Technical Datasheet

Etabloc 065-040-160 GG
ETB 065-040-160-GGSBV66 WSECM4HHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate		Vapour pressure determined	0.005121 bar.a
Target head		Minimum inlet pressure required	-0.3 bar.r
Fluid	Antifreeze on ethylene glycol base, inhibited, closed system, e.g. Antifrogen N or similar products	Specified ambient temperature	20 °C
		Installation altitude above sea level	1,000 m
Fluid variant	Concentration 30% 50295		
Specified fluid temperature	-7 °C		
Density Fluid handled	1,051 kg/m³		
Kinematic viscosity Fluid handled	6.25 mm²/s		

Operating conditions (performance)

Flow rate	35.05 m³/h	Maximum power input at duty point	3.557 kW
Minimum permissible flow rate	7.335 m³/h	Maximum power input / curve	4.697 kW
Maximum permissible flow rate	43.66 m³/h	Pump speed	3,000 1/min
Pump set		Shut-off pressure	2.81826 bar.r
Maximum permissible flow rate	61.65 m³/h		
Head	25.07 m		
Maximum pressure determined at duty point	2.58381 bar.r		
Shut-off head	27.35 m		
Efficiency Pump	70.72 %		
NPSH required	2.26 m		

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Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Input voltage and frequency	Without
		Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Horizontal	Minimum efficiency index MEI	0.7
Pump design	Close-coupled	Minimum permissible fluid temperature	-30 °C
Pump system design	Single-pump system		
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
		Casing wear ring design suction-side	Casing wear ring flat
Hydraulic impeller diameter	137.1 mm		
Impeller type	Radial, closed, multi-channel	Casing wear ring design discharge-side	Casing wear ring flat
Free passage	11.5 mm		
Support foot	Yes	Installation chamber Casing cover	Conical (A-type cover)
		Bearing bracket size / shaft unit	25
		Pump directive	CE

Nozzle connections pump

Nominal diameter Suction nozzle	DN 65	Nominal diameter Discharge nozzle	DN 40
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

1M Pressure gauge Discharge nozzle	G 1/4 Drilled and plugged	5B Venting and drain	G 1/4 Drilled and plugged
1M Pressure gauge Suction nozzle	G 1/4 Drilled and plugged		
6B Fluid Drain	G 1/4 Drilled and plugged		
6D Fluid Filling and venting	G 1/4 Drilled and plugged		

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Shaft sealing

Shaft seal type	Single mechanical seal; seal chamber can be vented (A-type casing cover) - AV	Shaft seal code	Code 66
		Shaft seal manufacturer inboard	BURGMANN
Operating mode of mechanical seal (function)	API plan 03	Mechanical seal type inboard	EMG13G6
		Material Shaft seal inboard	Q7Q7EGG-Y10 DW001
Determined pressure Seal chamber	-0.14 bar.r		

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 Shaft	C45+N	Material Nut Impeller fastening (920.95)	(ST)
Material Impeller (230)	EN-GJL-250/A48 CL 35B		
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON		
Material Casing wear ring discharge-side (502.02)	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		

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Power Drive System

Electric motor, synchronous	Yes	Rated speed Motor	3,000 1/min
Drive concept	Electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	4 kW
Drive standard electric	IEC	Motor power reserve determined	12.5 %
Motor manufacturer	KSB		
Motor construction type	IM V1 (IM3011) IEC 60034-7	Rated voltage Motor	400 V
Motor size	112M	Motor winding	- / 400 V
Efficiency class	IE5 (Ultra Premium)	Rated frequency Motor	100Hz
Material motor housing	AL	Motor switching type	Star
Enclosure Motor	IP55 (TEFC)	Maximum current Unit	0 A
Thermal class	155 (F) according to IEC 60085	Rated current Motor	9.4 A
		Cos phi at 4/4 load	0.76
Temperature sensor motor	3 PTC thermistors	Motor efficiency at 4/4 load	90.6 %
Terminal box position of motor (looking at the motor shaft)	360 °	Marking according to directive Drive	CE
Operation on a frequency inverter permitted	Required by design		
Earth connector motor housing	No		
Sound pressure level Motor	71 dBa		
Type series Motor manufacturer	SuPremE C2		

