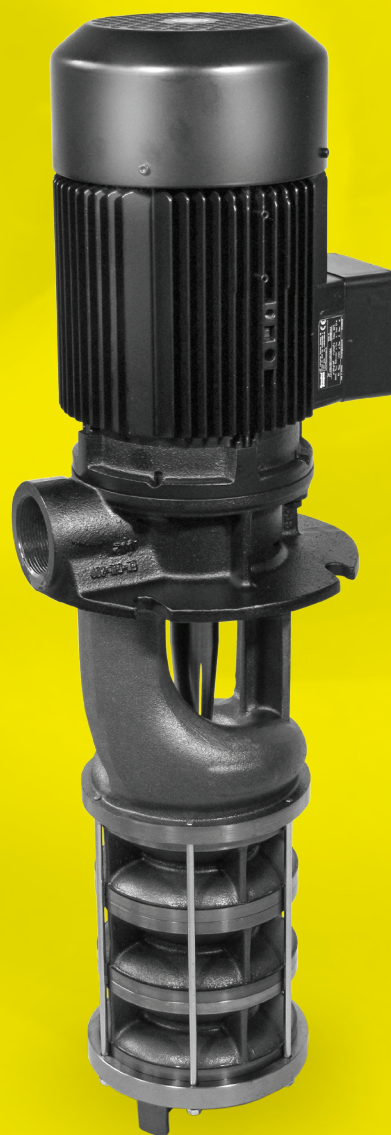


**Spandau
pumpen**

by EBARA

PS/PSL - Centrifugal pumps

Data Book 50/60Hz



Quality Management
ISO 9001: 2015

Environmental Management
ISO 14001:2015



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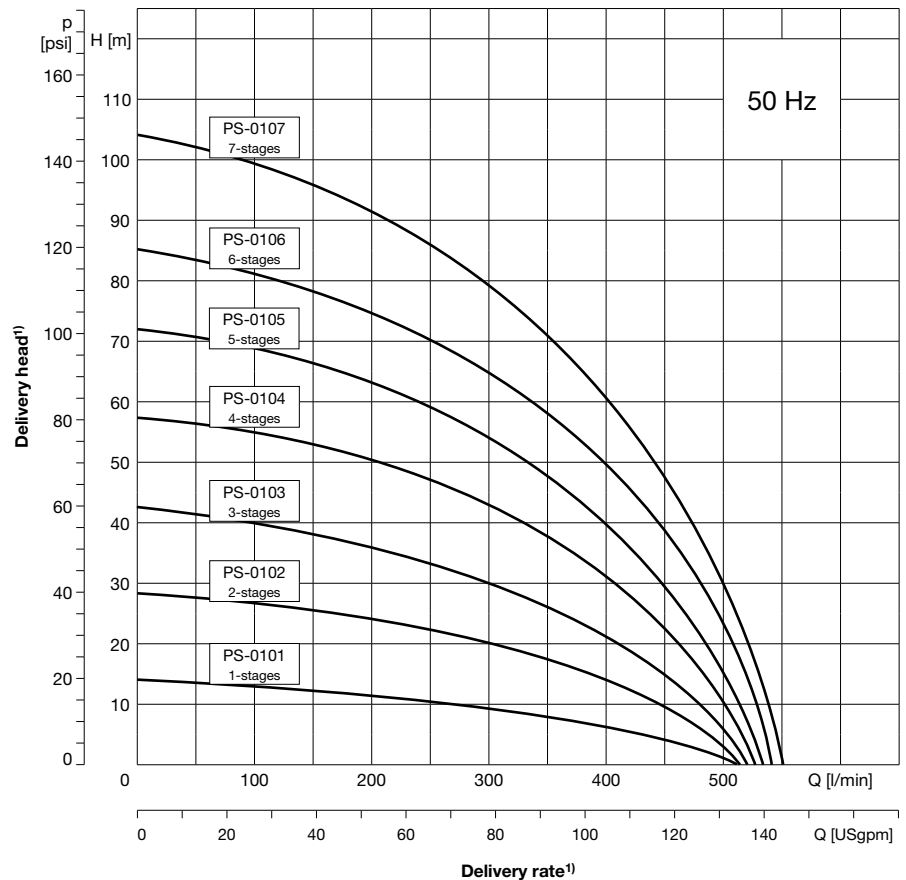
PS 01 – Immersion pumps, sealless

