

## NK50-125/113A2F2AE-SBAQE

Grundfos pump 96627006



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<https://www.lenntech.com/grundfos/NKBASIS/96627006/NK-50-125-113-A2-F-A-E-BAQE.html>

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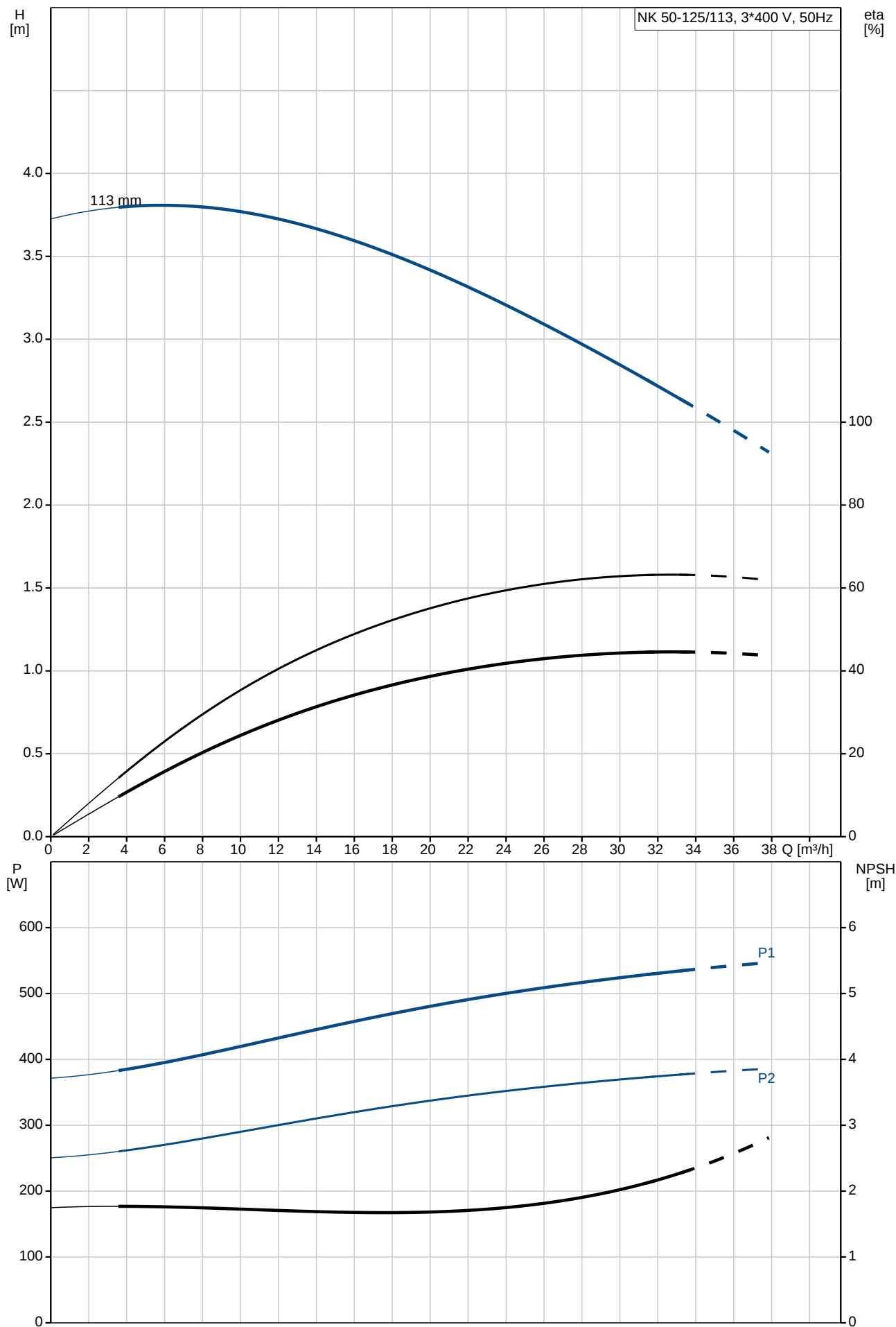
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| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|          | 1    | <p><b>NK 50-125/113 A2-F-A-E-BAQE</b></p>  <p>Product No.: On request</p> <p>Non-self-priming, single-stage, centrifugal volute pump designed according to ISO 5199 with dimensions and rated performance according to EN 733. Flanges are PN 16 with dimensions according to EN 1092-2. The pump has an axial suction port, a radial discharge port and horizontal shaft. It is of the back pull-out design enabling removal of the coupling, bearing bracket and impeller without disturbing the motor, pump housing or pipework.</p> <p>The unbalanced rubber bellows seal is according to DIN EN 12756.</p> <p>The pump is fitted with a foot-mounted, fan-cooled asynchronous motor. Pump and motor are mounted on a common base frame.</p> <p><b>Further product details</b></p> <p>Pump and motor are mounted on a common steel base frame in accordance with ISO 3661. The back pull-out design together with a spacer coupling makes it possible to make service on the pump without dismantling the pump housing and motor from the base frame. This saves realignment of pump and motor after service.</p> <ol style="list-style-type: none"> <li>1) Remove coupling.