GRUNDFOS **DATA BOOKLET**

# NB150-400/394 A-F1-A-GQQE

## Grundfos Pump 98306023

**Thank you for your interest in our products**
Please contact us for more information, or visit our website
https://www.lenntech.com/grundfos/NB000/98306023/NB-150-400-394-A-F1-A-E-GQQE.html

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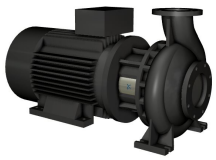
| Position | Qty. | Description |
|---|---|---|
| | 1 | **NB 150-400/394 A-F1-A-E-GQQE** |



Product No.: 98306023

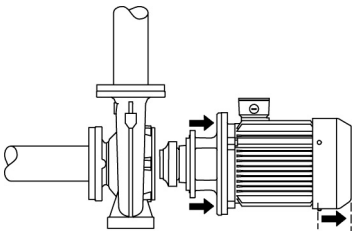
Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733 (10 bar). Flanges are PN 10 with dimensions according to EN 1092-2. The pump has an axial suction port, radial discharge port, horizontal shaft and a back pull-out design enabling removal of the motor, motor stool, cover and impeller without disturbing the pump housing or pipework.

The unbalanced rubber bellows shaft seal with reduced seal face is according to DIN EN 12756.
The pump is close-coupled to a fan-cooled asynchronous motor.

## Further product details

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.

The back pull-out design means that the pump can be serviced by a single person without disturbing the pump housing or pipe work.



Cast-iron parts have an epoxy-based coating made in a cathodic electro-deposition (CED) process. CED is a high-quality dip-painting process where an electrical field around the products ensures deposition of paint particles as a thin, well-controlled layer on the surface. An integral part of the process is a pretreatment. The entire process consists of these elements:

1) Alkaline-based cleaning.
2) Zinc phosphating.
3) Cathodic electro-deposition.
4) Curing to a dry film thickness 18-22 my m.

The colour code for the finished product is NCS 9000/RAL 9005.

## Pump

The pump housing has both a priming and a drain hole closed by plugs.
The impeller is a closed impeller with double-curved blades with smooth surfaces. The impeller is statically balanced according to ISO 1940-1 class G6.3 and hydraulically balanced to compensate for axial thrust.

Wear rings used in pump housing and for impeller are made of bronze/brass or cast iron.

Motor stool and pump cover are made of cast iron (EN-GJL-250). Coupling guards are fitted to the motor stool. The pump cover is provided with a manual air vent screw for venting of the pump housing and the shaft seal chamber.

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.

| Position | Qty. | Description |
|---|---|---|

Secondary seal material: EPDM (ethylene-propylene rubber)
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.

## 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 IE3 in accordance with IEC 60034-30.
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.

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.

A variable speed drive makes adjustment of pump performance to any duty point possible. If the motor is to be connected to a variable speed drive, the pump should be ordered with an electrically insulated motor bearing.

## Technical data

**Liquid:**

| | |
|---|---|
| Pumped liquid: | Water |
| Liquid temperature range: | -25 .. 60 °C |
| Liquid temperature during operation: | 20 °C |
| Density: | 998.2 kg/m³ |

**Technical:**

| | |
|---|---|
| Speed for pump data: | 1485 rpm |
| Rated flow: | 474 m³/h |
| Rated head: | 50 m |
| Actual impeller diameter: | 394 mm |
| Impeller nom: | 400 mm |
| Primary shaft seal: | GQQE |
| Secondary shaft seal: | NONE |
| Curve tolerance: | ISO9906:2012 3B |

**Materials:**

| | |
|---|---|
| Pump housing: | Cast iron<br>EN-GJL-250<br>ASTM A48-40 B |
| Impeller: | Cast iron<br>EN-GJL-200<br>ASTM A48-30 B |
| Shaft: | Stainless steel<br>1.4301<br>304 |
| Rubber: | EPDM |
| Wear ring mat.: | High alloy brass(CuZn34Mn3AI2 |

