


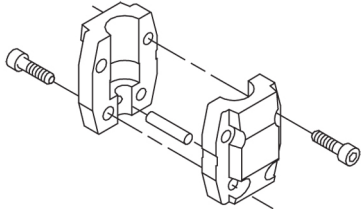
Qty.	Description
1	<p data-bbox="201 159 485 188">CRE 45-1 A-F-A-E-HQQE</p>  <p data-bbox="201 481 464 510">Product No.: 99072011</p> <p data-bbox="201 542 1430 640">Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). The pump head and base are in cast iron – all other wetted parts are in stainless steel. A cartridge shaft seal ensures high reliability, safe handling, and easy access and service. Power transmission is via a rigid split coupling. Pipe connection is via DIN flanges.</p> <p data-bbox="201 683 1126 712">The pump is fitted with a 3-phase, fan-cooled, permanent-magnet, synchronous motor.</p> <p data-bbox="201 714 1015 743">The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p data-bbox="201 745 1394 797">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.</p> <p data-bbox="201 799 1449 875">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:</p> <ul data-bbox="240 887 1458 1032" style="list-style-type: none"> • "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). <p data-bbox="201 1034 1422 1111">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".</p> <p data-bbox="201 1120 1437 1171">The terminal box has a number of inputs and outputs enabling the motor to be used in advanced applications where many inputs and outputs are required:</p> <ul data-bbox="240 1176 900 1532" style="list-style-type: none"> • two dedicated digital inputs • three 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 analog output, 0-10 V, 0(4)-20 mA • two configurable digital inputs or open-collector outputs • two Pt100/Pt1000 inputs • LiqTec, dry-running protection sensor input • 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. <p data-bbox="201 1563 512 1592">Further product details</p> <p data-bbox="201 1599 1449 1650">An external sensor can be connected if controlled pump operation based on for example flow, differential pressure or temperature is required.</p> <p data-bbox="201 1655 1449 1731">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:</p> <ul data-bbox="240 1738 1458 1883" style="list-style-type: none"> • "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). <p data-bbox="201 1888 1422 1964">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".</p> <p data-bbox="201 1971 1394 2022">Steel, cast iron and aluminium components have an epoxy-based coating made in a cathodic electro-deposition (CED) process.</p> <p data-bbox="201 2027 1430 2078">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>

Qty. Description

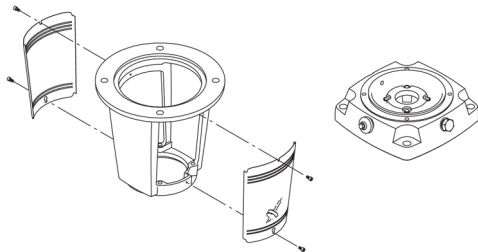
- 1 An integral part of the process is a pretreatment.
The entire process consists of these elements:
- 1) Alkaline-based cleaning.
 - 2) Zinc phosphating.
 - 3) Cathodic electro-deposition.
 - 4) Curing to a dry film thickness 18-22 my m.
- The colour code for the finished product is NCS 9000/RAL 9005.

Pump

A standard split coupling connects the pump and motor shaft. It is enclosed in the pump head/motor stool by means of two coupling guards.



The motor stool connects the pump head and motor. The pump head has a combined 1/2" priming plug and vent screw.



The pump is fitted with a balanced O-ring seal unit with a rigid torque-transmission system.

This seal type is assembled in a cartridge unit which makes replacement safe and easy.

Due to the balancing, this seal type is suitable for high-pressure applications.

The cartridge construction also protects the pump shaft from possible wear from a dynamic O-ring between pump shaft and shaft seal.

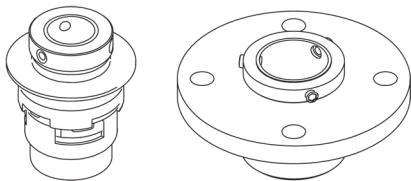
Seal faces:

- 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)

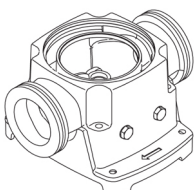
EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.



The shaft seal is retained in the pump head by a cover and screws. It can be replaced without removing the motor.

