

**Qty. Description**

1 NB 200-450/355 AASF1AESBQQEPW5

Product No.: [98976156](#)

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 seal is according to DIN EN 12756.

The pump is close-coupled to a fan-cooled asynchronous motor.

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



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.

## Pump

Motor stool and pump cover are made of cast iron (EN-GJL-250). Coupling guards are fitted to the motor stool.

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.

Seal faces:

- 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 pump housing has feet.

The pump is to be secured to the foundation with bolts through the pump housing feet and motor feet. The pump is delivered with steel support blocks. The support blocks provide horizontal alignment of the pump and ensure clearance between the motor stool/motor flange and the foundation.

## 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 60034-30-1.

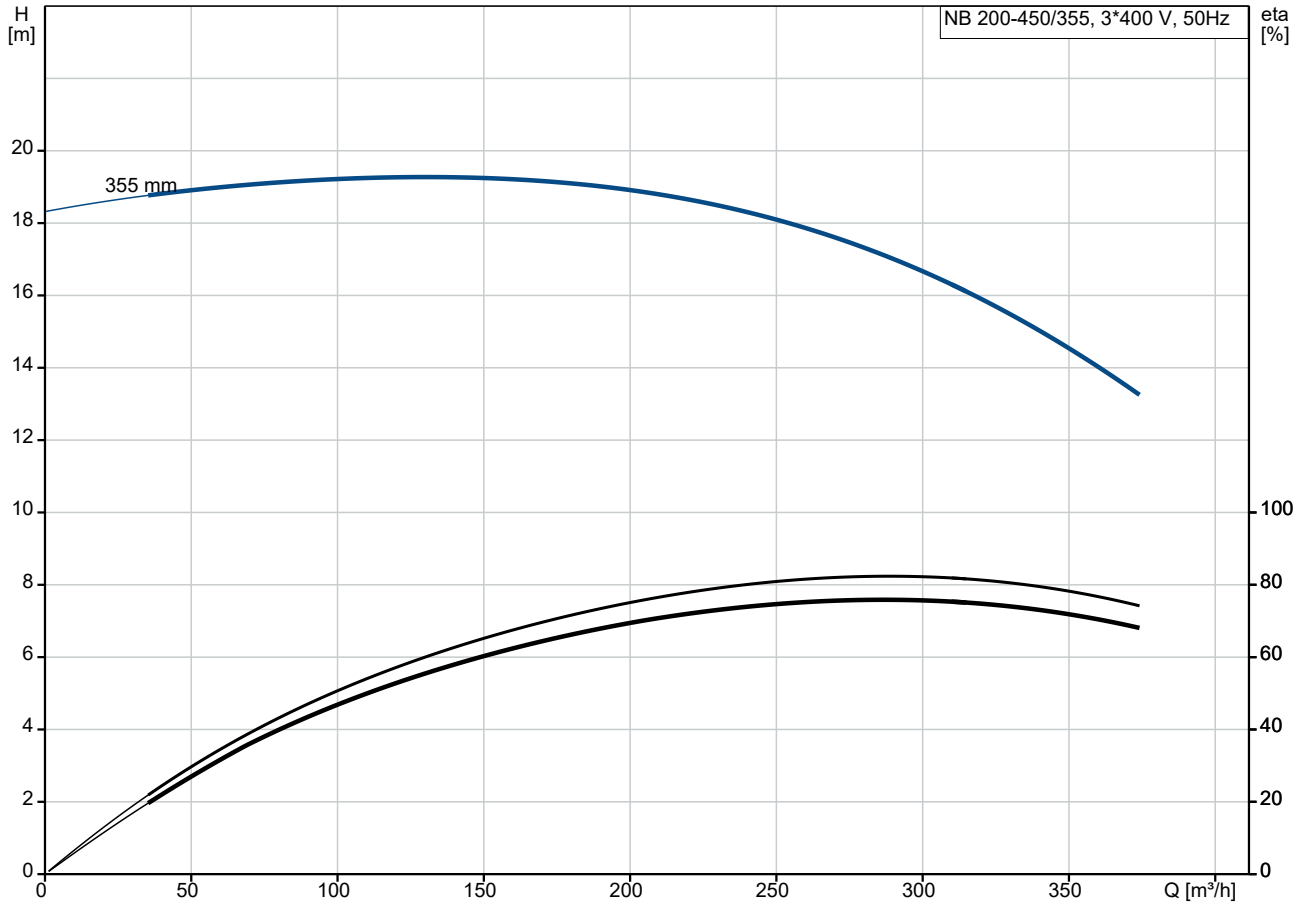
The motor has thermistors (PTC sensors) in the windings in accordance with DIN 44081/DIN 44082. The protection reacts to both slow- and quick-rising temperatures, e.g. constant overload and stalled conditions.

