

## TPE 100-60/4-AI-F-A-BUBE 3X400 50HZ

Grundfos pump 98504681



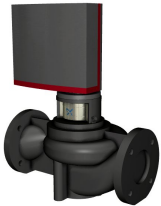
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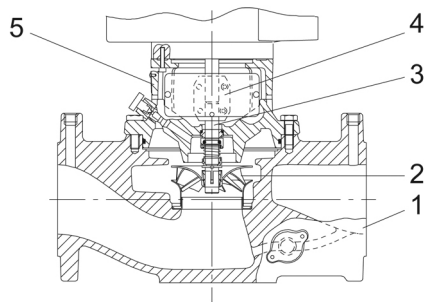
<https://www.lenntech.com/grundfos/TPE00/98504681/TPE-100-60-4-AI-F-A-BUBE.html>

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| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | 1    | <p><b>TPE 100-60/4 AI-F-A-BUBE</b></p>  <p>Product No.: On request</p> <p>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.</p> <p>The pump is fitted with an unbalanced rubber bellows seal. The shaft seal is according to EN 12756. Pipework connection is via PN 6 DIN flanges (EN 1092-2 and ISO 7005-2).</p> <p>The pump is fitted with a fan-cooled, permanent-magnet synchronous motor. The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p>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.</p> <p><b>Further product details</b></p> <p>A control panel enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The control panel has indicator lights for "Operation" and "Fault".</p> <p>Communication with the pump is possible by means of the 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".</p> <p>An operating panel on the motor terminal box enables setting of required setpoint as well as setting of pump to "Min." or "Max." operation or to "Stop". The Grundfos Eye indicator on the operating panel provides visual indication of pump status:</p> <ul style="list-style-type: none"> <li>• "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights)</li> <li>• "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights)</li> <li>• "Alarm": Motor has stopped (flashing red indicator lights).</li> </ul> <p>Communication with the pump is 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".</p> <p>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.</p> <p><b>Pump</b></p> <p>Pump housing and pump head are electrocoated to improve the corrosion resistance. Electrocoating includes:</p> <ol style="list-style-type: none"> <li>1) Alkaline-based cleaning.</li> <li>2) Pretreatment with zinc phosphate coating.</li> <li>3) Cathodic electrocoating (epoxy).</li> <li>4) Curing of paint film at 200-250 °C.</li> </ol> |



- 1: Pump housing
- 2: Impeller
- 3: Shaft
- 4: Coupling
- 5: Pump head

The pump housing is provided with a replaceable stainless 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 with a split cone with nut.

The pump is fitted with an unbalanced rubber bellows seal with torque transmission across the spring and around the bellows. Due to the bellows, the seal does not wear the shaft, and the axial movement is not prevented by deposits on the shaft.

Primary seal:

- Rotating seal ring material: tungsten carbide (WC)
- Stationary seat material: carbon graphite, resin-impregnated

This is a widely used material pairing. If the pumped liquid contains particles, wear on the seal faces must be expected. Due to the favourable lubricating properties of carbon graphite, the seal is suitable for use even under poor lubricating conditions, such as hot water. However, under such conditions, wear on the carbon graphite face reduces seal life.

Secondary seal material: EPDM (ethylene-propylene rubber)

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

A circulation of liquid through the duct of the air vent screw ensures lubrication and cooling of the shaft seal.

The flanges have tapings for mounting of pressure gauges.

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. Motor and pump shaft are connected via a shell coupling.

## 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 is flange-mounted with tapped-hole flange (FT).

Motor-mounting designation in accordance with IEC 60034-7: IM B 14, IM V 18 (Code I) / IM 3601, IM 3611 (Code II).

The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.

