

## TP 80-170/4-A-F-A-BQQE 400D 50HZ

Grundfos pump 96108851



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<https://www.lenntech.com/grundfos/TP000/96108851/TP-80-170-4-A-F-A-BQQE.html>

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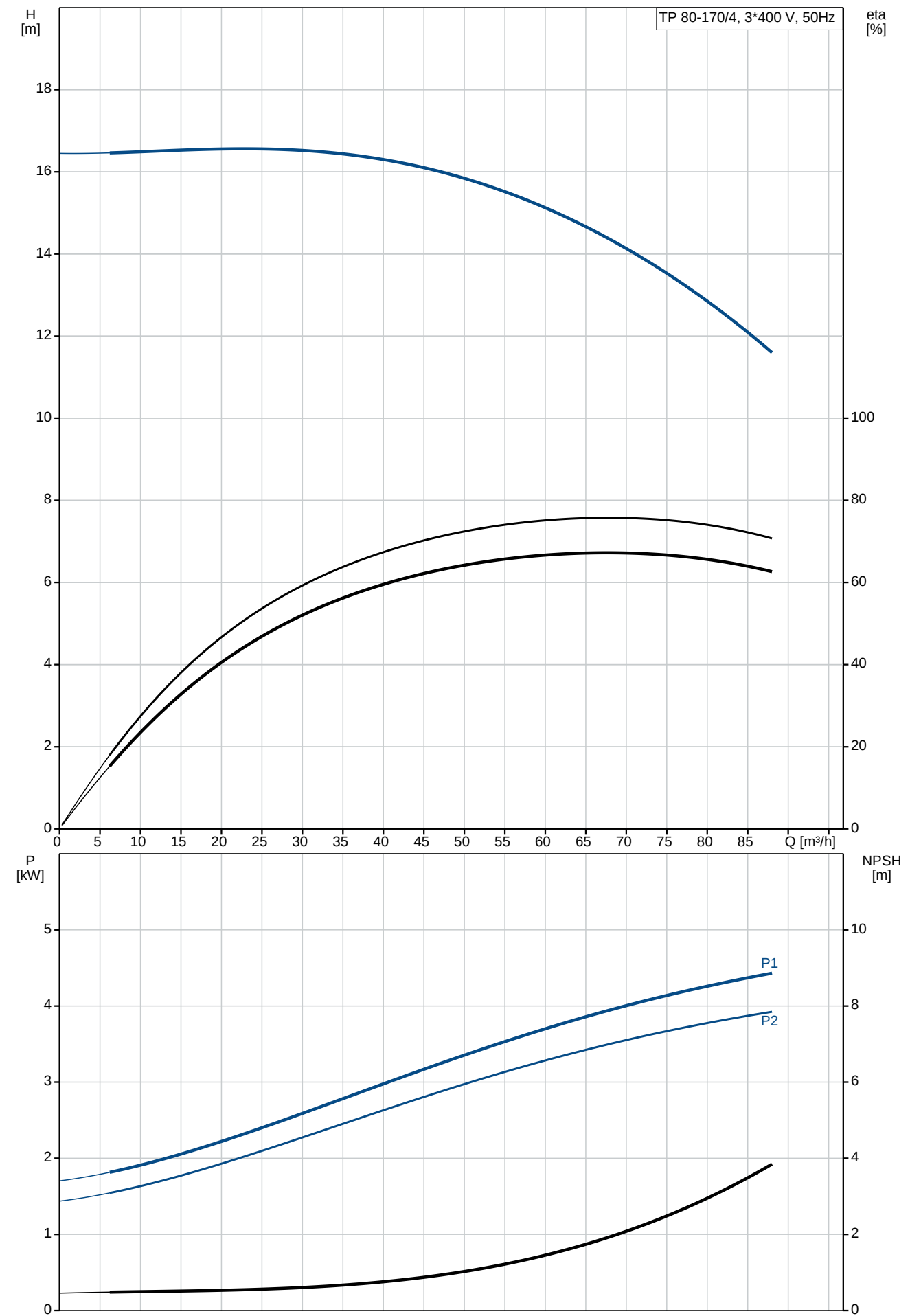
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| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|          | 1    | <p><b>TP 80-170/4 A-F-A-BQQE</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 16 DIN flanges (EN 1092-2 and ISO 7005-2).</p> <p>The pump is fitted with a fan-cooled asynchronous motor.</p> <p><b>Further product details</b></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>  <ol style="list-style-type: none"> <li>1: Pump housing</li> <li>2: Impeller</li> <li>3: Stub shaft</li> <li>4: Pump head/motor stool</li> <li>5: Wear rings</li> </ol> <p>The pump housing is provided with a replaceable brass neck ring to reduce the amount of liquid running from the outlet side of the impeller to the inlet side. The impeller is secured to the shaft with a nut.</p> <p>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.</p> <p>Primary seal:</p> <ul style="list-style-type: none"> <li>• Rotating seal ring material: silicon carbide (SiC)</li> <li>• Stationary seat material: silicon carbide (SiC)</li> </ul> <p>This material pairing is used where higher corrosion resistance is required. The high hardness of this material pairing offers good resistance against abrasive particles.</p> <p>Secondary seal material: EPDM (ethylene-propylene rubber)</p> <p>EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.</p> |

