

ETLZ040-040-250 GGS AV11D200224 BKS BIE4M
 Inline pump

Operating data Point no. 2

Requested flow rate		Actual flow rate	11.52 m ³ /h
Requested developed head		Actual developed head	18.96 m
Pumped medium	Water	Efficiency	40.3 %
	Clean water	MEI (Minimum Efficiency Index)	≥ 0.70
	Not containing chemical and mechanical substances which affect the materials	Power absorbed	1.47 kW
Ambient air temperature	20.0 °C	Pump speed of rotation	1500 rpm
Fluid temperature	20.0 °C	NPSH required	2.16 m
Fluid density	998 kg/m ³	Permissible operating pressure	16.00 bar.g
Fluid viscosity	1.00 mm ² /s	Discharge press.	1.86 bar.g
Suction pressure max.	0.00 bar.g	Min. allow. mass flow for continuous stable operation	0.77 kg/s
Mass flow rate	3.19 kg/s	Max. allow. mass flow Design	8.35 kg/s
Max. power on curve	2.29 kW		Twin system one full duty + one standby pump
Min. allow. flow for continuous stable operation	2.79 m ³ /h		Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2
Shutoff head	20.23 m		

Point no. 1

Requested flow rate	5.75 m ³ /h	Actual flow rate	5.75 m ³ /h
Requested developed head	14.30 m	Actual developed head	14.30 m
Ambient air temperature	20.0 °C	Efficiency	30.7 %
Fluid temperature	20.0 °C	MEI (Minimum Efficiency Index)	≥ 0.70
Fluid density	998 kg/m ³	Power absorbed	0.73 kW
Fluid viscosity	1.00 mm ² /s	Pump speed of rotation	1265 rpm
Suction pressure max.	0.00 bar.g	NPSH required	1.74 m
Mass flow rate	1.59 kg/s	Permissible operating pressure	16.00 bar.g
Max. power on curve	1.38 kW	Discharge press.	1.40 bar.g
Min. allow. flow for continuous stable operation	2.35 m ³ /h	Min. allow. mass flow for continuous stable operation	0.65 kg/s
Shutoff head	14.39 m		Twin system one full duty + one standby pump
Max. allow. mass flow	7.05 kg/s		

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Design

Pump standard	Without	Shaft seal code	11
Design	Close coupled twin inline	Sealing plan	Single-acting mechanical seal with vented chamber (A-type casing cover, taper bore)
Orientation	Vertical		
Suction nominal dia.	DN 40		
Suction nominal pressure	PN 16	A liquid free of solids is assumed	
Suction position	180° (down)	Seal chamber design	Conical seal chamber (A-type cover)
Suction flange drilled according to standard	EN1092-2	Contact guard	With
Discharge nominal dia.	DN 40	Wear ring	Casing wear ring
Discharge nominal pressure	PN 16	Impeller diameter	236.0 mm
Discharge position	top (0°/360°)	Free passage size	7.1 mm
Discharge flange drilled according to standard	EN1092-2	Direction of rotation from drive	Clockwise
Shaft seal	Single acting mechanical seal	Bearing bracket construction	Close-coupled
Manufacturer	KSB	Bearing bracket size	25
Type	1	Bearing type	Anti-friction bearings
Material code	BQ1EGG-WA	Lubrication type	Grease
		Color	Vermilion (RAL 2002)

Driver, accessories

Driver type	Electric motor	Rated current	5.7 A
Drive standard mech.	IEC	Insulation class	F to IEC 34-1
Model (make)	KSB SuPremE®	Motor enclosure	IP55
Type series motor manufacturer	SuPremE C1 (with terminal box)	Cos phi at 4/4 load	0.68
Drive supplied by	Standard motor supplied by KSB - mounted by KSB	Motor efficiency at 4/4 load	89.5 %
Motor const. type	V1	Temperature sensor	3 PTC resistors
Motor size	100L	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	Viewed from the drive
		Connection mode	400 V
Speed control selection	Specified speed	Motor cooling method	Star
Motor speed	1500 rpm	Motor material	Surface cooling
Frequency	50 Hz	Motor noise pressure level	Aluminium
Designed for operation with frequency inverter	Yes	Driver colour	60 dBa
Rated voltage	400 V		Same as the pump
Rated power P2	2.20 kW		
Available reserve	49.65 %		

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Materials G

Notes 1

General criteria for a water analysis: pH-value ≥ 7 ; chloride content (Cl) ≤ 250 mg/kg. Chlorine (Cl₂) ≤ 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
Motor stool (341)	Grey cast iron EN-GJL-250/A48CL35B	Nut (920)	8+A2A/ 8+B633 SC1 TP3
Flat gasket (400)	DPAF seal plate asbestos free	Impeller nut (922)	Steel 8
Joint ring (411)	Steel ST	Key (940)	Steel C45+C / A311 GR 1045 CLASS A
		Pipe line (700)	Steel ST

