

MovitecV F025/03-B1D53EE132D5VW

High pressure Inline Pump With PumpDrive

Operating data

Requested flow rate	30.00 m³/h	Actual flow rate	30.82 m³/h
Operating data determined for	maximum inlet pressure	Actual developed head	43.15 m
Pumped medium	Water	Efficiency	73.4 %
	Clean water	MEI (Minimum Efficiency Index)	≥ 0.70
Pumped medium details	Not containing chemical and mechanical substances which affect the materials	Power absorbed	4.93 kW
Max. ambient air temperature	20.0 °C	Pump speed of rotation	2940 rpm
Min. ambient air temperature	20.0 °C	NPSH required	4.35 m
Fluid temperature	20.0 °C	Permissible operating pressure	25.00 bar.g
Fluid density	998 kg/m³	Discharge press.	5.22 bar.g
Fluid viscosity	1.00 mm²/s	Shutoff head	63.88 m
Suction pressure max.	1.00 bar.g	Min. allow. flow for continuous stable operation	2.79 m³/h
Suction pressure min.	1.00 bar.g	Min. allow. mass flow for continuous stable operation	0.77 kg/s
NPSH available	20.20 m	Max. allow. mass flow	9.84 kg/s
Mass flow rate	8.55 kg/s	Design	Single system 1 x 100 % Tolerances to ISO 9906 Class 3B; below 10 kW acc. to paragraph 4.4.2
Max. power on curve	4.99 kW		

Design

Pump standard	KSB high pressure in-line international execution	Shaft seal manufacturer	DP
Design	Close-coupled	Shaft seal type	EMG-AC
Orientation	Vertical	Material code	BQ7EGG-Y10-DW001
Suction nominal dia.	DN 65	Shaft seal code	53
Suction nominal pressure	PN 25	Sealing plan	I Single-acting mechanical seal(internal circulation)
Suction position	90° (right)	A liquid free of solids is assumed	
Connection standard	EN 1092-2	Seal chamber design	Standard seal chamber
discharge		Contact guard	With
Discharge nominal dia.	DN 65	Impeller diameter	124.0 mm
Discharge nominal pressure	PN 25	Direction of rotation from drive	Clockwise
Discharge position	270° (left 90°)	Color	Graphite black (RAL 9011)
Round flange (F)			
Shaft seal	Single acting mechanical seal		

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Driver, accessories

Frequency inverter operation allowed only for rated voltage.

Driver type	Electric motor
Drive standard mech.	IEC
Model (make)	KSB (DMW)
Drive supplied by	Standard motor supplied by KSB - mounted by KSB
Motor const. type	V1
Motor size	132S
Efficiency class	Efficiency class IE3 acc. to IEC60034-30-1
Motor speed	2939 rpm
Frequency	50 Hz
Designed for operation with frequency inverter	Yes
Rated voltage	400 V
Rated power P2	5.50 kW
Performance limit P2max	6.30 kW
Available reserve	27.84 %
Rated current	10.0 A

Starting current ratio	8
Insulation class	F to IEC 34-1
Motor enclosure	IP55
Cos phi at 4/4 load	0.89
Motor efficiency at 4/4 load	89.2 %
Temperature sensor	3 PTC resistors
Terminal box position	90° (right)
	Viewed from the drive
Motor winding	400 / 690 V
Number of poles	2
Fixed bearing reinforced	axial
Connection mode	Delta
Motor cooling method	Surface cooling
Motor material	Aluminium
Frequency inverter operation allowed	FI allowed
Motor noise pressure level	68 dBA

Materials V

Pump shroud (10-6)	Stainless steel 1.4301	O-Ring (412)	EPDM WRc / ACS Approved
Pump casing (101)	Stainless Steel 1.4308	Seal cover (471)	Stainless Steel 1.4308
Stage casing (108)	Stainless steel 1.4301	Bearing sleeve (529)	Tungsten Carbide
Cover (160)	Stainless steel 1.4301	Flange (723)	Ductile cast iron EN-GJS-400-15
Diffuser (171)	Stainless steel 1.4301		
Shaft (210)	Chrome steel 1.4057+QT800	Baseplate (890)	Grey cast iron EN-GJL-250
Impeller (230)	Stainless steel 1.4301	Screwed plug (903)	Stainless steel 1.4301
Motor stool (341)	Grey cast iron EN-GJL-250	Tie bolt (905)	Chrome steel 1.4057+QT800
		Nut (920)	Stainless steel 1.4301