**Installation:**

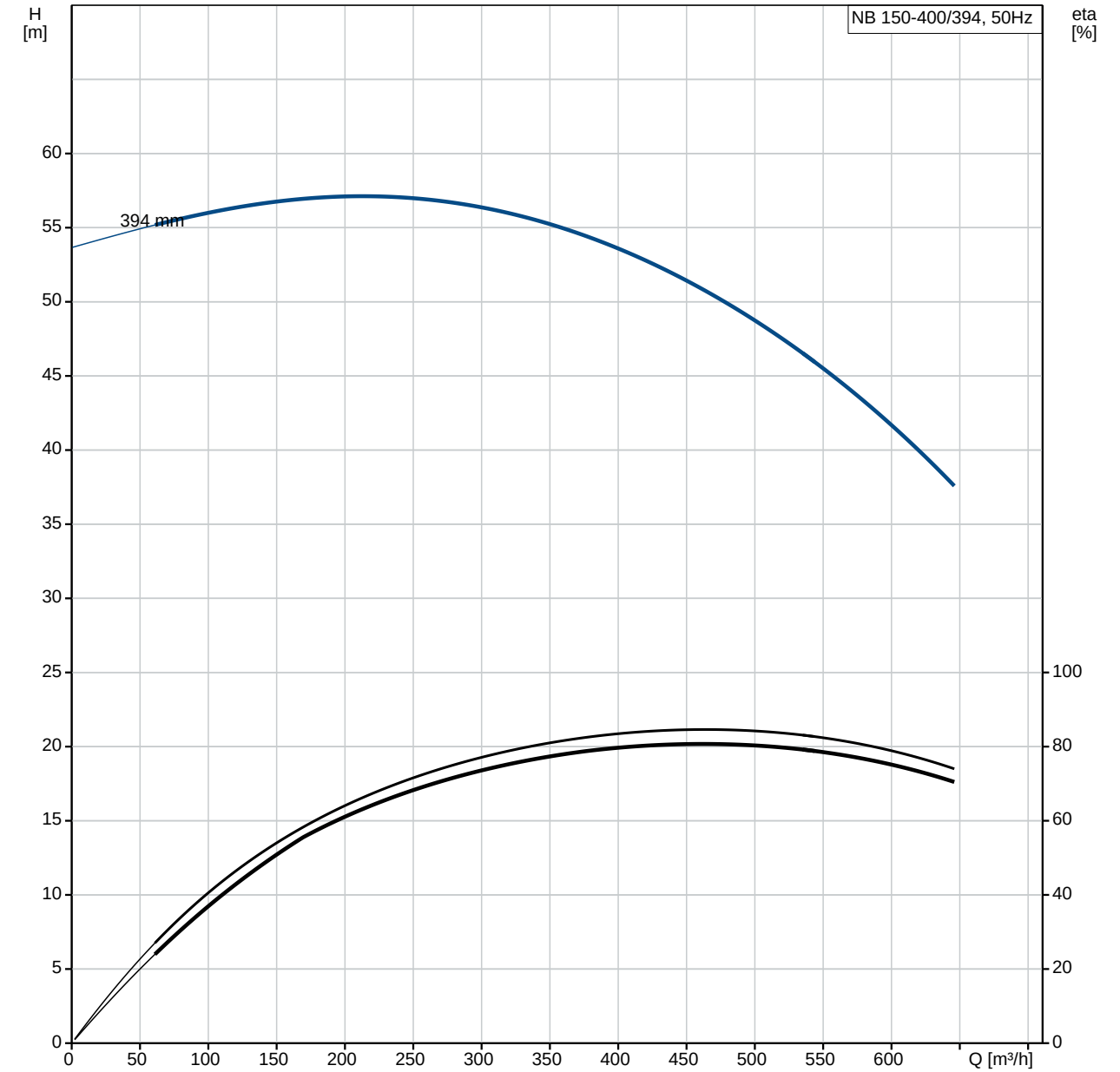
| | |
|---|---|
| Maximum ambient temperature: | 55 °C |
| Maximum operating pressure: | 10 bar |
| Flange standard: | EN 1092-2 |
| Pump inlet: | DN 200 |
| Pump outlet: | DN 150 |
| Pressure rating: | PN 10 |