50 Hz, closed impellers



Features

- Vertical multistage coolant pump
- For delivery of clean, polluted and viscous types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G2



Technical Data

Delivery rate Q_{max}	1250 l/min
Delivery head H_{max}	105 m
Immersion depth t_{max}	670 mm
Kinematic viscosity	max. 30 mm ² /s
Delivery temperature	0 °C to +80 °C
Grain size	max. Ø4 mm
Contamination	max. 8,2 kg/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, Water with rust-proofing additives, heat carrier oil

Mechanical design

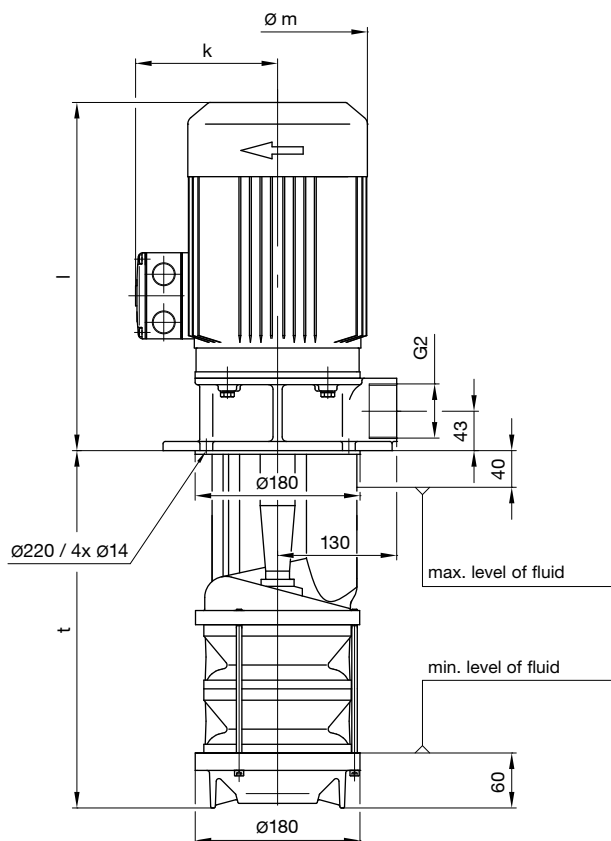
Component	Material
Flange	EN-GJL-200
Shaft	1.0762
Impeller	EN-GJL-200
Intermediate chamber	EN-GJL-200
Bearings	Deep groove ball bearing with covering disk
Bushing	Sintered iron
Pumps bottom	EN-GJL-200

¹⁾ Data for viscosity of ~1 mm²/s at a density of ~1 kg/dm³. Minimum volumetric flow: 5 to 10 % of nominal delivery rate.



PS 01 – Immersion pumps, sealless

50 Hz, closed impellers



Electrical data, dimensions and weights at 50 Hz

Type of pump			Immer- sion depth t [mm]	Rated motor values					Dimensions [mm]			Weight [kg]	Sonic pressure [dBA]	Pressure port (DIN ISO 228)
Series	Frame size	Stages		Voltage Δ/Y U [V]	Motor index	Output P _N [kW]	Current Δ/Y I _N [A]	Speed n _N [min ⁻¹]	Øm	k	l			
PS PSL	01	01	250	230/400	H	1,1	4,3 / 2,5	2830	141.4	103	324	32	62-64	G2
			320									34		
			450									36		
			550									38		
		02	320		50	65-77								
			390		51									
			520		53									
			620		54									
		03	390		67	68-74								
			460		68									
			590		70									
		04	460		82	69-75								
			530	83										
			660	85										
		05	530	102	68-75									
			600	103										
600	107		69-75											
07	670	400/690	O	7.5	14,3 / 8,3	2945	259	180	512	120	72-75			