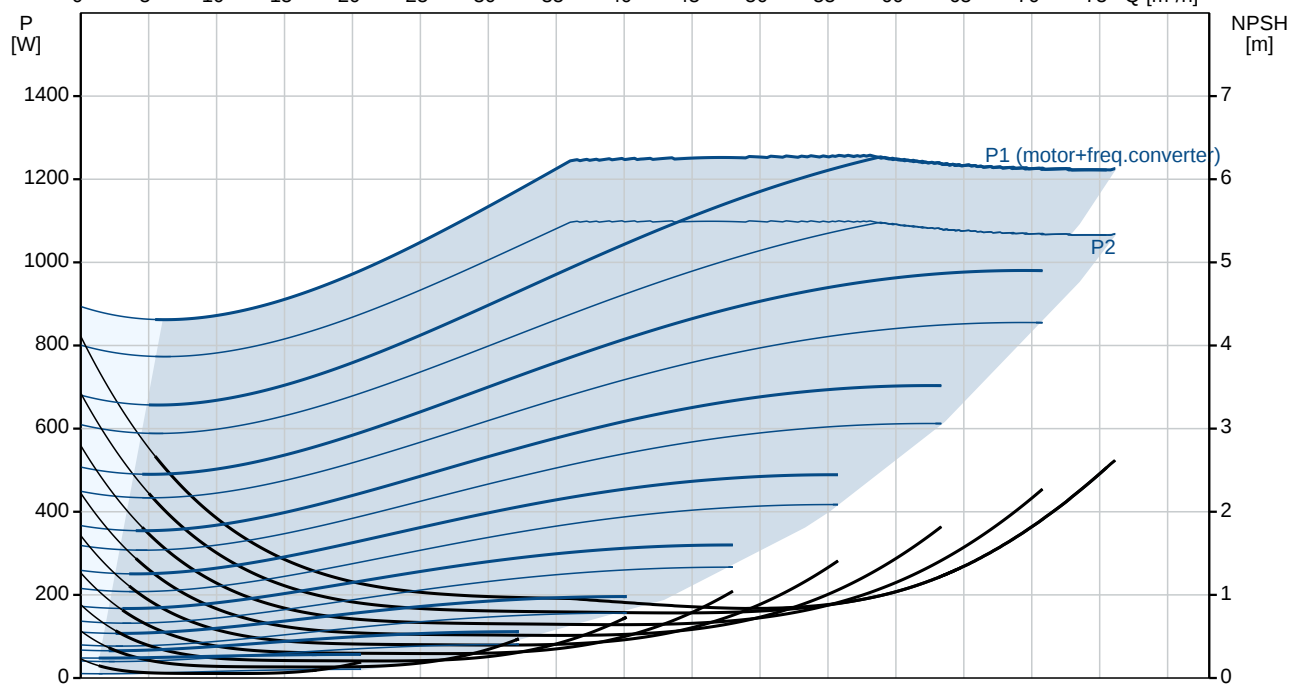
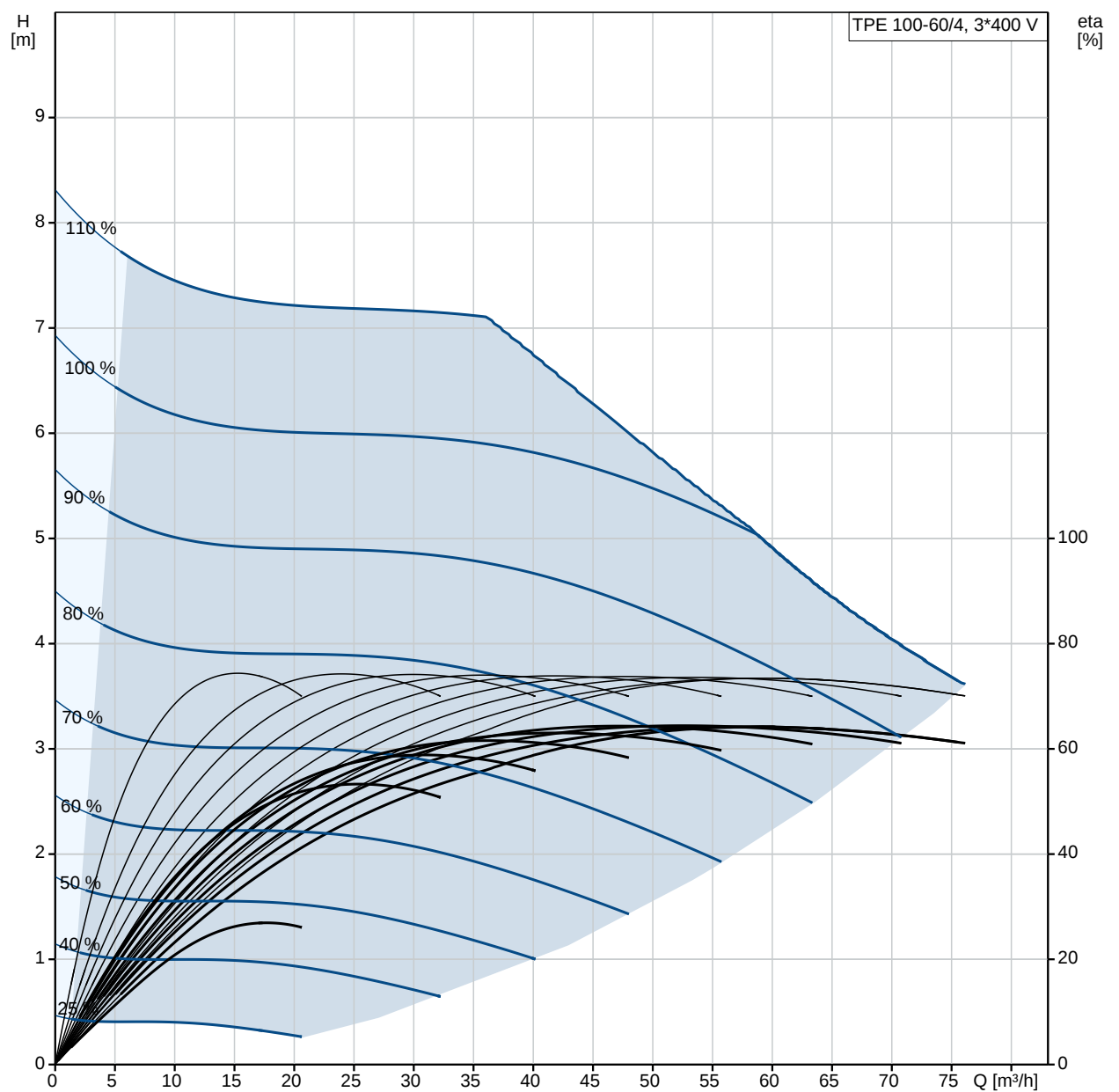
The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