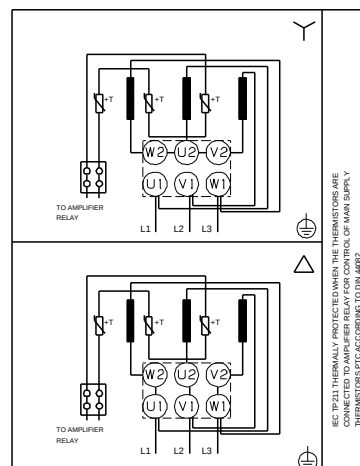
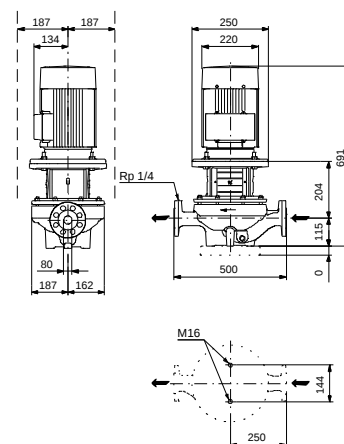
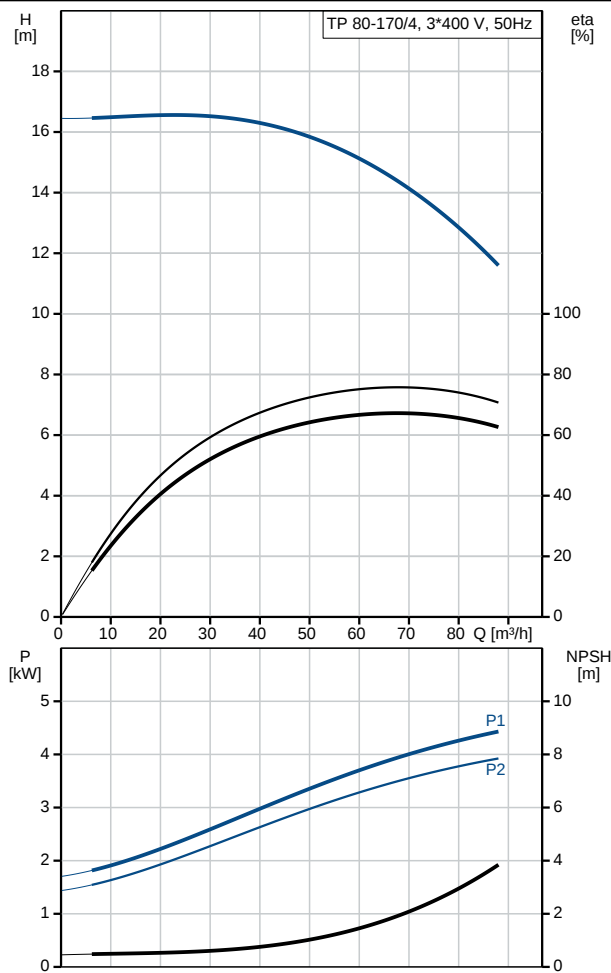
| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | <p>A circulation of liquid through the duct of the air vent screw ensures lubrication and cooling of the shaft seal.</p> <p>The flanges have tappings for mounting of pressure gauges.</p> <p>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.</p> <p>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.</p> <p><b>Motor</b></p> <p>The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. Electrical tolerances comply with IEC 60034.</p> <p>The motor is flange-mounted with free-hole flange (FF).</p> <p>Motor-mounting designation in accordance with IEC 60034-7: IM B 5, IM V 1 (Code I) / IM 3001, IM 3011 (Code II).</p> <p>The motor efficiency is classified as IE3 in accordance with IEC 60034-30-1.</p> <p>The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.</p> <p>Thermal switches must be connected to an external control circuit in a way which ensures that the automatic reset cannot cause accidents. The motors must be connected to a motor-protective circuit breaker according to local regulations.</p> <p>The motor can be connected to a variable speed drive for adjustment of pump performance to any duty point. Grundfos CUE offers a range of variable speed drives. Please find more information in Grundfos Product Center.</p> <p><b>Technical data</b></p> <p><b>Liquid:</b></p> <p>Pumped liquid: Water</p> <p>Liquid temperature range: -25 .. 120 °C</p> <p>Liquid temperature during operation: 20 °C</p> <p>Density: 998.2 kg/m<sup>3</sup></p> <p><b>Technical:</b></p> <p>Rated flow: 67.9 m<sup>3</sup>/h</p> <p>Rated head: 14.4 m</p> <p>Actual impeller diameter: 219 mm</p> <p>Primary shaft seal: BQQE</p> <p>Curve tolerance: ISO9906:2012 3B</p> <p><b>Materials:</b></p> <p>Pump housing: Cast iron<br/>EN-JL1040<br/>ASTM A48-40 B</p> <p>Impeller: Cast iron<br/>EN-JL1030<br/>ASTM A48-30 B</p> <p><b>Installation:</b></p> <p>Range of ambient temperature: -30 .. 60 °C</p> <p>Maximum operating pressure: 16 bar</p> <p>Flange standard: DIN</p> <p>Pipe connection: DN 80</p> <p>Pump inlet: DN 80</p> <p>Pump outlet: DN 80</p> <p>Pressure rating: PN 16</p> <p>(@): 500 mm</p> <p>Flange size for motor: FF215</p> <p><b>Electrical data:</b></p> |

| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | <p> Motor type: 112MC<br/> IE Efficiency class: IE3<br/> Rated power - P2: 4 kW<br/> Power (P2) required by pump: 4 kW<br/> Mains frequency: 50 Hz<br/> Rated voltage: 3 x 380-415D V<br/> Rated current: 9.3 A<br/> Starting current: 790-870 %<br/> Cos phi - power factor: 0.75-0.68<br/> Rated speed: 1460 rpm<br/> Efficiency: IE3 88,6%<br/> Motor efficiency at full load: 88.6 %<br/> Motor efficiency at 3/4 load: 88.9 %<br/> Motor efficiency at 1/2 load: 88.3 %<br/> Number of poles: 4<br/> Enclosure class (IEC 34-5): 55 Dust/Jetting<br/> Insulation class (IEC 85): F </p> <p> <b>Others:</b><br/> Minimum efficiency index, MEI <math>\geq</math> 0.70<br/> ErP status: EuP Standalone/Prod.<br/> Net weight: 100 kg<br/> Gross weight: 117 kg<br/> Shipping volume: 0.39 m<sup>3</sup><br/> Danish VVS No.: 381715170 </p> |

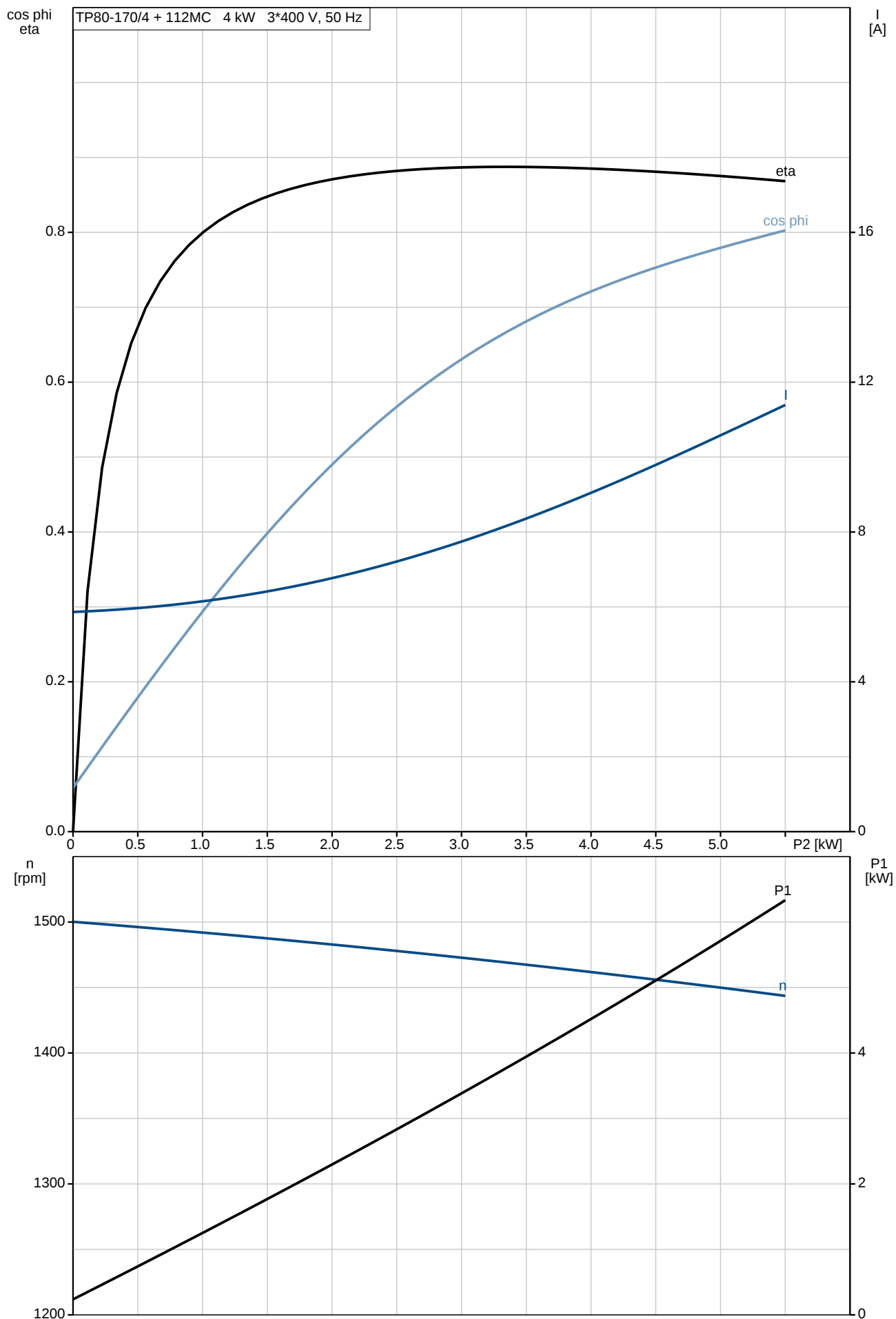
On request TP 80-170/4 A-F-A-BQQE 50 Hz



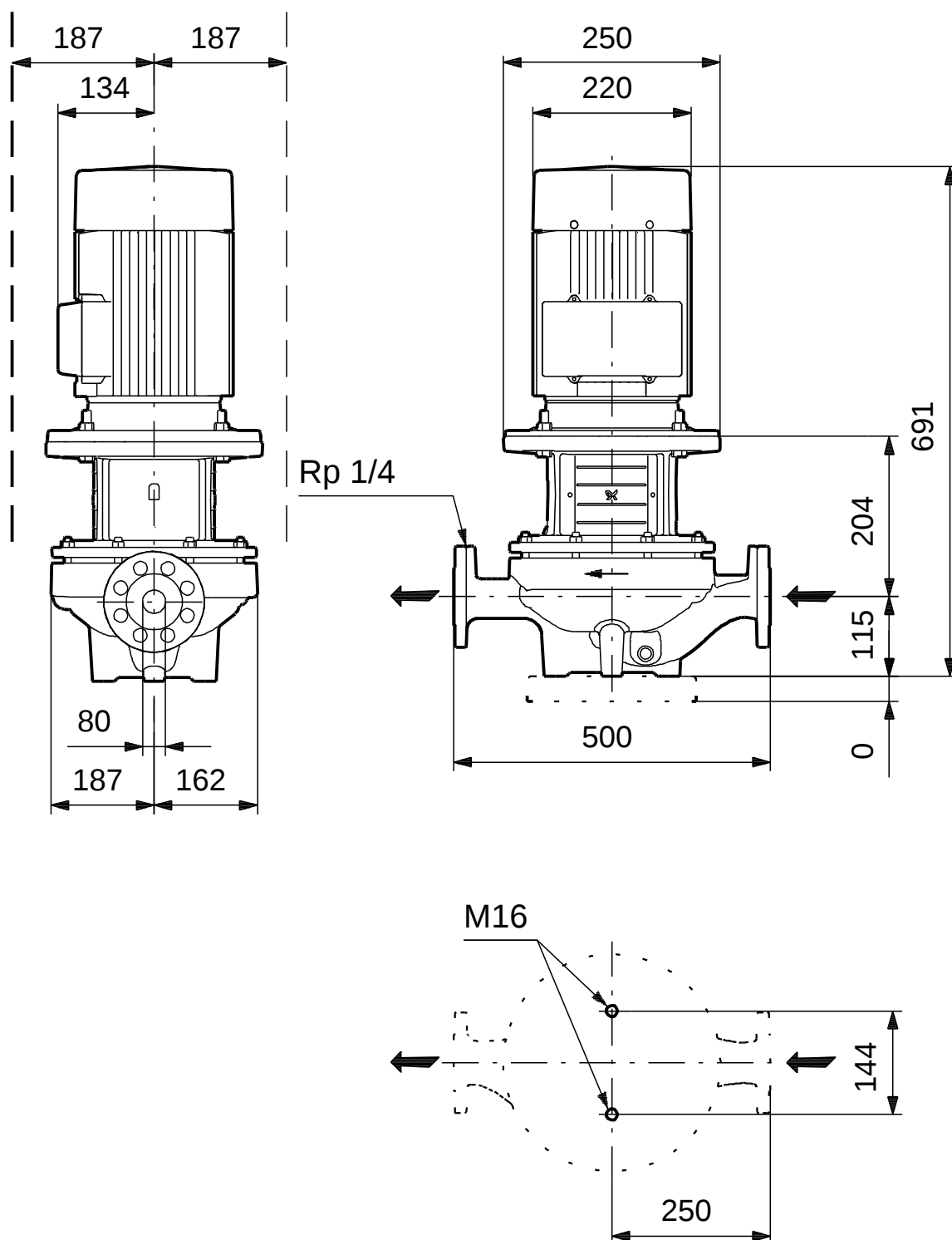
| Description                          | Value                  |
|--------------------------------------|------------------------|
| <b>General information:</b>          |                        |
| Product name:                        | TP 80-170/4 A-F-A-BQQE |
| Product No:                          | On request             |
| EAN number:                          | On request             |
| <b>Technical:</b>                    |                        |
| Rated flow:                          | 67.9 m³/h              |
| Rated head:                          | 14.4 m                 |
| Head max:                            | 170 dm                 |
| Actual impeller diameter:            | 219 mm                 |
| Primary shaft seal:                  | BQQE                   |