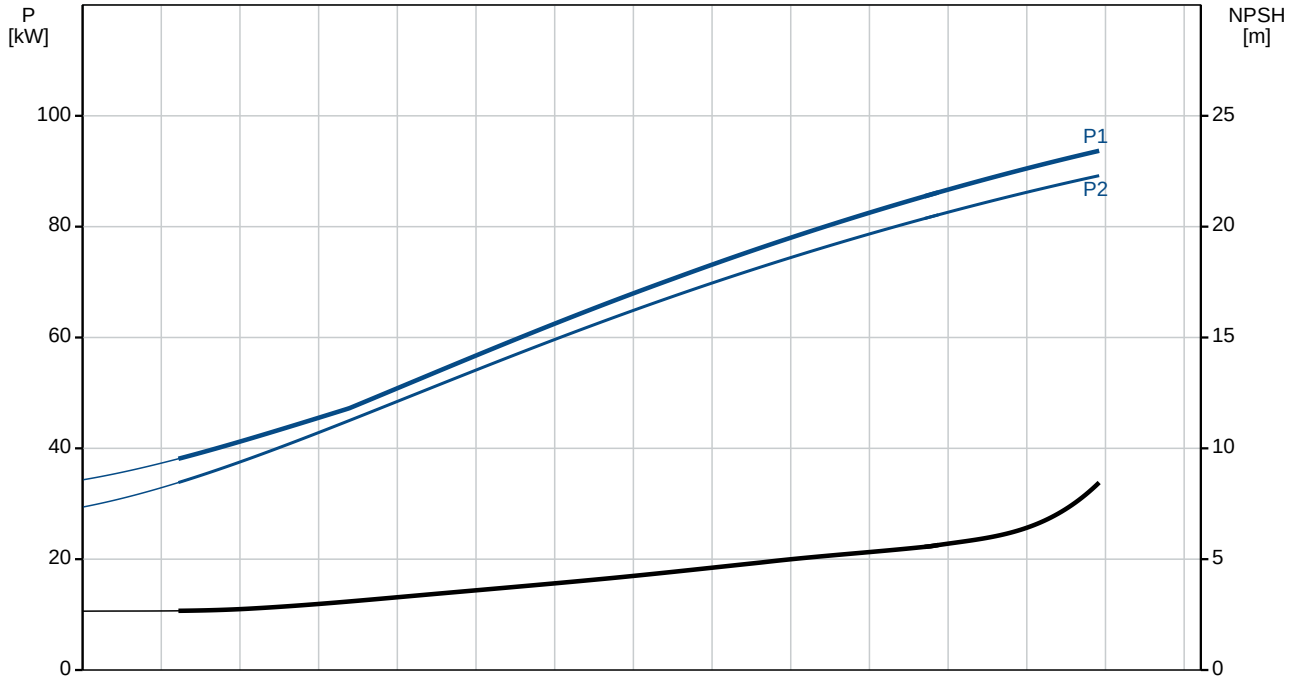
**Electrical data:**

| | |
|---|---|
| Motor type: | SIEMENS |
| IE Efficiency class: | IE3 |
| Rated power - P2: | 90 kW |
| Mains frequency: | 50 Hz |
| Rated voltage: | 3 x 380-420D/660-725Y V |
| Rated current: | 166-152/95,0-88,0 A |

| Position | Qty. | Description |
|---|---|---|
| | | Starting current: 720-720 %<br>Cos phi - power factor: 0,9<br>Rated speed: 1485 rpm<br>Efficiency: IE3 95,2%<br>Motor efficiency at full load: 95.2-95.2 %<br>Motor efficiency at 3/4 load: 95.5-95.5 %<br>Motor efficiency at 1/2 load: 95.3-95.3 %<br>Number of poles: 4<br>Enclosure class (IEC 34-5): 55 Dust/Jetting<br>Insulation class (IEC 85): F<br>Lubricant type: Grease<br><br>**Others:**<br>Minimum efficiency index, MEI ≥: 0.70<br>ErP status: EuP Standalone/Prod.<br>Net weight: 986 kg<br>Gross weight: 1060 kg<br>Shipping volume: 1.73 $m^3$ |

