Technical Datasheet

Etanorm 125-100-250 GG
ETN 125-100-250-GGSAA11 GSFJV2EHB

Operating point 2 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate		Vapour pressure determined	0.599 bar.a
Target head		Minimum inlet pressure required	0.396 bar.r
Fluid	Water, high-temperature hot water	Specified ambient temperature	20 °C
Fluid variant	High-temperature hot water treated to VdTÜV 1466	Installation altitude above sea level	1,000 m
Specified fluid temperature	86 °C		
Density Fluid handled	968 kg/m³		
Kinematic viscosity Fluid handled	0.345 mm²/s		

Operating conditions (performance)

Flow rate	252.5 m³/h	Maximum power input at duty point	118.21 kW
Minimum permissible flow rate	93.77 m³/h	Maximum power input / curve	162.81 kW
Head	140 m	Pump speed	3,498 1/min
Shut-off head	144.73 m	Discharge pressure-max.	14.09 bar.r
Efficiency Pump	79.3 %		
NPSH required	7.9 m		

Operating point 1

Operating conditions (purchaser requirements)

Target flow rate	252 m³/h	Vapour pressure determined	0.599 bar.a
Target head	100 m	Specified ambient temperature	20 °C
Fluid	Water, high-temperature hot water	Installation altitude above sea level	1,000 m
Fluid variant	High-temperature hot water treated to VdTÜV 1466		
Specified fluid temperature	86 °C		
Density Fluid handled	968 kg/m³		
Kinematic viscosity Fluid handled	0.345 mm²/s		

Operating conditions (performance)

Flow rate	252 m³/h	Maximum power input at duty point	79.62 kW
Minimum permissible flow rate	80.08 m³/h	Maximum power input / curve	101.43 kW
Head	100 m	Pump speed	2,987 1/min
Shut-off head	105.57 m	Discharge pressure-max.	10.25 bar.r
Efficiency Pump	83.1 %		
NPSH required	6.67 m		

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Operating point **3**

Operating conditions (purchaser requirements)

Target flow rate	336.66 m³/h	Vapour pressure determined	0.599 bar.a
Target head	100 m	Specified ambient temperature	20 °C
Fluid	Water, high-temperature hot water	Installation altitude above sea level	1,000 m
Fluid variant	High-temperature hot water treated to VdTÜV 1466		
Specified fluid temperature	86 °C		
Density Fluid handled	968 kg/m³		
Kinematic viscosity Fluid handled	0.345 mm²/s		

Operating conditions (performance)

Flow rate	336.66 m³/h	Maximum power input at duty point	102.96 kW
Minimum permissible flow rate	83.75 m³/h	Maximum power input / curve	116.01 kW
Head	100 m	Pump speed	3,124 1/min
Shut-off head	115.46 m	Discharge pressure-max.	11.34 bar.r
Efficiency Pump	86.3 %		
NPSH required	8.27 m		

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Design data pump

Scope of supply Pump supplied by KSB	Pump + coupling + coupling guard + baseplate + 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	Long-coupled (basepl-mounted)	Minimum permissible fluid temperature	0 °C
Pump system design	Single-pump system	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	269 mm	Casing wear ring design discharge-side	Flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	18.8 mm	Bearing bracket size / shaft unit	35
Nut lock for Impeller	No	Bearing bracket type	Bearing bracket
Swirl break	No	Bearing bracket design	Medium
		Pump bearing type, non-drive end	Anti-friction bearing
		Pump bearing type, drive end	Anti-friction bearing
		Lubrication type	Grease lubrication
		Bearing seal Pump	V-ring
		Pump directive	CE

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)		

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Auxiliary connections pump

6B Fluid Drain	G 1/2 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 1/2 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
8B Leakage Drain	G 1/2 Drilled		

Shaft sealing

Shaft seal type	SMS A-type cover	Shaft seal code	Code 11
Operating mode of mechanical seal (function)	API plan 03	Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	1.2 bar.r	Mechanical seal type inboard	1
		Material Shaft seal inboard	BQ1EGG-WA

Materials

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Hydraulic casing (902.01)	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Material Screw plug Hydraulic casing	ST
Material Shaft	C45+N	Material Static seal Screw plug Volute casing	A4/AISI 316
Material Impeller (230)	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (920.95)	(ST)
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON	Material Key	C45+C/A311 GR 1045 CLASS A
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON		
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)		
Material Bearing bracket (330)	EN-GJL-250/A48 CL 35B		
Material Static seal Discharge cover	DPAF DW001		

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Driver (not included!)

