

TPE3 40-240-S-A-F-A-BUBE

Grundfos pump 98437970



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<https://www.lenntech.com/grundfos/TPE0S2/98437970/TPE3-40-240-S-A-F-A-BUBE.html>

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Position	Qty.	Description
	1	TPE3 40-240-S A-F-A-BUBE  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 6/10 DIN flanges (EN 1092-2 and ISO 7005-2). 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. 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-limiting 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.

Electrocoating includes:

- 1) Alkaline-based cleaning.
- 2) Pretreatment with zinc phosphate coating.
- 3) Cathodic electrocoating (epoxy).
- 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 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 to the shaft with a 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.

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

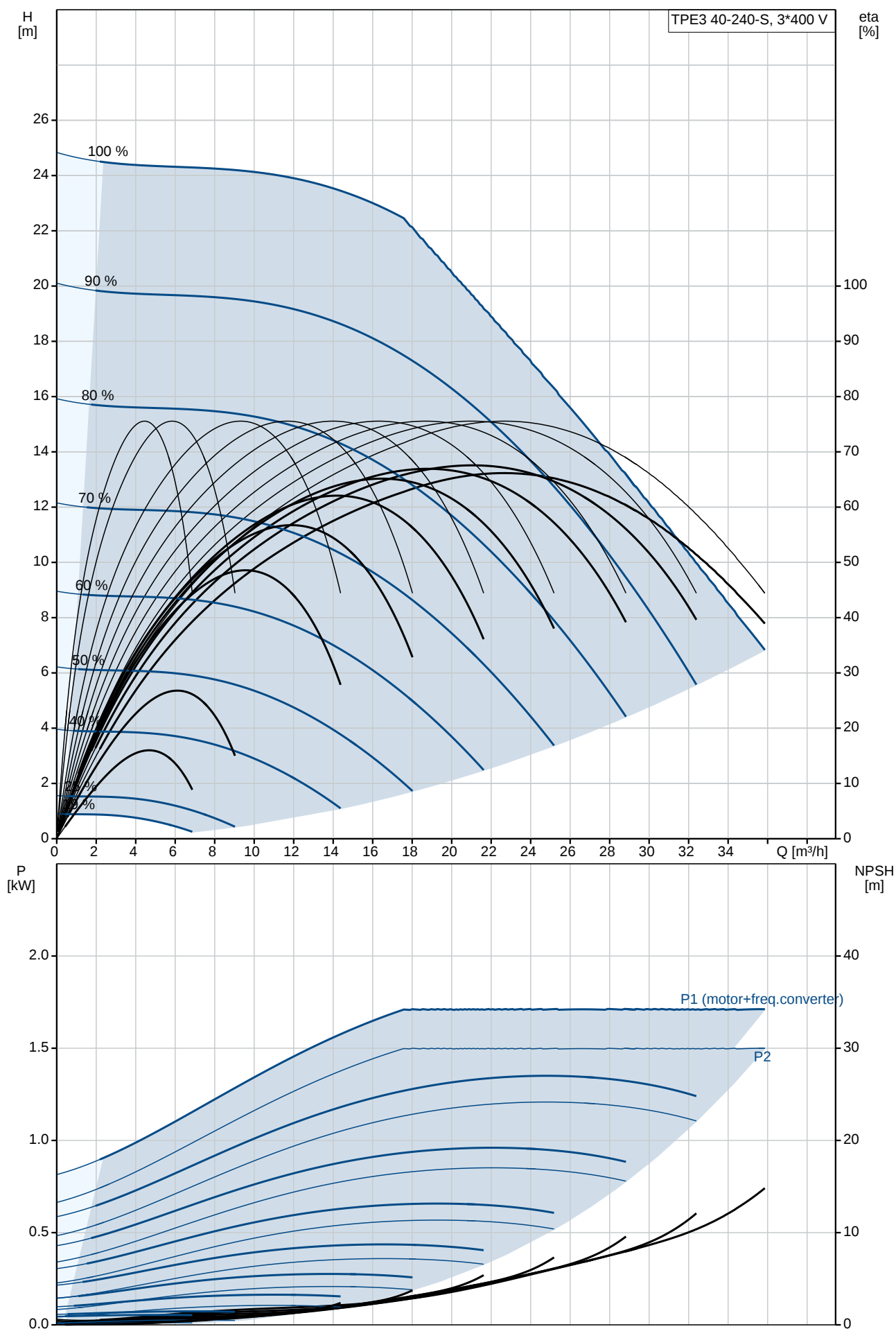
The motor requires no external motor protection. The motor control unit incorporates protection against slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

