

PROJECT: _____	UNIT TAG: _____	QUANTITY: _____
REPRESENTATIVE: _____	TYPE OF SERVICE: _____	DATE: _____
ENGINEER: _____	SUBMITTED BY: _____	DATE: _____
CONTRACTOR: _____	APPROVED BY: _____	DATE: _____
	ORDER NO.: _____	DATE: _____

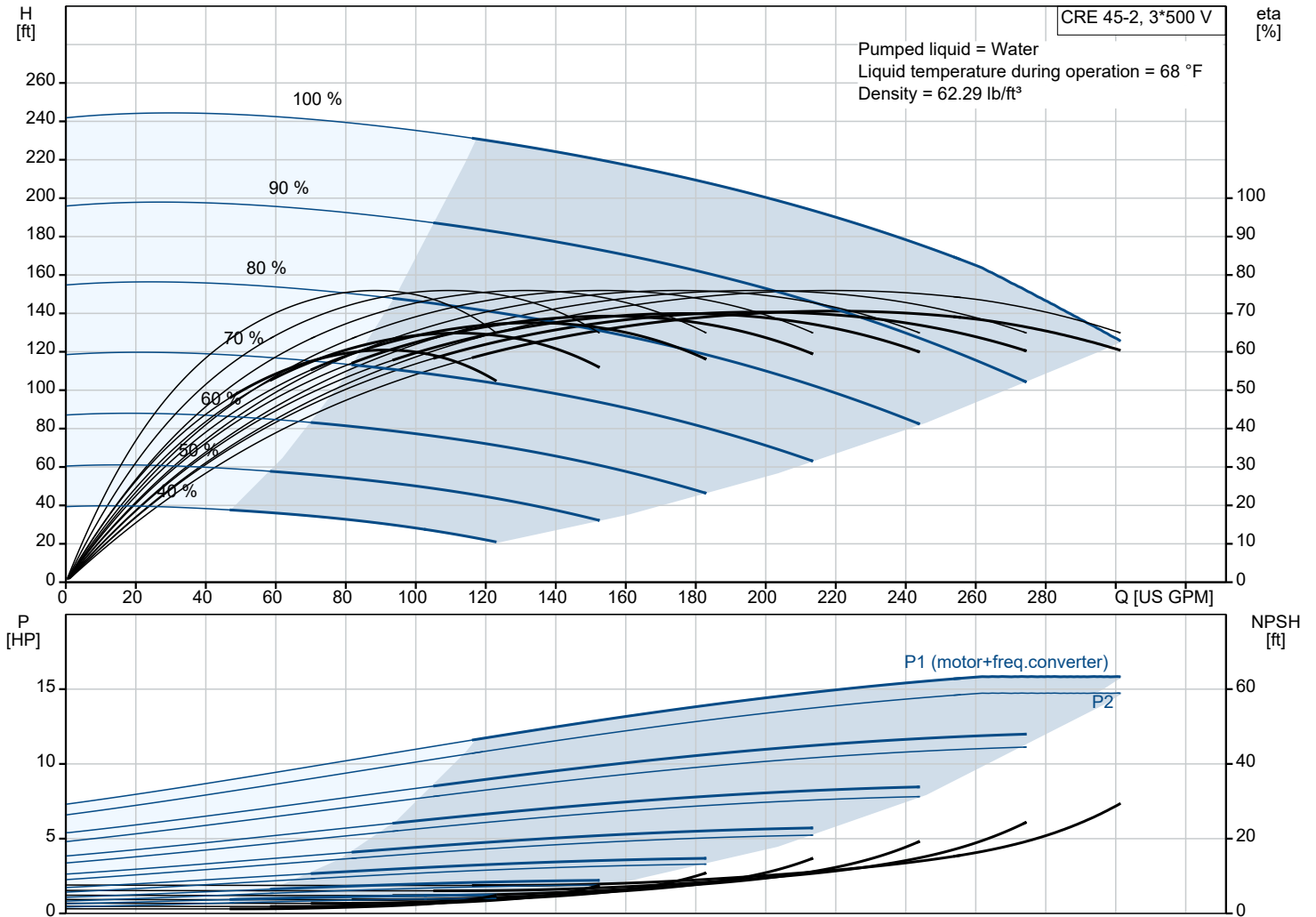


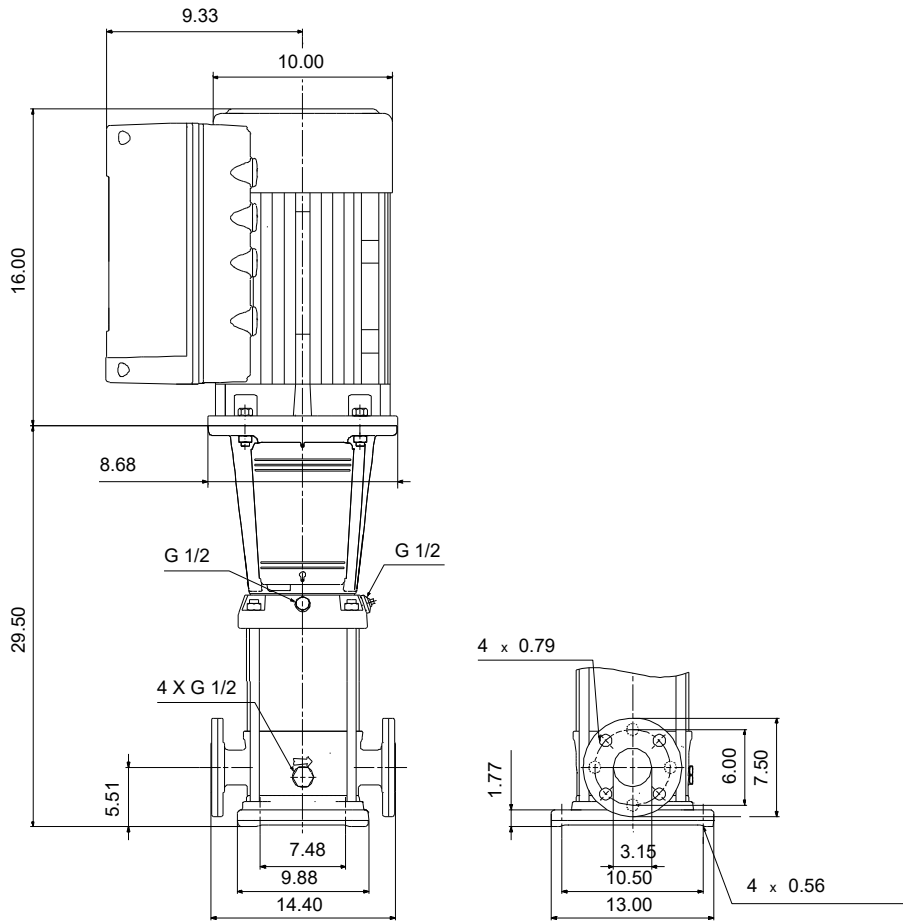
CRE 45-2 N-G-A-E-HQQE

Vertical, multistage centrifugal pump with integrated frequency converter. The pump head and base are in cast iron - all other wetted parts are in stainless steel (EN 1.4301)

Note! Product picture may differ from actual product


Conditions of Service		Pump Data		Motor Data	
Liquid:	Water	Max pressure at stated temp:	232 psi / 250 °F	Rated power - P2:	15 HP
Temperature:	68 °F	Liquid temperature range:	-22 .. 248 °F	Rated voltage:	440-480 V
Specific Gravity:	1.000	Maximum ambient temperature:	122 °F	Mains frequency:	60 Hz
		Shaft seal:	HQQE	Enclosure class:	IP55
		Product number:	99249176	Insulation class:	F
				Motor protection:	ELEC
				Motor type:	160H
				Eta 1/1:	93.2 %