The chambers and impellers are made of stainless-steel sheet. The chambers are provided with a PTFE neck ring offering improved sealing and high efficiency. The impellers have smooth surfaces, and the shape of the blades ensure a high efficiency.

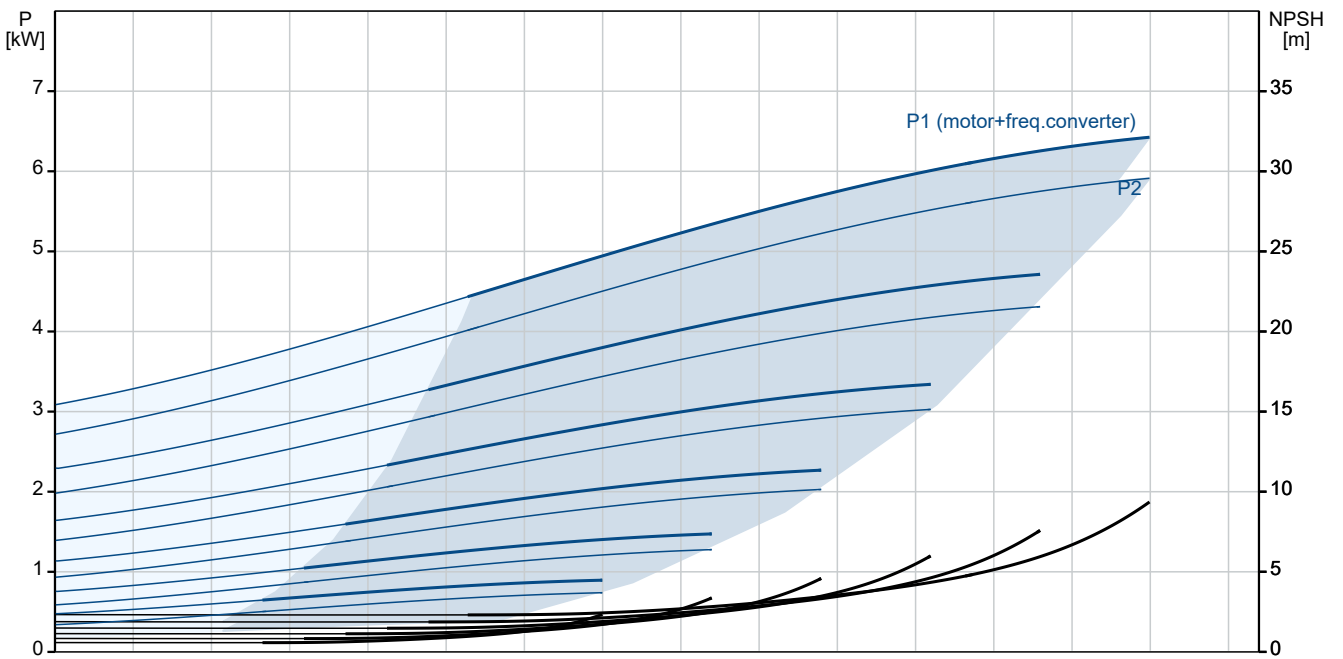