</li> <li>2) Remove the bolts in the bearing bracket support foot.</li> <li>3) Remove the bearing bracket from the pump housing.</li> </ol>  <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. An integral part of the process is a pretreatment. The entire process consists of these elements:</p> <ol style="list-style-type: none"> <li>1) Alkaline-based cleaning.</li> <li>2) Zinc phosphating.</li> <li>3) Cathodic electro-deposition.</li> <li>4) Curing to a dry film thickness 18-22 my m.</li> </ol> <p>The colour code for the finished product is NCS 9000/RAL 9005.</p> <p><b>Pump</b></p> <p>The pump housing has both a priming and a drain hole closed by plugs.</p> <p>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.</p> <p>Wear rings used in pump housing and for impeller are made of bronze/brass or cast iron.</p> <p>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.</p> <p>Primary seal:</p> <ul style="list-style-type: none"> <li>• Rotating seal ring material: carbon graphite, metal-impregnated</li> <li>• Stationary seat material: silicon carbide (SiC)</li> </ul> <p>This material pairing has a very good corrosion resistance and is especially suitable for water up to 120 °C. However, seal life will be reduced at temperatures above 90 °C. The material pairing is not recommended for liquids containing particles as this will result in heavy wear on the SiC face.</p> <p>Secondary seal material: EPDM (ethylene-propylene rubber)</p> <p>EPDM has excellent resistance to hot water. EPDM is not suitable for mineral oils.</p> |

| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | <p>The shaft is made of stainless steel and has a diameter of 24 mm where the coupling is mounted. The pump uses a spacer coupling between the pump and motor shaft.</p>  <p><b>Motor</b></p> <p>The motor is a totally enclosed, fan-cooled motor with principal dimensions to IEC and DIN standards and mounting designation B3 (IM 1001). Electrical tolerances comply with IEC 60034.</p> <p>The motor does not incorporate motor protection and must be connected to a motor-protective circuit breaker which can be manually reset. The motor-protective circuit breaker must be set according to the rated current of the motor (I1/1).</p> <p><b>Technical data</b></p> <p><b>Liquid:</b><br/> Pumped liquid: Water<br/> Liquid temperature range: 0 .. 120 °C<br/> Liquid temperature during operation: 20 °C<br/> Density: 998.2 kg/m³</p> <p><b>Technical:</b><br/> Rated flow: 28.8 m³/h<br/> Rated head: 2.8 m<br/> Actual impeller diameter: 113 mm<br/> Impeller nom: 125 mm<br/> Primary shaft seal: BAQE<br/> Secondary shaft seal: NONE<br/> Curve tolerance: ISO9906:2012 3B</p> <p><b>Materials:</b><br/> Pump housing: Cast iron<br/> EN-GJL-250<br/> ASTM A48-40 B<br/> Impeller: Cast iron<br/> EN-GJL-200<br/> ASTM A48-30 B<br/> Rubber: EPDM<br/> Wear ring mat.: High alloy brass(CuZn34Mn3Al2)</p> <p><b>Installation:</b><br/> Maximum ambient temperature: 40 °C<br/> Maximum operating pressure: 16 bar<br/> Flange standard: EN 1092-2<br/> Pump inlet: DN 65<br/> Pump outlet: DN 50<br/> Pressure rating: PN 16<br/> Coupling type: Spacer<br/> Base frame: EN / ISO</p> <p><b>Electrical data:</b><br/> Motor type: 71B<br/> Rated power - P2: 0.37 kW<br/> Mains frequency: 50 Hz<br/> Rated voltage: 3 x 220-240D/380-415Y V<br/> Rated current: 1.90/1.10 A<br/> Starting current: 400-440 %<br/> Cos phi - power factor: 0.77-0.67<br/> Rated speed: 1400-1420 rpm<br/> Efficiency: 66.0%</p> |