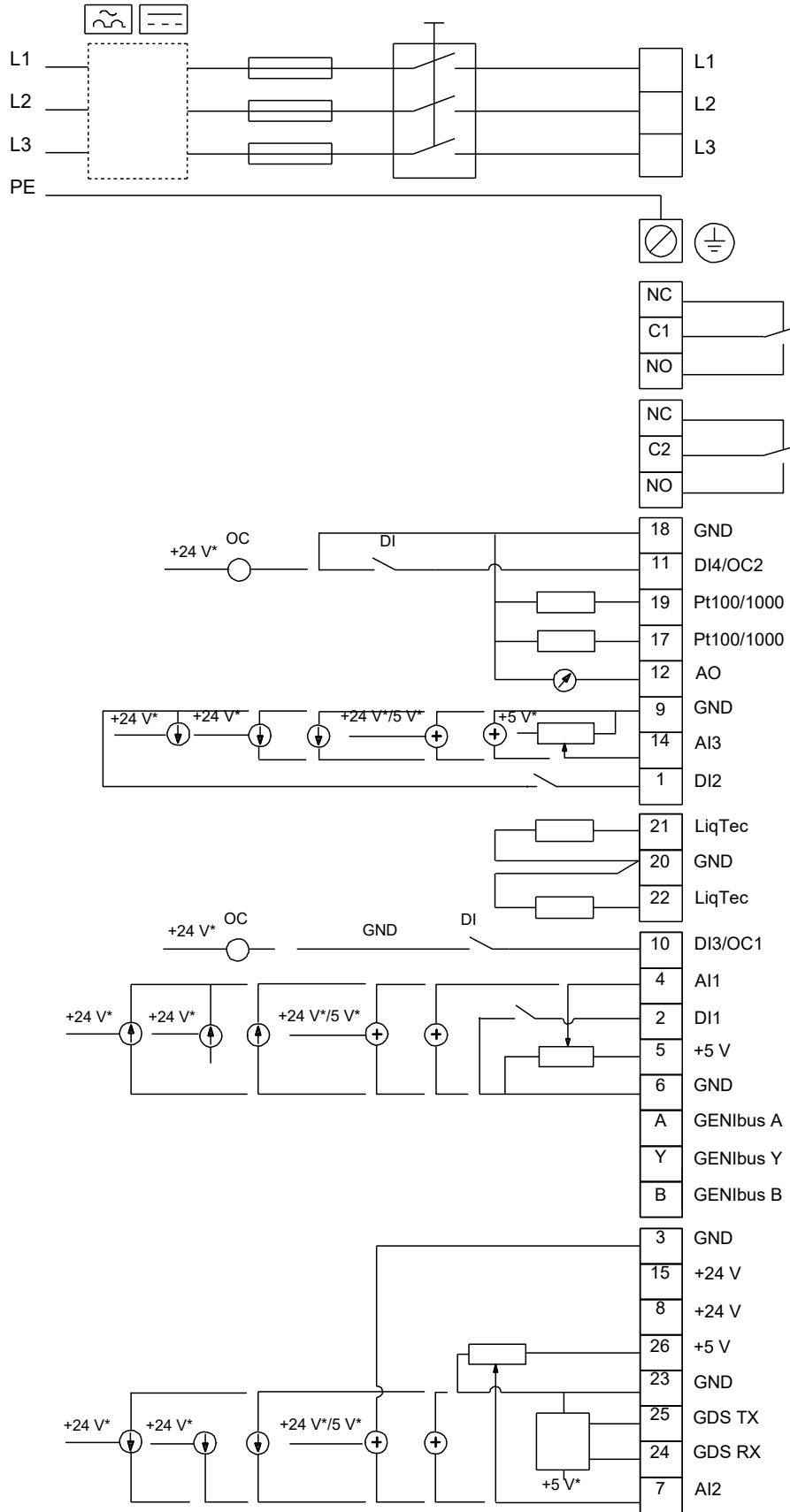
Materials:

- Base: Cast iron
- Base: EN 1563 EN-GJS-500-7
- Base: ASTM A536 80-55-06
- Impeller: Stainless steel
- Impeller: AISI 304
- Impeller: EN 1.4301
- Material code: A
- Code for rubber: E

