

**Etabloc 125-100-200 GB**  
**ETB 125-100-200-GBSBV10 WSFCM4HBB**
**Operating point****1 Dimensioning operating point****Operating conditions (purchaser requirements)**

Target flow rate	100 m <sup>3</sup> /h	Vapour pressure determined	0.0234 bar.a
Target mass flow rate	27.72 kg/s	Minimum inlet pressure	-0.3 bar
Target head	10 m	required	
Fluid	Water, swimming-pool and bathing water	Specified ambient temperature	20 °C
Fluid variant	Fresh water	Installation altitude above sea level	1,000 m
Specified fluid temperature	20 °C		
Density Fluid handled	998 kg/m <sup>3</sup>		
Kinematic viscosity Fluid handled	1 mm <sup>2</sup> /s		

**Operating conditions (performance)**

Flow rate	100.01 m <sup>3</sup> /h	Maximum power input at duty point	3.64 kW
Minimum permissible flow rate	19.73 m <sup>3</sup> /h	Maximum power input / curve	4.22 kW
Head	10 m	Pump speed	1,456 1/min
Shut-off head	11.1 m	Discharge pressure-max.	1.09 bar
Efficiency Pump	74.6 %		
NPSH required	1.95 m		

**Design data pump**

Scope of supply Pump supplied by KSB	Pump + motor	Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Horizontal	Minimum efficiency index MEI	0.6
Pump design	Close-coupled	Minimum permissible fluid temperature	0 °C
Pump system design	2 x 100 % standby operation	Maximum permissible fluid temperature	110 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Quantity Stages, single-entry	1
Pump direction of rotation, viewed from casing side	Counterclockwise	Casing wear ring design suction-side	Flat
Impeller diameter D2	182 mm	Casing wear ring design discharge-side	Flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	17.9 mm	Bearing bracket size / shaft unit	35
Nut lock for Impeller	No	Pump bearing type, non-drive end	Anti-friction bearing
Swirl break	No	Pump bearing type, drive end	Anti-friction bearing
Support foot	Yes	Pump directive	CE

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**Nozzle connections pump**

Nominal diameter Suction nozzle	DN 125	Nominal diameter Discharge nozzle	DN 100
Nominal pressure Suction nozzle	PN 16	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Axial	Discharge nozzle position	0 deg
Suction nozzle design acc.to	EN1092-2	Discharge nozzle design acc.to	EN1092-2
Suction flange bolt hole pattern as per standard	EN1092-2	Discharge flange bolt hole pattern as per standard	EN1092-2
Flange facing type Inlet	Raised face (B,RF)		
Flange facing type Outlet	Raised face (B,RF)		

**Auxiliary connections pump**

6B Fluid Drain	G 1/2 Drilled and plugged	1M Pressure gauge Discharge nozzle	G 1/2 Fitted pressure sensor
6D Fluid Filling and venting	G 1/2 Drilled and plugged	1M Pressure gauge Suction nozzle	G 1/2 Fitted pressure sensor
Connection type 5B Venting and drain	G 1/4 Drilled and plugged		

**Shaft sealing**

Shaft seal type	SMS A-type cover, vented	Shaft seal code	Code 10
Piping plan	API plan 03	Shaft seal manufacturer	KSB's choice
Determined pressure Seal chamber	-0.24 bar	Mechanical seal type inboard	1
		Material Shaft seal inboard	Q1Q1X4GG

**Materials**

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Hydraulic casing (902.01)	
Material Shaft	C45+N	Material Screw plug Hydraulic casing (903.01)	ST
Material Impeller (230)	CC480K DW	Material Static seal Screw plug Volute casing (411)	A4/AISI 316
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON	Material Nut Impeller fastening (920.95)	(CRNIMO ST INT)
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON	Material Key	1.4571+C/A276 TP 316 COND B
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Static seal Discharge cover	DPAF DW001		
Material Drive lantern	EN-GJL-250/A48 CL 35B		
Material Support foot	(ST)		

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**Driver**

Electric motor	Yes	Rated speed Motor	1,450 1/min
Drive concept	With electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	4 kW
Drive standard electric	IEC	Motor power reserve	9.83 %
Motor bearing, insulated	No	determined	
Motor manufacturer	KSB's choice	Rated voltage Motor	400 V
Customer supply Drive	No	Motor winding	400 / 690 V
Motor construction type	IM V1 (IM3011) IEC 60034-7	Rated frequency Motor	50Hz
Motor size	112M	Motor switching type	Delta
Efficiency class	IE3 (Premium)	Rated current Motor	8.6 A
Material motor housing	AL	Starting current ratio $I_a/I_n$	7.5
Enclosure Motor	IP55	Cos phi at 4/4 load	0.78
Thermal class	155 (F) nach IEC 60085	Motor efficiency at 4/4 load	88.6 %
Temperature sensor motor	3 PTC thermistors	Directive Drive	CE
Terminal box position of motor (looking at the motor shaft)	360 Grad		
Operation on a frequency inverter permitted	Yes (acc to motor manufact)		
Sound pressure level Motor	61 dBA		
Type series Motor manufacturer	Acc. to motor manufacturer		