| Position | Qty. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |      | <p> Motor efficiency at full load: 66.0 %<br/> Motor efficiency at 3/4 load: 72.2 %<br/> Motor efficiency at 1/2 load: 67.6 %<br/> Number of poles: 4<br/> Enclosure class (IEC 34-5): 55 Dust/Jetting<br/> Insulation class (IEC 85): F<br/> Lubricant type: Grease </p> <p><b>Others:</b></p> <p> Minimum efficiency index, MEI ≥: 0.60<br/> ErP status: EuP Standalone/Prod.<br/> Net weight: 100 kg<br/> Gross weight: 114 kg<br/> Shipping volume: 0.279 m<sup>3</sup> </p> |

On request NK 50-125/113 A2-F-A-E-BAQE 50 Hz



| Description                          | Value                                    |
|--------------------------------------|------------------------------------------|
| <b>General information:</b>          |                                          |
| Product name:                        | NK 50-125/113<br>A2-F-A-E-BAQE           |
| Product No:                          | On request                               |
| EAN number:                          | On request                               |
| <b>Technical:</b>                    |                                          |
| Rated flow:                          | 28.8 m³/h                                |
| Rated head:                          | 2.8 m                                    |
| Actual impeller diameter:            | 113 mm                                   |
| Impeller nom:                        | 125 mm                                   |
| Primary shaft seal:                  | BAQE                                     |
| Secondary shaft seal:                | NONE                                     |
| Shaft diameter:                      | 24 mm                                    |
| Curve tolerance:                     | ISO9906:2012 3B                          |
| Pump version:                        | A2                                       |
| <b>Materials:</b>                    |                                          |
| Pump housing:                        | Cast iron<br>EN-GJL-250<br>ASTM A48-40 B |
| Impeller:                            | Cast iron<br>EN-GJL-200<br>ASTM A48-30 B |
| Material code:                       | A                                        |
| Rubber:                              | EPDM                                     |
| Code for rubber:                     | E                                        |
| Wear ring mat.:                      | High alloy brass(CuZn34Mn3Al2            |
| <b>Installation:</b>                 |                                          |
| Maximum ambient temperature:         | 40 °C                                    |
| Maximum operating pressure:          | 16 bar                                   |
| Flange standard:                     | EN 1092-2                                |
| Pump inlet:                          | DN 65                                    |
| Pump outlet:                         | DN 50                                    |
| Pressure rating:                     | PN 16                                    |
| Coupling type:                       | Spacer                                   |
| Wear ring(s):                        | neckring(s)                              |
| Base frame:                          | EN / ISO                                 |
| Connect code:                        | F                                        |
| <b>Liquid:</b>                       |                                          |
| Pumped liquid:                       | Water                                    |
| Liquid temperature range:            | 0 .. 120 °C                              |
| Liquid temperature during operation: | 20 °C                                    |
| Density:                             | 998.2 kg/m³                              |
| <b>Electrical data:</b>              |                                          |
| Motor type:                          | 71B                                      |
| Rated power - P2:                    | 0.37 kW                                  |
| Mains frequency:                     | 50 Hz                                    |
| Rated voltage:                       | 3 x 220-240D/380-415Y V                  |
| Rated current:                       | 1.90/1.10 A                              |
| Starting current:                    | 400-440 %                                |
| Cos phi - power factor:              | 0.77-0.67                                |
| Rated speed:                         | 1400-1420 rpm                            |
| Efficiency:                          | 66.0%                                    |
| Motor efficiency at full load:       | 66.0 %                                   |
| Motor efficiency at 3/4 load:        | 72.2 %                                   |
| Motor efficiency at 1/2 load:        | 67.6 %                                   |
| Number of poles:                     | 4                                        |
| Enclosure class (IEC 34-5):          | 55 Dust/Jetting                          |
| Insulation class (IEC 85):           | F                                        |
| Motor protec:                        | NONE                                     |
| Motor No:                            | 87100381                                 |
| Lubricant type:                      | Grease                                   |
| <b>Others:</b>                       |                                          |
| Minimum efficiency index, MEI ≥:     | 0.60                                     |