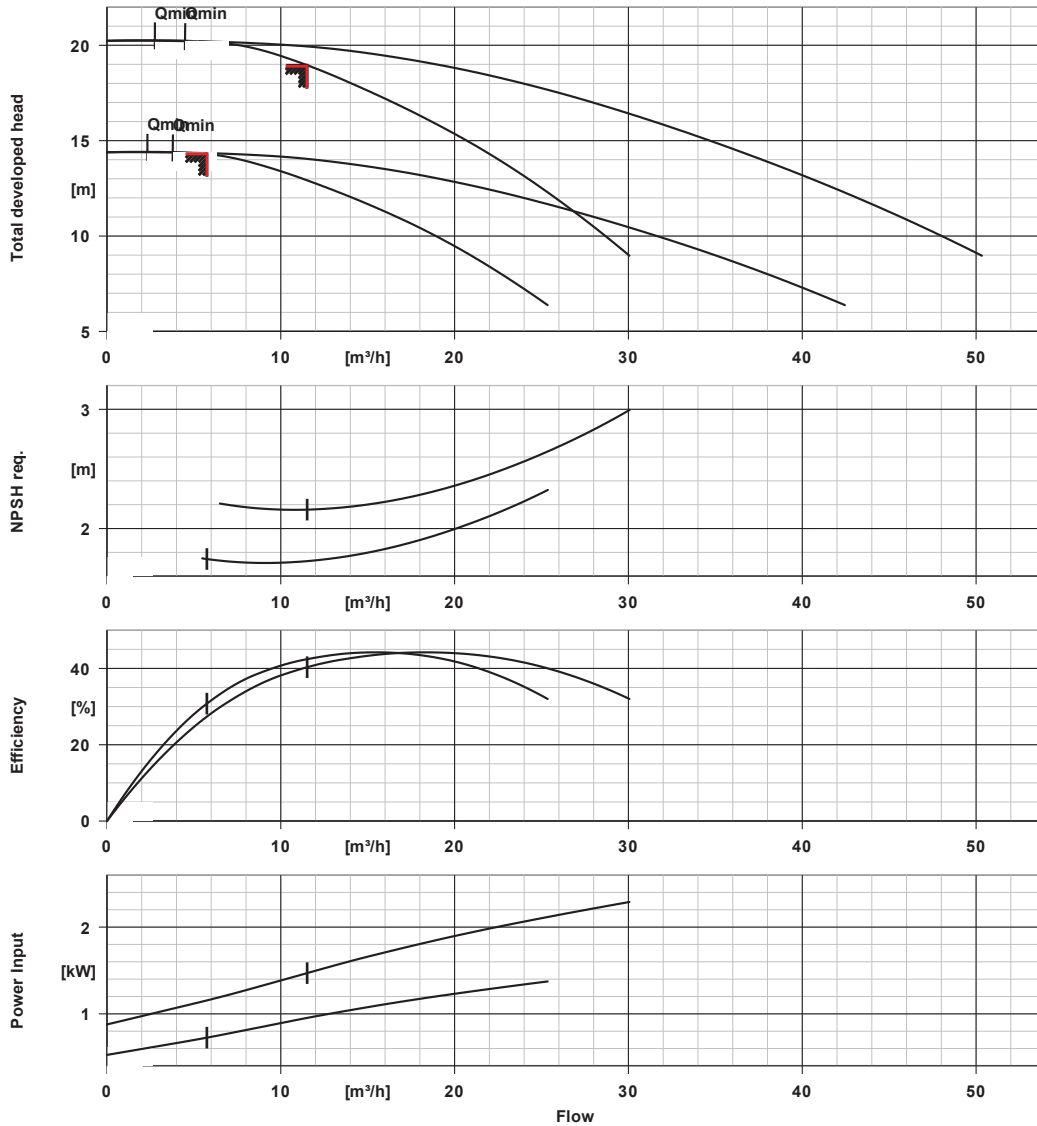
Packaging

Packaging for transport	Truck	Label text	3CF11a_b
Packaging for storage	Indoor	Packaging category	A0 Packing acc. to KSB choice
Label location	Packaging		

Nameplates

Nameplates language	International	Individual text per piece	Without
Supplementary text	3CF11a_b		

