

## Data sheet



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**ETLZ065-065-160 GGS AV11D200154 BKS BIE3**  
Inline pump

Version no.: 2

### Operating data

|                                                     |                                                                                                            |                                                          |                                                                                                                                             |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Pumped medium                                       | Water<br>Clean water<br>Not containing chemical and<br>mechanical substances which<br>affect the materials | Actual flow rate                                         | 36.46 m <sup>3</sup> /h                                                                                                                     |
|                                                     |                                                                                                            | Actual developed head                                    | 8.16 m                                                                                                                                      |
|                                                     |                                                                                                            | Efficiency                                               | 68.9 %                                                                                                                                      |
|                                                     |                                                                                                            | MEI (Minimum Efficiency<br>Index)                        | ≥ 0.70                                                                                                                                      |
| Max. ambient air temperature                        | 20.0 °C                                                                                                    | Power absorbed                                           | 1.17 kW                                                                                                                                     |
| Min. ambient air temperature                        | 20.0 °C                                                                                                    | Pump speed of rotation                                   | 1457 rpm                                                                                                                                    |
| Fluid temperature                                   | 20.0 °C                                                                                                    | NPSH required                                            | 1.75 m                                                                                                                                      |
| Fluid density                                       | 998 kg/m <sup>3</sup>                                                                                      | Permissible operating<br>pressure                        | 16.00 bar.g                                                                                                                                 |
| Fluid viscosity                                     | 1.00 mm <sup>2</sup> /s                                                                                    |                                                          |                                                                                                                                             |
| Suction pressure max.                               | 0.00 bar.g                                                                                                 | Discharge press.                                         | 0.80 bar.g                                                                                                                                  |
| Mass flow rate                                      | 10.11 kg/s                                                                                                 | Min. allow. mass flow for<br>continuous stable operation | 1.54 kg/s                                                                                                                                   |
| Max. power on curve                                 | 1.48 kW                                                                                                    | Max. allow. mass flow<br>Design                          | 16.76 kg/s<br>Twin system one full duty +<br>one standby pump<br>Tolerances to ISO 9906<br>Class 3B; below 10 kW acc.<br>to paragraph 4.4.2 |
| Min. allow. flow for continuous<br>stable operation | 5.55 m <sup>3</sup> /h                                                                                     |                                                          |                                                                                                                                             |
| Shutoff head                                        | 10.72 m                                                                                                    |                                                          |                                                                                                                                             |

### Design

|                                                   |                               |                                    |                                                                                           |
|---------------------------------------------------|-------------------------------|------------------------------------|-------------------------------------------------------------------------------------------|
| Pump standard                                     | Without                       | Material code                      | BQ1EGG-WA                                                                                 |
| Design                                            | Close coupled twin inline     | Shaft seal code                    | 11                                                                                        |
| Orientation                                       | Vertical                      | Sealing plan                       | Single-acting mechanical seal<br>with vented chamber (A-type<br>casing cover, taper bore) |
| Suction nominal dia.                              | DN 65                         | A liquid free of solids is assumed |                                                                                           |
| Suction nominal pressure                          | PN 16                         |                                    |                                                                                           |
| Suction position                                  | 180° (down)                   | Seal chamber design                | Conical seal chamber (A-type<br>cover)                                                    |
| Suction flange drilled<br>according to standard   | EN1092-2                      | Contact guard                      | With                                                                                      |
| Discharge nominal dia.                            | DN 65                         | Wear ring                          | Casing wear ring                                                                          |
| Discharge nominal pressure                        | PN 16                         | Impeller diameter                  | 167.0 mm                                                                                  |
| Discharge position                                | top (0°/360°)                 | Free passage size                  | 11.6 mm                                                                                   |
| Discharge flange drilled<br>according to standard | EN1092-2                      | Direction of rotation from drive   | Clockwise                                                                                 |
| Surface type                                      | Flat face                     | Bearing bracket construction       | Close-coupled                                                                             |
| Shaft seal                                        | Single acting mechanical seal | Bearing bracket size               | 25                                                                                        |
| Manufacturer                                      | KSB                           | Bearing type                       | Anti-friction bearings                                                                    |
| Type                                              | 1                             | Lubrication type                   | Grease                                                                                    |
|                                                   |                               | Color                              | Vermilion (RAL 2002)                                                                      |

