

PSR Centrifugal pumps

Technical data

- Delivery rate
 $Q_{\max} = 180 \text{ l/min}$
- Delivery head
 $H_{\max} = 255 \text{ m}$
- Temperature range
 $T = -10^{\circ}\text{C to } +80^{\circ}\text{C}$
- Kinematic viscosity
 $\nu_{\max} = 20 \text{ mm}^2/\text{s}$



PSR 02 – Immersion pumps, sealless

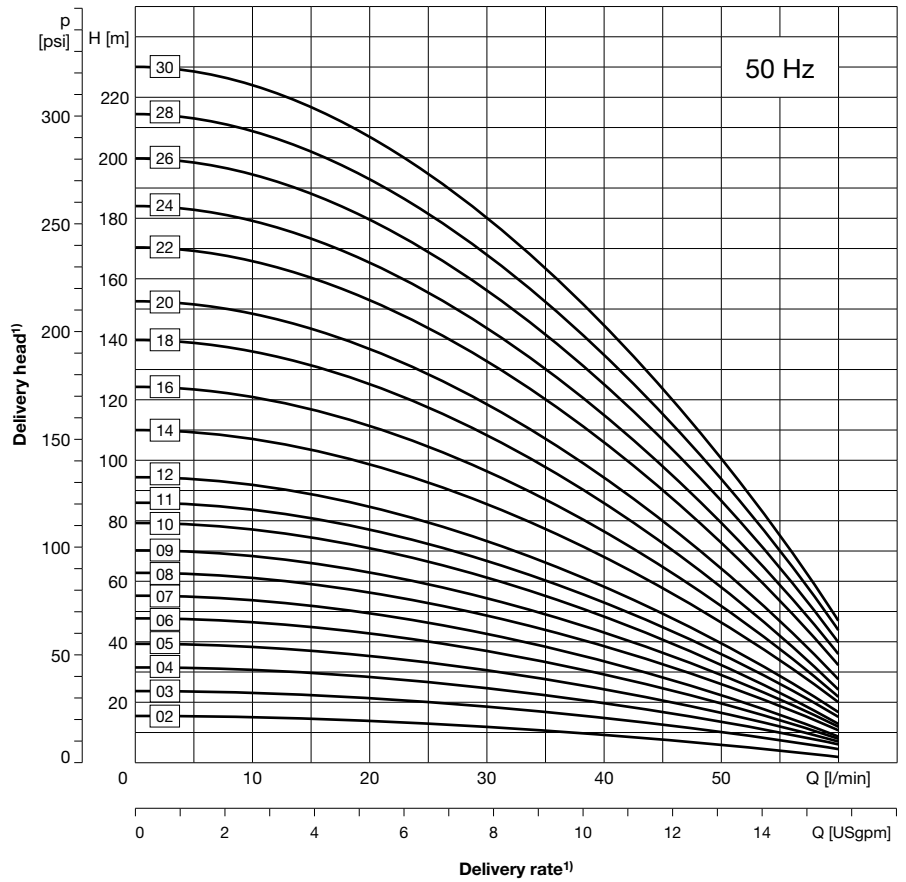
50 Hz, closed impellers



PSR

Features

- Vertical multistage coolant pump
- Connector dimensions as per DIN EN 12157
- For delivery of slightly contaminated types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G1 1/4



Technical Data

Delivery rate Q_{max}	60 l/min
Delivery head H_{max}	230 m
Immersion depth t_{max}	739 mm
Kinematic viscosity	max. 20 mm ² /s
Delivery temperature	-10 °C to +80 °C
Grain size	max. Ø2 mm
Contamination	max. 50 g/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, cleaning liquids, water, mild acids

Mechanical design

Component	Material
Flange	EN-GJL-200
Shaft	Stainless steel 1.4122
Gap bush ($H_{max} < 150$ m)	POM
Mechanical seal ($H_{max} > 150$ m)	WC, carbon, FKM, stainless steel 1.4571
Impeller	Stainless steel 1.4301
Intermediate chamber	Stainless steel 1.4301
Tension anchor	Stainless steel 1.4057
Bushing	Stainless steel 1.4301
Pumps bottom	EN-GJL-200
Elastomers	FPM