**Performance Graphs:**

**Head (H) vs. Flow (Q):** The graph shows the pump's head performance. The y-axis represents Head (H) in meters [m], ranging from 0.0 to 4.0. The x-axis represents Flow (Q) in m³/h, ranging from 0 to 35. A blue curve indicates the head performance, starting at approximately 3.8 m at 0 m³/h and decreasing to about 2.5 m at 35 m³/h. A label "113 mm" points to the curve. The right y-axis shows efficiency (eta) in percent [%], ranging from 0 to 100. A dashed line indicates the efficiency curve, starting at approximately 40% at 0 m³/h and decreasing to about 25% at 35 m³/h.

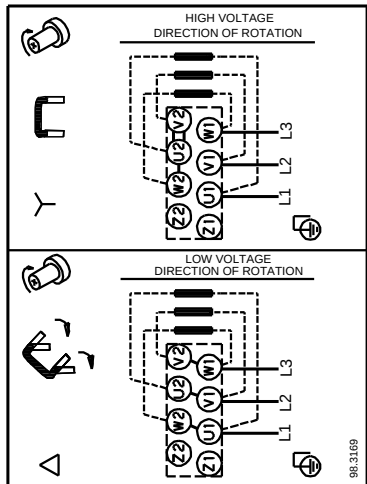
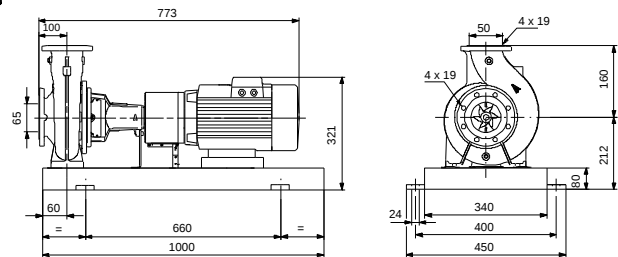
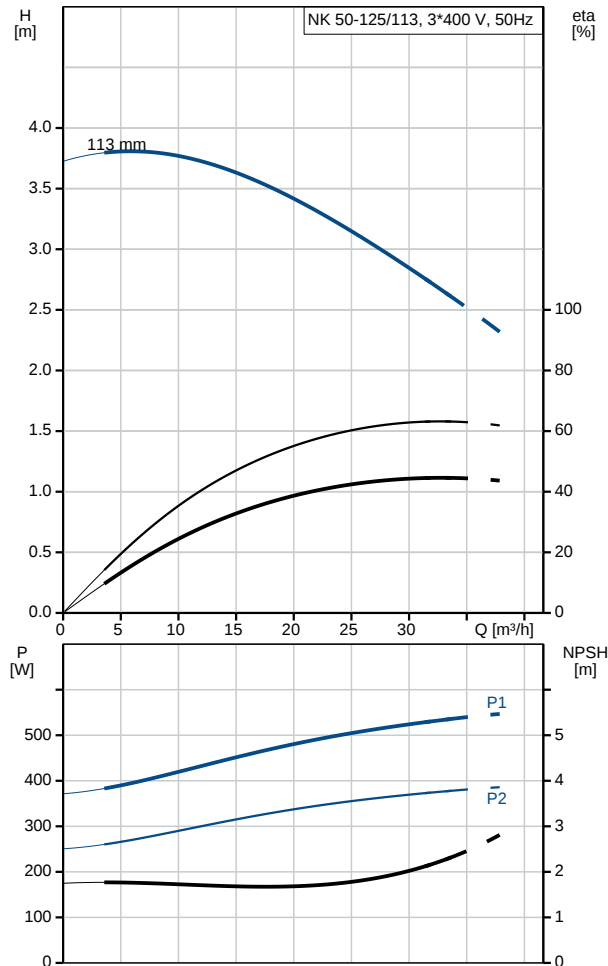
**Power (P) vs. Flow (Q):** The graph shows the pump's power performance. The y-axis represents Power (P) in Watts [W], ranging from 0 to 500. The x-axis represents Flow (Q) in m³/h, ranging from 0 to 35. Two blue curves are shown: P1 (upper curve) and P2 (lower curve). P1 starts at approximately 380 W at 0 m³/h and increases to about 520 W at 35 m³/h. P2 starts at approximately 250 W at 0 m³/h and increases to about 380 W at 35 m³/h. The right y-axis shows NPSH in meters [m], ranging from 0 to 5. A dashed line indicates the NPSH curve, starting at approximately 1.5 m at 0 m³/h and increasing to about 2.5 m at 35 m³/h.

**Dimensions:**

The pump is shown in two views: a side view and a front view. The side view shows the pump housing, motor, and base frame. Key dimensions include: total width 773 mm, motor width 100 mm, pump housing width 65 mm, base frame width 660 mm, and total height 321 mm. The front view shows the pump housing, motor, and base frame. Key dimensions include: total width 450 mm, motor width 340 mm, pump housing width 24 mm, and total height 212 mm. The pump housing has 4 x 19 mm ports.

