

**ETL 125-125-160 GGS AV11D300404 BKS BIE4 PD2E**  
 Inline pump

**Operating data**

Requested flow rate		Actual flow rate	141.50 m <sup>3</sup> /h
Requested developed head		Actual developed head	8.00 m
Pumped medium	Water, heating water Heating water up to 100 °C (max.), acc. to VDI 2035 Not containing chemical and mechanical substances which affect the materials	Efficiency	80.9 %
		MEI (Minimum Efficiency Index)	≥ 0.60
		Power absorbed	3.73 kW
Ambient air temperature	20.0 °C	Pump speed of rotation	1405 rpm
Fluid temperature	75.0 °C	NPSH required	2.22 m
Fluid density	975 kg/m <sup>3</sup>	Permissible operating pressure	16.00 bar.g
Fluid viscosity	0.39 mm <sup>2</sup> /s	Discharge press.	0.76 bar.g
Suction pressure max.	0.00 bar.g	Min. allow. mass flow for continuous stable operation	5.64 kg/s
Mass flow rate	38.33 kg/s	Max. allow. mass flow Design	54.08 kg/s Twin system one full duty + one standby pump Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2
Max. power on curve	3.88 kW		
Min. allow. flow for continuous stable operation	20.82 m <sup>3</sup> /h		
Shutoff head	9.87 m		

**Design**

Pump standard	Without	Shaft seal code	11
Caution: The overall length from suction to discharge can be different to the previous generation of Etaline.		Sealing plan	Single-acting mechanical seal with vented chamber (A-type casing cover, taper bore)
Design	Close-coupled in-line	Minimum requirements for hot water quality: treatment acc. to VdTÜV regulation TCH 1466 and solids content up to max. 5 mg/l.	
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	KSB	Lubrication type	Grease
Type	1	Color	Vermilion (RAL 2002)
Material code	BQ1EGG-WA		

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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 Viewed from the drive
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	7.11 %		