Packaging

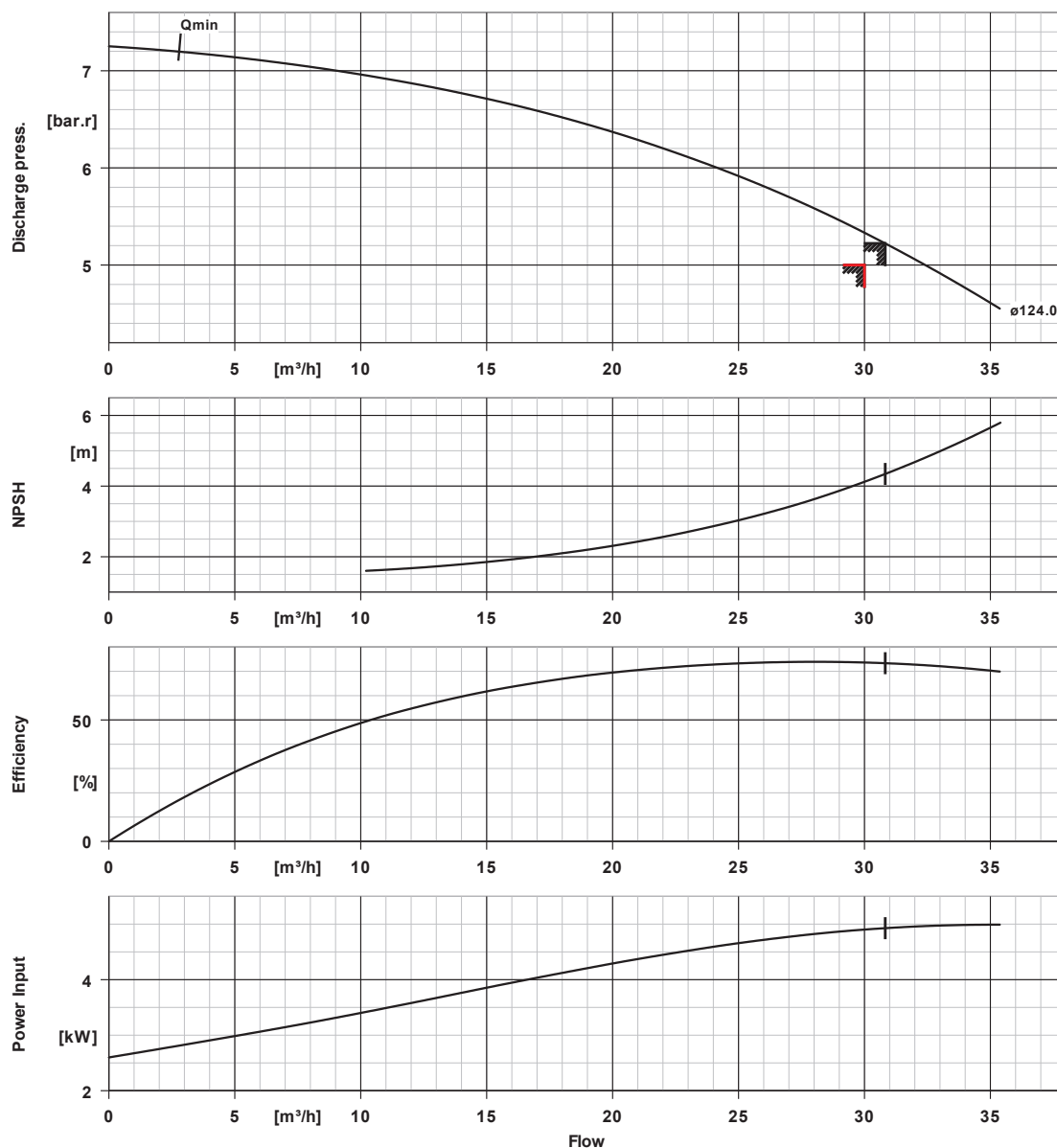
Packaging category	A0 Packing acc. to KSB choice	Packaging for transport	Truck
Packaging for storage	Indoor		