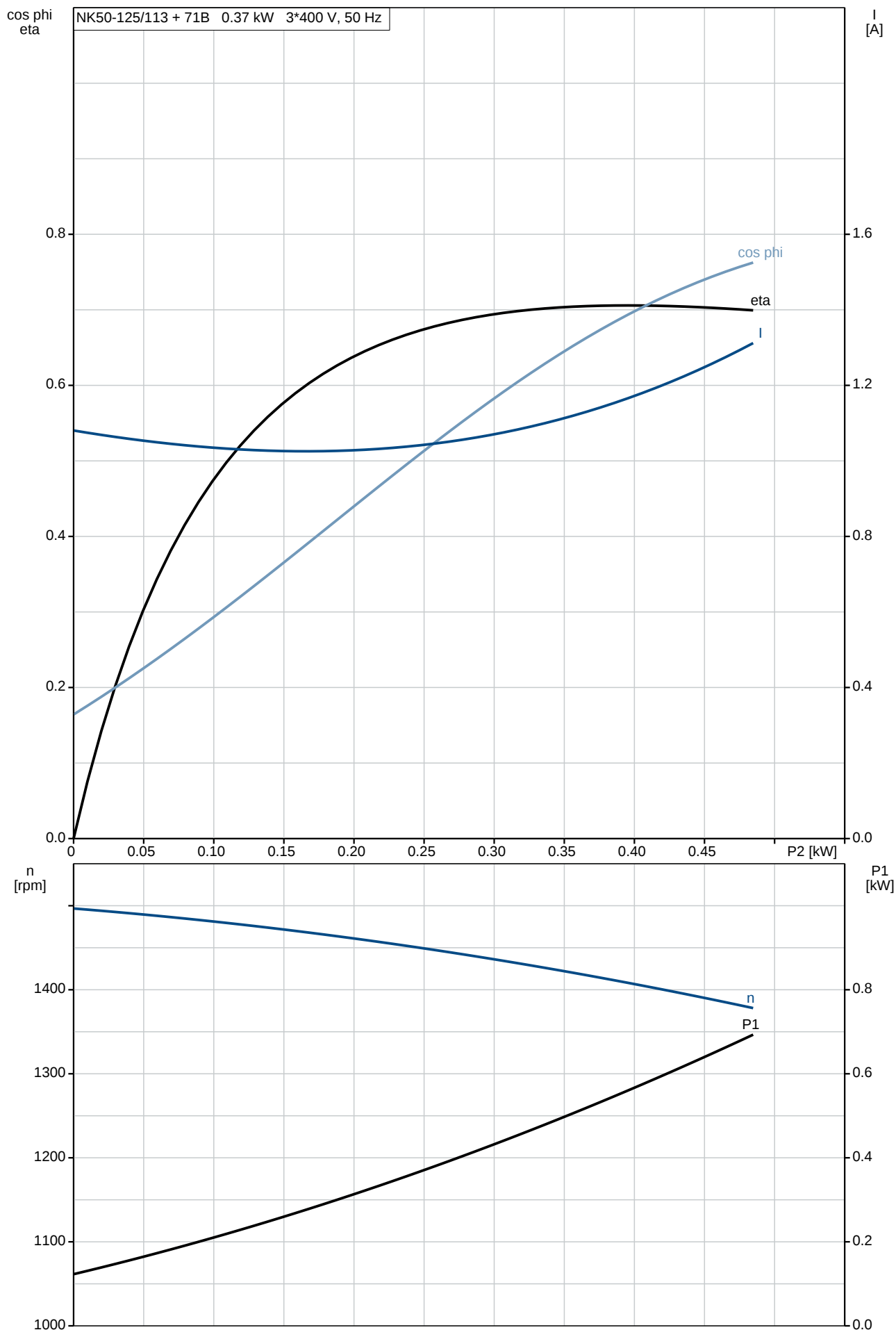
**Wiring Diagram:**

The diagram shows the wiring connections for the pump. It includes a terminal block with terminals labeled L1, L2, L3, N, and PE. The wiring is connected to the motor terminals (U, V, W) and the pump housing terminals (Z1, Z2, Z3, Z4, Z5, Z6). The diagram is divided into two sections: "HIGH VOLTAGE DIRECTION OF ROTATION" and "LOW VOLTAGE DIRECTION OF ROTATION". The high voltage section shows a different wiring configuration than the low voltage section. The diagram is labeled with the number 98.3169.