| Curve tolerance:                     | ISO9906:2012 3B        |
| Pump version:                        | A                      |
| Model:                               | A                      |
| <b>Materials:</b>                    |                        |
| Pump housing:                        | Cast iron              |
|                                      | EN-JL1040              |
|                                      | ASTM A48-40 B          |
| Impeller:                            | Cast iron              |
|                                      | EN-JL1030              |
|                                      | ASTM A48-30 B          |
| Material code:                       | A                      |
| <b>Installation:</b>                 |                        |
| Range of ambient temperature:        | -30 .. 60 °C           |
| Maximum operating pressure:          | 16 bar                 |
| Flange standard:                     | DIN                    |
| Pipe connection:                     | DN 80                  |
| Pump inlet:                          | DN 80                  |
| Pump outlet:                         | DN 80                  |
| Pressure rating:                     | PN 16                  |
| (@)                                  | 500 mm                 |
| Flange size for motor:               | FF215                  |
| Connect code:                        | F                      |
| <b>Liquid:</b>                       |                        |
| Pumped liquid:                       | Water                  |
| Liquid temperature range:            | -25 .. 120 °C          |
| Liquid temperature during operation: | 20 °C                  |
| Density:                             | 998.2 kg/m³            |
| <b>Electrical data:</b>              |                        |
| Motor type:                          | 112MC                  |
| IE Efficiency class:                 | IE3                    |
| Rated power - P2:                    | 4 kW                   |
| Power (P2) required by pump:         | 4 kW                   |
| Mains frequency:                     | 50 Hz                  |
| Rated voltage:                       | 3 x 380-415D V         |
| Rated current:                       | 9.3 A                  |
| Starting current:                    | 790-870 %              |
| Cos phi - power factor:              | 0.75-0.68              |
| Rated speed:                         | 1460 rpm               |
| Efficiency:                          | IE3 88,6%              |
| Motor efficiency at full load:       | 88.6 %                 |
| Motor efficiency at 3/4 load:        | 88.9 %                 |
| Motor efficiency at 1/2 load:        | 88.3 %                 |
| Number of poles:                     | 4                      |
| Enclosure class (IEC 34-5):          | 55 Dust/Jetting        |
| Insulation class (IEC 85):           | F                      |
| Motor protec:                        | PTC                    |
| Motor No:                            | 87322330               |
| <b>Others:</b>                       |                        |
| Minimum efficiency index, MEI ≥:     | 0.70                   |
| ErP status:                          | EuP Standalone/Prod.   |
| Net weight:                          | 100 kg                 |
| Gross weight:                        | 117 kg                 |
| Shipping volume:                     | 0.39 m³                |
| Danish VVS No.:                      | 381715170              |



