

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

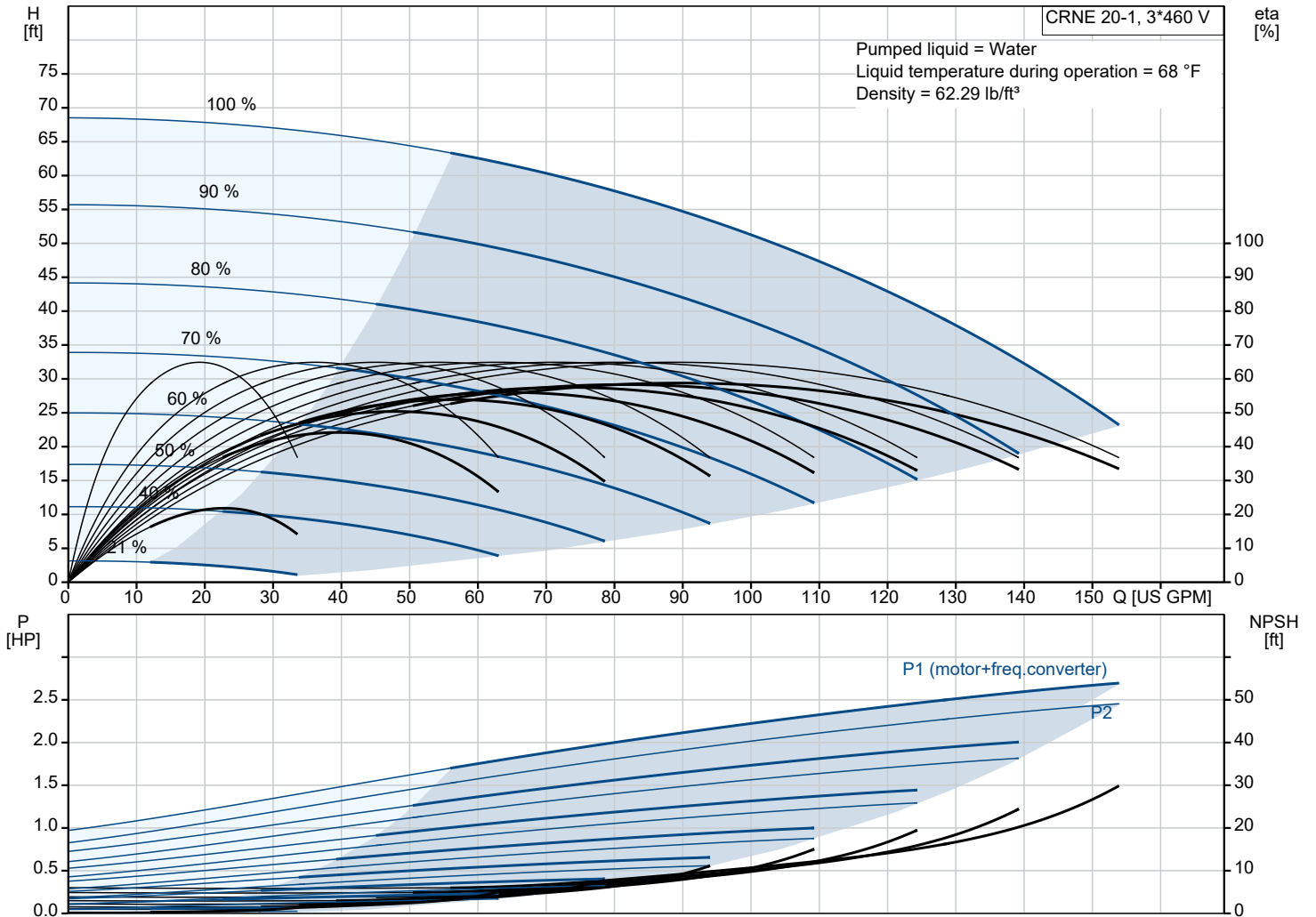


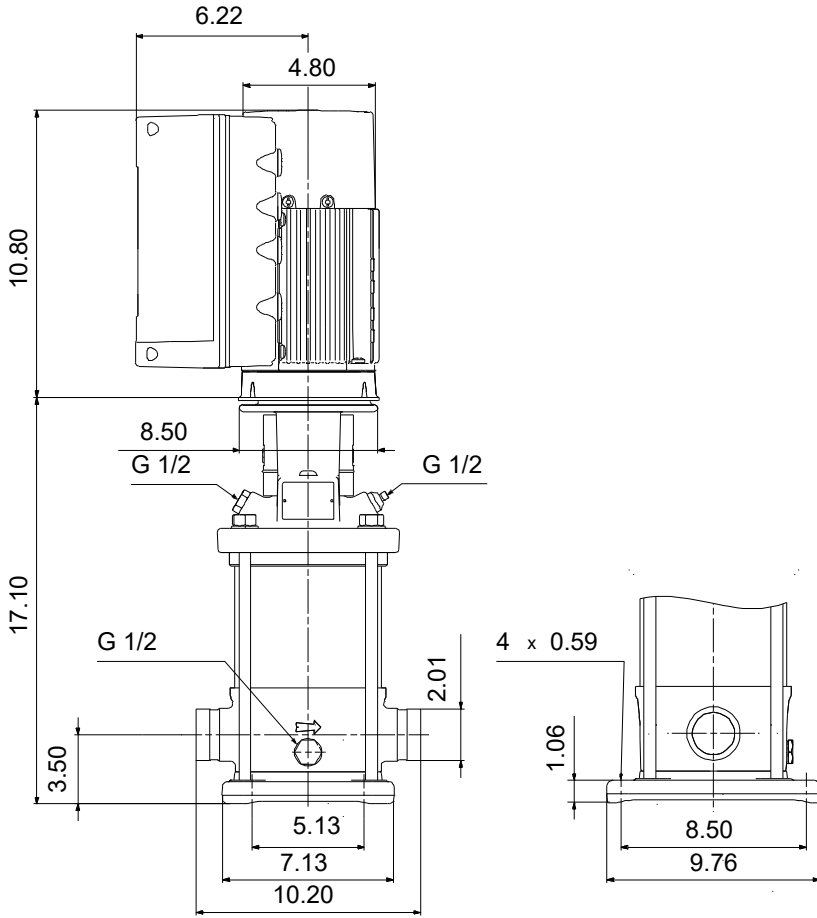
## CRNE 20-1 N-P-A-E-HQQE

Vertical, multistage centrifugal pump with integrated frequency converter. Pump materials in contact with the liquid are in high-grade stainless steel (EN 1.4401)

Note! Product picture may differ from actual product

| Conditions of Service |       | Pump Data                    |                  | Motor Data        |           |
|-----------------------|-------|------------------------------|------------------|-------------------|-----------|
| Liquid:               | Water | Max pressure at stated temp: | 363 psi / 250 °F | Rated power - P2: | 3 HP      |
| Temperature:          | 68 °F | Liquid temperature range:    | -4 .. 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:              | 99341045         | Insulation class: | F         |
|                       |       |                              |                  | Motor protection: | ELEC      |
|                       |       |                              |                  | Motor type:       | 90D       |
|                       |       |                              |                  | Eta 1/1:          | 90.7 %    |





**Materials:**

Base: Stainless steel  
 Base: EN 1.4408  
 Base: AISI 316  
 Impeller: Stainless steel  
 Impeller: AISI 316  
 Impeller: EN 1.4401  
 Material code: A  
 Code for rubber: E