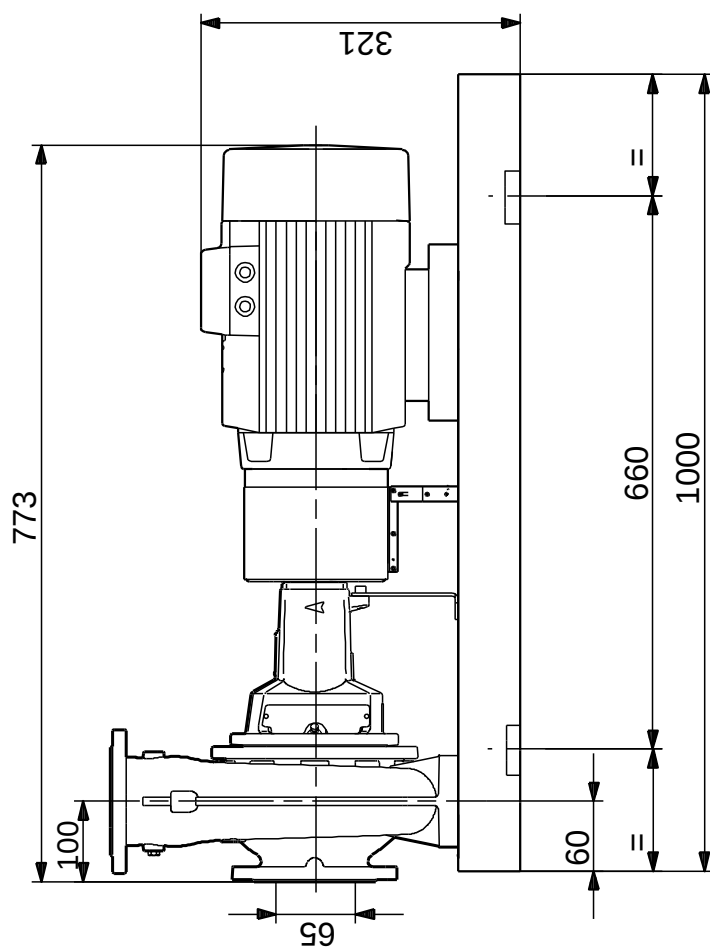
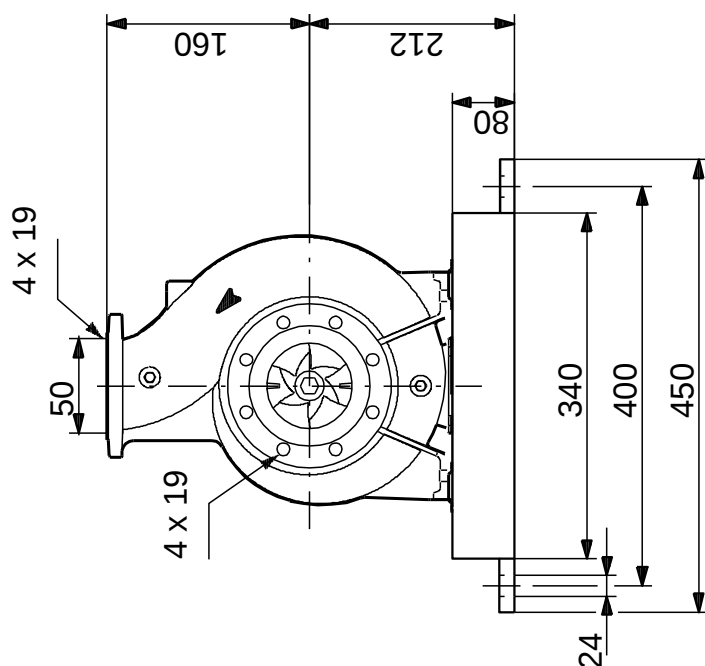


| Description      | Value                |
|------------------|----------------------|
| ErP status:      | EuP Standalone/Prod. |
| Net weight:      | 100 kg               |
| Gross weight:    | 114 kg               |
| Shipping volume: | 0.279 m <sup>3</sup> |

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

# Exploded view



Sectional drawing (TM058200 for TPE2,TPE3)



