

ETL 125-125-160 GGS AV66D300404 BKSBIE4 PD2E

Inline pump

Operating data

| | | | |
|--|---|---|---|
| Requested flow rate | | Actual flow rate | 144.30 m ³ /h |
| Requested developed head | | Actual developed head | 6.00 m |
| Pumped medium | Antifreeze on ethylene glycol base, inhibited, closed system, e.g. Antifrogen N or similar products | Efficiency | 79.4 % |
| | Cooling water with antifreeze-concentration 30% (pH >= 7.5) | MEI (Minimum Efficiency Index) | ≥ 0.60 |
| | Not containing chemical and mechanical substances which affect the materials | Power absorbed | 3.11 kW |
| Ambient air temperature | 20.0 °C | Pump speed of rotation | 1282 rpm |
| Fluid temperature | 13.0 °C | NPSH required | 2.22 m |
| Fluid density | 1043 kg/m ³ | Permissible operating pressure | 16.00 bar.g |
| Fluid viscosity | 2.73 mm ² /s | Discharge press. | 0.61 bar.g |
| Suction pressure max. | 0.00 bar.g | Min. allow. mass flow for continuous stable operation | 5.50 kg/s |
| Mass flow rate | 41.80 kg/s | Max. allow. mass flow | 52.76 kg/s |
| Max. power on curve | 3.15 kW | Design | Single system 1 x 100 % |
| Min. allow. flow for continuous stable operation | 19.00 m ³ /h | | Tolerances to ISO 9906 |
| Shutoff head | 8.22 m | | Class 3B; below 10 kW acc. to paragraph 4.4.2 |

Design

| | | | |
|---|-------------------------------|----------------------------------|---|
| Pump standard | Without | Material code | Q7Q7EGG |
| Caution: The overall length from suction to discharge can be different to the previous generation of Etaline. | | Shaft seal code | 66 |
| Design | Close-coupled in-line | Sealing plan | Single-acting mechanical seal with vented chamber (A-type casing cover, taper bore) |
| Orientation | Vertical | Seal chamber design | Conical seal chamber (A-type cover) |
| Suction nominal dia. | DN 125 | Contact guard | With |
| Suction nominal pressure | PN 16 | Wear ring | Casing wear ring |
| Suction position | 180° (down) | Impeller diameter | 185.0 mm |
| Suction flange drilled according to standard | EN1092-2 | Free passage size | 16.4 mm |
| Discharge nominal dia. | DN 125 | Direction of rotation from drive | Clockwise |
| Discharge nominal pressure | PN 16 | Silicon free pump assembly | Yes |
| Discharge position | top (0°/360°) | Bearing bracket construction | Close-coupled |
| Discharge flange drilled according to standard | EN1092-2 | Bearing bracket size | 35 |
| Shaft seal | Single acting mechanical seal | Bearing type | Anti-friction bearings |
| Manufacturer | Burgmann | Lubrication type | Grease |
| Type | MG13G6 | Color | Vermilion (RAL 2002) |