**Coating****Aggregate**

Surface preparation	Free from dirt, grease, rust
Properties Primer coat	Hydro dip primer, water-dilutable
Thickness Primer coat	60 µm
Properties Top coat	Acrylate dispersion water-thin
Thickness Top coat	40 µm
Colour Top coat	RAL5002 Ultramarine Blue

**Packaging**

Suitable for transport	Truck transport
Suitable for storage	Indoor storage
Packaging category	KSB's choice (A0)

**Nameplates**

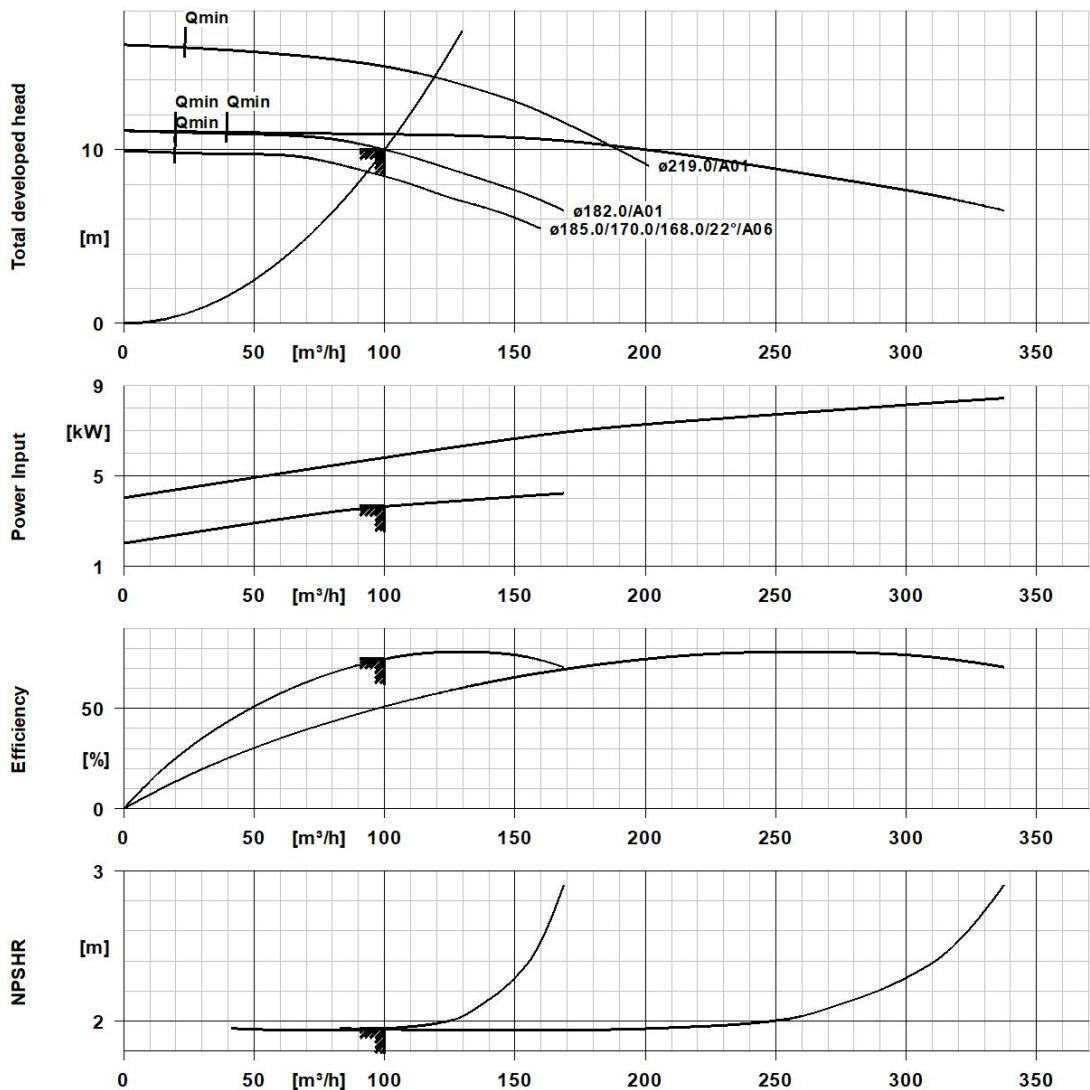
Duplicate name plate	No
Material Installation part Pump (S185)	