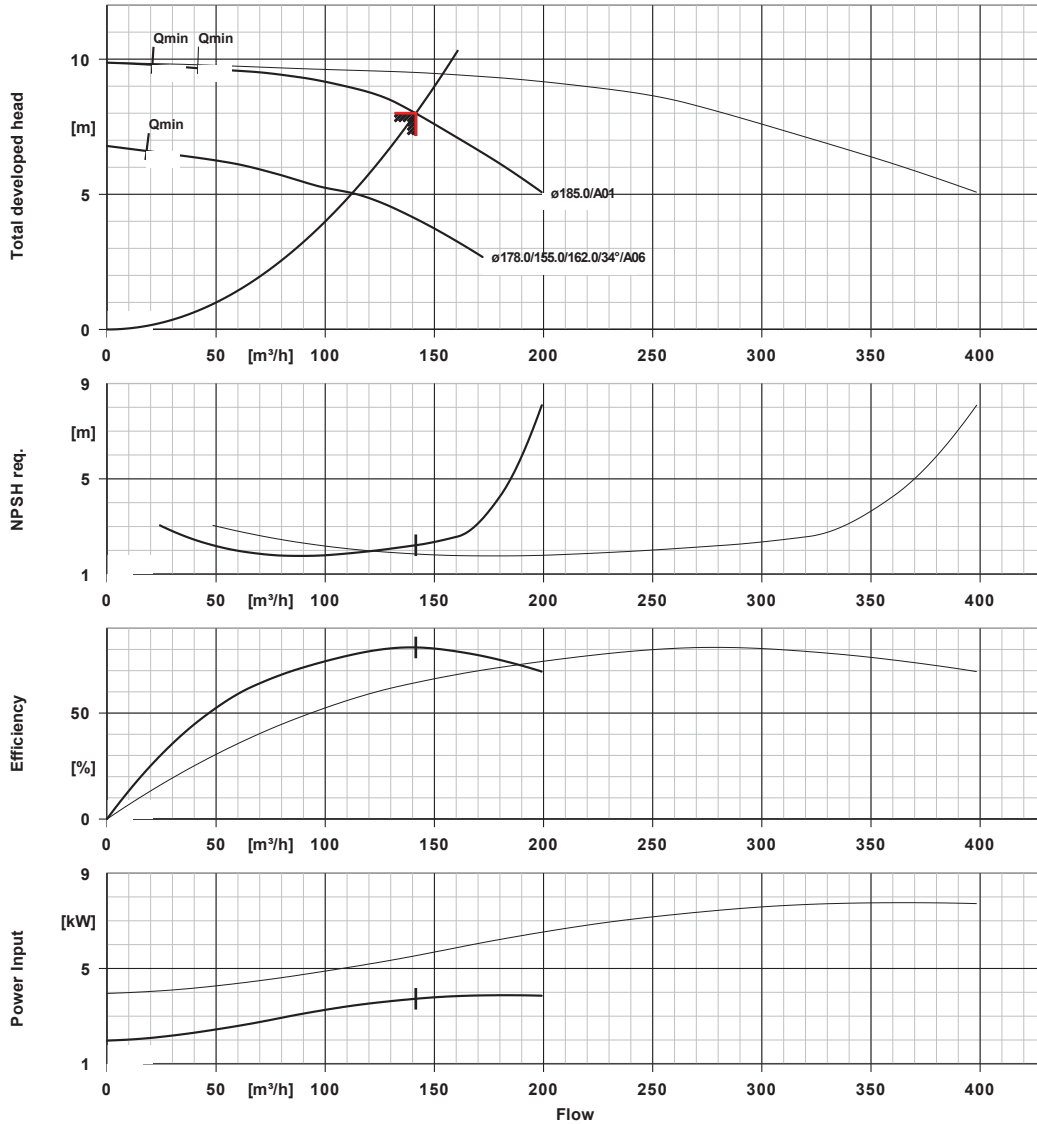
**Materials G**

**Notes 1**

Unalloyed cast iron components: pH = 9 to 10.5 and O2 content <= 0.02 mg/kg.

Volute casing (102)	Grey cast iron EN-GJL-250/A48CL35B	Joint ring (411)	Steel ST
Casing cover (161)	Grey cast iron EN-GJL-250/A48CL35B	Casing wear ring (502.1)	Grey cast iron GG/CAST IRON
Shaft (210)	Tempered steel C45+N	Casing wear ring (502.2)	Grey cast iron GG/CAST IRON
Impeller (230)	Grey cast iron EN-GJL-250/A48CL35B	Shaft sleeve (523)	CrNiMo steel
Motor stool (341)	Grey cast iron EN-GJL-250/A48CL35B	Stud (902)	Steel 8.8
Flat gasket (400)	DPAF seal plate asbestos free	Impeller nut (922)	Steel 8
		Key (940)	Steel C45+C / A311 GR 1045 CLASS A

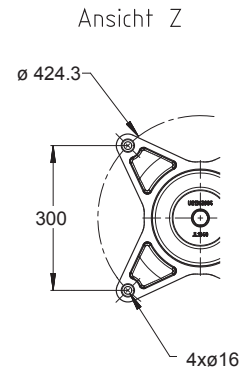
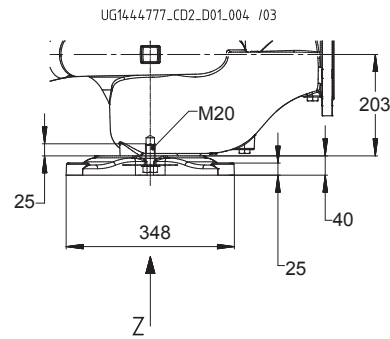
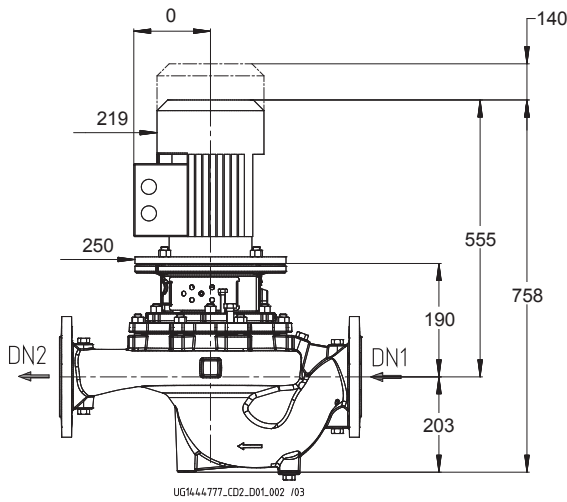
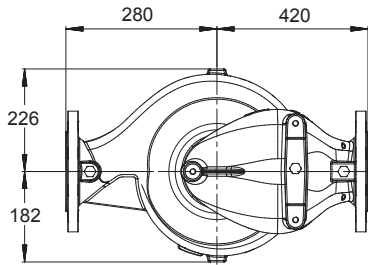
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 Inline pump