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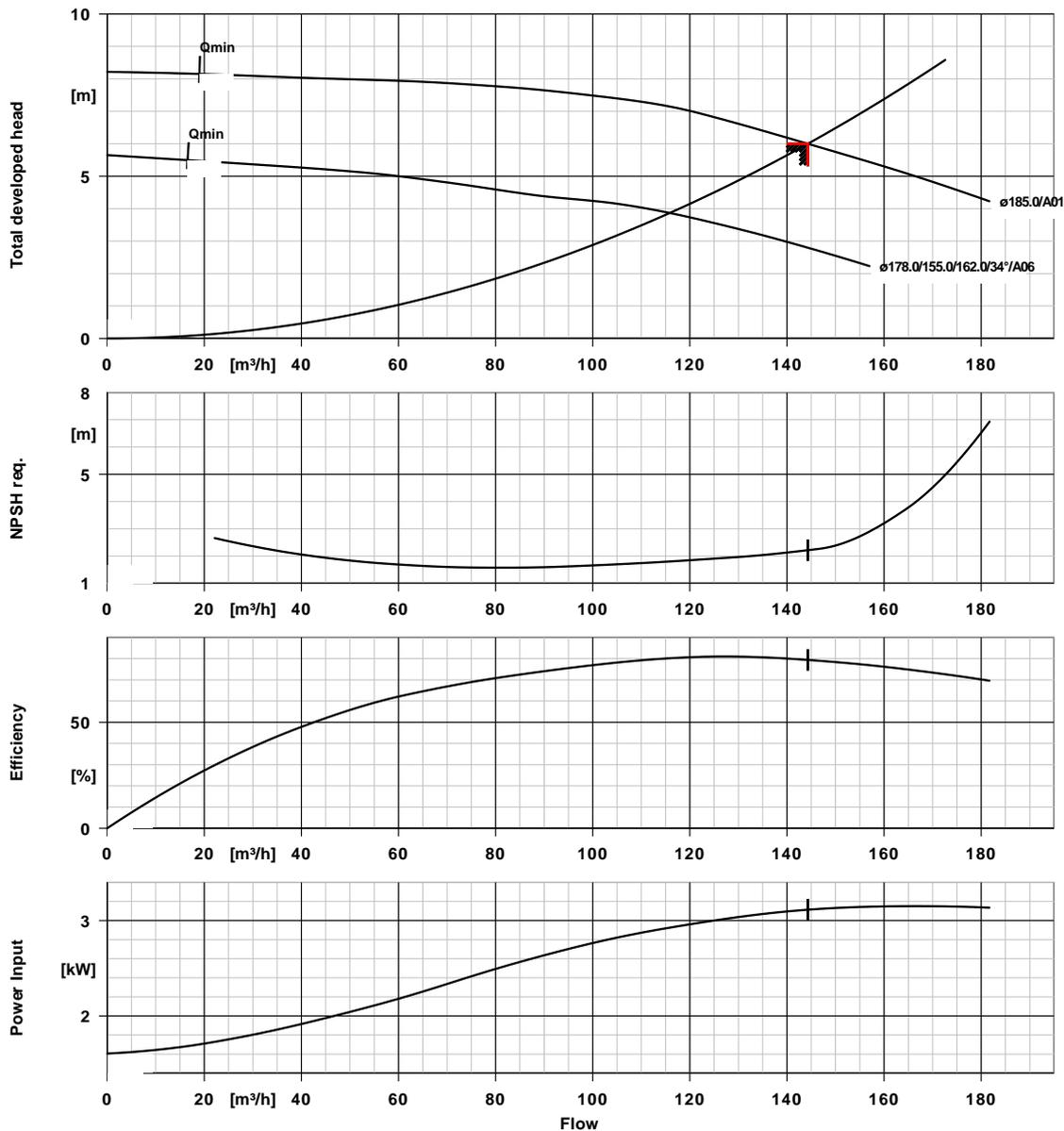
Driver, accessories

| | | | |
|--|--|------------------------------|---------------------|
| Driver type | Electric motor | Rated current | 9.6 A |
| Drive standard mech. | IEC | Insulation class | F to IEC 34-1 |
| Model (make) | KSB SuPremE® | Motor enclosure | IP55 |
| Type series motor manufacturer | SuPremE C2 (with mounting plate for PumpDrive 2, non removable) | Cos phi at 4/4 load | 0.73 |
| Drive supplied by | Standard motor supplied by KSB - mounted by KSB | Motor efficiency at 4/4 load | 91.2 % |
| Motor const. type | V1 | Temperature sensor | 3 PTC resistors |
| Motor size | 112M | Terminal box position | 0° same orientation |
| Efficiency class | Efficiency class IE4 acc. IEC/TS 60034-30-2 (2016) – free of magnets. The efficiency of the motor for a quadratic torque-speed characteristic is > 95% of the nominal efficiency even at 25% of the nominal power. | Motor winding | 400 V |
| Speed control selection | Speed adjustment | Connection mode | Star |
| Frequency | 50 Hz | Motor cooling method | Surface cooling |
| Designed for operation with frequency inverter | Yes | Motor material | Aluminium |
| Rated voltage | 400 V | Motor noise pressure level | 61 dBa |
| Rated power P2 | 4.00 kW | Driver colour | Same as the pump |
| Available reserve | 28.49 % | | |