Nameplates

Nameplates language	International
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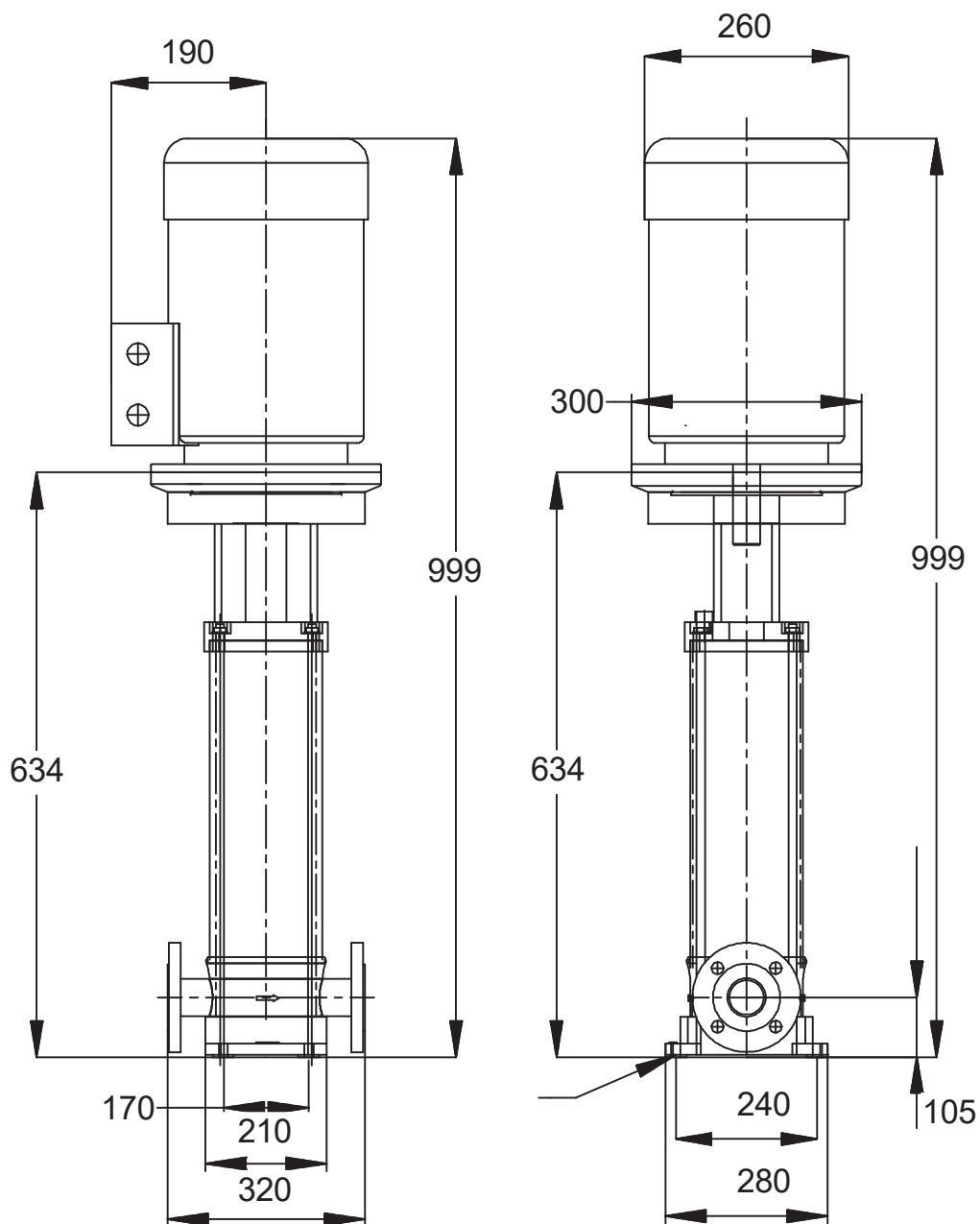