Coating

Aggregate

Primary coating code	A1 to AN1897
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-thinned
Thickness Top coat	40 µm
Colour Top coat	RAL5002 Ultramarine Blue
Colour Top coat Drive	RAL5002 Ultramarine Blue

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Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO2eq) 309 kg
*

* based on product weight and assuming typical material proportions. The conversion rate between product weight and CO2 emissions is based onseve ral life cycle analyses in acc. with ISO 14040 / 44 of sampleproducts fr om the same series. The objective and scope of these LCAs waslimited to the manufacturing phase (cradle-to-gate). With regard toinputs, all mate rials, energy and auxiliary materials were taken intoaccount; with regar d to outputs, emissions, scrap and waste wereconsidered. The influence o f outgoing logistics is not covered. Theinput variables of the analyses cover at least 95% of the total weight.The analysis focuses on the globa l warming potential (EF3.0 ClimateChange – total).

Packaging

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

Product properties

Specification of wetted parts	Manufactured without paint wetting impairment substances

Performance Curve (Pump)

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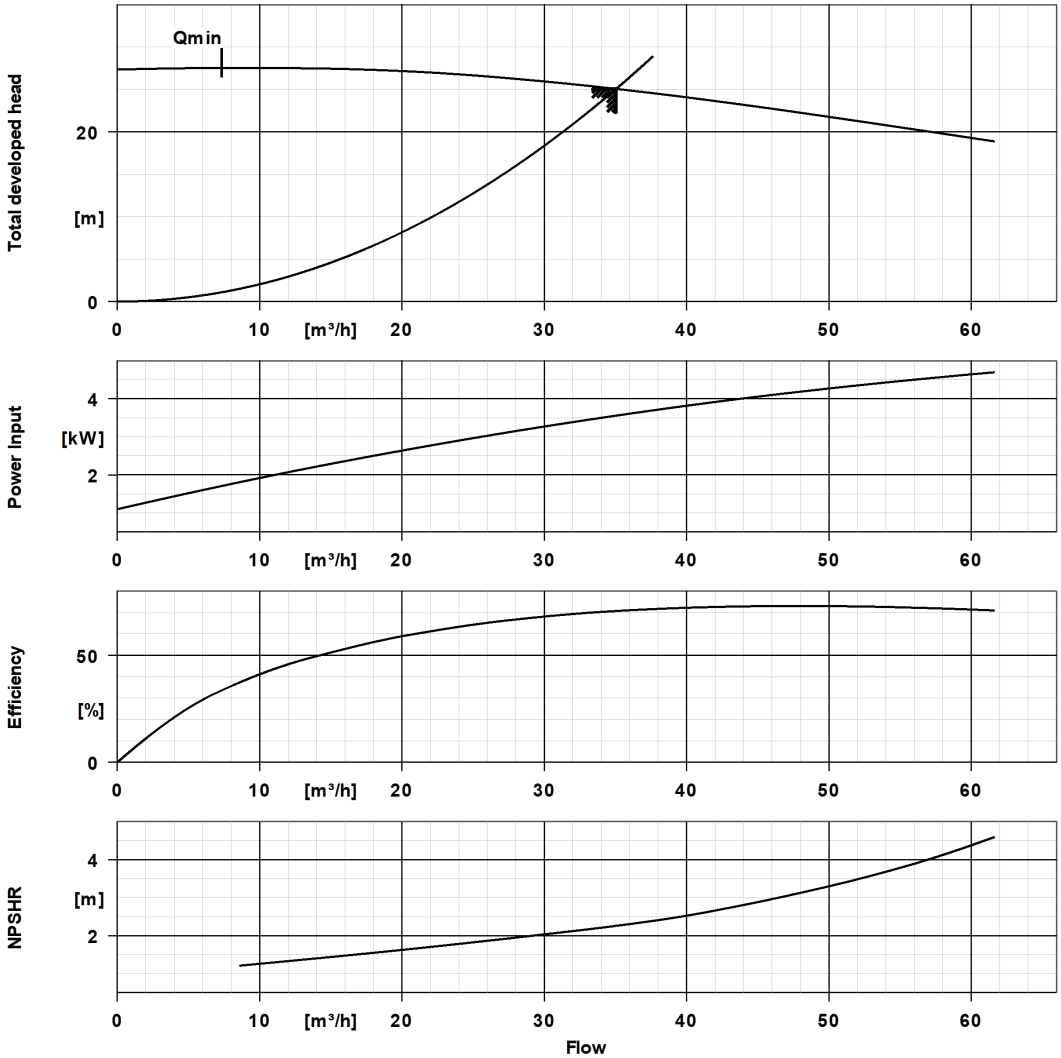