# Performance Curve (Pump)



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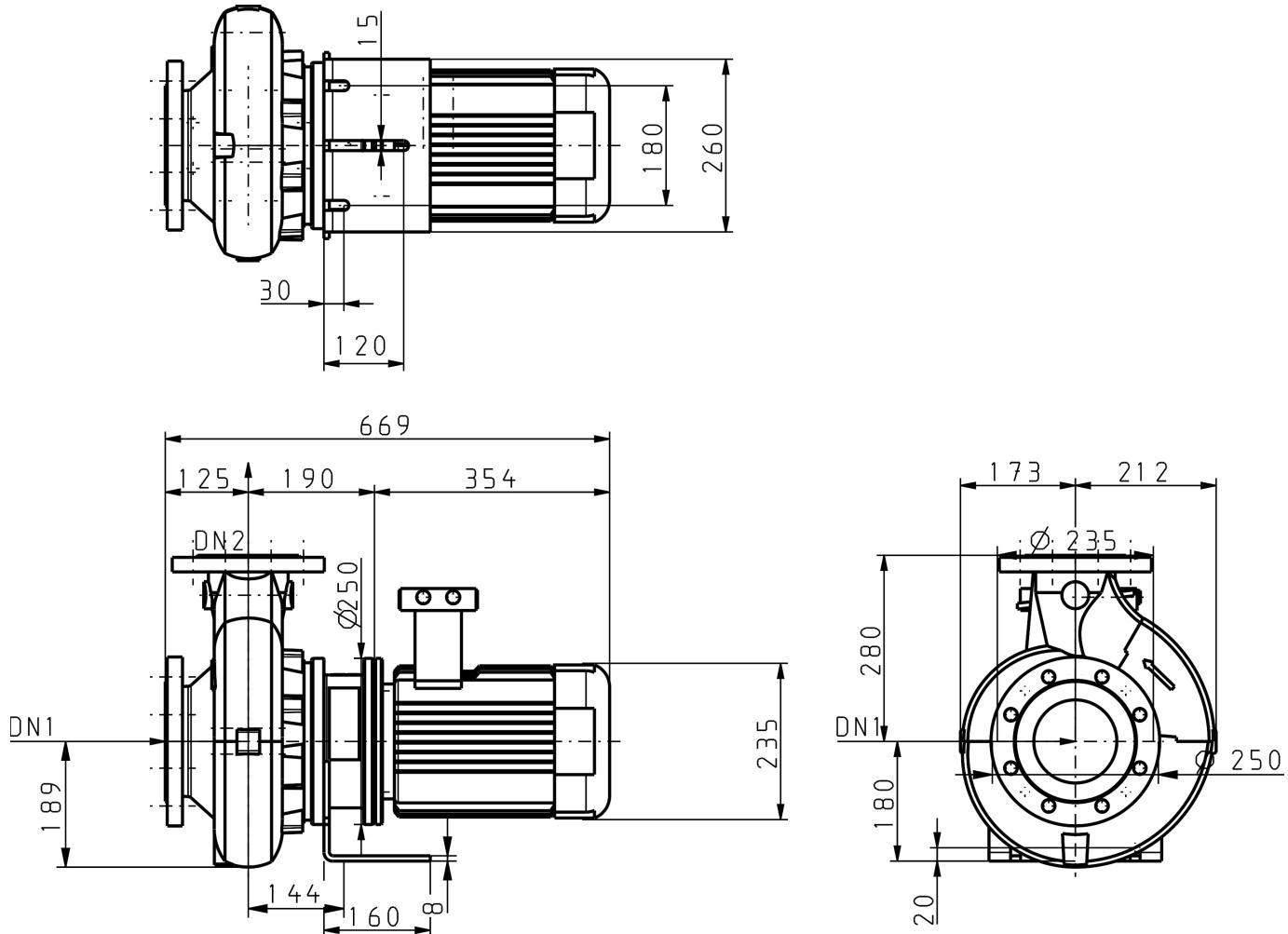
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## Curve Data

Pump speed	1,456 1/min	Efficiency Pump	74.6 %
Density Fluid handled	998 kg/m³	Minimum efficiency index MEI	0.6
Kinematic viscosity Fluid handled	1 mm²/s	Maximum power input at duty point	3.64 kW
Flow rate	100.01 m³/h	NPSH required	1.95 m
Head	10 m	Hydraulic impeller diameter	181.4 mm
		Hydraulic calculation according to standard/ class	EN ISO 9906 Class 3B

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Drawing is not to scale.