The terminal box holds terminals for these connections:

- one dedicated digital input
- two analog inputs, 0(4)-20 mA, 0-10 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.

Position	Qty.	Description
		Technical data Liquid: Pumped liquid: Water Liquid temperature range: 0 .. 120 °C Liquid temperature during operation: 20 °C Density: 998.2 kg/m³ Technical: Rated flow: 22.4 m³/h Rated head: 18.6 m Primary shaft seal: BUBE Curve tolerance: ISO9906:2012 3B Materials: Pump housing: Cast iron Impeller: Composite PES/PP 30% GF Installation: Range of ambient temperature: -20 .. 50 °C Maximum operating pressure: 10 bar Flange standard: DIN Pipe connection: DN 40 Pressure rating: PN 6/10 (@): 250 mm Flange size for motor: 56C Electrical data: Motor type: 90SB IE Efficiency class: IE5 Rated power - P2: 1.5 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-500 V Rated current: 3.05-2.50 A Cos phi - power factor: 0.90-0.83 Rated speed: 480-5900 rpm Efficiency: 89.1% Motor efficiency at full load: 89.1 % Enclosure class (IEC 34-5): IP55 Insulation class (IEC 85): F Others: Minimum efficiency index, MEI ≥: 0.7 ErP status: EuP Standalone/Prod. Net weight: 27.4 kg Gross weight: 34.9 kg Shipping volume: 0.058 m³

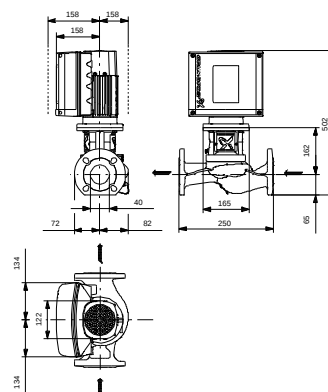
On request TPE3 40-240-S A-F-A-BUBE 50 Hz