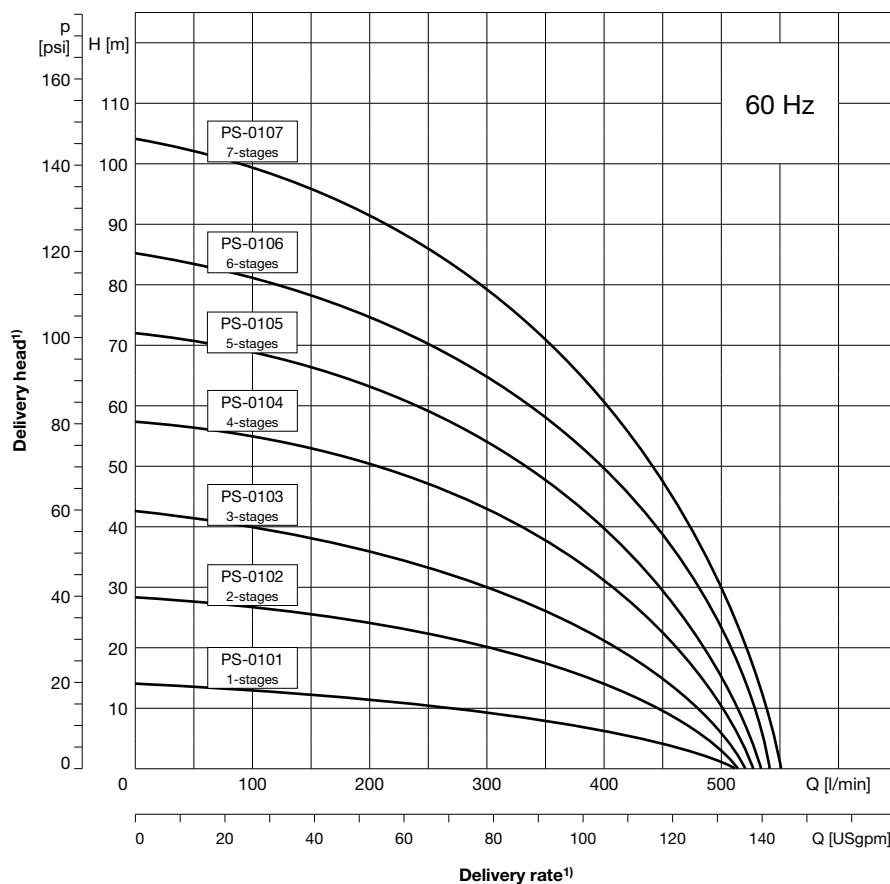
PS 01 – Immersion pumps, sealless

60 Hz, closed impellers



Features

- Vertical multistage coolant pump
- For delivery of clean, polluted and viscous types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G2



Technical Data

Delivery rate $Q_{\max}$	1250 l/min
Delivery head $H_{\max}$	105 m
Immersion depth $t_{\max}$	670 mm
Kinematic viscosity	max. 30 mm ² /s
Delivery temperature	0 °C to +80 °C
Grain size	max. Ø4 mm
Contamination	max. 8,2 kg/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, Water with rust-proofing additives, heat carrier oil

Mechanical design

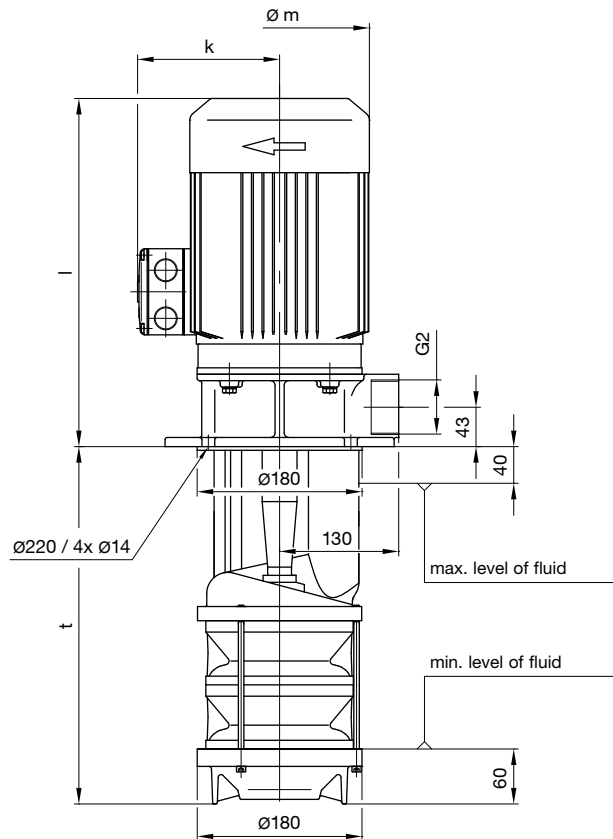
Component	Material
Flange	EN-GJL-200
Shaft	1.0762
Impeller	EN-GJL-200
Intermediate chamber	EN-GJL-200
Bearings	Deep groove ball bearing with covering disk
Bushing	Sintered iron
Pumps bottom	EN-GJL-200