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### Driver, accessories

|                        |                                                 |                                                                                                                                             |                       |
|------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Driver type            | Electric motor                                  | Motor enclosure                                                                                                                             | IP55                  |
| Drive standard mech.   | IEC                                             | Cos phi at 4/4 load                                                                                                                         | 0.84                  |
| Model (make)           | KSB-Motor                                       | Motor efficiency at 4/4 load                                                                                                                | 85.3 %                |
| Drive supplied by      | Standard motor supplied by KSB - mounted by KSB | Temperature sensor                                                                                                                          | 3 PTC resistors       |
|                        |                                                 | Terminal box position                                                                                                                       | 0° same orientation   |
| Motor const. type      | V1                                              |                                                                                                                                             | Viewed from the drive |
| Motor size             | 90L                                             | Motor winding                                                                                                                               | 230 / 400 V           |
| Efficiency class       | Efficiency class IE3 acc. to IEC60034-30-1      | Number of poles                                                                                                                             | 4                     |
|                        |                                                 | Connection mode                                                                                                                             | Star                  |
| Motor speed            | 1457 rpm                                        | Motor cooling method                                                                                                                        | Surface cooling       |
| Frequency              | 50 Hz                                           | Motor material                                                                                                                              | Aluminium             |
| Rated voltage          | 400 V                                           | Frequency inverter operation                                                                                                                | FI allowed            |
| Rated power P2         | 1.50 kW                                         |                                                                                                                                             |                       |
| Available reserve      | 27.84 %                                         | Motor data can vary from type plate information. Motor data describes KSB's choice functional specification and is used for pump selection. |                       |
| Rated current          | 3.5 A                                           | CE-approval                                                                                                                                 | Yes                   |
| Starting current ratio | 7.8                                             | Condensat drain motor                                                                                                                       | Yes                   |
| Insulation class       | F to IEC 34-1                                   |                                                                                                                                             |                       |

### Materials G

#### Notes 1

General criteria for a water analysis: pH-value  $\geq 7$ ; chloride content (Cl)  $\leq 250$  mg/kg. Chlorine (Cl2)  $\leq 0.6$  mg/kg.

|                     |                                    |                          |                             |
|---------------------|------------------------------------|--------------------------|-----------------------------|
| Volute casing (102) | Grey cast iron EN-GJL-250/A48CL35B | Casing wear ring (502.1) | Grey cast iron GG/CAST IRON |
| Casing cover (161)  | Grey cast iron EN-GJL-250/A48CL35B | Casing wear ring (502.2) | Grey cast iron GG/CAST IRON |
| Shaft (210)         | Tempered steel C45+N               | Disc (550)               | Steel ST                    |
| Impeller (230)      | Grey cast iron EN-GJL-250/A48CL35B | Stud (902)               | Steel 8.8                   |
|                     |                                    | Nut (920)                | 8+A2A/ 8+B633 SC1 TP3       |
|                     |                                    | Impeller nut (922)       | Steel 8                     |
|                     |                                    | Key (940)                | Steel C45+C / A311 GR 1045  |
| Motor stool (341)   | Grey cast iron EN-GJL-250/A48CL35B |                          | CLASS A                     |
| Flat gasket (400)   | DPAF seal plate asbestos free      | Pipe line (700)          | Steel ST                    |
| Joint ring (411)    | Steel ST                           |                          |                             |

