

Etaline 032-032-160 GG

ETL 032-032-160-GGSCV66 WSEBS4HAB

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Input voltage and frequency	Without
Pump standard	EN 733	Mains voltage	400 V
Shaft axis position	Vertical	Mains frequency	50 Hz
Pump design	Close-coupled	Minimum efficiency index MEI	0.7
Pump system design	Single-pump system	Minimum permissible fluid temperature	-30 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Maximum permissible fluid temperature	110 °C
Pump direction of rotation, viewed from casing side	Counterclockwise	Quantity Stages, single-entry	1
Impeller diameter D2	125 mm	Installation chamber Casing cover	Conical (A-type cover)
Impeller type	Radial, closed, multi-channel	Bearing bracket size / shaft unit	25
Free passage	5.4 mm	Pump directive	CE
Hydraulic casing foot	No		

Nozzle connections pump

Nominal diameter Suction nozzle	DN 32	Nominal diameter Discharge nozzle	DN 32
Nominal pressure Suction nozzle	PN 16	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Opposite of discharge nozzle	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 1/4 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 1/4 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
5B Venting and drain	G 1/4 Manual globe valve, fitted		

Shaft sealing

Shaft seal type	SMS A-type cover, vented	Shaft seal code	Code 66
Determined pressure Seal chamber	1.31 bar.r	Shaft seal manufacturer inboard	BURGMANN
		Mechanical seal type inboard	EMG13G6
		Material Shaft seal inboard	Q7Q7EGG-Y10 DW001

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Special design

Variant shaft seal

Materials

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Volute casing (902.01)	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (920.95)	(ST)
Material Shaft	C45+N		
Material Impeller (230)	EN-GJL-250/A48 CL 35B		
Material Static seal Volute casing (400.10)	DPAF DW001		
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON		
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	WITHOUT		

Power Drive System

Drive concept	Electric actuator	Rated speed Motor	3,000 1/min
Drive standard, mechanical	IEC	Number of motor poles	4
Drive standard electric	IEC	Rated power Motor	2.2 kW
Motor manufacturer	KSB	Motor power reserve determined	56.5 %
Customer supply Drive	No	Rated voltage Motor	400 V
Motor construction type	IM V1 (IM3011) IEC 60034-7	Motor winding	- / 400 V
Motor size	90L	Rated frequency Motor	100Hz
Efficiency class	IE5 (Ultra Premium)	Motor switching type	Star
Material motor housing	AL	Maximum current Unit	0 A
Enclosure Motor	IP55	Rated current Motor	5.6 A
Thermal class	155 (F) nach IEC 60085	Cos phi at 4/4 load	0.71
Temperature sensor motor	3 PTC thermistors	Motor efficiency at 4/4 load	88.9 %
Terminal box position of motor (looking at the motor shaft)	360 °	Explosion protection directive Drive	Without
Operation on a frequency inverter permitted	Required by design	Marking according to directive Drive	CE
Sound pressure level Motor	70 dBa		
Type series Motor manufacturer	SuPremE C2		



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Coating

Aggregate

Surface preparation
Properties Primer coat
Thickness Primer coat
Properties Top coat
Thickness Top coat
Colour Top coat

Free from dirt, grease, rust
Hydro dip primer, water-dilutable
60 µm
Acrylate dispersion water-thinned
40 µm
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
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Performance Curve (Pump)