¹⁾ Data for viscosity of ~1 mm²/s at a density of ~1 kg/dm³. Minimum volumetric flow: 5 to 10 % of nominal delivery rate.



PS 01 – Immersion pumps, sealless

60 Hz, closed impellers



Electrical data, dimensions and weights at 60 Hz

Type of pump			Immersion depth t [mm]	Rated motor values					Dimensions [mm]			Weight [kg]	Sonic pressure [dBA]	Pressure port (DIN ISO 228)
Series	Frame size	Stages		Voltage Δ/Y U [V]	Motor index	Output P _N [kW]	Current Δ/Y I _N [A]	Speed n _N [min ⁻¹]	Øm	k	l			
PS PSL	01	01	250	265/460	H	1,26	4,1 / 2,4	3440	141.4	103	324	32	62-64	G2
			320									34		
			450									36		
			550									38		
		02	320		K	2,6	8,3 / 4,8	3505	259	180	512	50	65-77	
			390									51		
			520									53		
			620									54		
		03	390		L	3,6	12,3 / 7,1	3540	193	142	430	67	68-74	
			460									68		
			590									70		
		04	460		M	4,5	13,5 / 7,8	3550	220	152	439	82	69-75	
			530									83		
			660									85		
		05	530	Δ 460	N	6,2	Δ 10,1	3540	259	180	512	102	68-75	
			600									103		
		06	600									107	69-75	
			07									670	O	