Electric motor	Yes
Drive concept	With electric actuator
Drive standard, mechanical	IEC
Drive standard electric	IEC
Motor bearing, insulated	Yes
Motor manufacturer	Siemens
Customer supply Drive	No
Motor construction type	IM B3 (IM1001) IEC 60034-7
Motor alignment	No
Motor size	315M
Efficiency class	IE4 (Super Premium)
Material motor housing	JL/LAMELLAR GRAPHITE CAST IRON
Enclosure Motor	IP55
Thermal class	155 (F) nach IEC 60085
Temperature sensor motor	3 PTC thermistors
Terminal box position of motor (looking at the motor shaft)	360 °
Operation on a frequency inverter permitted	Yes (acc to motor manufact)
Sound pressure level Motor	77 dBa
Type series Motor manufacturer	1LE1

Rated speed Motor	2,988 1/min
Number of motor poles	2
Rated power Motor	132 kW
Motor power reserve determined	11.2 %
Rated voltage Motor	400 V
Motor winding	400 / 690 V
Rated frequency Motor	50Hz
Motor switching type	Delta
Rated current Motor	220 A
Starting current ratio Ia/In	10.5
Cos phi at 4/4 load	0.9
Motor efficiency at 4/4 load	96.2 %
Motor service factor	1.15
Directive Drive	CE

Installation parts / Accessories

Coupling

Coupling type	Rotex ZS-DKM-SH
Coupling manufacturer	KTR
Nominal size Coupling	65
Spacer length	140 mm

Coupling guard

Coupling guard type	Light (ZN79)
Nominal coupling guard size	B189
Material Coupling guard	ST+Z

Baseplate

Baseplate type	Folded plate/U-section
Material Installation part Pump	(S185)
Baseplate size	16B
Drill baseplate at motor end	Yes

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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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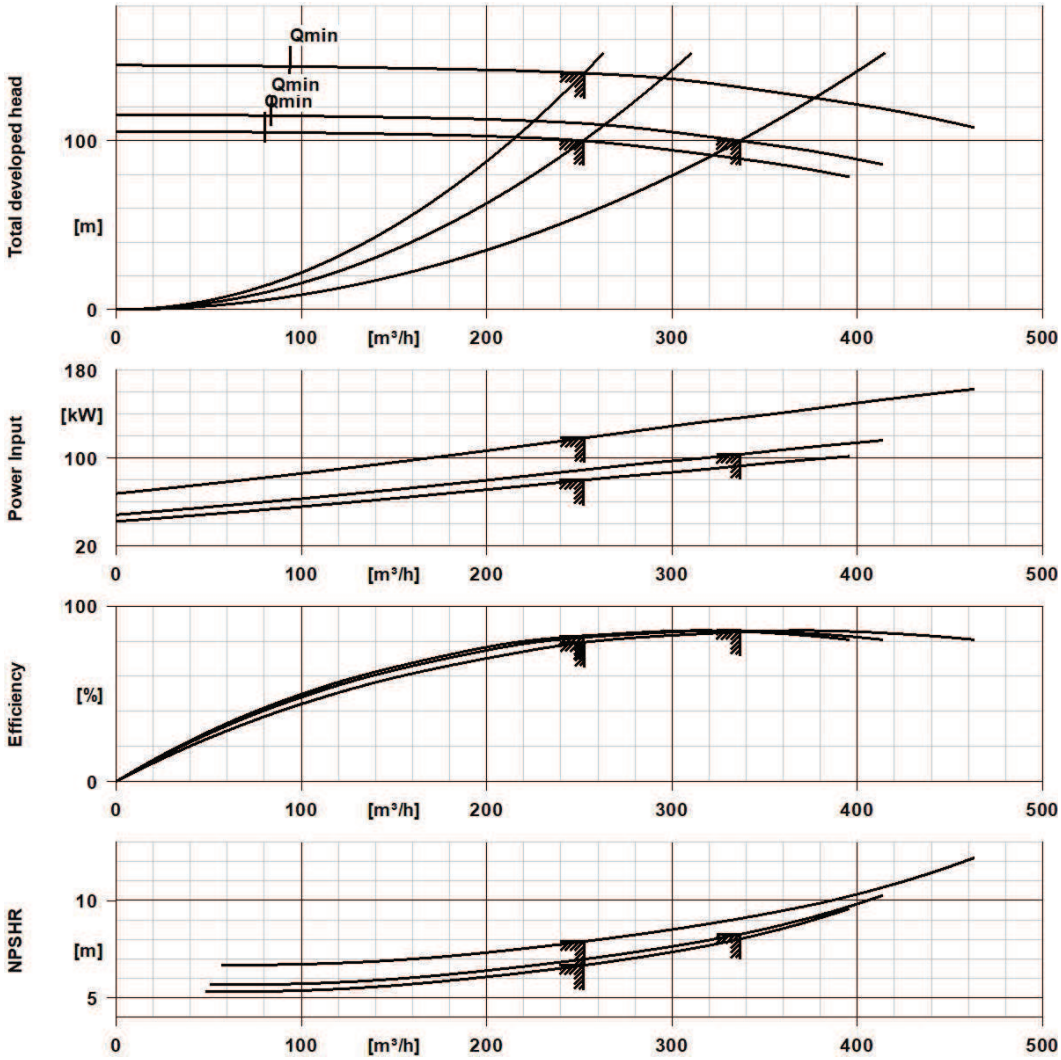