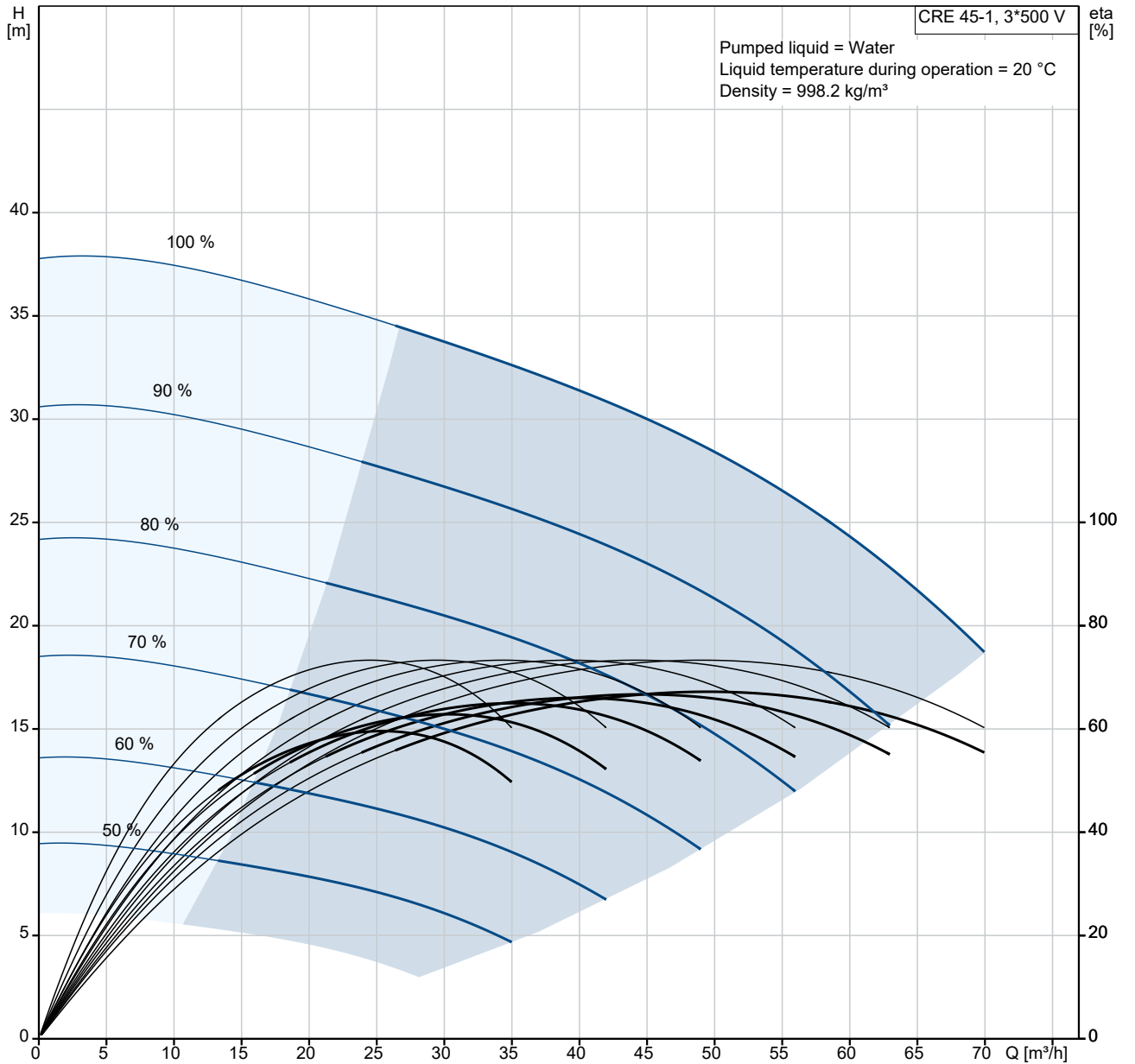
The base is made of cast iron. Both the inlet and the outlet side of the base have two pressure gauge tappings. The pump is secured to the foundation by four bolts through the base plate. The flanges are fastened to the base by means of locking rings.