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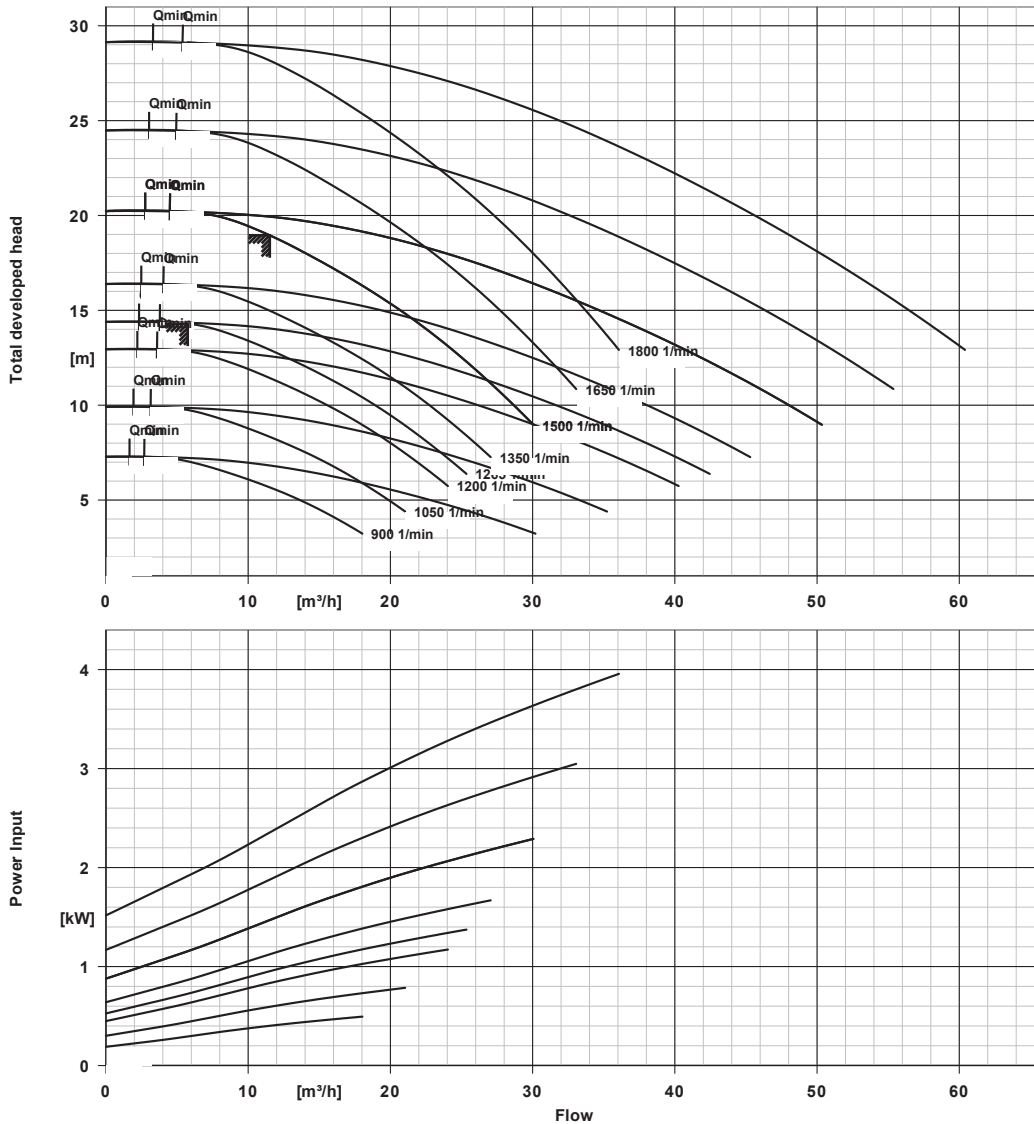


Curve data

Speed of rotation	1500 rpm	Efficiency	40.3 %
Fluid density	998 kg/m^3	MEI (Minimum Efficiency Index)	≥ 0.70
Viscosity	1.00 mm^2/s	Power absorbed	1.47 kW
Flow rate	11.52 m^3/h	NPSH required	2.16 m
Requested flow rate	11.50 m^3/h	Curve number	K1161.454/24
Total developed head	18.96 m	Effective impeller diameter	236.0 mm
Requested developed head	18.90 m	Acceptance standard	Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2