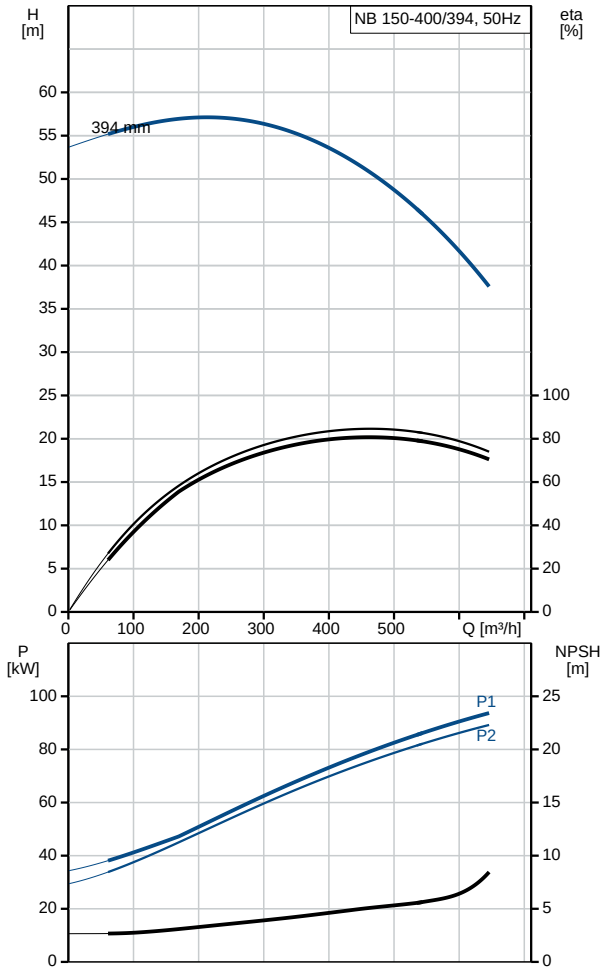
# 98306023 NB 150-400/394 50 Hz

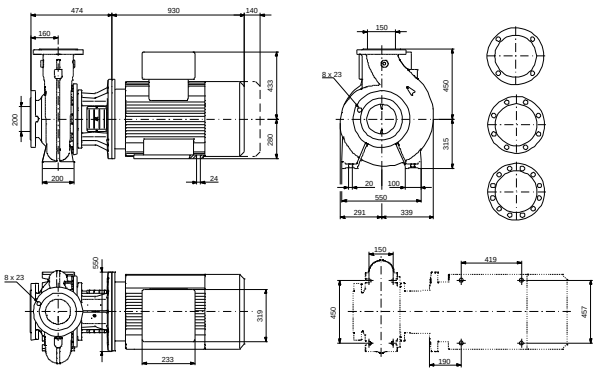


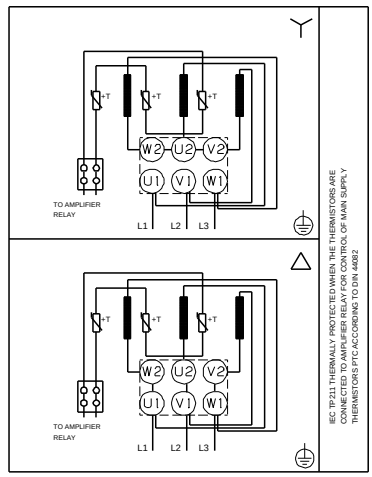




*Printed from Grundfos Product Centre [2018.02.043]*

| Description | Value |
|---|---|
| **General information:** | |
| Product name: | NB 150-400/394 A-F1-A-E-GQQE |
| Product No: | 98306023 |
| EAN number: | 5711492787205 |
| **Technical:** | |
| Speed for pump data: | 1485 rpm |
| Rated flow: | 474 m³/h |
| Rated head: | 50 m |
| Actual impeller diameter: | 394 mm |
| Impeller nom: | 400 mm |
| Primary shaft seal: | GQQE |
| Secondary shaft seal: | NONE |
| Shaft diameter: | 48 mm |
| Curve tolerance: | ISO9906:2012 3B |
| Pump version: | A |
| **Materials:** | |
| Pump housing: | Cast iron |
| | EN-GJL-250 |
| | ASTM A48-40 B |
| Impeller: | Cast iron |
| | EN-GJL-200 |
| | ASTM A48-30 B |
| Shaft: | Stainless steel |
| | 1.4301 |
| | 304 |
| Material code: | A |
| Rubber: | EPDM |
| Code for rubber: | E |