TM058200

# Exploded view ( TM057026 for MGE model H/I )



**Parts list NK 50-125/113, Product No. On request**  
**Valid from 1.1.2008 (0801)**

| Pos  | Description                 | Annotation | Données de classification | Référence | Quantité | Unité |
|------|-----------------------------|------------|---------------------------|-----------|----------|-------|
| +    | Motor                       |            |                           |           | 1        | pcs   |
| -    | Coupling cpl.               |            |                           |           | 1        | pcs   |
| 9    | Socket set screw            |            |                           |           | 1        |       |
| 89.b | Socket set screw            |            | Length (mm): 8            |           | 1        |       |
|      |                             |            | Thread: M6                |           |          |       |
| 89.d | Hex socket head cap screw   |            | Length (mm): 16           |           | 6        |       |
|      |                             |            | Thread: M6                |           |          |       |
| 89.p | Coupling female             |            |                           |           | 1        |       |
| 89o  | Coupling part spacer side   |            |                           |           | 12       |       |
| 89o  | Coupling part spacer side   |            |                           |           | 1        |       |
| 89r  | Spacer sleeve               |            |                           |           | 1        |       |
| 89s  | Spacer ring                 |            |                           |           | 1        |       |
| -    | Nut                         |            |                           |           | 1        | pcs   |
| 66   | Washer                      |            |                           |           | 1        |       |
| 66a  | Spring lock washer          |            |                           |           | 1        |       |
| 67   | Nut                         |            | Thread: M14               |           | 1        |       |
| -    | Pump housing cpl.           |            |                           |           | 1        | pcs   |
| 6    | Pump housing                |            |                           |           | 1        |       |
| 36   | Nut                         |            | Thread: M10               |           | 6        |       |
|      | Bearing bracket             |            |                           |           | 1        | pcs   |
| -    | Shaft seal cpl.             |            |                           |           | 1        | pcs   |
| 72a  | O-ring                      |            | Diameter: 177,39          |           | 1        |       |
|      |                             |            | Material type: EPDM       |           |          |       |
|      |                             |            | Thickness: 3,53           |           |          |       |
| 105  | Shaft seal                  |            | Material type: BAQE       |           | 1        |       |
| -    | 7 Coupling guard cpl.       |            |                           |           | 1        | pcs   |
| 7    | Coupling guard cpl.         |            |                           |           | 1        |       |
| 7b   | Retainer for coupling guard |            |                           |           | 1        |       |
| 186  | Hex socket head cap screw   |            | Length (mm): 10           |           | 4        |       |
|      |                             |            | Thread: M6                |           |          |       |
| -    | 7.d Foot for coupling guard |            |                           |           | 1        | pcs   |
| 7d   | Foot for coupling guard     |            |                           |           | 1        |       |
| 49   | Impeller                    |            |                           |           | 1        | pcs   |
| -    | 77 Cover                    |            |                           |           | 1        | pcs   |
| 77   | Cover                       |            |                           |           | 1        |       |
| -    | 90 Base plate               |            |                           |           | 1        | pcs   |
|      | Hex head screw              |            | Length (mm): 35MM         |           | 4        |       |
|      |                             |            | Thread: M12               |           |          |       |
|      | Hex head screw              |            | Length (mm): 35MM         |           | 2        |       |
|      |                             |            | Thread: M12               |           |          |       |
|      | Hex head screw              |            |                           |           | 4        |       |
|      | Nut                         |            |                           |           | 8        |       |
|      | Washer                      |            |                           |           | 4        |       |
|      | Base plate                  |            |                           |           | 1        |       |
|      | Support rail                |            |                           |           | 2        |       |
|      | Support block               |            |                           |           | 2        |       |
|      | Hex head bolt               |            |                           |           | 4        |       |
| 7h   | Hex head screw              |            | Length (mm): 16           |           | 2        |       |
|      |                             |            | Thread: M8                |           |          |       |
| 66   | Washer                      |            |                           |           | 16       |       |
| 66   | Washer                      |            |                           |           | 2        |       |
| 66   | Washer                      |            |                           |           | 2        |       |

*Disclaimer: The information about the Grundfos pump in this document may be outdated.*

*Data may be subject to alterations without further notice.*

*Please contact us to verify the data above is still accurate/up-to-date.*

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