# On request TP 80-170/4 A-F-A-BQQE 50 Hz



# On request TP 80-170/4 A-F-A-BQQE 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 TP 80-170/4, Product No. On request**  
**Valid from 1.1.2011 (1152)**

| Pos  | Description        | Annotation | Données de classification                                  | Référence | Quantité | Unité |
|------|--------------------|------------|------------------------------------------------------------|-----------|----------|-------|
| +    | Motor              |            |                                                            |           | 1        | pcs   |
| -    | Nut                |            |                                                            |           | 1        | pcs   |
| 66   | Washer             |            |                                                            |           | 1        |       |
| 66a  | Spring lock washer |            |                                                            |           | 1        |       |
| 67   | Nut                |            | Thread: M14                                                |           | 1        |       |
| -    | Motor stool cpl.   |            |                                                            |           | 1        | pcs   |
| 1a   | Motor stool        |            |                                                            |           | 1        |       |
| 7    | Coupling guard     |            |                                                            |           | 2        |       |
| 77a  | Pan head screw     |            |                                                            |           | 4        |       |
| -    | Pump housing cpl.  |            |                                                            |           | 1        | pcs   |
| 6    | Pump housing       |            |                                                            |           | 1        |       |
| 19   | Plug               |            |                                                            |           | 1        |       |
| 20   | Plug               |            |                                                            |           | 1        |       |
| 36   | Nut                |            | Thread: M10                                                |           | 8        |       |
| -    | Shaft seal cpl.    |            |                                                            |           | 1        | pcs   |
| 72.a | O-ring             |            | Diameter: 221,84<br>Material type: EPDM<br>Thickness: 3,53 |           | 1        |       |
| 105  | Shaft seal         |            |                                                            |           | 1        |       |
| -    | Stub shaft         |            |                                                            |           | 1        | pcs   |
| 9    | Socket set screw   |            | Length (mm): 6<br>Thread: M8                               |           | 2        |       |
| 11   | Parallel key       |            | Dimension: 6X6X35                                          |           | 1        |       |
| 51   | Pump shaft         |            |                                                            |           | 1        |       |
| 19   | Plug               |            |                                                            |           | 2        | pcs   |
| 49   | Impeller           |            |                                                            |           | 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.*

*All information is copyright Grundfos.*



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