

Date: 03/11/2020 Qty. Description NBE 65-160/177 AF2ABQQE 1 Note! Product picture may differ from actual product Product No.: 99105434 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 16 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, permanent-magnet synchronous motor. 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 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. An external sensor can be connected if controlled pump operation is required for flow, differential pressure or temperature control. 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: "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). 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". 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 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.



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Qty. | Description

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.

Date:

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: 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.

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, 0-5 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.

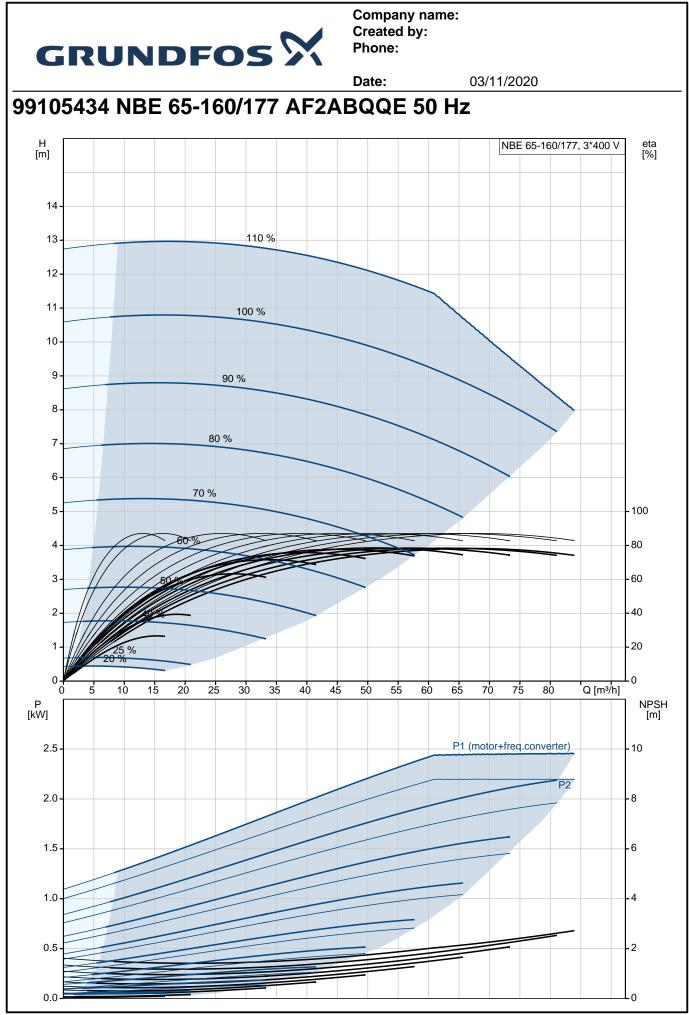
Further product details

Technical data

Controls: Frequency converter:	Built-in
Liquid: Pumped liquid: Liquid temperature range: Selected liquid temperature: Density:	Water -25 120 °C 20 °C 998.2 kg/m³
Technical: Pump speed on which pump dat Rated flow: Rated head: Actual impeller diameter: Nominal impeller diameter: Shaft seal arrangement: Code for shaft seal: Curve tolerance: Bearing design:	a are based: 1450 rpm 64 m ³ /h 8.9 m 177 mm 160 Single BQQE ISO9906:2012 3B2 Standard
Materials: Pump housing:	Cast iron EN-GJL-250 ASTM class 35