Curve data

Speed of rotation	2940 rpm	MEI (Minimum Efficiency Index)	≥ 0.70
Fluid density	998 kg/m³	Power absorbed	4.93 kW
Viscosity	1.00 mm²/s	NPSHR	4.35 m
Flow rate	30.82 m³/h	Curve number	K2973568/5
Requested flow rate	30.00 m³/h	Effective impeller diameter	124.0 mm
Total developed head	43.15 m	Acceptance standard	Tolerances to ISO 9906
Requested discharge pressure	5.00 bar.g		Class 3B; below 10 kW
Efficiency	73.4 %		acc. to paragraph 4.4.2
		Pressure calculation for the displayed curve with constant inlet pressure	1.00 bar

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Drawing is not to scale

Dimensions in mm

Motor

Motor manufacturer	KSB (DMW)
Motor size	132S
Motor power	5.50 kW
Number of poles	2
Speed of rotation	2939 rpm
Position of terminal box	90° (right)
	Viewed from the drive
Thrust bearing housing	No

Connections

Suction nominal size DN1	DN 65 / EN 1092-2
Discharge nominal size DN2	DN 65 / EN 1092-2
Nominal pressure suct.	PN 25
Rated pressure disch.	PN 25
Round flange (F)	

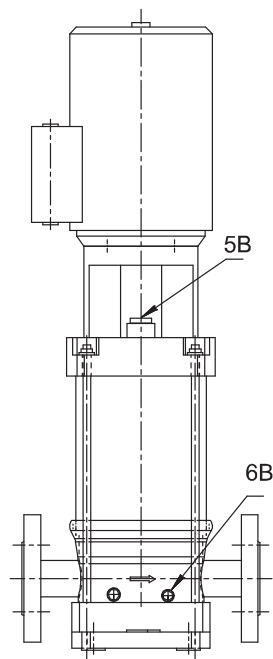
Weight net

Pump	62 kg
Motor	49 kg
PumpDrive 2	10 kg
Total	120 kg

Connect pipes without stress or strain!

For auxiliary connections see separate drawing.

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Connections

5B venting
6B Pumped liquid drain

G 3/8
G 1/4

Closed with venting plug
Drilled and plugged.

PDRV2E_005K50C_KSWEAE3P2_MOOOO**PumpDrive 2**

Modular, self-cooling frequency inverter enabling continuously variable speed control of asynchronous and synchronous reluctance motors.		Weight	10 kg
Design concept of control unit		PumpDrive length	330.0 mm
Display type		PumpDrive width	255.0 mm
Rated power		PumpDrive height	185.0 mm
Max. allowed current		Manufacturer	KSB
M12 module		PumpDrive adapter	No
Remote operation		Designation	-
Mounting			
	PumpDrive 2 Eco		
	With standard control panel		
	5.50 kW		
	14.0 A		
	With		
	Without		
	CM - Mounting in an external cabinet		

Characteristic

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

Mains frequency: 50 - 60 Hz +/- 2%

Interference suppression class: <= 11 kW: EN 61800-3 C1 / EN 55011 Class B / cable length <= 5 m

Internal power supply: 24 V +/- 10 %, max. 600 mA DC

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 contacts, parameterisable

Environment:

IP 55 enclosure (acc. EN 60529)

Ambient temperature: -10 to 50 °C

Rel. humidity in operation: 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.

Housing:

Heat sink: die-cast aluminium

Housing cover: Polyamid, glass fibre reinforced

Control panel: Polyamid, glass fibre reinforced

Protective functions:

- Full protection by means of overcurrent 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 fieldbus
- 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 (Δp const) in a single-pump configuration
- Sensorless differential pressure control with dynamic pressure compensation (Δp var) in a single-pump configuration

PDRV2E_005K50C_KSWEAE3P2_MOOOO

- Sensorless flow rate control
- Functional check run

Operation and display:

- Operating point estimation (Q, H)
- Optical service interface for connection to KSB Service Tool

PumpDrive functions:

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