Qty.	Description
1	<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>Further product details</b></p> <p>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.</p> <p><b>Technical data</b></p> <p>Controls:</p> <p>Frequency converter: NONE</p> <p>Pressure sensor: N</p> <p>Liquid:</p> <p>Pumped liquid: Water</p> <p>Liquid temperature range: -25 .. 120 °C</p> <p>Selected liquid temperature: 20 °C</p> <p>Density: 998.2 kg/m<sup>3</sup></p> <p>Technical:</p> <p>Pump speed on which pump data are based: 978 rpm</p> <p>Rated flow: 287.6 m<sup>3</sup>/h</p> <p>Rated head: 16.98 m</p> <p>Actual impeller diameter: 355 mm</p> <p>Nominal impeller diameter: 450</p> <p>Shaft seal arrangement: Single</p> <p>Code for shaft seal: BQQE</p> <p>Curve tolerance: ISO9906:2012 3B</p> <p>Bearing design: Standard</p> <p>Materials:</p> <p>Pump housing: Cast iron EN-GJL-250 ASTM class 35</p> <p>Wear ring: Brass</p> <p>Impeller: Cast iron EN-GJL-200 ASTM class 30</p> <p>Internal pump house coating: CED</p> <p>Shaft: Stainless steel EN 1.4301 AISI 304</p> <p>Installation:</p> <p>Max. ambient temperature: 55 °C</p> <p>Maximum operating pressure: 10 bar</p> <p>Pipe connection standard: EN 1092-2</p> <p>Size of inlet connection: DN 250</p> <p>Size of outlet connection: DN 200</p> <p>Pressure rating for connection: PN 10</p> <p>Bearing lubrication: Grease</p> <p>Pump housing with feet: Yes</p> <p>Support block (Yes/No): Y</p>