The terminal box holds terminals for these connections:

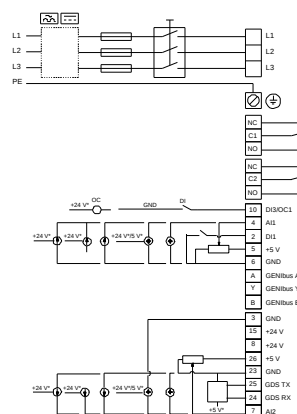
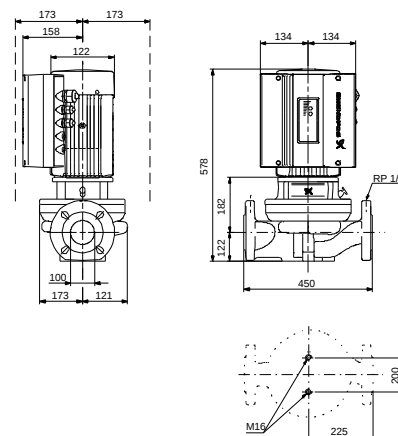
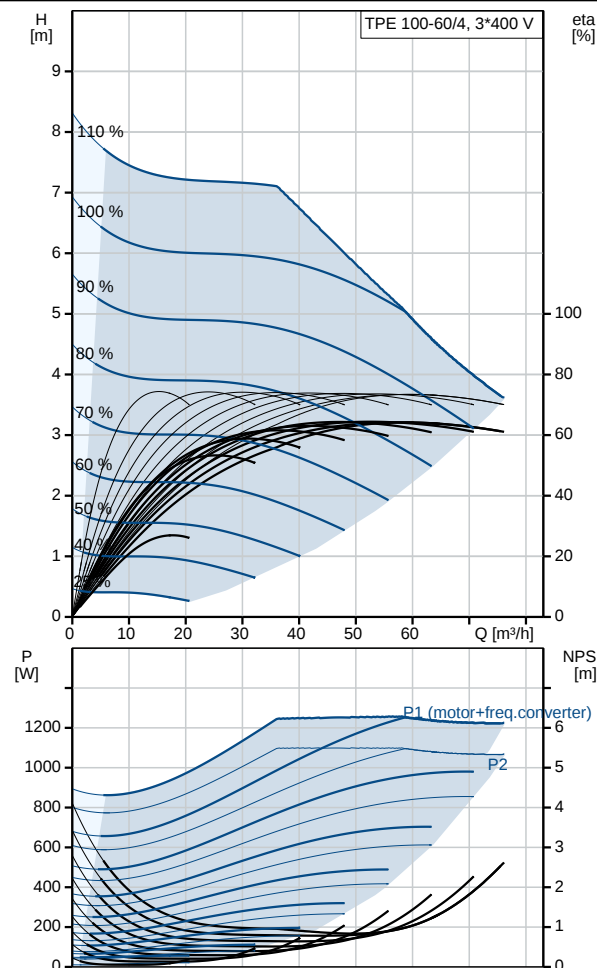
- one dedicated digital input
- two analog inputs, 0(4)-20 mA, 0-5 V, 0-10 V, 0.5 - 3.5 V
- 5 V voltage supply to potentiometer and sensor
- one configurable digital input or open-collector output
- Grundfos Digital Sensor input and output
- 24 V voltage supply for sensors
- two signal-relay outputs (potential-free contacts)
- GENIbus connection
- interface for Grundfos CIM fieldbus module.

| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | <b>Technical data</b><br><br><b>Liquid:</b><br>Pumped liquid: Water<br>Liquid temperature range: 0 .. 140 °C<br>Liquid temperature during operation: 20 °C<br>Density: 998.2 kg/m³<br><br><b>Technical:</b><br>Rated flow: 63 m³/h<br>Rated head: 5.04 m<br>Actual impeller diameter: 144 mm<br>Primary shaft seal: BUBE<br>Curve tolerance: ISO9906:2012 3B<br><br><b>Materials:</b><br>Pump housing: Cast iron<br>EN-JL1040<br>ASTM A48-40 B<br>Impeller: Stainless steel<br>DIN W.-Nr. 1.4301<br>AISI 304<br><br><b>Installation:</b><br>Range of ambient temperature: -20 .. 50 °C<br>Maximum operating pressure: 6 bar<br>Flange standard: DIN<br>Pipe connection: DN 100<br>Pressure rating: PN 6<br>(@): 450 mm<br>Flange size for motor: FT115<br><br><b>Electrical data:</b><br>Motor type: 90SD<br>IE Efficiency class: IE5<br>Rated power - P2: 1.1 kW<br>Mains frequency: 50 Hz<br>Rated voltage: 3 x 380-500 V<br>Rated current: 2.30-2.10 A<br>Cos phi - power factor: 0.90-0.74<br>Rated speed: 180-2000 rpm<br>Efficiency: 87.2%<br>Motor efficiency at full load: 87.2 %<br>Enclosure class (IEC 34-5): IP55<br>Insulation class (IEC 85): F<br><br><b>Others:</b><br>Minimum efficiency index, MEI ≥: 0.70<br>ErP status: EuP Standalone/Prod.<br>Net weight: 56.1 kg<br>Gross weight: 65 kg<br>Shipping volume: 0.16 m³ |