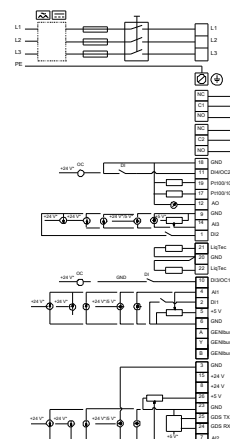
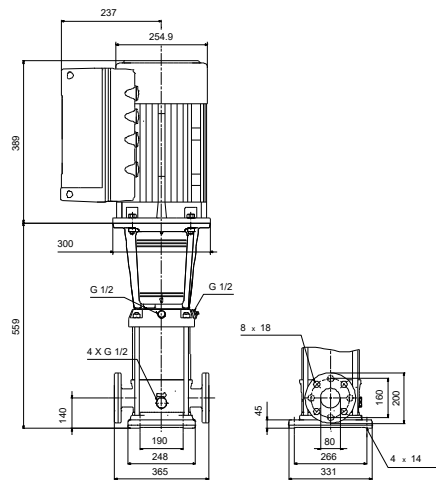
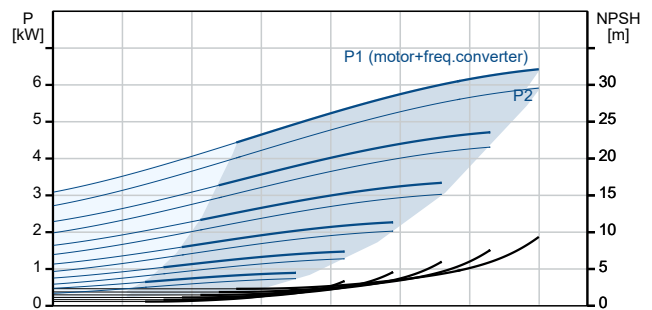
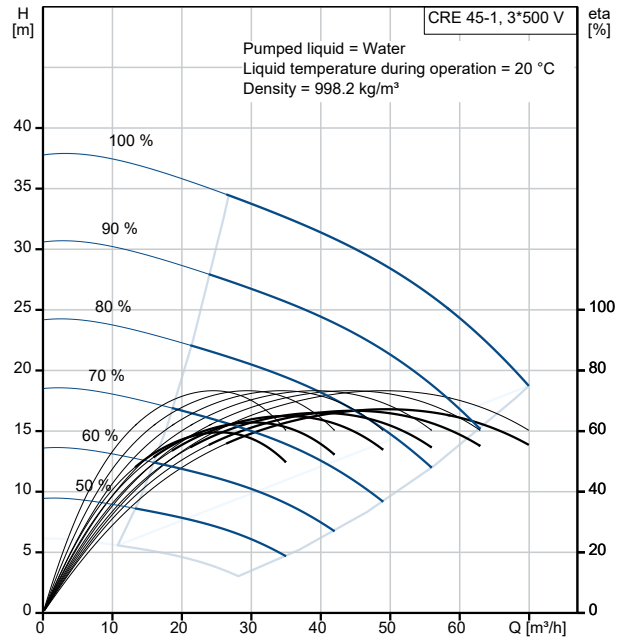
Qty.	Description
1	<p data-bbox="204 163 284 185">Motor</p> <p data-bbox="204 197 1430 248">The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards. The motor is flange-mounted with free-hole flange (FF).</p> <p data-bbox="204 255 1241 282">Motor-mounting designation in accordance with IEC 60034-7: IM B 5 (Code I) / IM 3001 (Code II).</p> <p data-bbox="204 288 679 315">Electrical tolerances comply with IEC 60034.</p> <p data-bbox="204 322 1015 349">The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p data-bbox="204 356 1409 407">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.</p> <p data-bbox="204 414 1437 465">The terminal box has a number of inputs and outputs enabling the motor to be used in advanced applications where many inputs and outputs are required:</p> <ul data-bbox="240 472 900 815" style="list-style-type: none"> • two dedicated digital inputs • three 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 analog output, 0-10 V, 0(4)-20 mA • two configurable digital inputs or open-collector outputs • two Pt100/Pt1000 inputs • LiqTec, dry-running protection sensor input • 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. <p data-bbox="204 822 400 848">Technical data</p> <p data-bbox="204 913 276 940">Liquid:</p> <p data-bbox="204 947 632 974">Pumped liquid: Water</p> <p data-bbox="204 981 703 1008">Liquid temperature range: -30 .. 120 °C</p> <p data-bbox="204 1014 628 1041">Selected liquid temperature: 20 °C</p> <p data-bbox="204 1048 695 1075">Density: 998.2 kg/m³</p> <p data-bbox="204 1099 316 1126">Technical:</p> <p data-bbox="204 1133 818 1160">Pump speed on which pump data are based: 3525 rpm</p> <p data-bbox="204 1167 647 1193">Rated flow: 54 m³/h</p> <p data-bbox="204 1200 639 1227">Rated head: 28.1 m</p> <p data-bbox="204 1234 647 1261">Pump orientation: Vertical</p> <p data-bbox="204 1267 632 1294">Shaft seal arrangement: Single</p> <p data-bbox="204 1301 632 1328">Code for shaft seal: HQQE</p> <p data-bbox="204 1335 823 1361">Approvals and markings: CE,EAC,UKCA,SEPRO</p> <p data-bbox="204 1368 695 1395">Approvals for drinking water: WRAS,ACS</p> <p data-bbox="204 1402 759 1429">Curve tolerance: ISO9906:2012 3B</p> <p data-bbox="204 1453 308 1480">Materials:</p> <p data-bbox="204 1487 823 1543">Base: Cast iron EN 1563 EN-GJS-500-7 ASTM A536 80-55-06</p> <p data-bbox="204 1550 719 1628">Impeller: Stainless steel EN 1.4301 AISI 304</p> <p data-bbox="204 1635 647 1691">Bearing arrangement: SIC Support bearing: Grafflon</p> <p data-bbox="204 1715 323 1742">Installation:</p> <p data-bbox="204 1749 628 1776">t max amb: 50 °C</p> <p data-bbox="204 1783 632 1809">Maximum operating pressure: 16 bar</p> <p data-bbox="204 1816 727 1872">Max pressure at stated temp: 16 bar / 120 °C 16 bar / -30 °C</p> <p data-bbox="204 1901 639 1928">Type of connection: DIN</p> <p data-bbox="204 1935 632 1962">Size of inlet connection: DN 80</p> <p data-bbox="204 1968 632 1995">Size of outlet connection: DN 80</p> <p data-bbox="204 2002 632 2029">Pressure rating for connection: PN 40</p> <p data-bbox="204 2036 632 2063">Flange size for motor: FF265</p> <p data-bbox="204 2087 360 2114">Electrical data:</p> <p data-bbox="204 2121 608 2148">Motor standard: IEC</p>