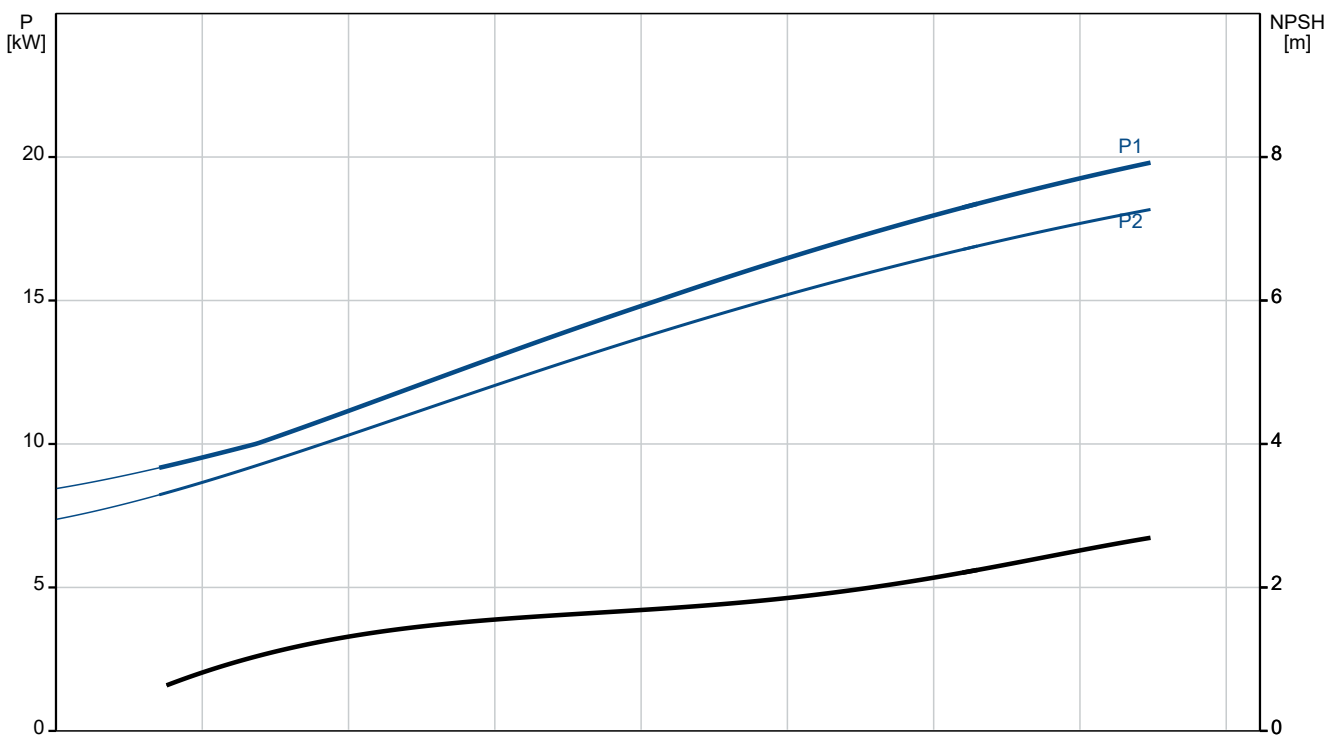
**Qty. Description**

1	Electrical data:	
	Motor type:	SIEMENS
	IE Efficiency class:	IE3
	Rated power - P2:	18.5 kW
	Mains frequency:	50 Hz
	Rated voltage:	3 x 380-420D/660-725Y V
	Rated current:	37.0/21.5 A
	Starting current:	560-560 %
	Cos phi - power factor:	0.79
	Rated speed:	978 rpm
	Efficiency:	IE3 91,7%
	Motor efficiency at full load:	91.7-91.7 %
	Motor efficiency at 3/4 load:	92.5-92.5 %
	Motor efficiency at 1/2 load:	92.4-92.4 %
	Number of poles:	6
	Enclosure class (IEC 34-5):	IP55
	Insulation class (IEC 85):	F
	Motor No:	83W15428
	Bearing insulation type N-end:	STEEL BEARING
	Others:	
	Minimum efficiency index, MEI ≥:	0.45
	Net weight:	636 kg
	Gross weight:	706 kg
	Shipping volume:	1.88 m <sup>3</sup>
	Danish VVS No.:	386068451
	Country of origin:	HU
	Custom tariff no.:	84137051

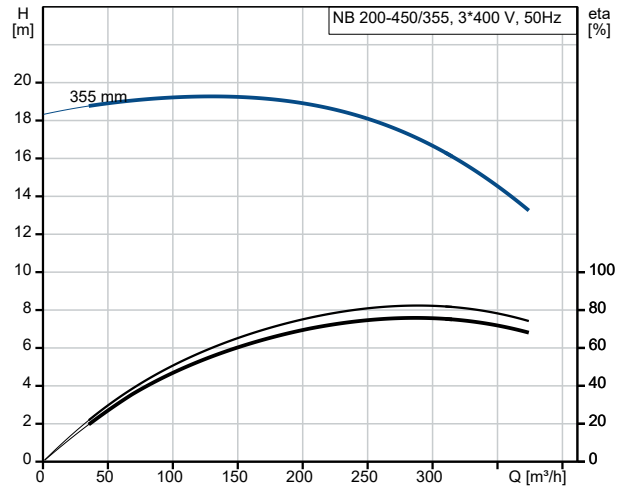
## 98976156 NB 200-450/355 AASF1AESBQQEPW5 50 Hz