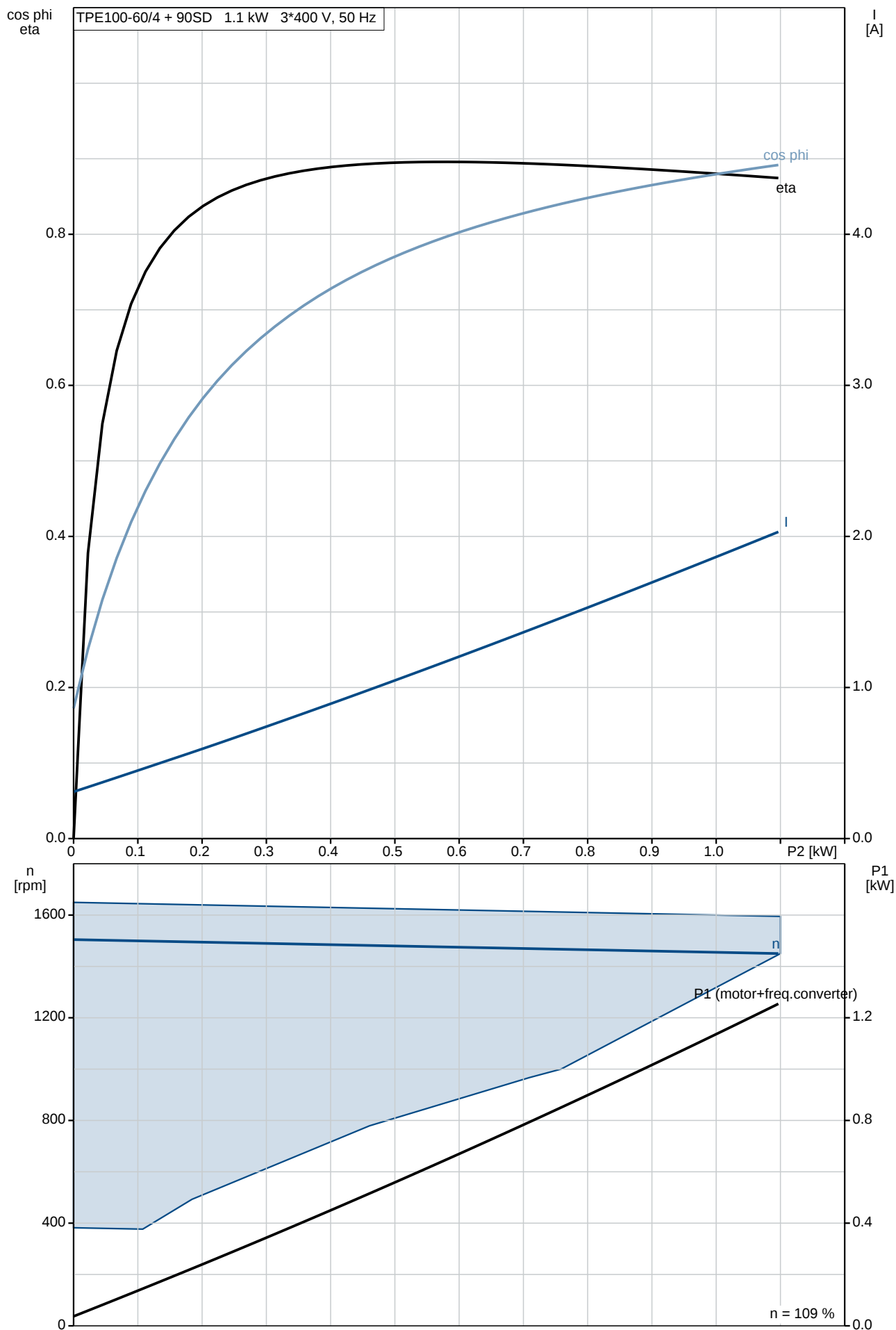
# On request TPE 100-60/4 AI-F-A-BUBE 50 Hz