Curve Data

Pump speed	3,498 1/min	Efficiency Pump	79.3 %
Density Fluid handled	968 kg/m³	Minimum efficiency index MEI	0.6
Kinematic viscosity Fluid handled	0.345 mm²/s	Maximum power input at duty point	118.21 kW
		NPSH required	7.9 m
Flow rate	252.5 m³/h	Hydraulic impeller diameter	269 mm
Head	140 m	Hydraulic calculation according to standard/ class	EN ISO 9906 Class 3B

According to EN ISO 9906, §4.4.2 (pump input power below 10 kW)

Installation plan

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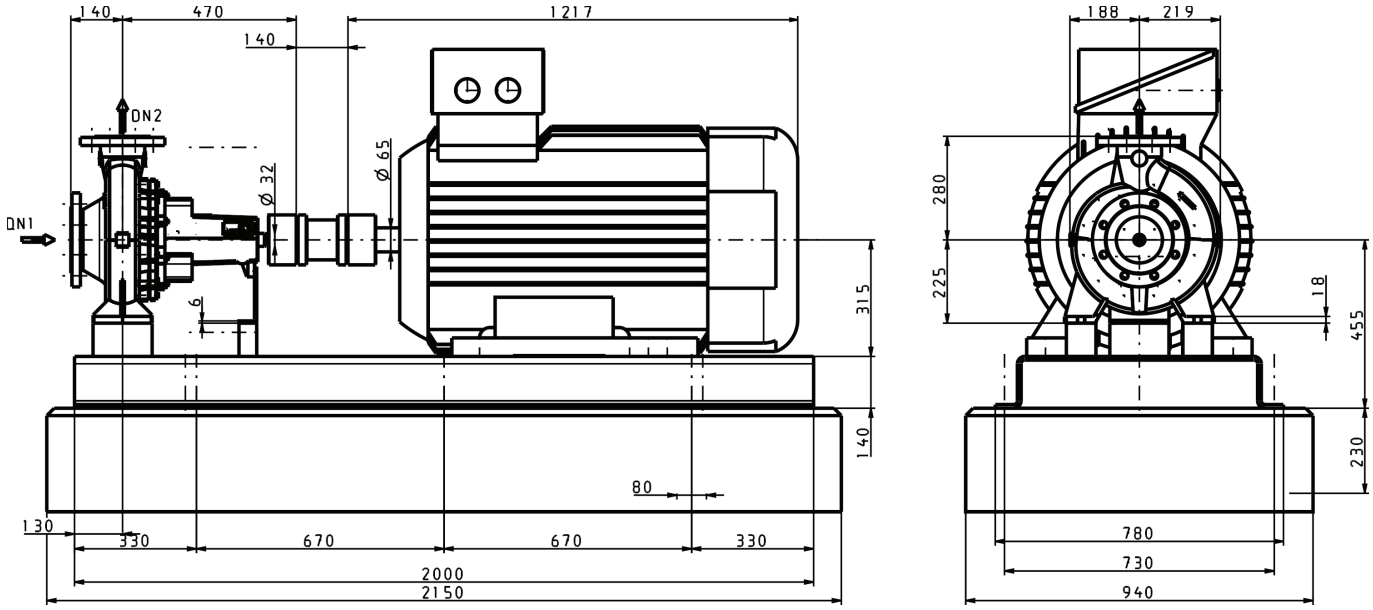

Drawing is not to scale.

Dimensions are given in mm

Motor (not included!)

Motor manufacturer	Siemens
Motor size	315M
Rated power Motor	132 kW
Number of motor poles	2
Rated speed Motor	2,988 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Baseplate

Baseplate type	Folded plate/U-section
Baseplate size	16B

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

Installation plan

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Coupling

Coupling manufacturer	KTR
Coupling type	Rotex ZS-DKM-SH
Nominal size Coupling	65
Spacer length	140 mm

Net weight

Total weight Pump	115.5 kg
Total weight Installation parts	173 kg
Total weight Coupling	15 kg
Total weight Contact guard	1.5 kg
Total weight Drive	
Total weight Pump set	305 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