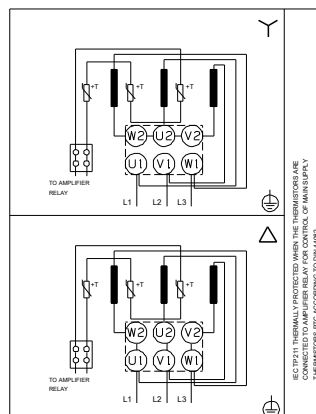
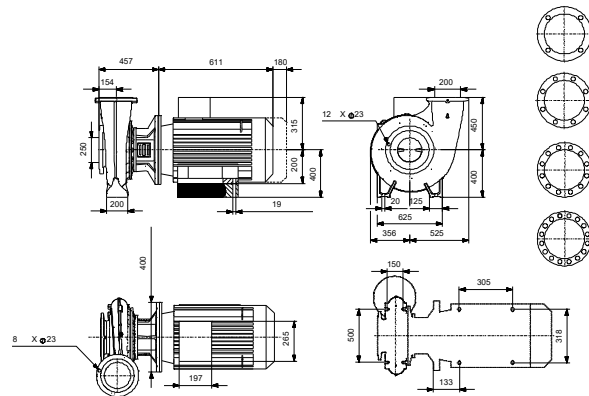
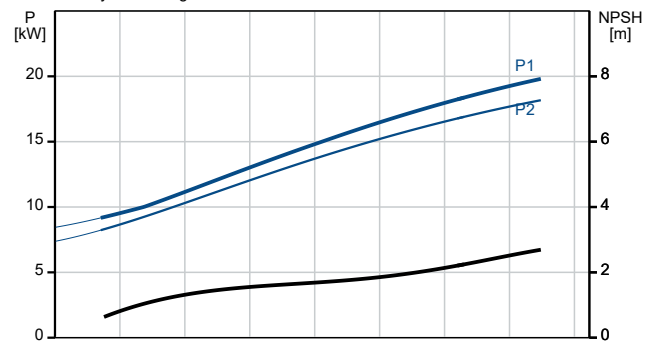
Pumped liquid = Water  
Liquid temperature during operation = 20 °C  
Density = 998.2 kg/m³



Description	Value
<b>General information:</b>	
Product name:	NB 200-450/355 AASF1AESBQQEPW5
Product No:	98976156
EAN number:	5712604556672
<b>Technical:</b>	
Pump speed on which pump data are based:	978 rpm
Rated flow:	287.6 m <sup>3</sup> /h
Rated head:	16.98 m
Actual impeller diameter:	355 mm
Nominal impeller diameter:	450
Shaft seal arrangement:	Single
Shaft diameter:	48 mm
Code for shaft seal:	BQQE
Curve tolerance:	ISO9906:2012 3B
Pump version:	AS
Bearing design:	Standard
<b>Materials:</b>	
Pump housing:	Cast iron
Pump housing:	EN-GJL-250
Pump housing:	ASTM class 35
Wear ring:	Brass
Impeller:	Cast iron
Impeller:	EN-GJL-200
Impeller:	ASTM class 30
Internal pump house coating:	CED
Material code:	A
Code for rubber:	E
Shaft:	Stainless steel
Shaft:	EN 1.4301
Shaft:	AISI 304
<b>Installation:</b>	
Max. ambient temperature:	55 °C
Maximum operating pressure:	10 bar
Pipe connection standard:	EN 1092-2
Size of inlet connection:	DN 250
Size of outlet connection:	DN 200
Pressure rating for connection:	PN 10
Bearing lubrication:	Grease
Pump housing with feet:	Yes
Support block (Yes/No):	Y
Connect code:	F1
<b>Liquid:</b>	
Pumped liquid:	Water
Liquid temperature range:	-25 .. 120 °C
Selected liquid temperature:	20 °C
Density:	998.2 kg/m <sup>3</sup>
<b>Electrical data:</b>	
Motor type:	SIEMENS
IE Efficiency class:	IE3
Rated power - P2:	18.5 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 380-420D/660-725Y V
Rated current:	37.0/21.5 A
Starting current:	560-560 %
Cos phi - power factor:	0.79
Rated speed:	978 rpm
Efficiency:	IE3 91,7%



Pumped liquid = Water  
Liquid temperature during operation = 20 °C  
Density = 998.2 kg/m<sup>3</sup>



IEC 60742 THERMAL PROTECTED MOTOR THE THERMISTORS ARE CONNECTED TO AMPLIFIER RELAY FOR CONTROL OF MOTOR SAFETY. THERMISTORE PTC ACCORDING TO DIN 44082.



Company name:

Created by:

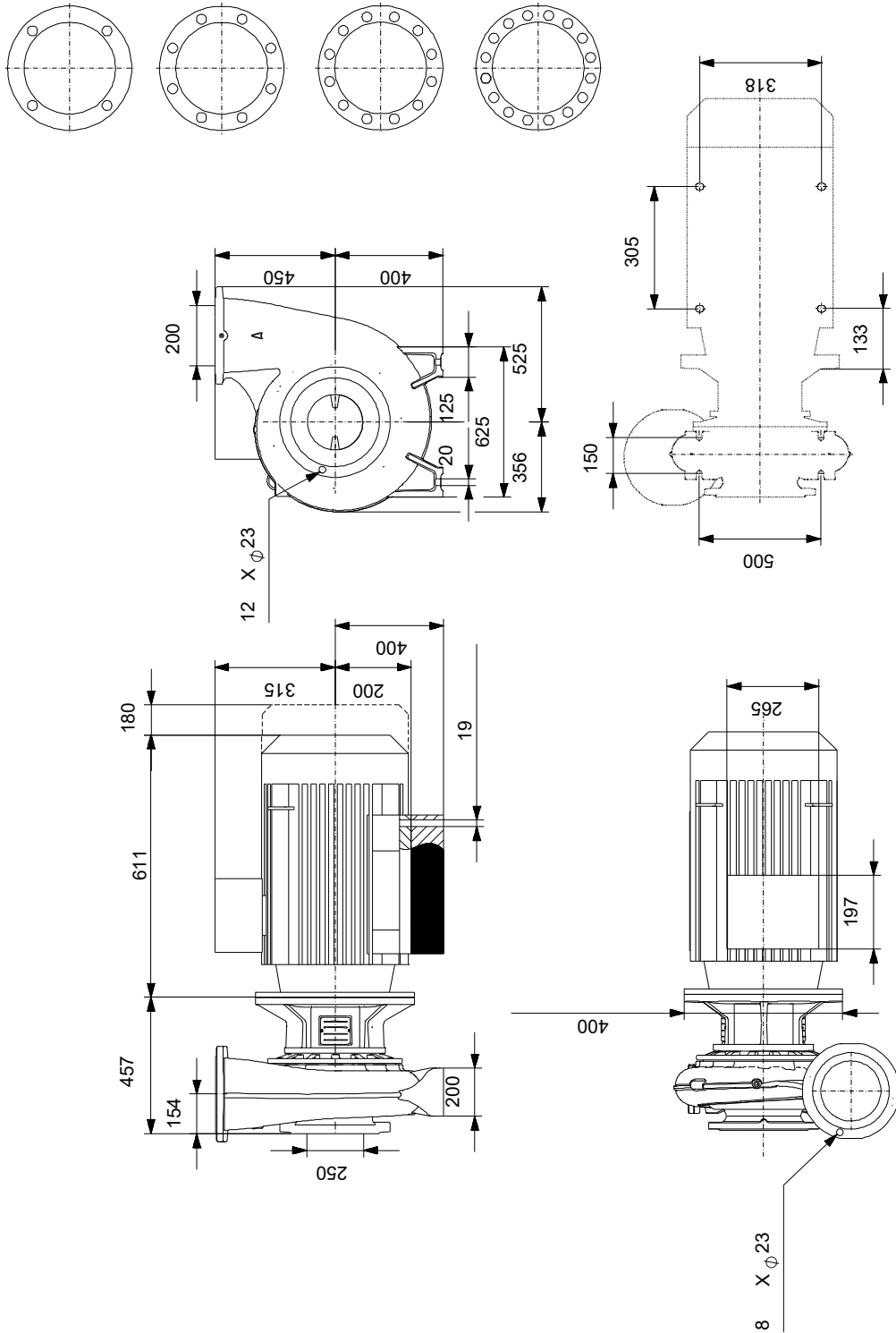
Phone:

Date:

22/12/2022

Description	Value
Motor efficiency at full load:	91.7-91.7 %
Motor efficiency at 3/4 load:	92.5-92.5 %
Motor efficiency at 1/2 load:	92.4-92.4 %
Number of poles:	6
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	PTC
Motor No:	83W15428
Mount. design. acc. IEC 34-7:	IM B35
Bearing insulation type N-end:	STEEL BEARING
<b>Controls:</b>	
Frequency converter:	NONE
Pressure sensor:	N
<b>Others:</b>	
Minimum efficiency index, MEI $\geq$ :	0.45
Net weight:	636 kg
Gross weight:	706 kg
Shipping volume:	1.88 m <sup>3</sup>
Danish VVS No.:	386068451
Country of origin:	HU
Custom tariff no.:	84137051

## 98976156 NB 200-450/355 AASF1AESBQQEPW5 50 Hz



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

## 98976156 NB 200-450/355 AASF1AESBQQEPW5 50 Hz



IEC TP211 THERMALLY PROTECTED WHEN THE THERMISTORS ARE  
CONNECTED TO AMPLIFIER RELAY FOR CONTROL OF MAIN SUPPLY  
THERMISTORS PTC ACCORDING TO DIN 44082

Note! All units are in [mm] unless others are stated.