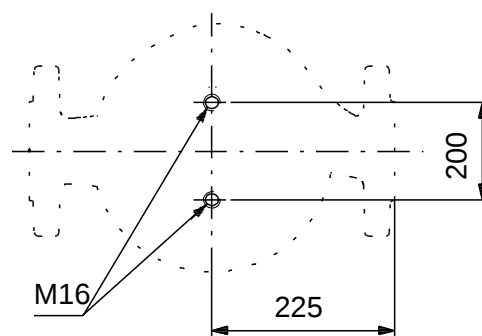
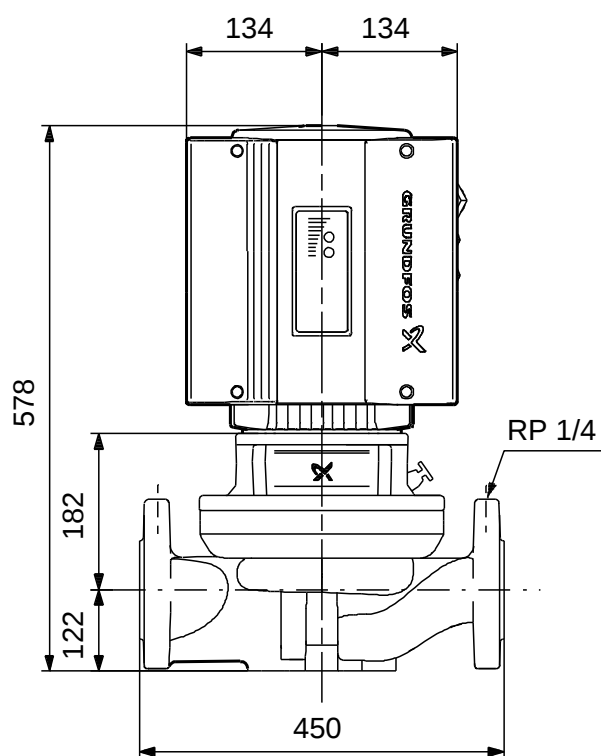
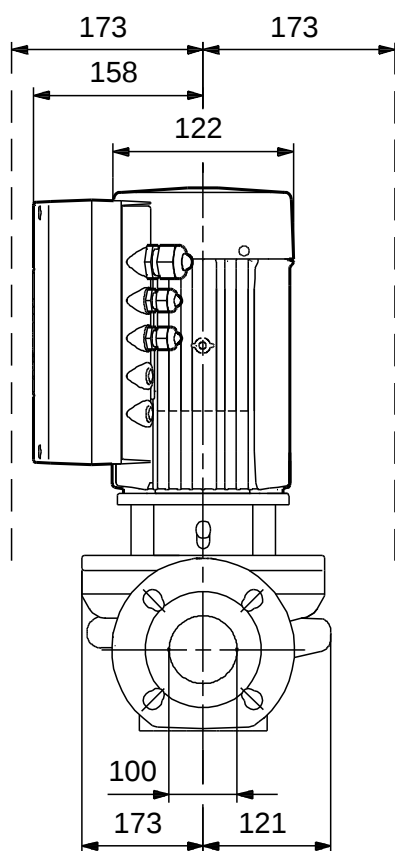
| Description                          | Value                    |
|--------------------------------------|--------------------------|
| <b>General information:</b>          |                          |
| Product name:                        | TPE 100-60/4 AI-F-A-BUBE |
| Product No:                          | On request               |
| EAN number:                          | On request               |
| <b>Technical:</b>                    |                          |
| Rated flow:                          | 63 m³/h                  |
| Rated head:                          | 5.04 m                   |
| Head max:                            | 60 dm                    |
| Actual impeller diameter:            | 144 mm                   |
| Primary shaft seal:                  | BUBE                     |
| Curve tolerance:                     | ISO9906:2012 3B          |
| Pump version:                        | AI                       |
| Model:                               | A                        |
| <b>Materials:</b>                    |                          |
| Pump housing:                        | Cast iron                |
|                                      | EN-JL1040                |
|                                      | ASTM A48-40 B            |
| Impeller:                            | Stainless steel          |
|                                      | DIN W.-Nr. 1.4301        |
|                                      | AISI 304                 |
| Material code:                       | A                        |
| <b>Installation:</b>                 |                          |
| Range of ambient temperature:        | -20 .. 50 °C             |
| Maximum operating pressure:          | 6 bar                    |
| Flange standard:                     | DIN                      |
| Pipe connection:                     | DN 100                   |
| Pressure rating:                     | PN 6                     |
| (@)                                  | 450 mm                   |
| Flange size for motor:               | FT115                    |
| Connect code:                        | F                        |
| <b>Liquid:</b>                       |                          |
| Pumped liquid:                       | Water                    |
| Liquid temperature range:            | 0 .. 140 °C              |
| Liquid temperature during operation: | 20 °C                    |
| Density:                             | 998.2 kg/m³              |
| <b>Electrical data:</b>              |                          |
| Motor type:                          | 90SD                     |
| IE Efficiency class:                 | IE5                      |
| Rated power - P2:                    | 1.1 kW                   |
| Mains frequency:                     | 50 Hz                    |
| Rated voltage:                       | 3 x 380-500 V            |
| Rated current:                       | 2.30-2.10 A              |
| Cos phi - power factor:              | 0.90-0.74                |
| Rated speed:                         | 180-2000 rpm             |
| Efficiency:                          | 87.2%                    |
| Motor efficiency at full load:       | 87.2 %                   |
| Enclosure class (IEC 34-5):          | IP55                     |
| Insulation class (IEC 85):           | F                        |
| Motor protec:                        | YES                      |
| Motor No:                            | 98286749                 |
| <b>Controls:</b>                     |                          |
| Control panel:                       | HMI200 - Standard        |
| Function Module:                     | FM200 - Standard         |
| <b>Others:</b>                       |                          |
| Minimum efficiency index, MEI ≥:     | 0.70                     |
| ErP status:                          | EuP Standalone/Prod.     |
| Net weight:                          | 56.1 kg                  |
| Gross weight:                        | 65 kg                    |
| Shipping volume:                     | 0.16 m³                  |
| Config. file no:                     | 98478701                 |