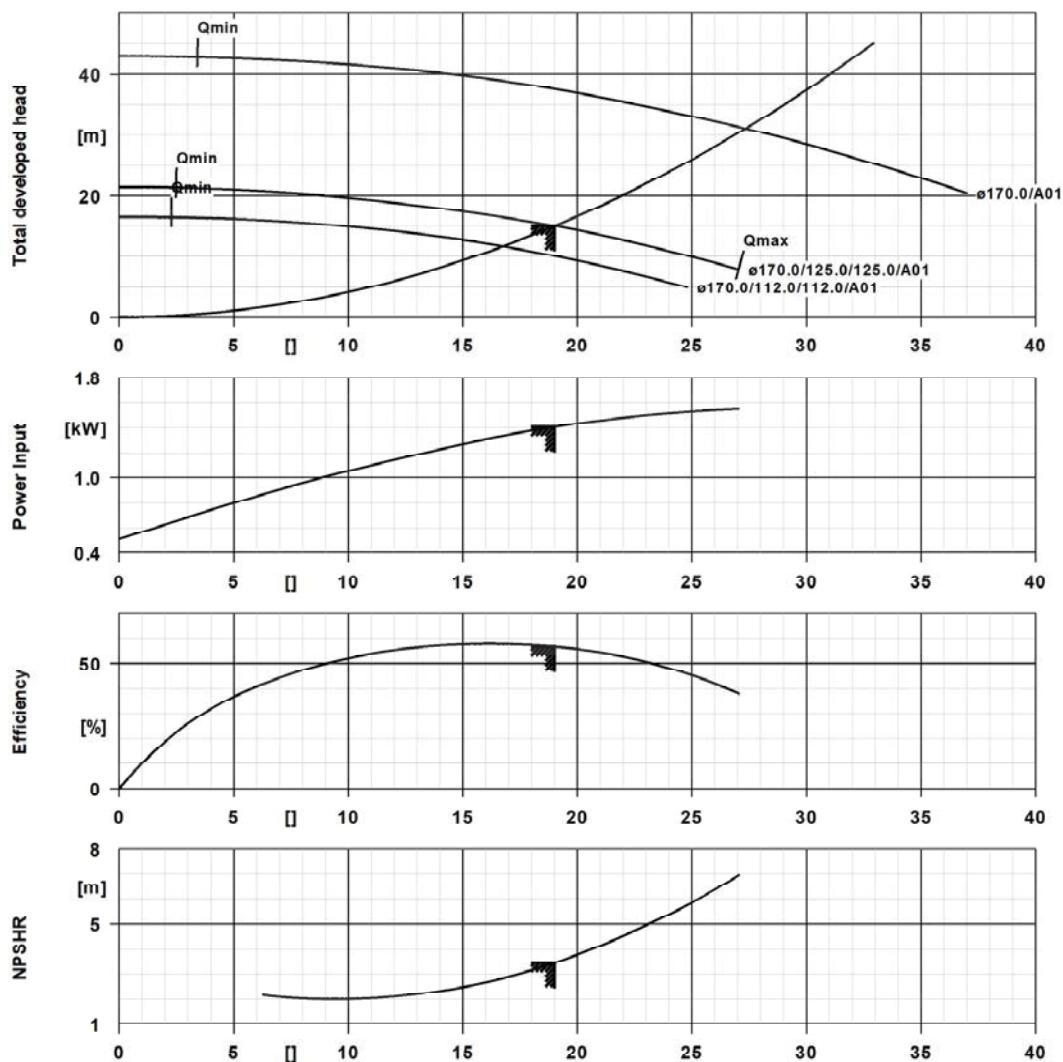


Quantity: 1

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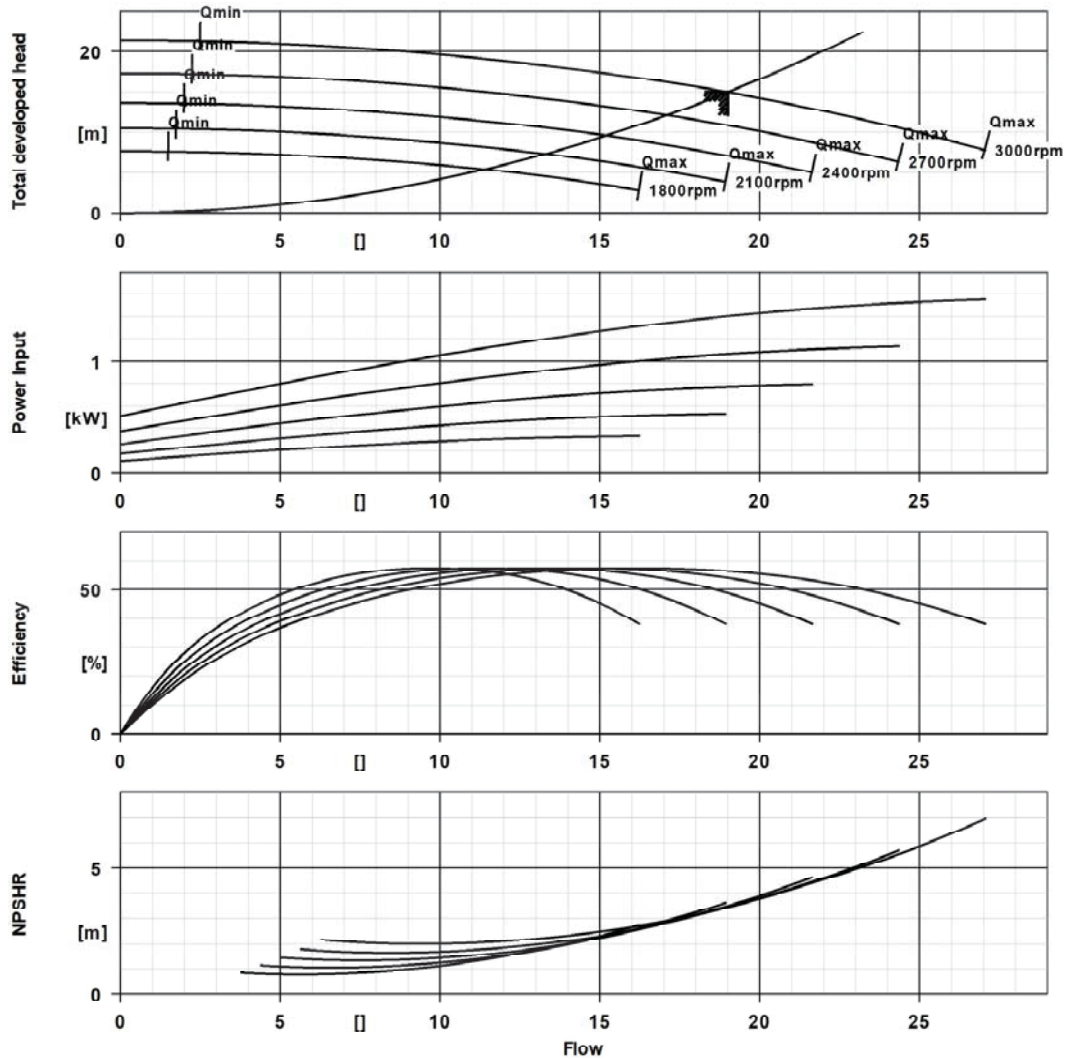
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Curve Data

Pump speed	3,000 1/min	Efficiency Pump	56.6 %
Density Fluid handled	1,024 kg/m³	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	