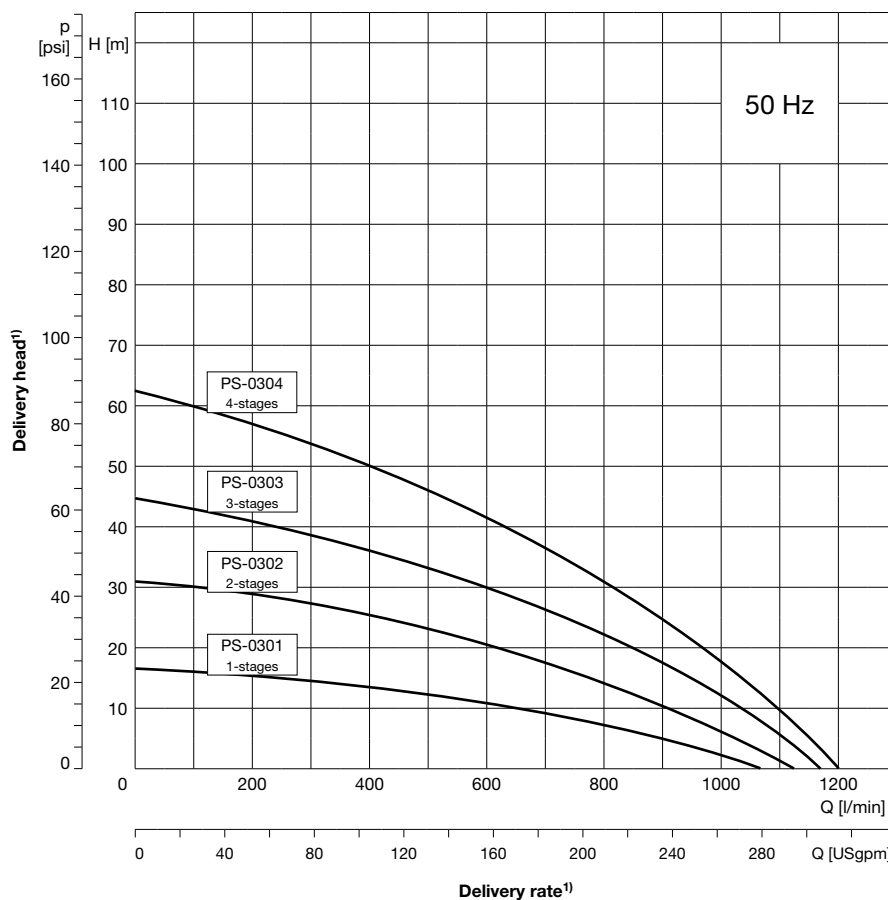
PS 03 – Immersion pumps, sealless

50 Hz, closed impellers



Features

- Vertical multistage coolant pump
- For delivery of clean, polluted and viscous types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G2



Technical Data

Delivery rate Q_{max}	1250 l/min
Delivery head H_{max}	105 m
Immersion depth t_{max}	670 mm
Kinematic viscosity	max. 30 mm ² /s
Delivery temperature	0 °C to +80 °C
Grain size	max. Ø4 mm
Contamination	max. 8,2 kg/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, Water with rust-proofing additives, heat carrier oil

Mechanical design

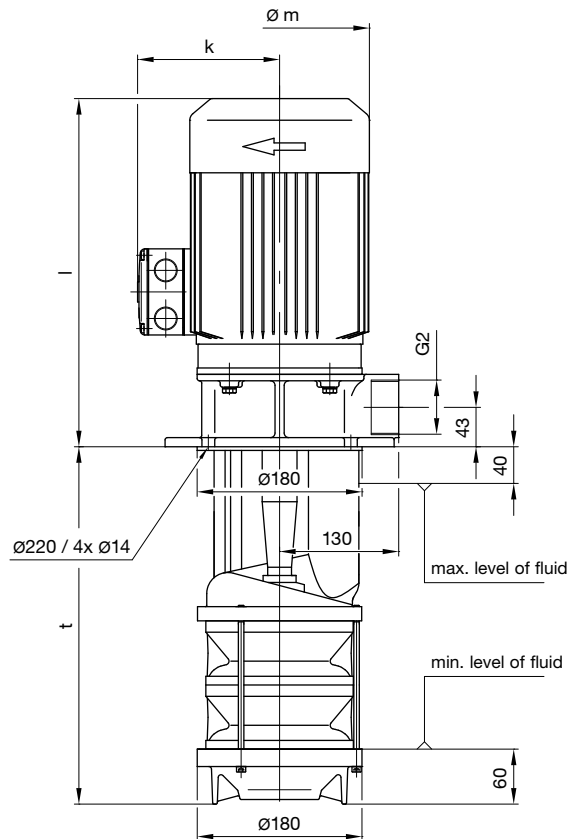
Component	Material
Flange	EN-GJL-200
Shaft	1.0762
Impeller	EN-GJL-200
Intermediate chamber	EN-GJL-200
Bearings	Deep groove ball bearing with covering disk
Bushing	Sintered iron
Pumps bottom	EN-GJL-200

¹⁾ Data for viscosity of ~1 mm²/s at a density of ~1 kg/dm³. Minimum volumetric flow: 5 to 10 % of nominal delivery rate.



PS 03 – Immersion pumps, sealless

50 Hz, closed impellers



Electrical data, dimensions and weights at 50 Hz

Type of pump			Immer- sion depth t [mm]	Rated motor values					Dimensions [mm]			Weight [kg]	Sonic pressure [dBA]	Pressure port (DIN ISO 228)
Series	Frame size	Stages		Voltage Δ/Y U [V]	Motor index	Output P _N [kW]	Current Δ/Y I _N [A]	Speed n _N [min ⁻¹]	Øm	k	l			
PS PSL	03	01	250	230/400	K	2,2	8,7 / 5,0	2915	259	180	512	43	63-65	G2
			320									45		
			450									44		
			550									45		
		02	320		M	4,0	14,0 / 8,1	2950	220	152	439	70	67-75	
			390									71		
			520									71		
			620									72		
		03	390	400/690	N	5,5	10,6 / 6,1	2945	259	180	512	88	70-77	
			460									89		
			590									89		
		04	460		O	7,5	10,6 / 6,1	2945	259	180	512	99	70-78	
			530									101		