**Curve data**

Speed of rotation	1405 rpm	Efficiency	80.9 %
Fluid density	975 kg/m <sup>3</sup>	MEI (Minimum Efficiency Index)	≥ 0.60
Viscosity	0.39 mm <sup>2</sup> /s	Power absorbed	3.73 kW
Flow rate	141.50 m <sup>3</sup> /h	NPSH required	2.22 m
Requested flow rate	141.50 m <sup>3</sup> /h	Curve number	K1159.454/45
Total developed head	8.00 m	Effective impeller diameter	185.0 mm
Requested developed head	8.00 m	Acceptance standard	Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2

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*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**

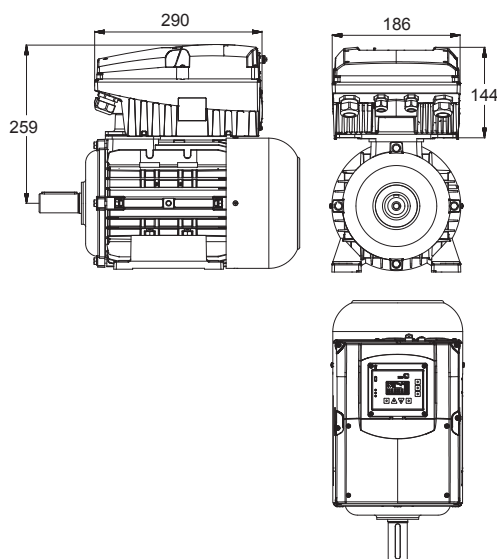
Pump	98 kg
Motor	33 kg
Other accessories	1 kg
Total	132 kg

**Connect pipes without stress or strain!**

**For auxiliary connections see separate drawing.**

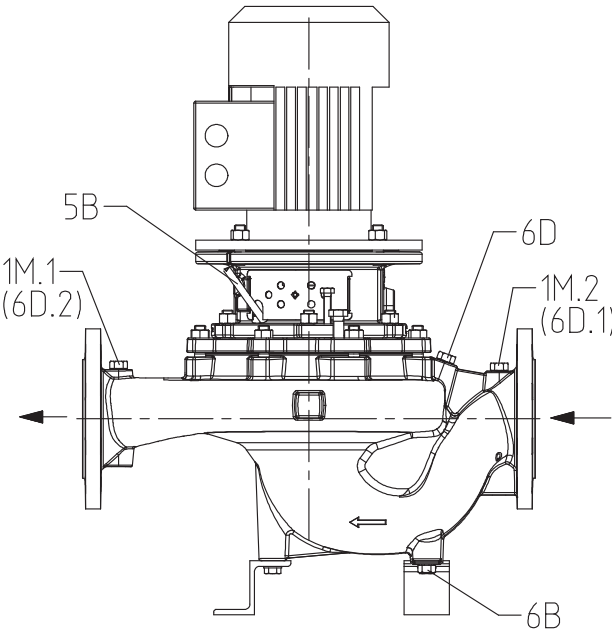
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Inline pump

Supplementary drawing for PumpDrive



*Drawing is not to scale*

**ETL 125-125-160 GGS AV11D300404 BKSBIE4 PD2E**  
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UG1444722\_D01\_003/ 02

**Connections**

Pump casing variant		XX46
1M.1 Pressure gauge connection	G 1/2	Drilled and plugged.
1M.2 Pressure gauge connection	G 1/2	Drilled and plugged.
6B Pumped liquid drain	G 1/2	Drilled and plugged.
6D Pumped medium - filling / venting	G 1/2	Drilled and plugged.
5B venting	G 1/4	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 ( $\Delta p$  const) in a single-pump configuration

- Sensorless differential pressure control with dynamic pressure compensation ( $\Delta p$  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

**CABLE PDRV2 CAN M12-ST./ST.2M**

M12 bus cable for multi pump operation  
Pre-configured bus cable for dual and multiple pump configuration  
For looping of the KSB device bus (CAN) from frequency inverter to frequency inverter via M12 module  
Shielded  
Colour: light purple  
M12 connector: angled - M12 connector: angled  
A-coded 5 poles  
Length: 2m

Material no 01533748