Materials G

| | | | |
|---------------------|------------------------------------|--------------------------|------------------------------------|
| 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 | Shaft sleeve (523) | CrNiMo steel |
| Impeller (230) | Grey cast iron EN-GJL-250/A48CL35B | Stud (902) | Steel 8.8 |
| Motor stool (341) | Grey cast iron EN-GJL-250/A48CL35B | Impeller nut (922) | Steel 8 |
| Flat gasket (400) | DPAF seal plate asbestos free | Key (940) | Steel C45+C / A311 GR 1045 CLASS A |
| Joint ring (411) | Steel ST | | |

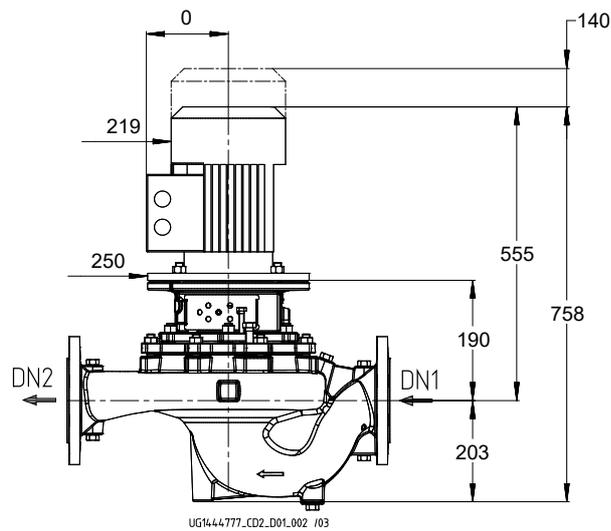
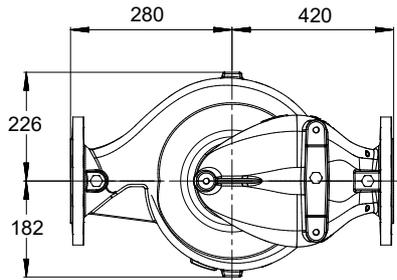
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 Inline pump



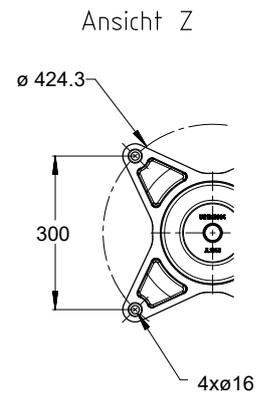
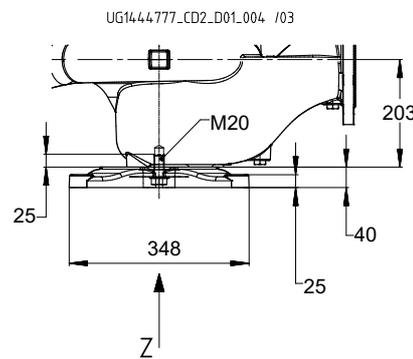
Curve data

| | | | |
|--------------------------|----------------|--------------------------------|--|
| Speed of rotation | 1282 rpm | Efficiency | 79.4 % |
| Fluid density | 1043 kg/m^3 | MEI (Minimum Efficiency Index) | ≥ 0.60 |
| Viscosity | 2.73 mm^2/s | Power absorbed | 3.11 kW |
| Flow rate | 144.30 m^3/h | NPSH required | 2.22 m |
| Requested flow rate | 144.30 m^3/h | Curve number | K1159.454/45 |
| Total developed head | 6.00 m | Effective impeller diameter | 185.0 mm |
| Requested developed head | 6.00 m | Acceptance standard | Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2 |

ETL 125-125-160 GGSAV66D300404 BKSBIE4 PD2E
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UG1444777_CD2_D01_002 /03