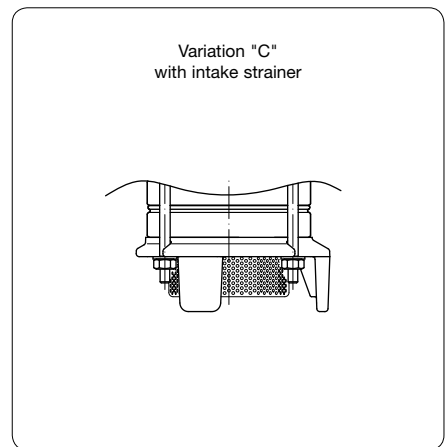
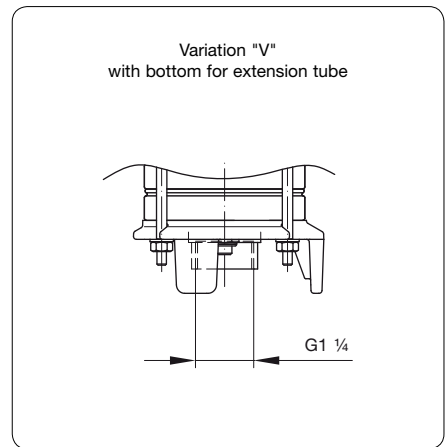
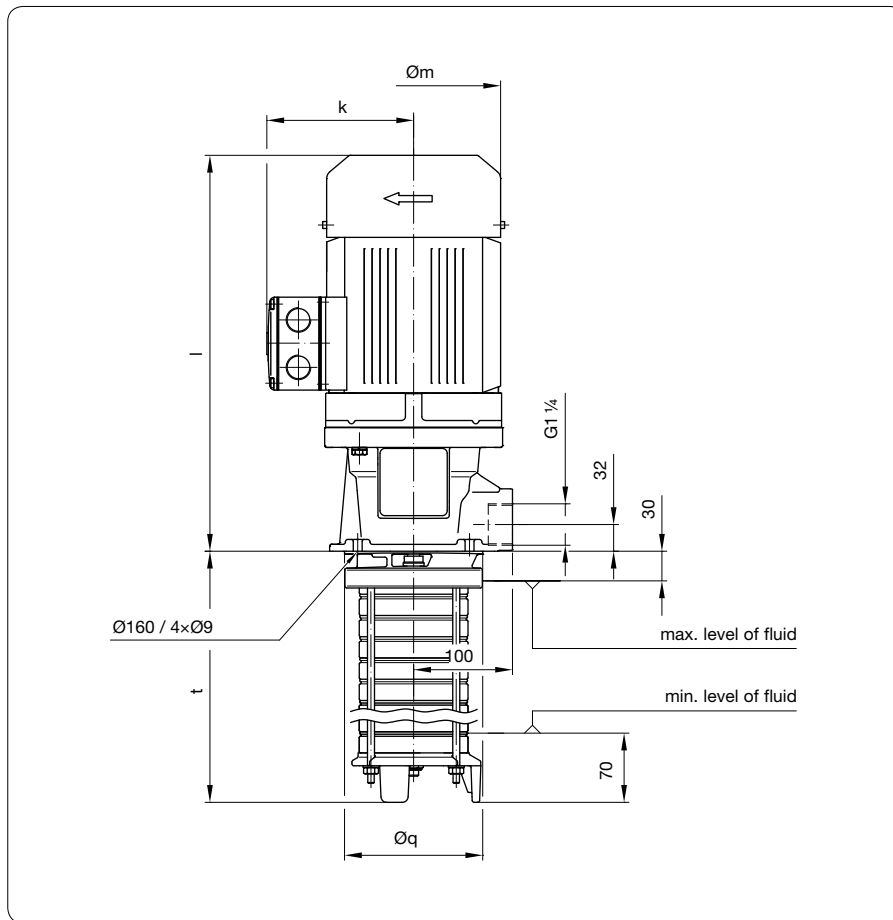
Variations

Component	Material
Flange	with chemical surface sealing or coated with paint
Bottom for extension tube	Stainless steel 1.4301
Intake strainer	Stainless steel 1.4301
Pumps bottom	Stainless steel 1.4308

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.

PSR 02 – Immersion pumps, sealless

50 Hz, closed impellers



PSR

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				Øq
PSR	02	02	137	230/400	E	0,37	1,57/0,91	2902	140	114	223	140	13,1	58	G1 1/4
		03	158										13,4		
		04	180										13,7		
		05	201										14,0		
		06	223										14,4		
		07	244										14,8		
		08	266		15,1	58									
		09	287		15,3										
		10	309		15,7	58									
		11	330		16,0										
		12	352		16,3	58									
		14	395		16,6										
		16	438		28,2	60									
		18	481		28,5										
		20	524		28,8	60									
		22	567		35,4										
24	610	36,2	60												
26	653	36,8													
28	696	37,3	67												
30	739	37,7													