Curve Data

Pump speed	3,000 1/min	Efficiency Pump	70.7 %
Density Fluid handled	1,051 kg/m³	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	6.25 mm²/s	Maximum power input at duty point	3.56 kW
Flow rate	35.1 m³/h	NPSH required	2.26 m
Maximum permissible flow rate	61.7 m³/h	Hydraulic impeller diameter	137.1 mm
Head	25.1 m	Hydraulic values according to	EN ISO 9906 Class 3B
Maximum pressure determined at duty point	2.58 bar.r		

Speed Curve

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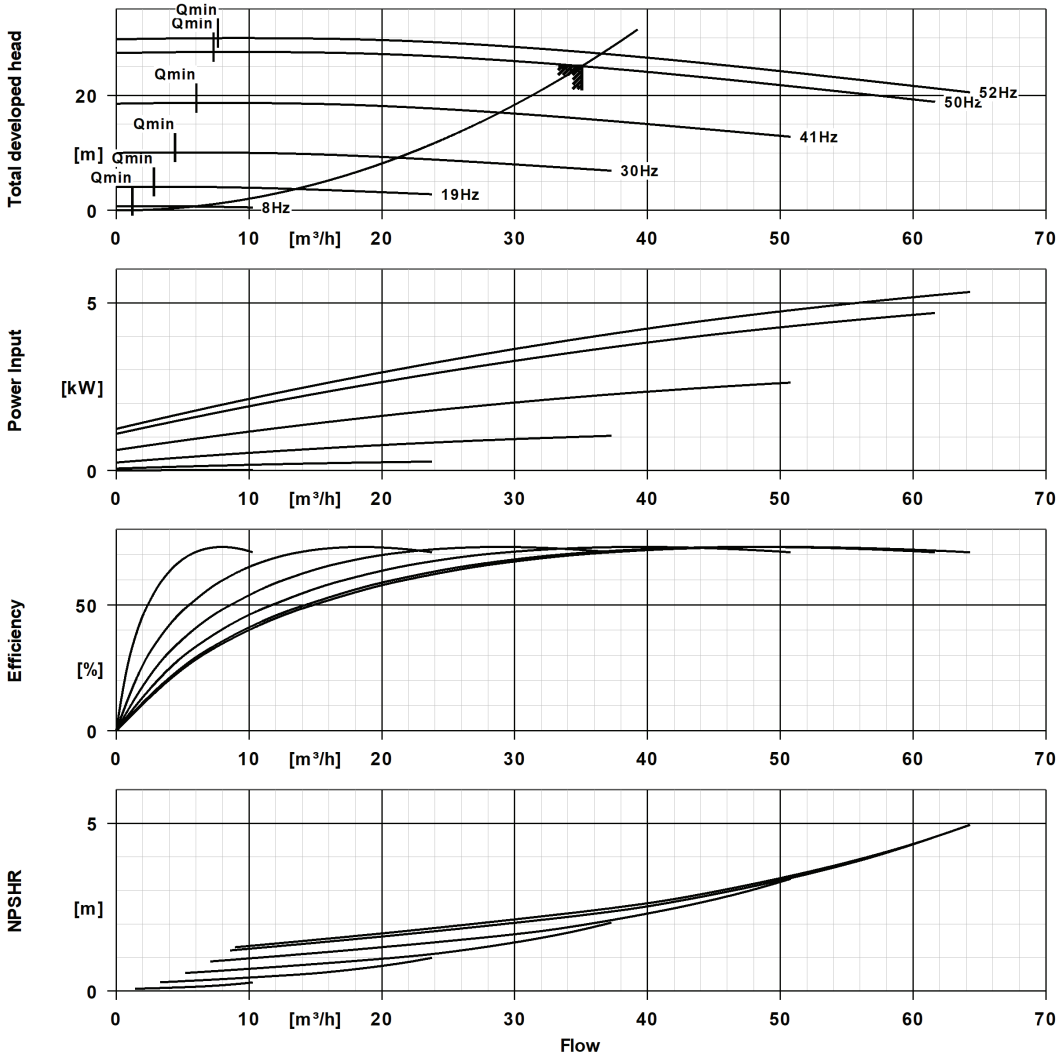