2.08 mm²/s	Maximum power input at duty point	1.41 kW
Flow rate	19 m³/h	NPSH required	3.45 m
Head	15 m	Hydraulic impeller diameter	124.5 mm
		Hydraulic calculation according to standard/ class	EN ISO 9906 Class 3B

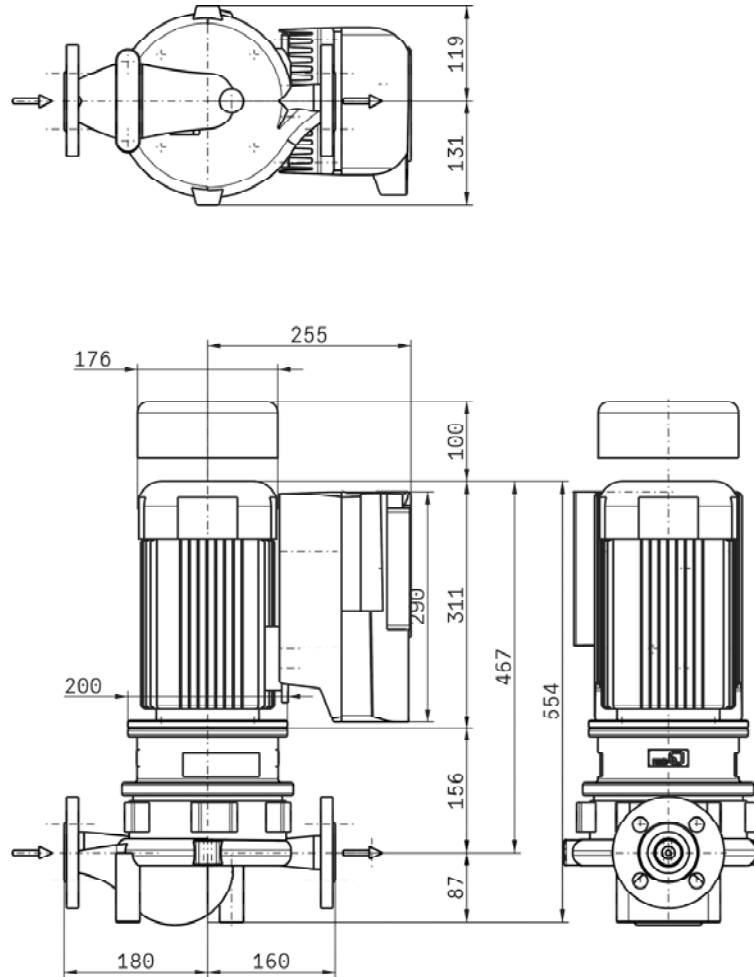
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Curve Data