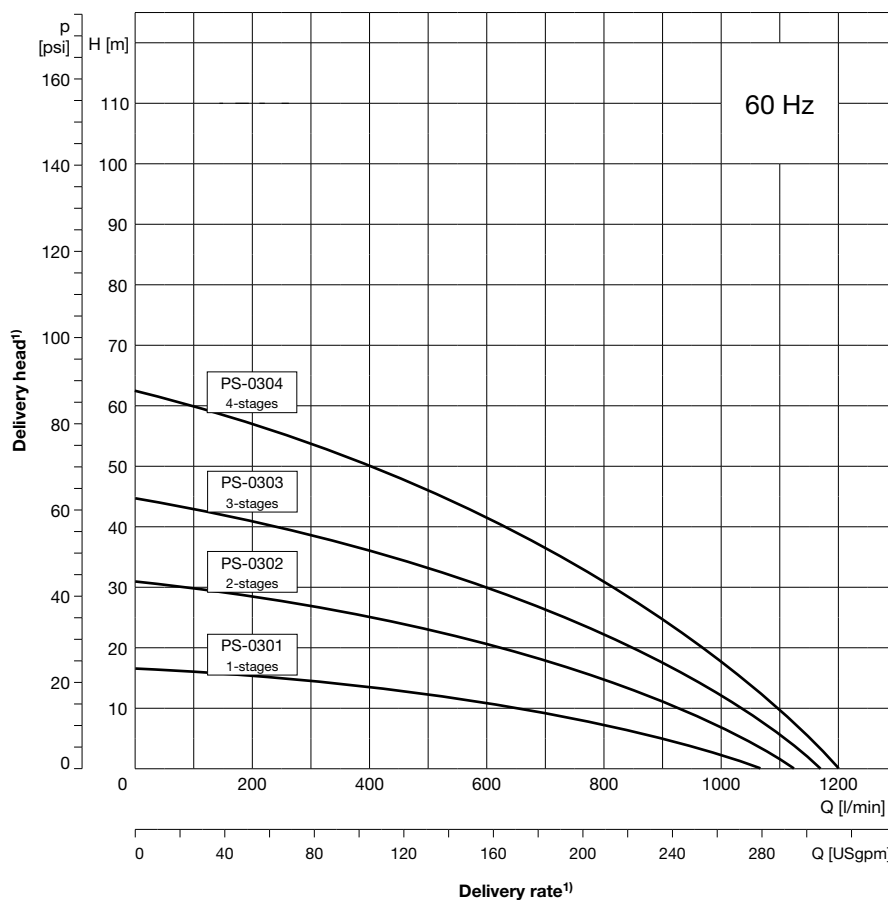
PS 03 – Immersion pumps, sealless

60 Hz, closed impellers



Features

- Vertical multistage coolant pump
- For delivery of clean, polluted and viscous types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G2



Technical Data

Delivery rate Q_{max}	1250 l/min
Delivery head H_{max}	105 m
Immersion depth t_{max}	670 mm
Kinematic viscosity	max. 30 mm ² /s
Delivery temperature	0 °C to +80 °C
Grain size	max. Ø4 mm
Contamination	max. 8,2 kg/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, Water with rust-proofing additives, heat carrier oil