Curve Data

Density Fluid handled	1,051 kg/m³	Head	25.1 m
Kinematic viscosity Fluid handled	6.25 mm²/s	Minimum efficiency index MEI	0.7
Flow rate	35.1 m³/h	Hydraulic impeller diameter	137.1 mm

Installation plan

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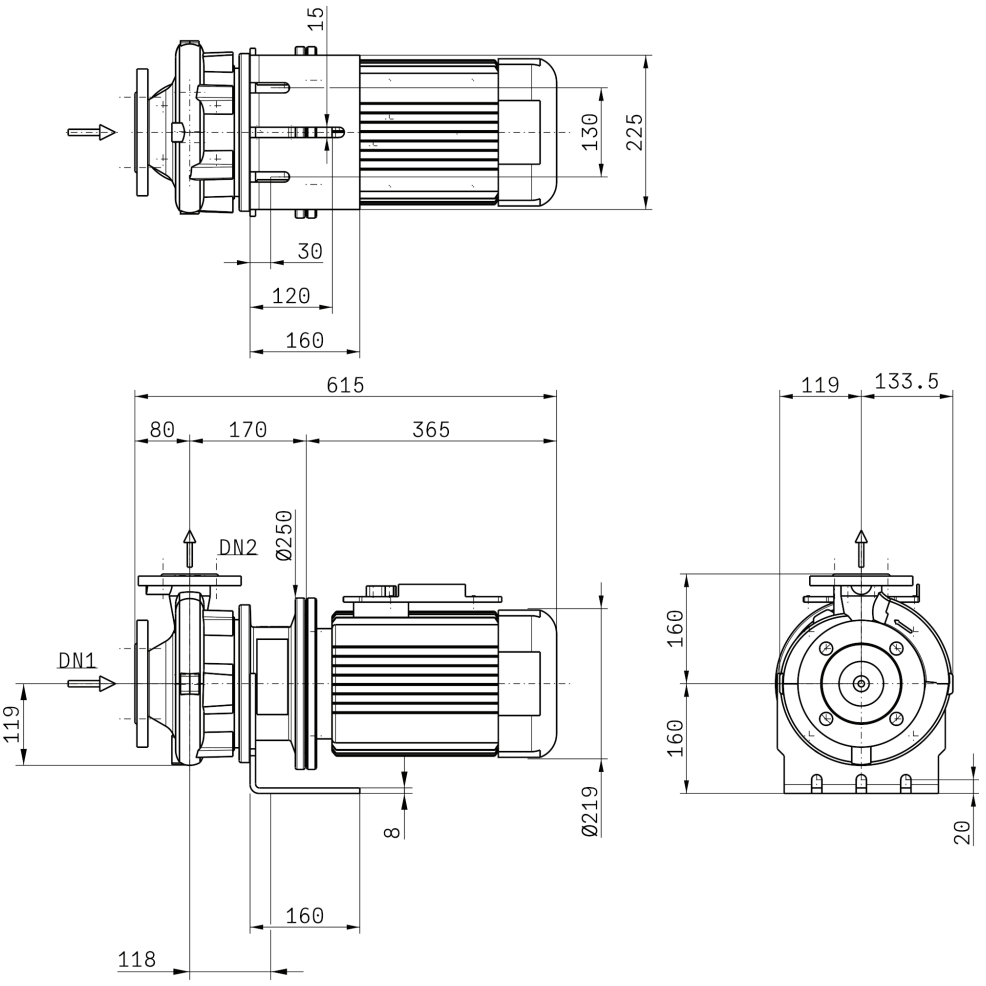

Installation plan

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB
Motor size	112M
Rated power Motor	4 kW
Number of motor poles	4
Rated speed Motor	3,000 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 65
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 40
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	30.35 kg
Total weight Drive	30 kg
Total weight Pump set	60.35 kg

Connect pipelines stress-free

Plan for additional connections see extra drawing

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