| Wear ring mat.: | High alloy brass(CuZn34Mn3Al2 |
| **Installation:** | |
| Maximum ambient temperature: | 55 °C |
| Maximum operating pressure: | 10 bar |
| Flange standard: | EN 1092-2 |
| Connect code: | F1 |
| Pump inlet: | DN 200 |
| Pump outlet: | DN 150 |
| Pressure rating: | PN 10 |
| Wear ring(s): | neckring(s) |
| **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: | SIEMENS |
| IE Efficiency class: | IE3 |
| Rated power - P2: | 90 kW |
| Mains frequency: | 50 Hz |
| Rated voltage: | 3 x 380-420D/660-725Y V |
| Rated current: | 166-152/95,0-88,0 A |
| Starting current: | 720-720 % |
| Cos phi - power factor: | 0,9 |
| Rated speed: | 1485 rpm |
| Efficiency: | IE3 95,2% |
| Motor efficiency at full load: | 95.2-95.2 % |
| Motor efficiency at 3/4 load: | 95.5-95.5 % |
| Motor efficiency at 1/2 load: | 95.3-95.3 % |
| Number of poles: | 4 |
| Enclosure class (IEC 34-5): | 55 Dust/Jetting |
| Insulation class (IEC 85): | F |
| Motor protec: | PTC |
| Motor No: | 83V15442 |