PSR 02 – Immersion pumps, sealless

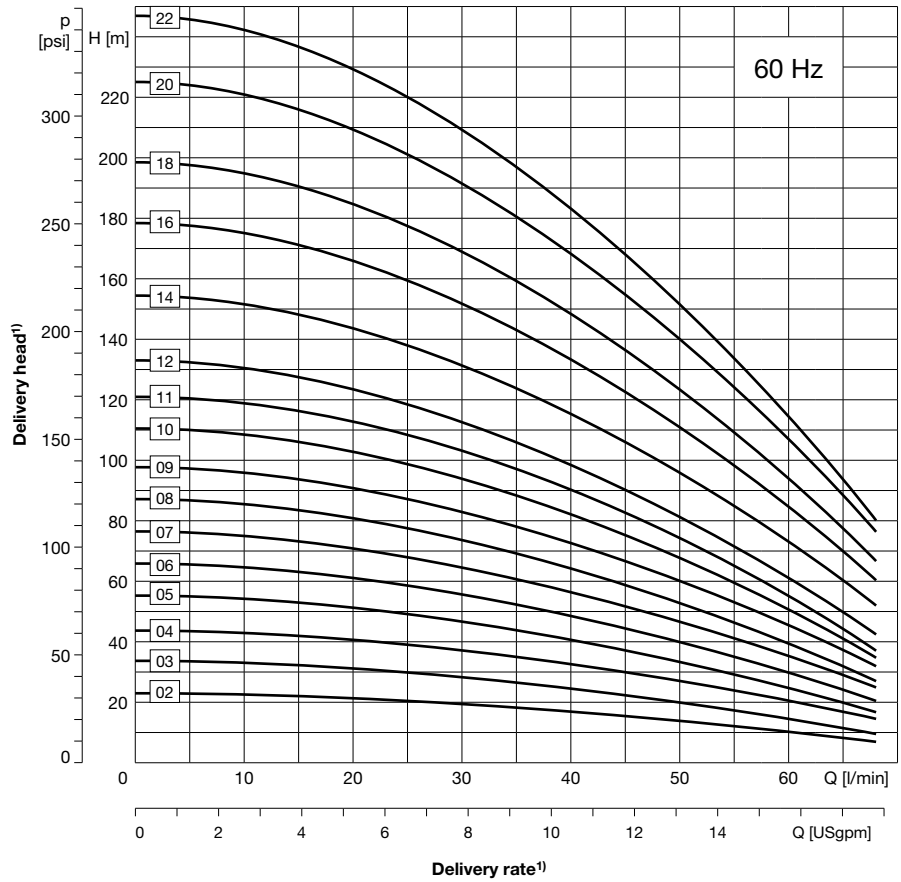
60 Hz, closed impellers



PSR

Features

- Vertical multistage coolant pump
- Connector dimensions as per DIN EN 12157
- For delivery of slightly contaminated types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G1 1/4



Technical Data

Delivery rate Q_{max}	68 l/min
Delivery head H_{max}	245 m
Immersion depth t_{max}	567 mm
Kinematic viscosity	max. 20 mm ² /s
Delivery temperature	-10 °C to +80 °C
Grain size	max. Ø2 mm
Contamination	max. 50 g/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, cleaning liquids, water, mild acids

Mechanical design

Component	Material
Flange	EN-GJL-200
Shaft	Stainless steel 1.4122
Gap bush ($H_{max} < 150$ m)	POM
Mechanical seal ($H_{max} > 150$ m)	WC, carbon, FKM, stainless steel 1.4571
Impeller	Stainless steel 1.4301
Intermediate chamber	Stainless steel 1.4301
Tension anchor	Stainless steel 1.4057
Bushing	Stainless steel 1.4301
Pumps bottom	EN-GJL-200
Elastomers	FPM

Variations

Component	Material
Flange	with chemical surface sealing or coated with paint
Bottom for extension tube	Stainless steel 1.4301
Intake strainer	Stainless steel 1.4301
Pumps bottom	Stainless steel 1.4308

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.