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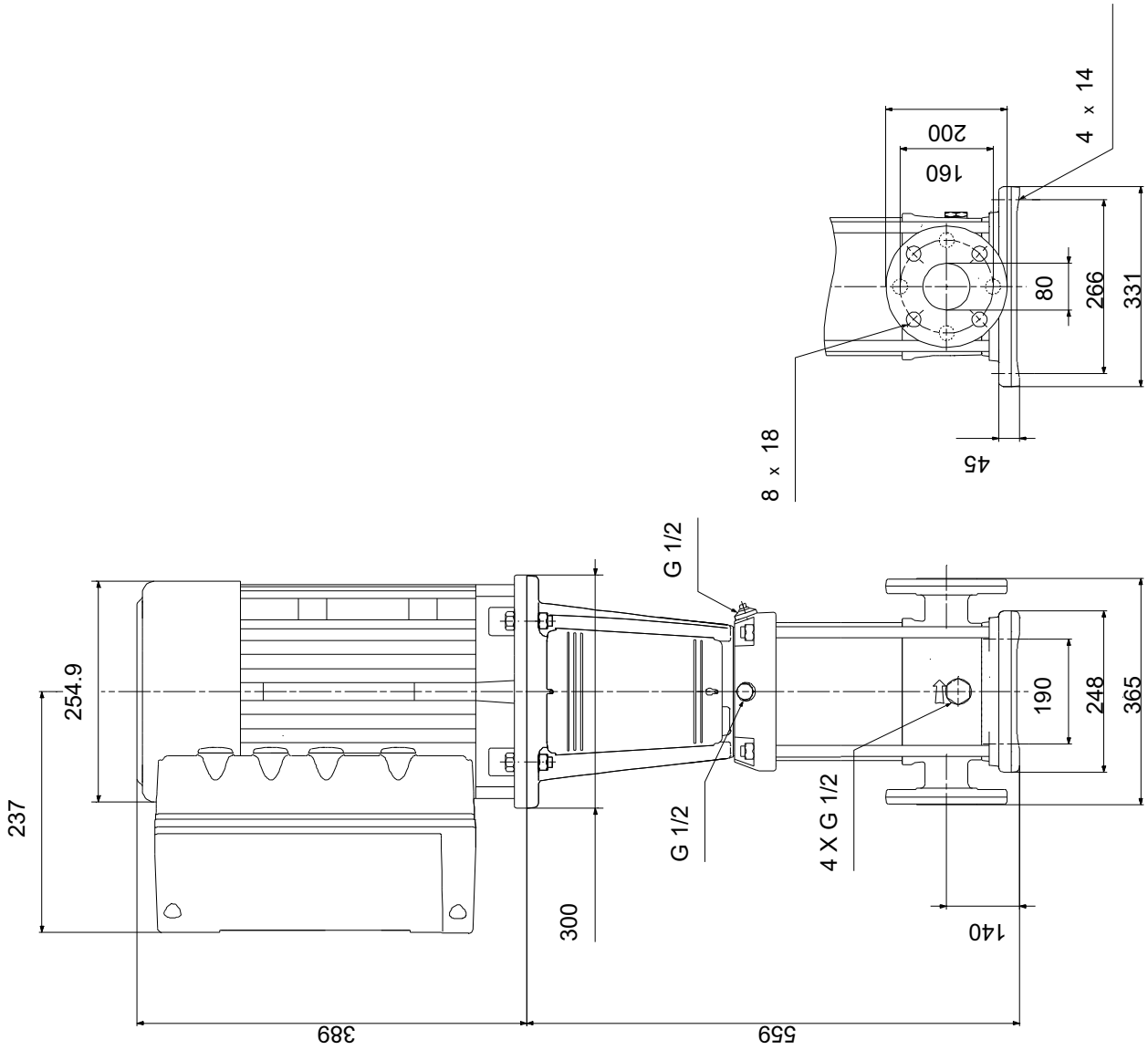