Qty.	Description
1	<p data-bbox="124 85 414 116">CRE 45-2 N-G-A-E-HQQE</p>  <p data-bbox="518 436 989 459">Note! Product picture may differ from actual product</p> <p data-bbox="124 465 391 497">Product No.: 99249176</p> <p data-bbox="124 526 1524 600">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 ANSI flanges.</p> <p data-bbox="124 611 1053 642">The pump is fitted with a 3-phase, fan-cooled, permanent-magnet, synchronous motor.</p> <p data-bbox="124 642 941 674">The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p data-bbox="124 674 1524 725">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="124 725 1476 757">The operating panel on the motor terminal box features a four-inch TFT display, push-buttons and the Grundfos Eye indicator.</p> <p data-bbox="124 786 885 817">The display gives an intuitive and user-friendly interface to all functions.</p> <p data-bbox="124 817 1460 869">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".</p> <p data-bbox="124 936 1524 1010">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".</p> <p data-bbox="124 1048 1117 1079">The Grundfos Eye indicator on the operating panel provides visual indication of pump status:</p> <ul data-bbox="167 1079 1436 1167" 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="124 1167 1508 1218">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="167 1218 1508 1608" 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; the factory-fitted pressure sensor is connected to one of these inputs • 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="124 1637 199 1668">Liquid:</p> <p data-bbox="124 1668 558 1700">Pumped liquid: Water</p> <p data-bbox="124 1700 622 1731">Liquid temperature range: -22 .. 248 °F</p> <p data-bbox="124 1731 550 1762">Selected liquid temperature: 68 °F</p> <p data-bbox="124 1762 606 1794">Density: 62.29 lb/ft³</p> <p data-bbox="124 1816 239 1848">Technical:</p> <p data-bbox="124 1848 742 1879">Pump speed on which pump data are based: 3444 rpm</p> <p data-bbox="124 1879 630 1910">Rated flow: 238 US GPM</p> <p data-bbox="124 1910 574 1942">Rated head: 177.8 ft</p> <p data-bbox="124 1942 566 1973">Actual impeller diameter: 5.37 in</p> <p data-bbox="124 1973 574 2004">Pump orientation: Vertical</p> <p data-bbox="124 2004 542 2036">Shaft seal arrangement: Single</p> <p data-bbox="124 2036 566 2067">Code for shaft seal: HQQE</p> <p data-bbox="124 2067 582 2098">Approvals: CURUS</p> <p data-bbox="124 2098 638 2130">Approvals for drinking water: NSF/ANSI 61</p> <p data-bbox="124 2130 686 2161">Curve tolerance: ISO9906:2012 3B</p>

Qty.	Description
	<p>Materials:</p> <p>Base: Cast iron EN 1563 EN-GJS-500-7 ASTM A536 80-55-06</p> <p>Impeller: Stainless steel EN 1.4301 AISI 304</p> <p>Bearing: SIC</p> <p>Support bearing: Graflon</p> <p>Installation:</p> <p>t max amb: 122 °F</p> <p>Maximum operating pressure: 232.06 psi</p> <p>Max pressure at stated temp: 232 psi / 250 °F 232 psi / -22 °F</p> <p>Type of connection: ANSI</p> <p>Size of inlet connection: 3 inch</p> <p>Size of outlet connection: 3 inch</p> <p>Pressure rating for connection: PN 16</p> <p>Flange rating inlet: 150 lb</p> <p>Flange size for motor: 254TC</p> <p>Electrical data:</p> <p>Motor standard: NEMA</p> <p>Motor type: 160H</p> <p>IE Efficiency class: IE5</p> <p>Rated power - P2: 15 HP</p> <p>Power (P2) required by pump: 15 HP</p> <p>Mains frequency: 60 Hz</p> <p>Rated voltage: 3 x 440-480 V</p> <p>Service factor: 1.15</p> <p>Rated current: 17.9-16.6 A</p> <p>Cos phi - power factor: 0.92-0.91</p> <p>Rated speed: 360-4000 rpm</p> <p>Efficiency: 93.2%</p> <p>Motor efficiency at full load: 93.2 %</p> <p>Enclosure class (IEC 34-5): IP55</p> <p>Insulation class (IEC 85): F</p> <p>Motor No: 99256777</p> <p>Controls:</p> <p>Frequency converter: Built-in</p> <p>Pressure sensor: Y</p> <p>Others:</p> <p>DOE Pump Energy Index VL: 0.40</p> <p>Net weight: 279 lb</p> <p>Gross weight: 297 lb</p> <p>Shipping volume: 17.5 ft³</p>

99249176 CRE 45-2 N-G-A-E-HQQE 60 Hz



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