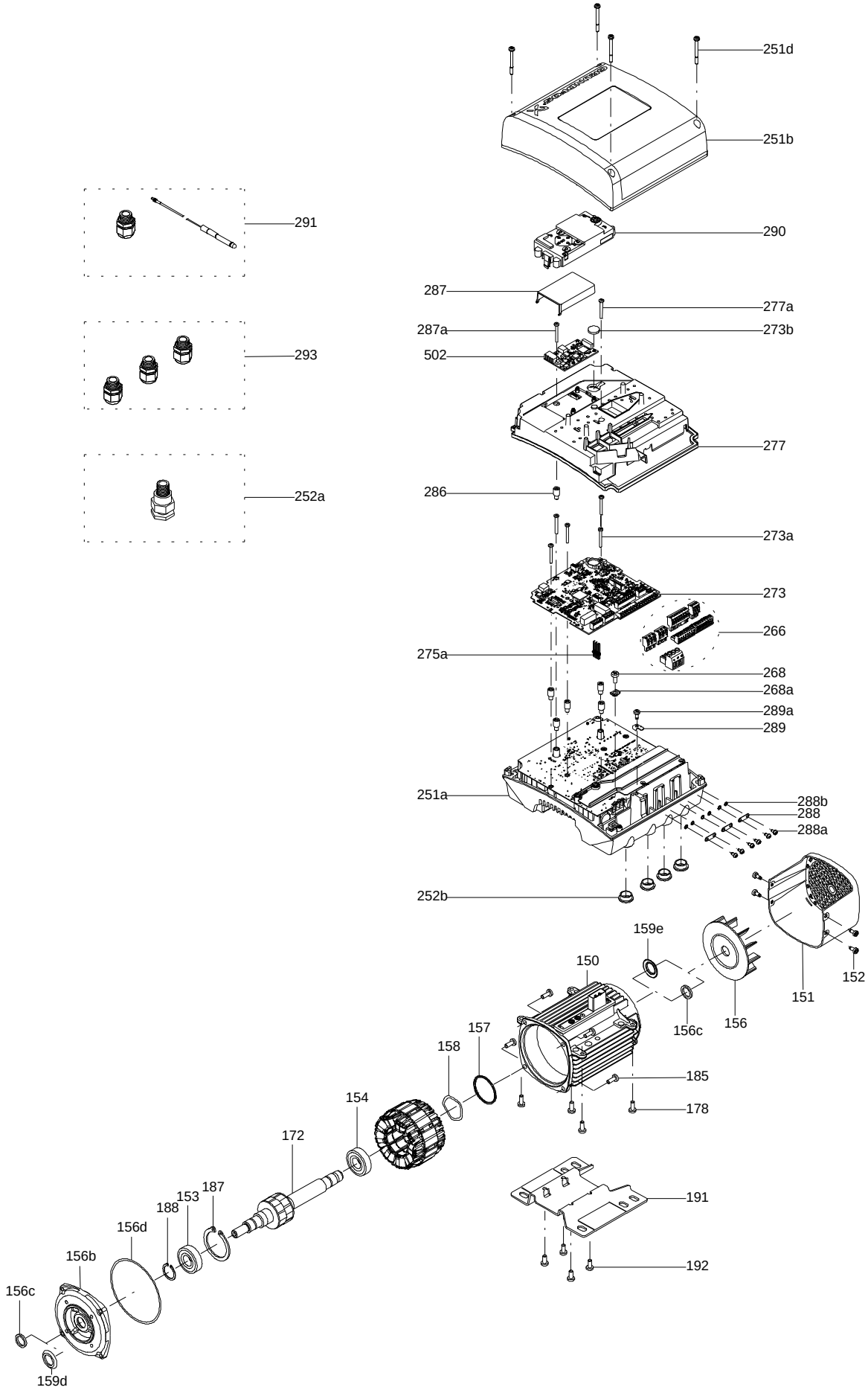


**Sectional drawing (TM058200 for TPE2,TPE3)**




TM058200

## Exploded view ( TM057026 for MGE model H/I )



# Parts list TPE3 50-180-S, Product No. On request
# Valid from 25.12.2012 (1252)

| Pos | Description | Annotation | Données de classification | Référence | Quantité | Unité |
|---|---|---|---|---|---|---|
| - | Motor | | | | 1 | pcs |
| | Terminal | | | | 3 | |
| | Pan head thread forming screw | | | | 4 | |
| 150 | Stator housing | | | | 1 | |
| 150 | Stator | | | | 1 | |
| 151 | Fan cover | | | | 1 | |
| 152 | Pan head thread forming screw | | | | 6 | |
| 152 | Pan head thread forming screw | | | | 1 | |
| 152 | Pan head thread forming screw | | | | 1 | |
| 152 | Pan head thread forming screw | | | | 4 | |
| 153 | Ball bearing | | Designation: 6304.2Z.C3.SYN | | 1 | |
| 154 | Ball bearing | | Designation: 6204.2Z.C3.SYN | | 1 | |
| 156 | Fan | | | | 1 | |
| 156b | Flange | | | | 1 | |
| 156d | Gasket | | Internal diameter: 114,80 | | 1 | |
| | | | Outer diameter: 121,20 | | | |
| | | | Thickness: 0,25 | | | |
| 157 | O-ring | | Diameter: 47 | | 1 | |
| | | | Material type: NBR | | | |
| | | | Thickness: 3 | | | |
| 158 | Retaining ring | | | | 1 | |
| 158 | Waved washer | | | | 1 | |
| 159c | Seal ring | | | | 1 | |
| 159c | Seal ring | | | | 1 | |
| 166 | Torx Screw | | | | 2 | |
| 172 | Shaft w/rotor | | | | 1 | |
| 172a | Parallel key | | | | 1 | |
| 173a | Base | | | | 1 | |
| 185 | Cross recess Pan head screw | | | | 4 | |
| 186 | Drain plug | | | | 3 | |
| 187 | Lock ring | | | | 1 | |
| 203 | Terminal plug | | | | 1 | |
| 251a | Control box | | | | 1 | |
| 251b | Control box | | | | 1 | |
| 251d | Pan head thread forming screw | | | | 4 | |
| 266 | Connector plug 3-pole | | | | 1 | |
| 266 | Connector plug 3-pole | | | | 1 | |
| 266 | Connector plug 8-pole | | | | 1 | |
| 266 | Connector plug 8-pole | | | | 1 | |
| 266 | Connector plug 10-pole | | | | 1 | |