Description	Value
General information:	
Product name:	CRE 45-1 A-F-A-E-HQQE
Product No:	99072011
EAN number:	5712606202584
Technical:	
Pump speed on which pump data are based:	3525 rpm
Rated flow:	54 m ³ /h
Rated head:	28.1 m
Maximum head:	38.6 m
Number of stages:	1
Impellers:	1
Number of reduced-diameter impellers:	0
Low NPSH:	N
Pump orientation:	Vertical
Shaft seal arrangement:	Single
Code for shaft seal:	HQQE
Approvals and markings:	CE,EAC,UKCA,SEPRO
Approvals for drinking water:	WRAS,ACS
Curve tolerance:	ISO9906:2012 3B
Pump version:	A
The first model is called A which is followed by model B, C etc.:	B
Materials:	
Base:	Cast iron
Base:	EN 1563 EN-GJS-500-7
Base:	ASTM A536 80-55-06
Impeller:	Stainless steel
Impeller:	EN 1.4301
Impeller:	AISI 304
Material code:	A
Code for rubber:	E
Bearing arrangement:	SIC
Support bearing:	Graflon
Installation:	
t max amb:	50 °C
Maximum operating pressure:	16 bar
Max pressure at stated temp:	16 bar / 120 °C
Max pressure at stated temp:	16 bar / -30 °C
Type of connection:	DIN
Size of inlet connection:	DN 80
Size of outlet connection:	DN 80
Pressure rating for connection:	PN 40
Flange size for motor:	FF265
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	-30 .. 120 °C
Selected liquid temperature:	20 °C
Density:	998.2 kg/m ³
Electrical data:	
Motor standard:	IEC
Motor type:	132SF
IE Efficiency class:	IE5
Rated power - P2:	7.5 kW
Power (P2) required by pump:	7.5 kW
Over/undersize motor:	Standard motor size
Mains frequency:	50 / 60 Hz
Rated voltage:	3 x 380-500 V
Rated current:	14.1-11.2 A
Cos phi - power factor:	0.93-0.89
Rated speed:	360-4000 rpm