Mechanical design

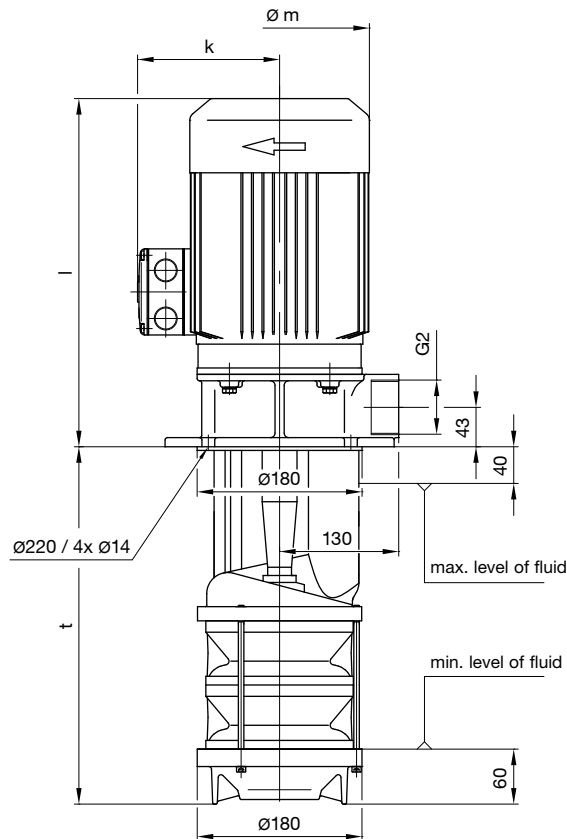
Component	Material
Flange	EN-GJL-200
Shaft	1.0762
Impeller	EN-GJL-200
Intermediate chamber	EN-GJL-200
Bearings	Deep groove ball bearing with covering disk
Bushing	Sintered iron
Pumps bottom	EN-GJL-200

¹⁾ Data for viscosity of ~1 mm²/s at a density of ~1 kg/dm³. Minimum volumetric flow: 5 to 10 % of nominal delivery rate.



PS 03 – Immersion pumps, sealless

60 Hz, closed impellers



Electrical data, dimensions and weights at 60 Hz

Type of pump			Immer- sion depth t [mm]	Rated motor values					Dimensions [mm]			Weight [kg]	Sonic pressure [dBA]	Pressure port (DIN ISO 228)
Series	Frame size	Stages		Voltage Δ/Y U [V]	Motor index	Output P _N [kW]	Current Δ/Y I _N [A]	Speed n _N [min ⁻¹]	Øm	k	l			
PS PSL	03	01	250	265/460	K	2,6	8,3 / 4,8	3505	259	180	512	43	63-65	G2
			320									45		
			450									44		
			550									45		
		02	320		M	4,5	13,5 / 7,8	3550	220	152	439	70	67-75	
			390									71		
			520									71		
			620									72		
		03	390	Δ 460	N	6,2	Δ 10,1	3540	259	180	512	88	70-77	
			460									89		
			590									89		
		04	460		O	8,6	Δ 13,8	3545	259	180	512	99	70-78	
			530									101		



PS/PSL – Immersion pumps, sealless

Order key

Series	PS- = Standard design PSL = "Slurp" for air-polluted liquids																	
Frame size	To determine the frame size the corresponding characteristics has to be used. 01, 03																	
Stages	To determine the desired number of stages the corresponding characteristics has to be used. 01 = 1-stages ... 07 = 7-stages																	
Materials	G = gray cast iron (standard)																	
Seal	B = gap bush (standard)																	
Pump design	S = standard design																	
Immersion depth in mm	250 = 250 mm ... 670 = 670 mm																	
Motor index	To determine the desired motor index the appropriate table "Electrical data, dimensions and weights" has to be used. Example: J = 1,5 kW																	
Power supply	01 = 230/400 V at 50 Hz (up to 4 kW) 400/690 V at 50 Hz (from 5,5 kW) 265/460 V at 60 Hz (to 4,6 kW) Δ460 V at 60 Hz (from 6,3 kW) 05 = Standard for Europe 230/400 V at 50 Hz (up to 4 kW) 400/690 V at 50 Hz (from 5,5 kW)																	
Motor design	CA = standard (insulation class F, IP 54, 2-pole, IE3)																	

Order example: PS-0104GBS460M05CA
Series: **PS**, Frame size: **01, 04**-stages, Material: **G** grey cast iron, Seal: **B** gap bush, Pump design: **S** standard design, Immersion depth: **460** mm, Motor index: **M** 4,0 kW, Power supply: **05** 230/400 V 50 Hz, Motor design: **CA** standard (IE3)

**Spandau
pumpen**

— by **EBARA**

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