Drawing is not to scale

Dimensions in mm

Motor

| | |
|--------------------------|--|
| Motor manufacturer | KSB |
| Motor size | 112M |
| Motor power | 4.00 kW |
| Number of poles | 4 |
| Speed of rotation | 1500 rpm |
| Position of terminal box | 0° same orientation Viewed from the drive |

Connections

| | |
|----------------------------|-------------------|
| Suction nominal size DN1 | DN 125 / EN1092-2 |
| Discharge nominal size DN2 | DN 125 / EN1092-2 |
| Nominal pressure suct. | PN 16 |
| Rated pressure disch. | PN 16 |

Weight net

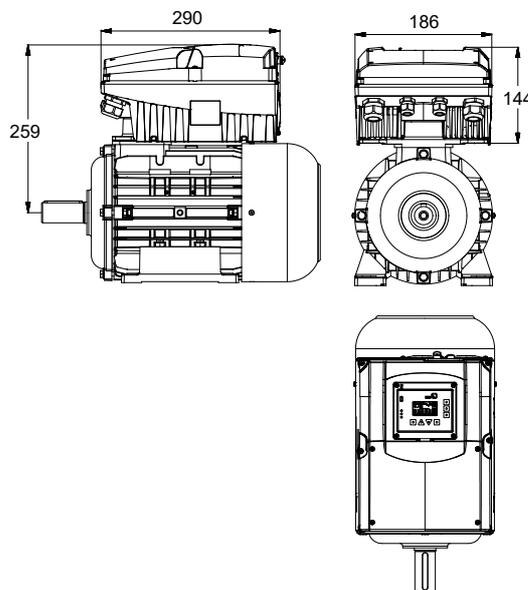
| | |
|-------------------|---------------|
| Pump | 98 kg |
| Motor | 33 kg |
| Other accessories | 0 kg |
| Total | 132 kg |

Connect pipes without stress or strain!

For auxiliary connections see separate drawing.

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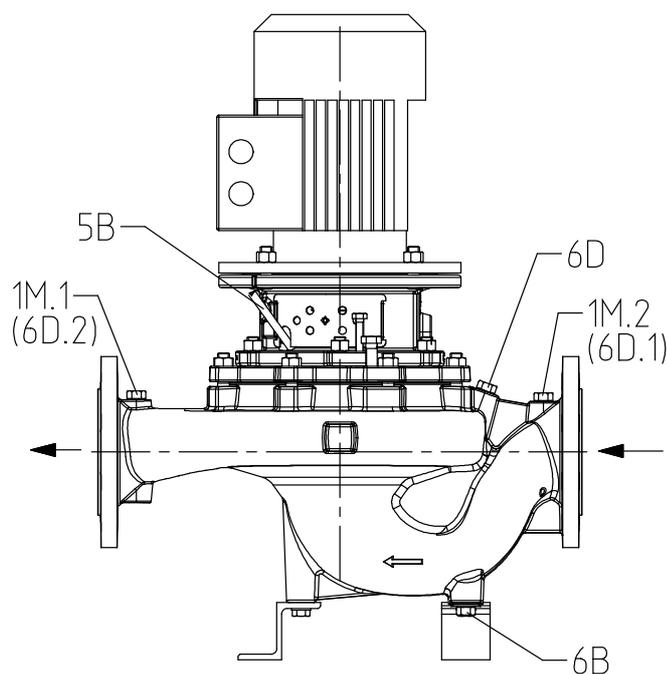
Supplementary drawing for PumpDrive



Drawing is not to scale

ETL 125-125-160 GGSAV66D300404 BKSBI4 PD2E

Inline pump



UG1444722_D01_003/ 02

Connections

Pump casing variant

1M.1 Pressure gauge connection

1M.2 Pressure gauge connection

6B Pumped liquid drain

6D Pumped medium - filling / venting

5B venting

G 1/2

G 1/2

G 1/2

G 1/2

G 1/4

XX46

Drilled and plugged.

Drilled and plugged.

Drilled and plugged.

Drilled and plugged.