y. Description Wear ring: Brass Impeller: Cast iron EN-GJL-200 ASTM class 30 ASTM class 30 ASTM class 30 Shaft: Stainless steel EN 1.4301 AISI 304 Installation: Maximum ambient temperature: 50 °C Maximum operating pressure: 16 bar Pipe connection standard: EN 1092-2 Size of inlet connection: DN 80 Size of outlet connection: DN 85 Pipe connection standard: EN 1092-2 Pressure rating for connection: DN 85 Suport block: N Electrical data: IE5 Rated power - P2: 2.2 kW Mains frequency: 50 Hz Rated outrage: 3 x380-500 V Rated outrage: 4 x30-3.60 A Cos phi - power factor: 0.90-0.82 Rated speed: 180-2200 rpm Efficiency at full loa	Wear ing: Brass Impeller: Cast iron EN-GJL-200 ASTM class 30 Shaft: Stainless steel EN 1.4301 AISI 304 Installation: Maximum ambient temperature: 50 °C Maximum operating pressure: 16 bar Pipe connection standard: EN 1092-2 Size of inlet connection: DN 65 Pipe connection standard: EN 1092-2 Presconnection standard: EN 1092-2 Prescure rating for connection: DN 65 Pipe connection standard: EN 1092-2 Pressure rating for connection: DN 65 Support block: N Electrical data: IE5 IE Efficiency class: IE5 Rated power - P2: 2.2 kW Mains frequency: 50 Hz Rated voltage: 3 x 380-500 V Rated voltage: 3 x 380-500 V Rated speed: 180-2200 rpm Efficiency: 89.1% Motor efficiency at full load: 89.1 % Number of poles: 4 Enclosure class (IEC 34-5): IP55
Impeller:Cast iron EN-GU-200 ASTM class 30Shaft:Stainless steel EN 1.4301 AISI 304Installation:AISI 304Maximum ambient temperature:50 °C Maximum operating pressure:16 bar Pipe connection standard:EN 1092-2Size of inlet connection:DN 80 Size of outlet connection:DN 80 Size of outlet connection:DN 86 Size of outlet connection:Pipe connection standard:EN 1092-2Pressure rating for connection:DN 86 Support block:Vmp housing with feet:Yes YesSupport block:NElectrical data:IE5 Rated power - P2:IE Efficiency class:IE5 Rated voltage:Rated voltage:3 x 380-500 V Rated current:Aated speed:180-2200 rpm P1%Motor efficiency at full load:89.1 % N Number of poles:Motor efficiency index, MEI $\frac{3}{2}$ %F : 0.70 Net weight:64 kg Gross weight:Minimum efficiency index, MEI $\frac{3}{2}$ %F : 0.70 Net weight:64 kg Gross weight:Motor of origin:HU	Impeller:Cast iron EN-GJL-200 ASTM class 30Shaft:Stainless steel EN 1.4301 AISI 304Installation:AISI 304Maximum ambient temperature:50 °C Maximum operating pressure:16 barPipe connection standard:Pipe connection standard:EN 1092-2Size of inlet connection:DN 65Pipe connection standard:EN 1092-2Pressure rating for connection:DN 65Pipe connection standard:EN 1092-2Pressure rating for connection:PN 16Pump housing with feet:YesSupport block:NElectrical data:IE5IE Efficiency class:IE5Rated power - P2:2.2 kWMains frequency:50 HzRated voltage:3 x 380-500 VRated voltage:3 x 380-500 VRated speed:180-2200 rpmEfficiency:89.1%Motor efficiency at full load:89.1 %Number of poles:4Enclosure class (IEC 34-5):IP55Insulation class (IEC 35):FMotor No:98971264Others:Minimum efficiency index, MEI #%#: 0.70Net weight:64 kgGross weight:81 kgShipping volume:0.315 m³Country of origin:HU
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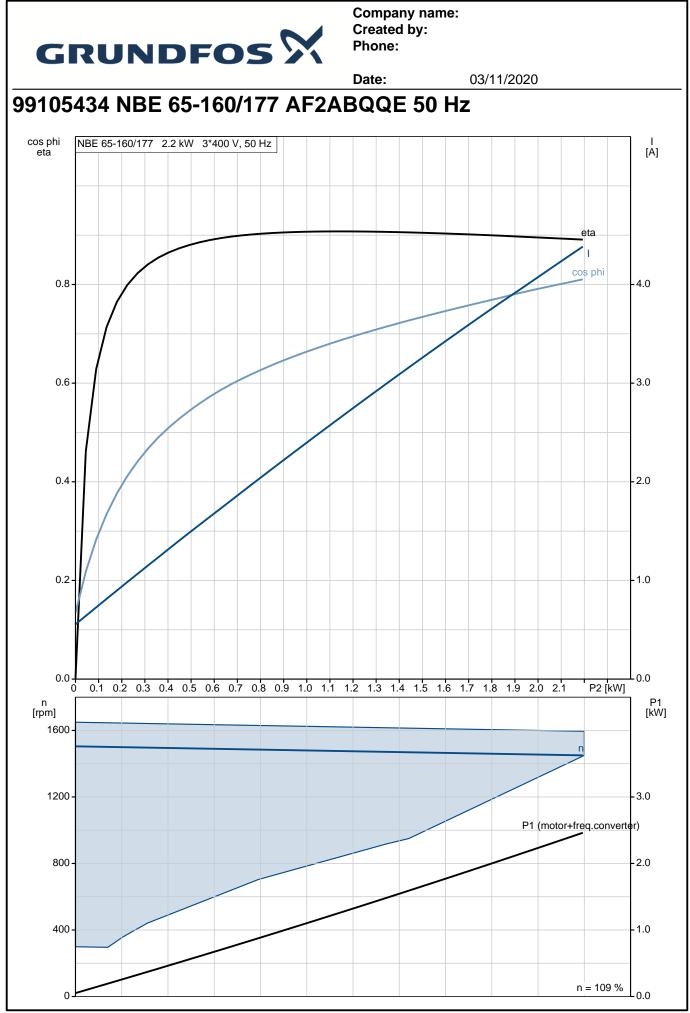