Density Fluid handled	1,024 kg/m ³	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	2.08 mm ² /s	Hydraulic impeller diameter	124.5 mm

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Drawing is not to scale.

Dimensions are given in mm

Motor

Rated power Motor 2.2 kW
Rated speed Motor 3,000 1/min

Connections

Nominal diameter Suction nozzle	DN 32
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 32
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

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Net weight

Total weight Pump	25.16 kg
Total weight Control unit	0 kg
Total weight Pump set	55.79 kg
Total weight of assembly/transport aids	2.42

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



Variable speed system

Design

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

Design concept	Eco	Total weight Control unit	0 kg
Display type	With standard control panel	Maximum length	290 mm
Rated power Control unit	2.2 kW	Maximum width	171 mm
Maximum output current Control unit	6 A	Maximum height	144 mm
M12 module	M12 module PDrv2		
Integrated connection hardware for self-parameterisation	Without		
Integrated master switch	No		
Field bus module	Without		
Additional IO module	Without		
Mounting location	Motor		

Parameterized for driver

Motor manufacturer	KSB	Efficiency class	IE5 (Ultra Premium)
Type series Motor manufacturer	SuPremE C2	Number of motor poles	4
		Total weight Drive	18 kg

Packaging

Suitable for transport	Truck transport
Suitable for storage	Indoor storage
Packaging category	KSB's choice (A0)
Phytosanitary certificate	No

Variable speed system

PumpDrive 2 Eco

PumpDrive2 [A]

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

Installation options:

Motor-mounted, wall-mounted or cabinet-mounted from 0,37 - 11 kW

Protective functions:

- Full protection by means of over current 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 field bus
- 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 (?p const) in a single-pump configuration
- Sensorless differential pressure control with dynamic pressure compensation (?p var) in a single-pump configuration
- Sensorless flow rate control
- Functional check run

Operation and display:

- Display of measured values and alerts and for setting parameters
- Operating point estimation (Q, H)
- Optical service interface for connection to KSB ServiceTool

PumpDrive functions:

- Programmable start and stop ramps
- Field-oriented control (vector control) with selectable motor control method (ASM, SuPremE)
- Automatic motor adaptation (AMA)
- Manual-I-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

Interference suppression class:

Motor ≤ 11 kW: EN 61800-3:2005-07 C1 / EN 55011 Class B / cable length < 5 m

Housing:

Heat sink: die-cast aluminium

Housing cover: polyamide, glass fibre reinforced



Variable speed system

Control panel: polyamide, glass fibre reinforced

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

Mains frequency 50 - 60 Hz $\pm$ 2 %

Internal power supply unit 24 V DC $\pm$ 10 %, max. 600 mA

Enclosure IP55 (to EN 60529)

Ambient temperature -10 to +50°C

Rel. humidity 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.

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 contact, parameterisable

Manufacturer KSB



Variable speed system

Accessories & Service

FUNCTION MODULE M12-MODULE PDRV2

Function module M12 Module PDRV2 -

Ident-No. 01537899

HX SOCK HD CAP SCR W M 4 X 16

Hexagon socket head cap screw M 4X16 ISO4762 8.8+A2A

Ident-No. 01598711