## Performance curve

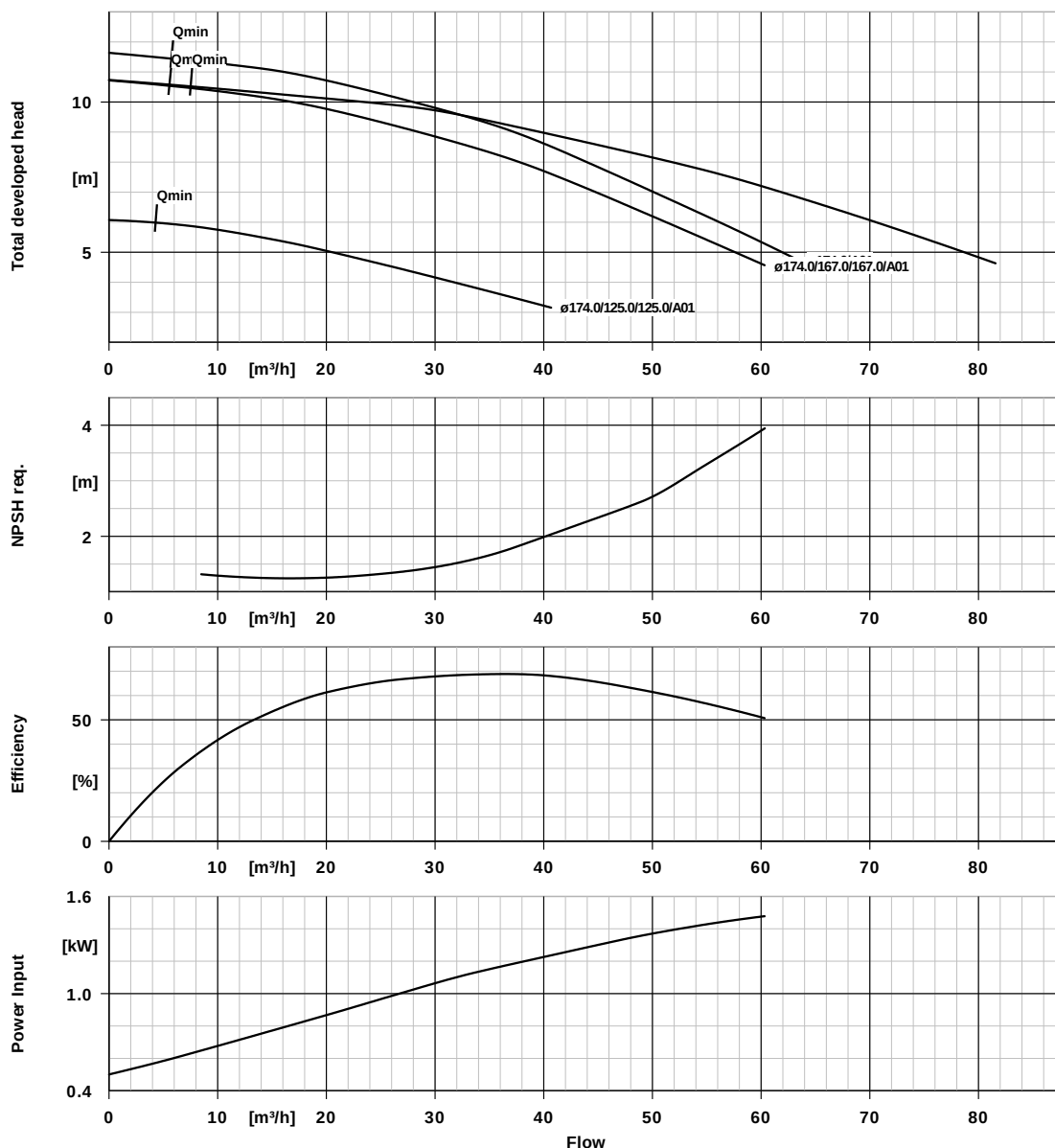


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### Curve data

Speed of rotation 1457 rpm  
Fluid density 998 kg/m³  
Viscosity 1.00 mm²/s  
Flow rate 36.46 m³/h  
Total developed head 8.16 m  
Efficiency 68.9 %