		Date:		/11/2020	
Description	Value	H [m]		NBE 65-160/177, 3*400	V et [%
General information:					
Product name:	NBE 65-160/177 AF2ABQQE	14 - 13 -	110	%	
Product No:	99105434	12			
EAN number:	5712606854714		100		
Price:	GBP 3009		100	7/0	
Technical:	52. 0000	10 -			
Pump speed on which pump data are		9-	90 %		
based:	1450 rpm	8-	80 %		
Rated flow:	64 m³/h	7-	80 %		
Rated head:	8.9 m	6-	70 %		
Actual impeller diameter:	177 mm	5-	10 %		100
Nominal impeller diameter:	160	4 -	60%		- 80
Shaft seal arrangement:	Single				
Shaft diameter:	24 mm	3-			- 60
Code for shaft seal:	BQQE	2-	III III		- 40
Curve tolerance:	ISO9906:2012 3B2	1 -	55%		- 20
Pump version:	A		20 %		
Bearing design:	Standard	0	10 20 30	40 50 60 70 Q [m ³ /	h]
Materials:		P [kW]			NPS [m
Pump housing:	Cast iron	[KVV] 2.5 -		P1 (motor+freq.converter)	10
Pump housing:	EN-GJL-250				
Pump housing:	ASTM class 35	2.0 -		P2	- 8
Wear ring:	Brass				
-	Cast iron	1.5 -	///		-6
mpeller:		1.0			4
mpeller:	EN-GJL-200				
mpeller:	ASTM class 30	0.5 -			- 2
Shaft:	Stainless steel				
Shaft:	EN 1.4301	0.0			0
Shaft:	AISI 304				
Material code:	A	F	274 334		
Code for rubber:	E	100			29
Installation:			ਗ਼		W
Maximum ambient temperature:	50 °C	+H	I Ind Ind A A		A
Maximum operating pressure:	16 bar	*H)			
Pipe connection standard:	EN 1092-2	- · · · ·	r w		
Size of inlet connection:	DN 80		<u>s L</u>	1XM25+4XM20	
Size of outlet connection:	DN 65		•		000
Pipe connection standard:	EN 1092-2		35		
Pressure rating for connection:	PN 16	4X •10			
Pump housing with feet:	Yes				
Support block:	N		ⅅ℡⅃		
Connect code:	F2		280	●	
_iquid:	-		-		
Pumped liquid:	Water				
Liquid temperature range:	-25 120 °C				
Selected liquid temperature:	-25 120 °C		<u> </u>		
Density:	998.2 kg/m³		Ø⊕ ∞—		
Electrical data:	155				
E Efficiency class:	IE5				
Rated power - P2:	2.2 kW	220			
Mains frequency:	50 Hz				
Rated voltage:	3 x 380-500 V				
Rated current:	4.30-3.60 A				
Cos phi - power factor:	0.90-0.82	-25.1° (C -25.1°)			
Rated speed:	180-2200 rpm		A GENBARA V GENBARAV B GENBARA		
Efficiency:	89.1%		3 and a 35 +24 V 38 +24 V		
Motor efficiency at full load:	89.1 %				
Number of poles:	4		ν Ψ ^{™™} Ψ Ψ ↓ <u>– </u> <u>1</u> α ² α ² κ.		

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Description	Value		
Enclosure class (IEC 34-5):	IP55	_	
Insulation class (IEC 85):	F		
Motor protec:	ELEC		
Motor No:	98971264		
Mount. design. acc. IEC 34-7:	IM V1/B5		
Controls:			
Control panel:	HMI300 - Advanced		
Function Module:	FM300 - Advanced		
Frequency converter:	Built-in		
Others:			
Minimum efficiency index, MEI ≥:	0.70		
Net weight:	64 kg		
Gross weight:	81 kg		
Shipping volume:	0.315 m³		
Country of origin:	HU		
Custom tariff no.:	84137051		



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