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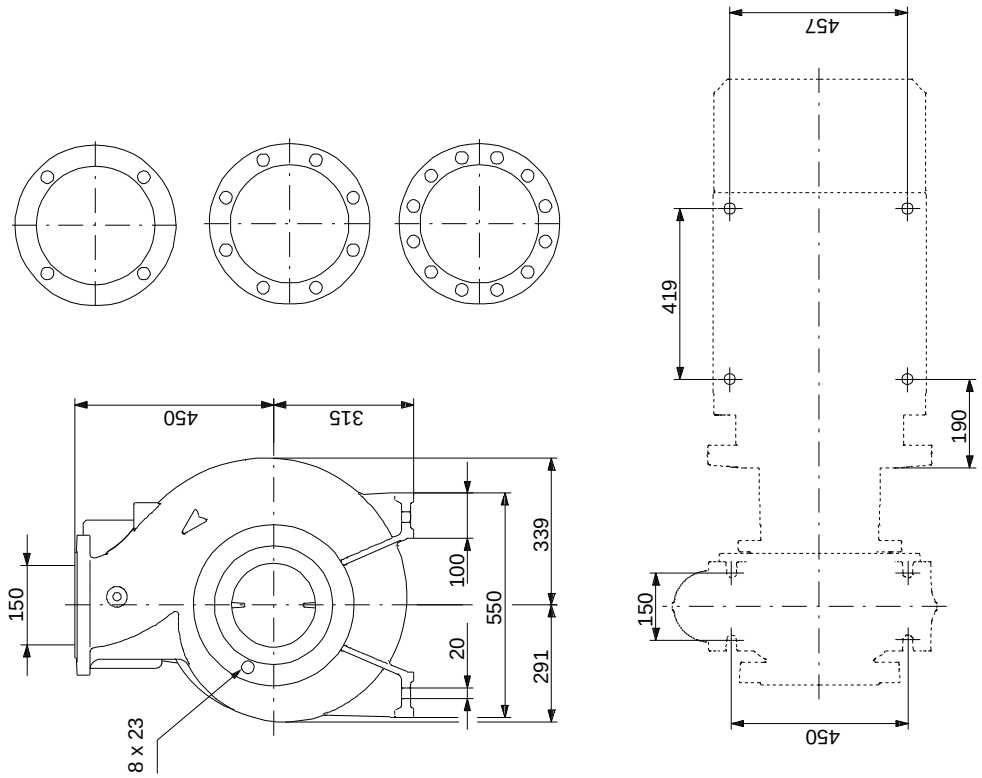
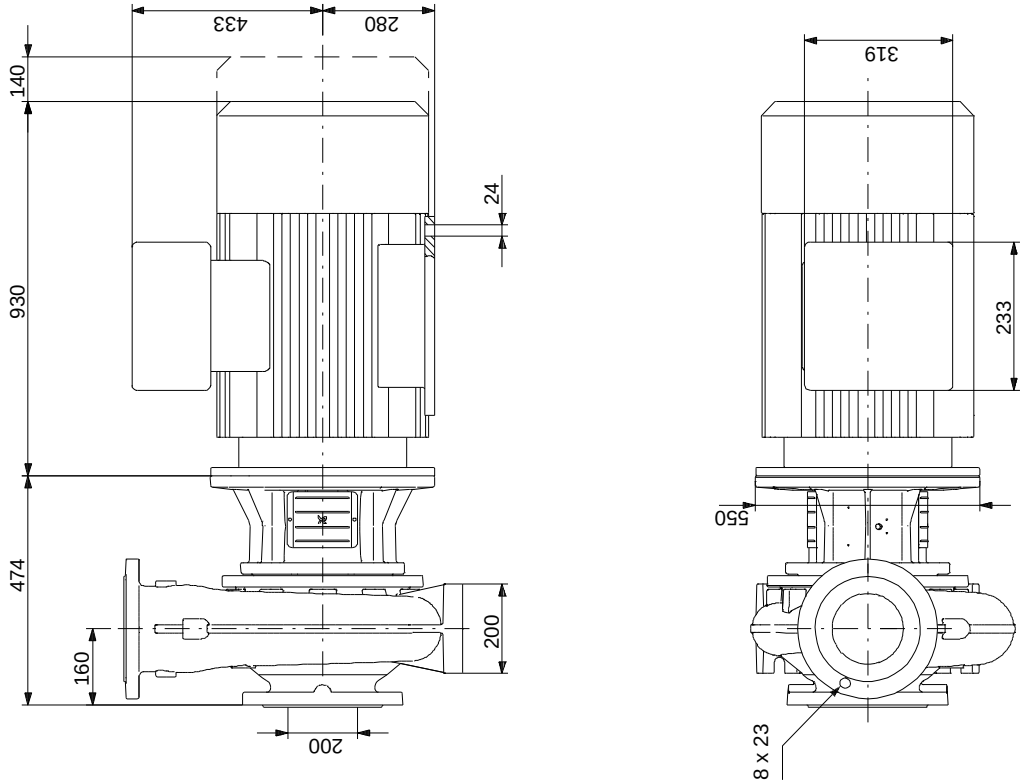
| Description | Value |
|---|---|
| Mount. design. acc. IEC 34-7: | IM B35 |
| Lubricant type: | Grease |
| **Others:** | |
| Minimum efficiency index, MEI ≥: | 0.70 |
| ErP status: | EuP Standalone/Prod. |
| Net weight: | 986 kg |
| Gross weight: | 1060 kg |
| Shipping volume: | 1.73 $m^3$ |