# On request TPE 100-60/4 AI-F-A-BUBE 50 Hz



# On request TPE 100-60/4 AI-F-A-BUBE 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 TPE 100-60/4, Product No. On request**  
**Valid from 23.9.2013 (1339)**

| 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 |            |                             |           | 4        |       |
| 152  | Pan head thread forming screw |            |                             |           | 1        |       |
| 153  | Ball bearing                  |            |                             |           | 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  | Waved washer                  |            |                             |           | 1        |       |
| 159a | Seal ring                     |            |                             |           | 1        |       |
| 159c | Seal ring                     |            |                             |           | 1        |       |
| 166  | Torx Screw                    |            |                             |           | 2        |       |
| 172  | Shaft w/rotor                 |            |                             |           | 1        |       |
| 173a | Base                          |            |                             |           | 1        |       |
| 185  | Cross recess Pan head screw   |            |                             |           | 4        |       |
| 186  | Drain plug                    |            |                             |           | 1        |       |
| 187  | Retaining ring                |            |                             |           | 1        |       |
| 188  | Retaining 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        |       |
| -    | Coupling cpl.                 |            |                             |           | 1        | pcs   |
| 9    | Hex socket head cap screw     |            | Designation: DIN 912        |           | 4        |       |
|      |                               |            | Length (mm): 25             |           |          |       |
|      |                               |            | Thread: M8                  |           |          |       |

| Pos | Description           | Annotation | Données de classification | Référence | Quantité | Unité |
|-----|-----------------------|------------|---------------------------|-----------|----------|-------|
| 10  | Shaft pin             |            | Diameter: 5               |           | 1        |       |
|     |                       |            | Length (mm): 26           |           |          |       |
| 10a | Coupling half         |            |                           |           | 2        |       |
| -   | Motor stool cpl.      |            |                           |           | 1        | pcs   |
| 2   | Motor stool           |            |                           |           | 1        |       |
| 26  | Hex head screw        |            | Length (mm): 25           |           | 8        |       |
|     |                       |            | Thread: M10               |           |          |       |
| 28  | Hex head screw        |            | Length (mm): 20           |           | 4        |       |
|     |                       |            | Thread: M8                |           |          |       |
| -   | Pump housing cpl.     |            |                           |           | 1        | pcs   |
| - 6 | Pump housing cpl.     |            |                           |           | 1        |       |
|     | Pump housing          |            |                           |           | 1        |       |
| 45  | Neck ring             |            |                           |           | 1        |       |
| -   | Coupling guard cpl.   |            |                           |           | 1        | pcs   |
| 7   | Coupling guard        |            |                           |           | 2        |       |
| 7a  | Pan head screw        |            |                           |           | 4        |       |
| -   | Shaft w/impeller cpl. |            |                           |           | 1        | pcs   |
| 49  | Impeller              |            |                           |           | 1        |       |
| 49b | Split cone            |            |                           |           | 1        |       |
| 49b | Split cone nut        |            |                           |           | 1        |       |
| 51  | Shaft                 |            |                           |           | 1        |       |
| 18  | Air vent screw        |            | Thread: 1/4"              |           | 1        | pcs   |
| 19  | Plug                  |            |                           |           | 2        | pcs   |
| 72a | O-ring                |            | Diameter: 154             |           | 1        | pcs   |
|     |                       |            | Material type: EPDM       |           |          |       |
|     |                       |            | Thickness: 4              |           |          |       |
| 105 | Shaft seal            |            | Material type: EPDM       |           | 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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