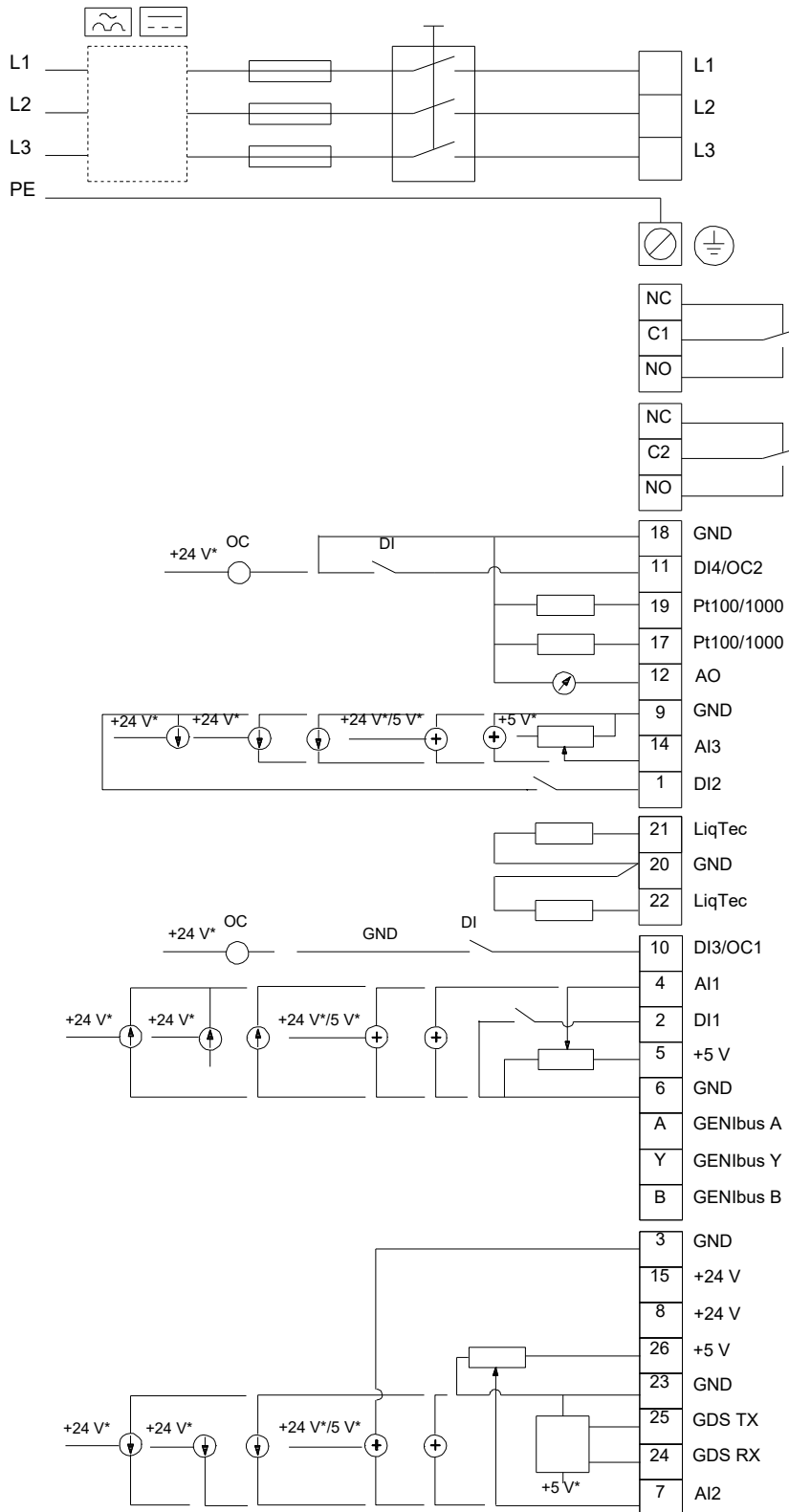
Description	Value
Efficiency:	92.5%
Motor efficiency at full load:	92.5 %
Enclosure class (IEC 34-5):	IP55
Insulation class (IEC 85):	F
Built-in motor protection:	ELEC
Motor No:	98971052
Controls:	
Control panel:	Standard
Function Module:	FM300 - Advanced
Frequency converter:	Built-in
Pressure sensor:	N
Others:	
Minimum efficiency index, MEI ≥:	0.70
Net weight:	105 kg
Gross weight:	138 kg
Shipping volume:	0.495 m ³
Config. file no:	99059348
Danish VVS No.:	386007001
Finnish LVI No.:	4925714
Country of origin:	GB
Custom tariff no.:	84137075

99072011 CRE 45-1 A-F-A-E-HQQE



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

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

Order Data:

Position	Your pos.	Product name	Amount	Product No	Total
		CRE 45-1	1	99072011	Price on request