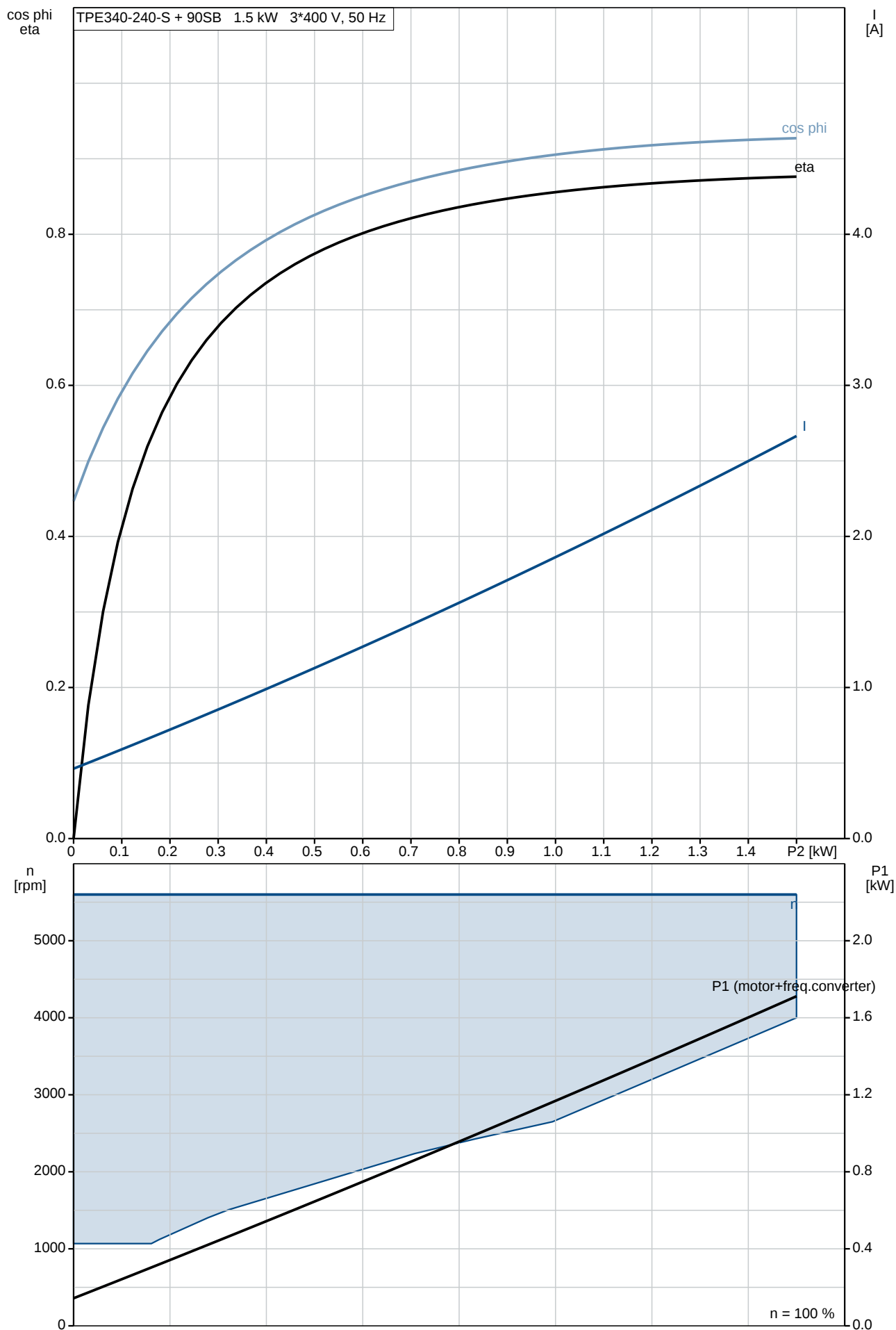
The figure consists of two vertically stacked graphs sharing a common x-axis representing flow rate Q in m^3/h , ranging from 0 to 35.

Top Graph: Shows static head H [m] on the left y-axis (0 to 26) and efficiency η [%] on the right y-axis (0 to 100). It contains multiple curves for different speed percentages: 100%, 90%, 80%, 70%, 60%, 50%, 40%, 30%, 20%, 10%, and 5%. The 100% curve is the highest, showing a peak head of approximately 24.5 m at $Q \approx 15 \text{ m}^3/\text{h}$. Efficiency curves are also plotted, with the 100% curve reaching an efficiency of about 85%.