MEI (Minimum Efficiency Index)  $\geq 0.70$   
Power absorbed 1.17 kW  
NPSH required 1.75 m  
Curve number K1161.454/31  
Effective impeller diameter 167.0 mm  
Acceptance standard Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2

## Installation plan

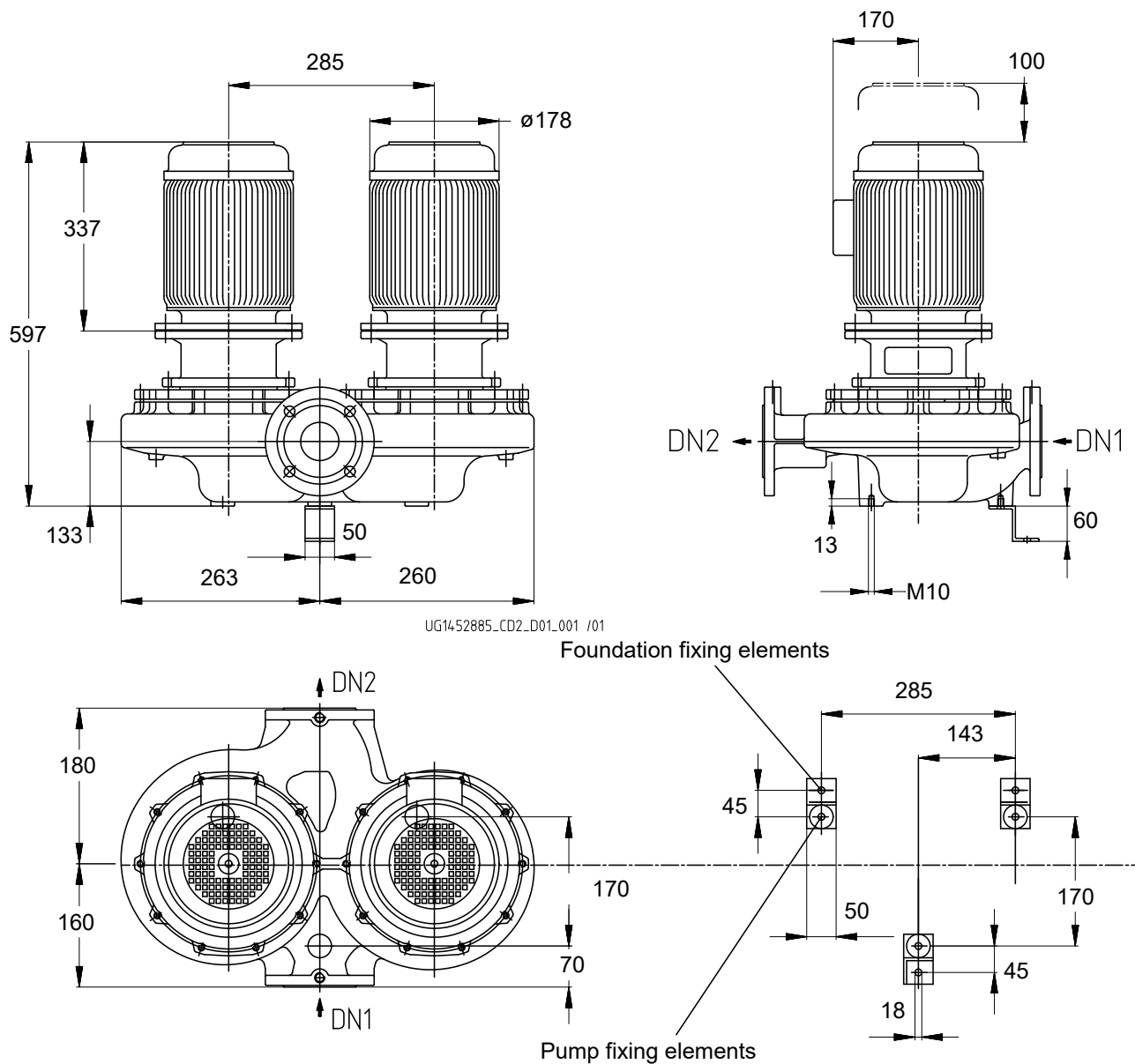


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Drawing is not to scale

Dimensions in mm

## Installation plan



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### Motor

|                          |                                              |
|--------------------------|----------------------------------------------|
| Motor manufacturer       | KSB-Motor                                    |
| Motor size               | 90L                                          |
| Motor power              | 1.50 kW                                      |
| Number of poles          | 4                                            |
| Speed of rotation        | 1457 rpm                                     |
| Position of terminal box | 0° same orientation<br>Viewed from the drive |