| Qty. | Description  |
|------|--|
| 1    | <p data-bbox="124 85 427 116"><b>CRNE 20-1 N-P-A-E-HQQE</b></p> <p data-bbox="124 116 391 138">Product No.: <a href="#">99341045</a></p> <p data-bbox="124 174 1519 250">Vertical, multistage centrifugal pump with inlet and outlet ports on same the level (inline). Pump materials in contact with the liquid are in high-grade 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 PJE (Victaulic®) couplings.</p> <p data-bbox="124 264 1050 295">The pump is fitted with a 3-phase, fan-cooled, permanent-magnet, synchronous motor.</p> <p data-bbox="124 295 938 318">The motor efficiency is classified as IE5 in accordance with IEC 60034-30-2.</p> <p data-bbox="124 318 1519 376">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="124 376 1471 407">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="124 443 890 474">The display gives an intuitive and user-friendly interface to all functions.</p> <p data-bbox="124 474 1465 519">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="124 586 1519 667">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="124 698 1114 730">The Grundfos Eye indicator on the operating panel provides visual indication of pump status:</p> <ul data-bbox="162 730 1439 819" style="list-style-type: none"> <li>• "Power on": Motor is running (rotating green indicator lights) or not running (permanently green indicator lights)</li> <li>• "Warning": Motor is still running (rotating yellow indicator lights) or has stopped (permanently yellow indicator lights)</li> <li>• "Alarm": Motor has stopped (flashing red indicator lights).</li> </ul> <p data-bbox="124 819 1503 878">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="162 878 1503 1258" style="list-style-type: none"> <li>• two dedicated digital inputs</li> <li>• 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</li> <li>• 5 V voltage supply to potentiometer and sensor</li> <li>• one analog output, 0-10 V, 0(4)-20 mA</li> <li>• two configurable digital inputs or open-collector outputs</li> <li>• two Pt100/Pt1000 inputs</li> <li>• LiqTec, dry-running protection sensor input</li> <li>• Grundfos Digital Sensor input and output</li> <li>• 24 V voltage supply for sensors</li> <li>• two signal-relay outputs (potential-free contacts)</li> <li>• GENIbus connection</li> <li>• interface for Grundfos CIM fieldbus module.</li> </ul> <p data-bbox="124 1294 204 1326">Liquid:</p> <p data-bbox="124 1326 555 1348">Pumped liquid: Water</p> <p data-bbox="124 1348 609 1379">Liquid temperature range: -4 .. 248 °F</p> <p data-bbox="124 1379 545 1411">Selected liquid temperature: 68 °F</p> <p data-bbox="124 1411 609 1442">Density: 62.29 lb/ft<sup>3</sup></p> <p data-bbox="124 1473 236 1505">Technical:</p> <p data-bbox="124 1505 746 1536">Pump speed on which pump data are based: 3461 rpm</p> <p data-bbox="124 1536 635 1568">Rated flow: 111 US GPM</p> <p data-bbox="124 1568 571 1599">Rated head: 49.54 ft</p> <p data-bbox="124 1599 561 1630">Actual impeller diameter: 4.13 in</p> <p data-bbox="124 1630 571 1662">Pump orientation: Vertical</p> <p data-bbox="124 1662 555 1693">Shaft seal arrangement: Single</p> <p data-bbox="124 1693 561 1724">Code for shaft seal: HQQE</p> <p data-bbox="124 1724 577 1756">Approvals: CURUS</p> <p data-bbox="124 1756 635 1787">Approvals for drinking water: NSF/ANSI 61</p> <p data-bbox="124 1787 683 1818">Curve tolerance: ISO9906:2012 3B</p> <p data-bbox="124 1841 236 1872">Materials:</p> <p data-bbox="124 1872 651 1944">Base: Stainless steel<br/>EN 1.4408<br/>AISI 316</p> <p data-bbox="124 1953 651 2033">Impeller: Stainless steel<br/>EN 1.4401<br/>AISI 316</p> <p data-bbox="124 2042 529 2074">Bearing: SIC</p> <p data-bbox="124 2110 252 2141">Installation:</p> <p data-bbox="124 2141 561 2172">t max amb: 122 °F</p> <p data-bbox="124 2172 603 2204">Maximum operating pressure: 362.59 psi</p> |

| Qty. | Description  |
|------|--|
|      | <p>Max pressure at stated temp: 363 psi / 250 °F<br/>363 psi / -4 °F</p> <p>Type of connection: PJE</p> <p>Size of inlet connection: DN 50</p> <p>Size of outlet connection: DN 50</p> <p>Pressure rating for connection: PN 50</p> <p>Flange size for motor: 182TC</p> <p>Electrical data:</p> <p>Motor standard: NEMA</p> <p>Motor type: 90D</p> <p>IE Efficiency class: IE5</p> <p>Rated power - P2: 3 HP</p> <p>Power (P2) required by pump: 3 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: 3.8 A</p> <p>Cos phi - power factor: 0.89</p> <p>Rated speed: 360-4000 rpm</p> <p>Efficiency: 90.7%</p> <p>Motor efficiency at full load: 90.7 %</p> <p>Enclosure class (IEC 34-5): IP55</p> <p>Insulation class (IEC 85): F</p> <p>Motor No: 98362284</p> <p>Controls:</p> <p>Frequency converter: Built-in</p> <p>Pressure sensor: Y</p> <p>Others:</p> <p>DOE Pump Energy Index VL: 0.41</p> <p>Net weight: 110 lb</p> <p>Gross weight: 126 lb</p> <p>Shipping volume: 6.11 ft³</p> |

# 99341045 CRNE 20-1 N-P-A-E-HQQE 60 Hz



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