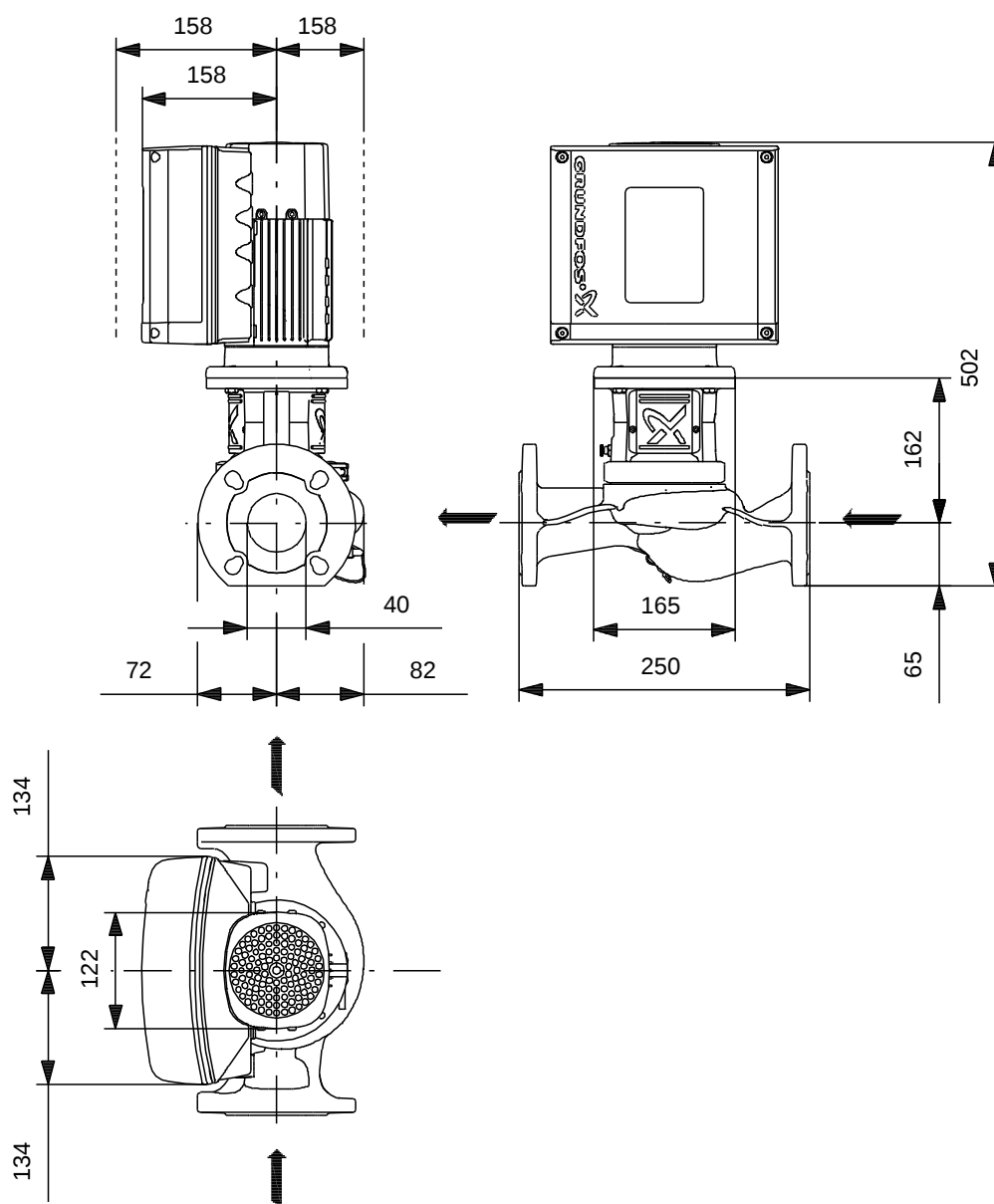
Bottom Graph: Shows power P [kW] on the left y-axis (0.0 to 2.0) and NPSH [m] on the right y-axis (0 to 40). It contains multiple curves for the same speed percentages as the top graph. The power curves show a peak power of approximately 1.7 kW at $Q \approx 15 \text{ m}^3/\text{h}$ for the 100% speed. The NPSH curves show a required head that increases with flow rate, with the 100% curve reaching about 35 m at $Q \approx 30 \text{ m}^3/\text{h}$. The region between the power and NPSH curves is shaded blue and labeled "P1 (motor+freq. converter) P2".



On request TPE3 40-240-S A-F-A-BUBE 50 Hz



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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 40-240-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				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	
172a	Parallel key				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				4	
277a	Cross recess Pan head screw				1	
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		Material type: EPDM		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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