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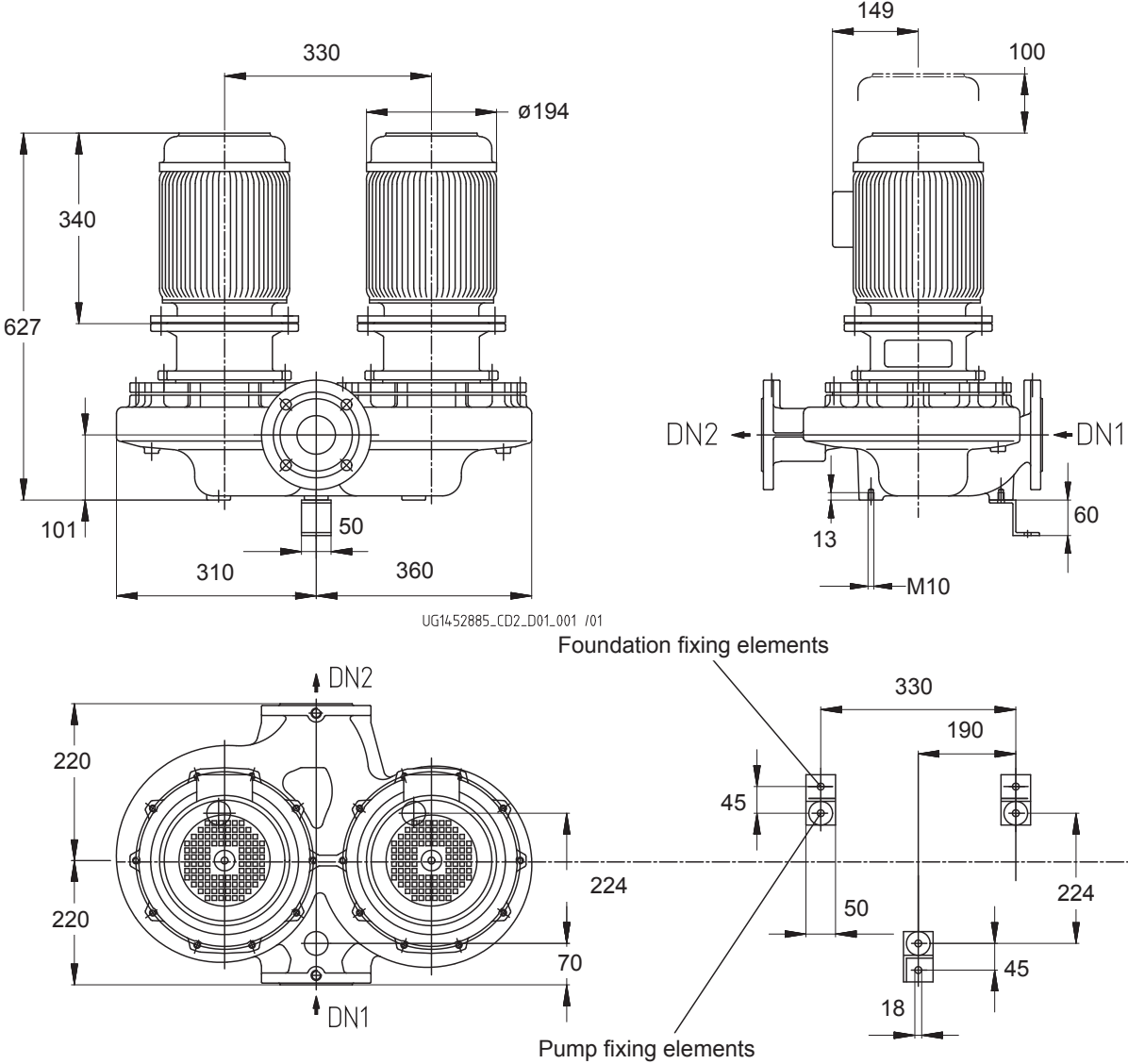
Inline pump



Curve data

Fluid density	998 kg/m ³	Total developed head	18.96 m
Viscosity	1.00 mm ² /s	Requested developed head	18.90 m
Flow rate	11.52 m ³ /h	MEI (Minimum Efficiency Index)	≥ 0.70
Requested flow rate	11.50 m ³ /h	Effective impeller diameter	236.0 mm

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UG1452885_CD2_D01_001 /01

Drawing is not to scale

Dimensions in mm

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Motor

Motor manufacturer	KSB
Motor size	100L
Motor power	2.20 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 40 / EN1092-2
Discharge nominal size DN2	DN 40 / EN1092-2
Nominal pressure suct.	PN 16
Rated pressure disch.	PN 16