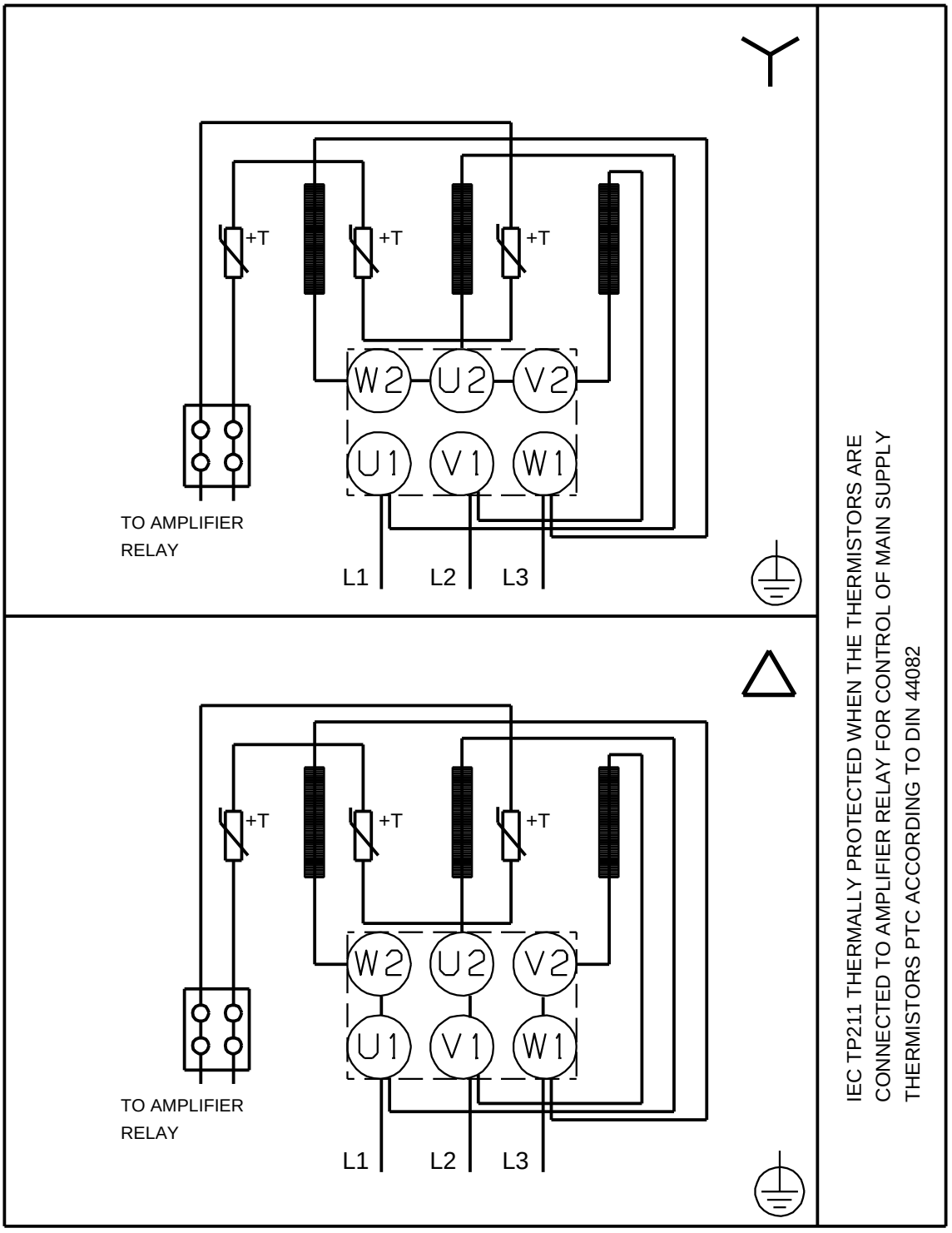
# 98306023 NB 150-400/394 50 Hz




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

# 98306023 NB 150-400/394 50 Hz




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.*



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