### Connections

|                            |                  |
|----------------------------|------------------|
| Suction nominal size DN1   | DN 65 / EN1092-2 |
| Discharge nominal size DN2 | DN 65 / EN1092-2 |
| Nominal pressure suct.     | PN 16            |
| Rated pressure disch.      | PN 16            |

### Weight net

|       |        |
|-------|--------|
| Pump  | 71 kg  |
| Motor | 44 kg  |
| Total | 115 kg |

**Connect pipes without stress or strain!**

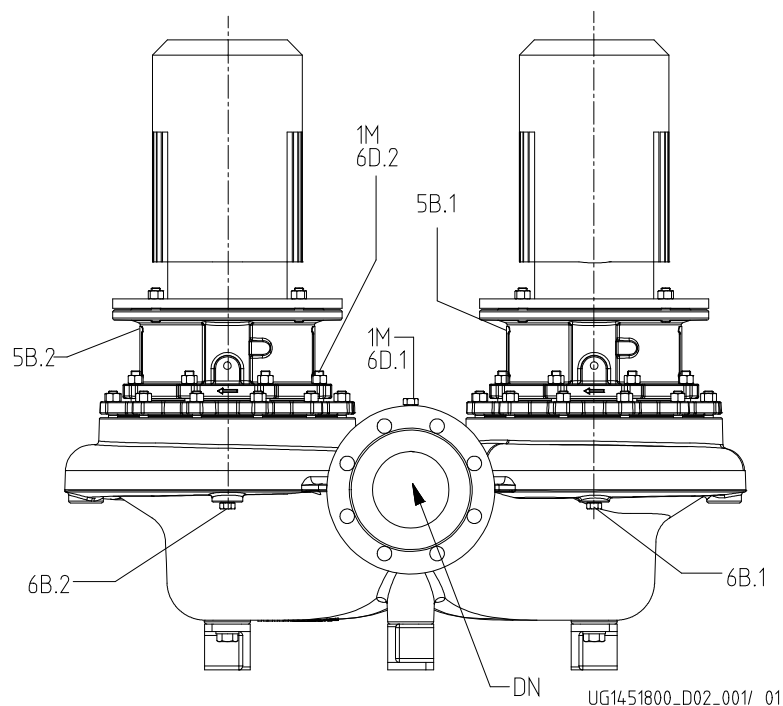
**For auxiliary connections see  
separate drawing.**

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UG1451800\_D02\_001/ 01

## Connections

Pump casing variant

1M.1 Pressure gauge connection  
1M.2 Pressure gauge connection  
6B.1 Pumped liquid drain  
6B.2 Pumped liquid drain  
6D.1 Pumped medium - filling/venting  
6D.2 Pumped medium - filling / venting  
5B.1 venting  
5B.2 venting

G 1/4  
G 1/4  
G 1/4  
G 1/4  
G 1/4  
G 1/4  
G 1/4  
G 1/4

XX46

Not executed  
Not executed  
Drilled and plugged.  
Drilled and plugged.  
Drilled and plugged.  
Drilled and plugged.  
Closed with venting plug  
Closed with venting plug