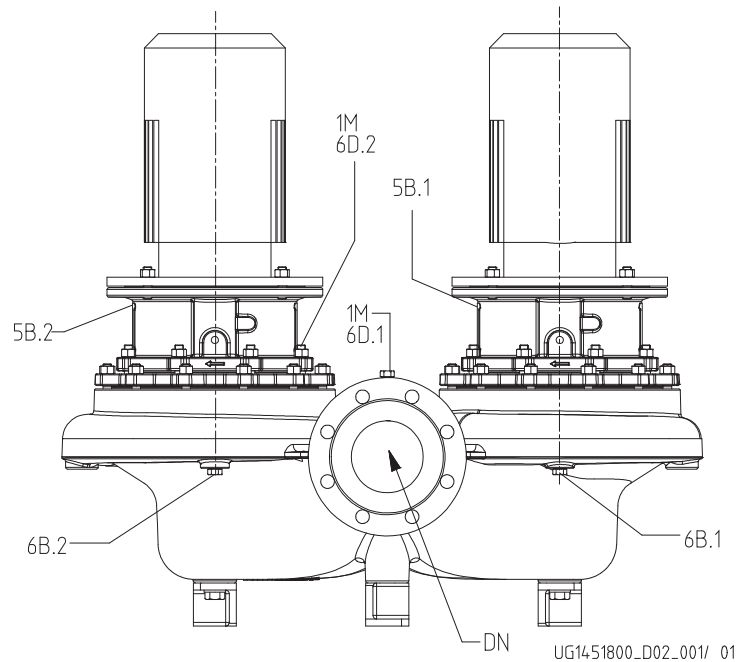
Weight net

Pump	99 kg
Motor	50 kg
Total	149 kg

Connect pipes without stress or strain!

For auxiliary connections see separate drawing.

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UG14-51800_D02_001/ 01

Connections

Pump casing variant		XX46
1M.1 Pressure gauge connection	G 1/4	Pressure sensor for PumpMeter fitted
1M.2 Pressure gauge connection	G 1/4	Pressure sensor for PumpMeter fitted
6B.1 Pumped liquid drain	G 1/4	Drilled and plugged.
6B.2 Pumped liquid drain	G 1/4	Drilled and plugged.
6D.1 Pumped medium - filling/venting	G 1/4	Drilled and plugged.
6D.2 Pumped medium - filling / venting	G 1/4	Drilled and plugged.
5B.1 venting	G 1/4	Closed with venting plug
5B.2 venting	G 1/4	Closed with venting plug

PumpMeter

Intelligent Pressure Transmitter PumpMeter - with on-site display of operating point

General description:

PumpMeter is an intelligent pressure transmitter with on-site display of measurement values and operating data of the pump. It comes factory-provided completely assembled and parameterised for your individual pump, to be connected via M12 connector and immediately ready to operate. PumpMeter records the pumps load profile during operation in order to – if applicable – provide information on the potential for energy savings or increased availability.

On-site display unit:

Backlit display unit for on-site display of measurement values and operating data of pump with intuitive and internationally comprehensible icons, rotatable in steps of 90°.

Display values:

suction pressure, pressure at inlet of pump in bar, gauge pressure
 discharge pressure, pressure at outlet of pump in bar, gauge pressure
 differential pressure between in- and outlet of pump in bar
 qualitative indication of operating point

Connection of display unit via connector (M12 x 1, 5-pin for power supply and utilization of communication interface.
 Making alternatively available:
 measurement value of discharge pressure via analogue signal 4 ... 20 mA
 calculated value of differential pressure via analogue signal 4 ... 20 mA
 all display values via serial interface RS 485 (Modbus RTU).
 Service interface RS232 for parameterisation.
 Factory provided parameterisation for individual pump.

Sensors:

Two gauge pressure transmitters, one each factory provided on both, inlet and discharge side of pump. Connected to display unit via connector.

Accuracy of measurement (sum of errors; relating to measurement range):

±1% for fluid temperature -10 ... 100 °C

±2.5% for fluid temperature -30 ... -10 °C and 100 ... 140 °C

Material of measuring cell: stainless steel (no internal gasket)

Available measurement ranges:

-1 ...10 bar (gauge pressure)

-1 ...10 bar (gauge pressure)

Ambient conditions:

Type of protection: IP 65

Ambient temperature:

-30°C ... 80°C (during transport, storage)

-10°C ... 60°C (operation)

Fluid temperature: -30°C ... 140°C

Scuff resistance:

Ultraviolet resistance (outdoor installation)

Resistance to most cleaning agents

Resistance to oil mist

Silicone free:

No detrimental to paint adhesion

Electric data:

Power supply:

24V DC ± 10%, min. 140 mA

Interfaces, alternatively utilisable:

4 ... 20 mA, 3-conductor (discharge pressure or differential pressure)

RS485, Modbus RTU (Slave)

Service interface: RS232

EMC:

EN 61326 (Immunity: industrial environment, Emissions: applicable in home and building environment)