| 268 | Pan head screw | | | | 1 | |
| 273 | Funct. Module cpl. | | | | 1 | |
| 275a | Pin | | | | 1 | |
| 277 | Isolation cover | | | | 1 | |
| 277a | Cross recess Pan head screw | | | | 1 | |
| 277a | Cross recess Pan head screw | | | | 1 | |
| 277a | Cross recess Pan head screw | | | | 4 | |
| 286 | Spacer | | | | 1 | |
| 286 | Spacer | | | | 1 | |
| 287 | Cover | | | | 1 | |
| 288 | Wire clamp | | | | 3 | |
| 288b | Washer | | | | 6 | |
| 289 | Wire clamp | | | | 1 | |
| 290 | Control panel, cpl. | | | | 1 | |
| 300 | Plug cpl. | | | | 4 | |
| 301 | Jumper | | | | 1 | |
| - | Guard | | | | 2 | pcs |
| 7 | Guard | | | | 1 | |
| 7a | Pan head screw | | | | 2 | |

| | Pos | Description | Annotation | Données de classification | Référence | Quantité | Unité |
|---|---|---|---|---|---|---|---|
| | 66 | Lock washer | | | | 2 | |
| - | | Motor stool cpl. | | | | 1 | pcs |
| | 17 | Air vent screw | | | | 1 | |
| | 28 | Hex head cap screw | | Length (mm): 25 | | 4 | |
| | | | | Thread: UNC 3/8" | | | |
| | 77 | Motor stool | | | | 1 | |
| - | | Pump housing cpl. | | | | 1 | pcs |
| | 6 | Pump housing | | | | 1 | |
| | 45 | Neck ring cpl. | | | | 1 | |
| - | | Shaft cpl. | | | | 1 | pcs |
| | 9 | Socket set screw | | | | 3 | |
| | 11b | Key | | | | 1 | |
| | 51 | Shaft | | | | 1 | |
| | 66a | Wedge lock washer | | | | 1 | |
| | 67 | Lock nut | | Thread: M8 | | 1 | |
| - | 49 | Impeller cpl. | | | | 1 | pcs |
| | | Impeller cpl. | | | | 1 | |
| | 100 | Spacer ring | | | | 1 | pcs |
| | 105 | Shaft seal | | | | 1 | pcs |
| - | 531 | Sensor | | | | 1 | pcs |
| | | O-ring | | | | 1 | |
| | 530 | Cable | | | | 1 | |
| | 531 | Sensor | | | | 1 | |
| | 534 | Bracket | | | | 1 | |
| | 534a | Pan head thread forming screw | | | | 1 | |
| | 534 | Bracket | | | | 1 | pcs |
| | 534a | Pan head thread forming screw | | | | 1 | pcs |

*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.*

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