Closed with venting plug

PDRV2E_004K00M_KSUPBE4P4_OMOOO

PumpDrive 2

Modular, self-cooling frequency inverter enabling continuously variable speed control of asynchronous and synchronous reluctance motors.

| | |
|--------------------------------|-----------------------------|
| Design concept of control unit | PumpDrive 2 Eco |
| Display type | With standard control panel |
| Rated power | 4.00 kW |
| Max. allowed current | 10.0 A |
| M12 module | Without |
| Remote operation | Without |
| Mounting | MM - Mounted on the motor |

| | |
|-------------------|----------|
| Weight | 6 kg |
| PumpDrive length | 290.0 mm |
| PumpDrive width | 186.0 mm |
| PumpDrive height | 144.0 mm |
| Manufacturer | KSB |
| PumpDrive adapter | No |
| Designation | - |

Characteristic

Mains voltage: 3 ~ 380 V AC -10% to 480 V AC +10 %

Mains frequency: 50 - 60 Hz +/- 2%

Interference suppression class: <= 11 kW: EN 61800-3 C1 / EN 55011 Class B / cable length <= 5 m

Internal power supply: 24 V +/- 10 %, max. 600 mA DC

Service interface: optical

2 analog inputs, 0/2-10 V or 0/4-20 mA

1 analog output, 0-10 V or 4-20 mA

Digital inputs:

1 hardware enable input

3 parameterisable inputs

Relay output: 2 NO contacts, parameterisable

Environment:

IP 55 enclosure (acc. EN 60529)

Ambient temperature: -10 to 50 °C

Rel. humidity in operation: 5 % to 85 % (non-condensing)

Note regarding Outdoor installation: Provide the frequency inverter with suitable protection when installed outdoors to prevent condensation on the electronic equipment and exposure to excessive sunlight.

Housing:

Heat sink: die-cast aluminium

Housing cover: Polyamid, glass fibre reinforced

Control panel: Polyamid, glass fibre reinforced

Protective functions:

- Full protection by means of overcurrent limitation and PTC thermistor monitoring
- Automatic speed reduction at overload and excessive temperatures. Protection against phase failure motor side, short-circuit monitoring motor side (phase to phase and phase to earth), overvoltage/undervoltage
- Protection against motor overload
- Suppression of resonant frequencies
- Cable integrity monitoring (live zero)
- Protection against dry running and hydraulic blockage (sensorless via learning function)
- Characteristic curve control

Open/closed-loop control

- Open-loop control via analog input, display or fieldbus
- Closed-loop control mode via integrated PID controller
- Controlled variables: pressure, differential pressure delta-p (constant) or delta-p (variable), temperature, level control, flow rate
- Sensorless differential pressure control (Δp const) in a single-pump configuration
- Sensorless differential pressure control with dynamic pressure compensation (Δp var) in a single-pump configuration
- Sensorless flow rate control
- Functional check run

PDRV2E_004K00M_KSUPBE4P4_OMOOO

Operation and display:

- Operating point estimation (Q, H)
- Optical service interface for connection to KSB Service Tool

PumpDrive functions:

- Programmable start and stop ramps
- Field-oriented control (vector control) with selectable motor control method (ASM, SuPremE)
- Automatic motor adaptation (AMA)
- Manual-0-automatic operation
- Sleep mode (stand-by mode)

Installation options:

- M12 module for bus connection of PumpMeter and for multiple pump operation of up to six pumps
- Wireless module for communication with a Smartphone
- Field bus module Modbus RTU, as an alternative to the M12 module.

MEASUR TRANSDUCER 0- 2 BAR 1/2

Differential pressure transducer 0 to 2 bar RC1/2
With two copper-spiralled pipe sections measuring 75 cm in length for connection to the discharge or suction nozzles complete with retaining plate spiralled pipe section and adapter
Output 4 to 20 mA 3-wire
Supply voltage 18 to 30 V DC
2.5 m connection cable
Ambient temperature -10 to +50 °C
Temperature of measured medium -10 to +80 °C
Differential pressure transducer with two copper spiralled pipe sections of 75 cm length for connection to the discharge or suction nozzles of the pump, complete with retaining plate, spiralled pipe section and adapter, 3-wire output 4...20 mA, supply voltage 18...30 V DC, 2.5 m connection cable

Material no

01111305