Dimensions are given in mm

**Motor**

Motor manufacturer	KSB's choice
Motor size	112M
Rated power Motor	4 kW
Number of motor poles	4
Rated speed Motor	1,450 1/min
Terminal box position of motor (looking at the motor shaft)	360 Grad

**Connections**

Nominal diameter Suction nozzle	DN 125
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 100
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

**Net weight**

Total weight Pump	72.96 kg
Total weight Drive	43 kg
Total weight Pump set	119.3 kg

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**Connect pipelines stress-free**

Dimensional tolerances for shaft axis height: DIN 747

Dimensions without tolerances, middle tolerances to: ISO 2768-m

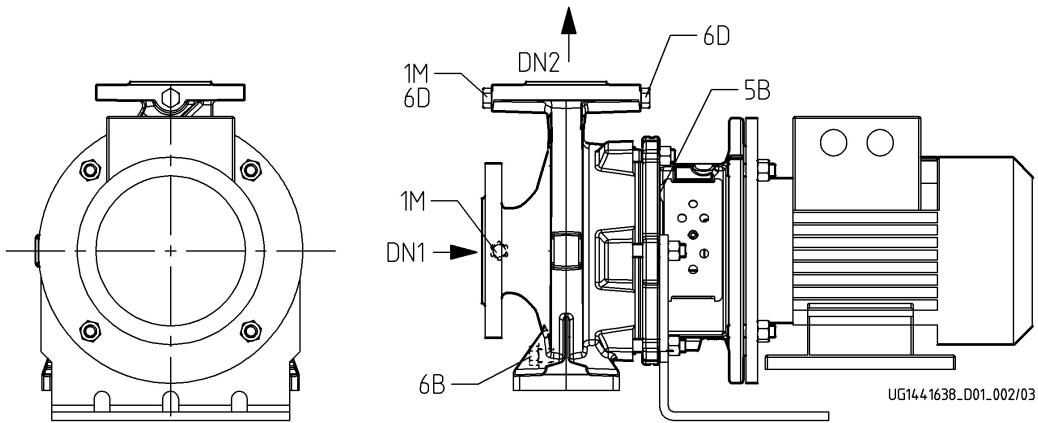
Connection dimensions for pumps: EN735

Dimensions without tolerances - welded parts: ISO 13920-B

Dimensions without tolerances - gray cast iron parts: ISO 8062-CT9

**Plan for additional connections see extra drawing**

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## Connections

6B Fluid Drain	G 1/2	Drilled and plugged
6D Fluid Filling and venting	G 1/2	Drilled and plugged
Connection type 5B Venting and drain	G 1/4	Drilled and plugged
1M Pressure gauge Discharge nozzle	G 1/2	Fitted pressure sensor
1M Pressure gauge Suction nozzle	G 1/2	Fitted pressure sensor

## Design

Explosion protection type	Monitoring unit	Without
Explosion protection zone (ATEX)		Without

## General description

### 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 measured values and pump operating data. It is supplied completely assembled and parameterised for the individual pump. PumpMeter is ready for operation as soon as the M12 plug connector is plugged in. PumpMeter records the load profile of the pump during operation in order to indicate any potential for optimising the energy efficiency and availability of your pumping system.

#### Display unit:

Backlit display for on-site display of measured values and pump operating data in a straightforward manner based on international symbols, rotatable in steps of 90°.

#### Values displayed:

Suction pressure, pressure at pump inlet in bar(g)  
Discharge pressure, pressure at pump outlet in bar(g)  
Differential pressure between pump inlet and outlet in bar  
Qualitative indication of the operating point

Connection of display unit via M12 x 1 5-pin connector, for power supply and utilisation of communication interfaces. Data options available: measured discharge pressure or calculated differential pressure of the pump via analog 4 - 20 mA signal or serial interface RS 485 (Modbus RTU).

Communication via RS232 service interface for parameterisation. Parameters factory-set for the individual pump.

#### Ambient conditions:

Enclosure: IP65  
Ambient temperature  
-30°C ... 80°C (transport, storage)  
-10°C ... 60°C (operation)  
Fluid temperature: -30°C to 140°C

#### Material resistance:

UV-resistant (suitable for outdoor installation)  
Resistant to most commonly used cleaning agents  
Resistant to oil mist

#### Silicone-free:

Manufactured without paint wetting impairment substances

#### Electrical data:

Power supply:  
24V DC ± 10%, min. 140 mA  
Interfaces, alternatives: 4 - 20 mA, 3-wire (discharge pressure or differential pressure)  
RS485, Modbus RTU (Slave)

Service interface: RS232

EMC:

EN 61326-1 (interference immunity for industrial environments, interference emission for residential environments)

Sensors:

Two gauge pressure sensors - one sensor factory-mounted at the pump inlet and outlet, respectively, and connected to the analysing unit by plug-type connector.

Measuring accuracy (sum of all errors relative to the measuring range):

±1% for a fluid temperature of -10 to 100 °C

±2.5% for a fluid temperature of -30 to -10 °C and 100 to 140 °C

Measuring cell material: stainless steel (sealless)

Available measuring ranges:

-1 ...10 bar (gauge pressure)

-1 ...10 bar (gauge pressure)