PSR 04 – Immersion pumps, sealless

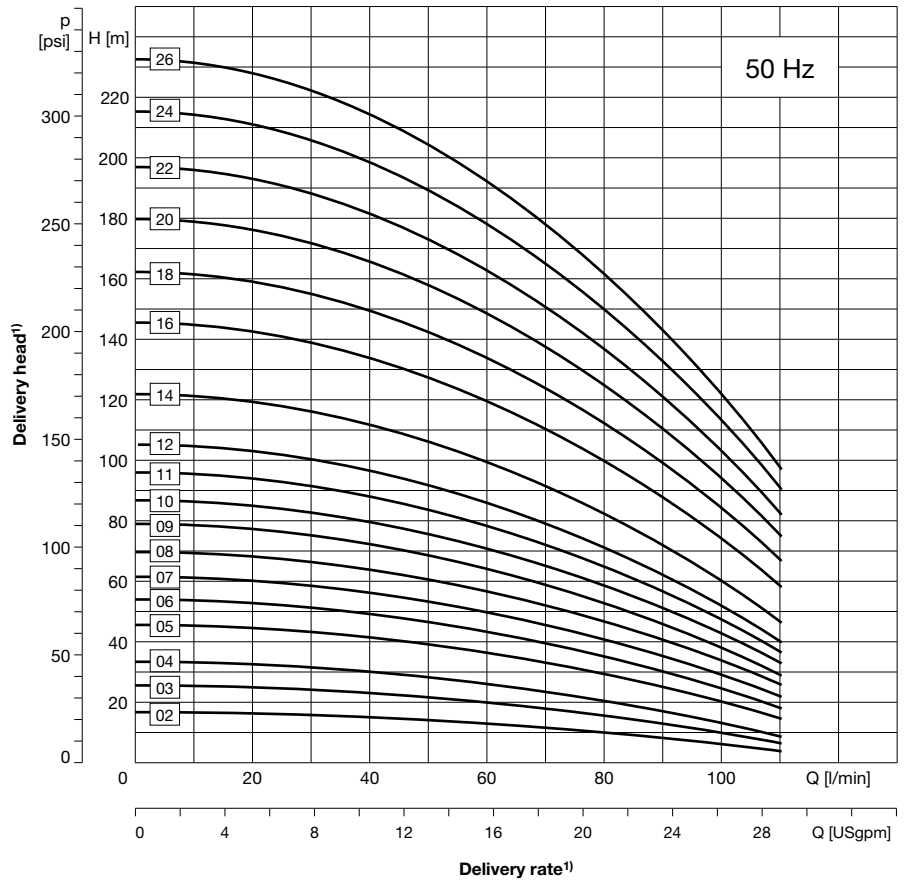
50 Hz, closed impellers



PSR

Features

- Vertical multistage coolant pump
- Connector dimensions as per DIN EN 12157
- For delivery of slightly contaminated types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G1 1/4



Technical Data

Delivery rate Q_{max}	110 l/min
Delivery head H_{max}	232 m
Immersion depth t_{max}	653 mm
Kinematic viscosity	max. 20 mm ² /s
Delivery temperature	-10 °C to +80 °C
Grain size	max. Ø2 mm
Contamination	max. 50 g/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, cleaning liquids, water, mild acids

Mechanical design

Component	Material
Flange	EN-GJL-200
Shaft	Stainless steel 1.4122
Gap bush ($H_{max} < 150$ m)	POM
Mechanical seal ($H_{max} > 150$ m)	WC, carbon, FKM, stainless steel 1.4571
Impeller	Stainless steel 1.4301
Intermediate chamber	Stainless steel 1.4301
Tension anchor	Stainless steel 1.4057
Bushing	Stainless steel 1.4301
Pumps bottom	EN-GJL-200
Elastomers	FPM

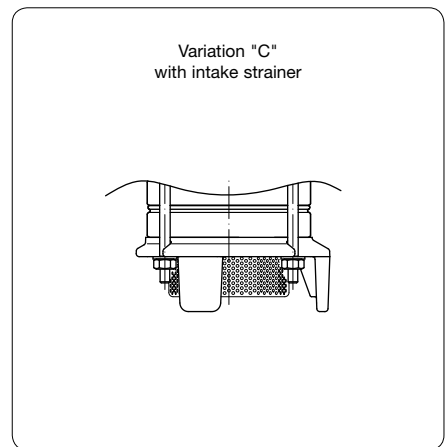
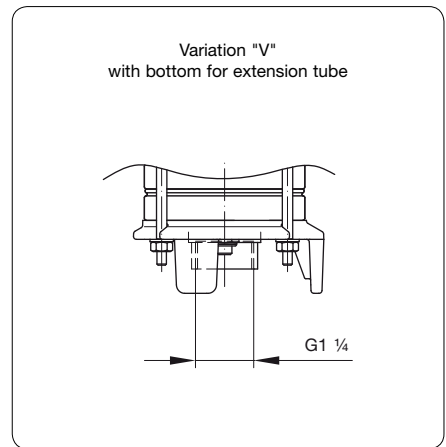
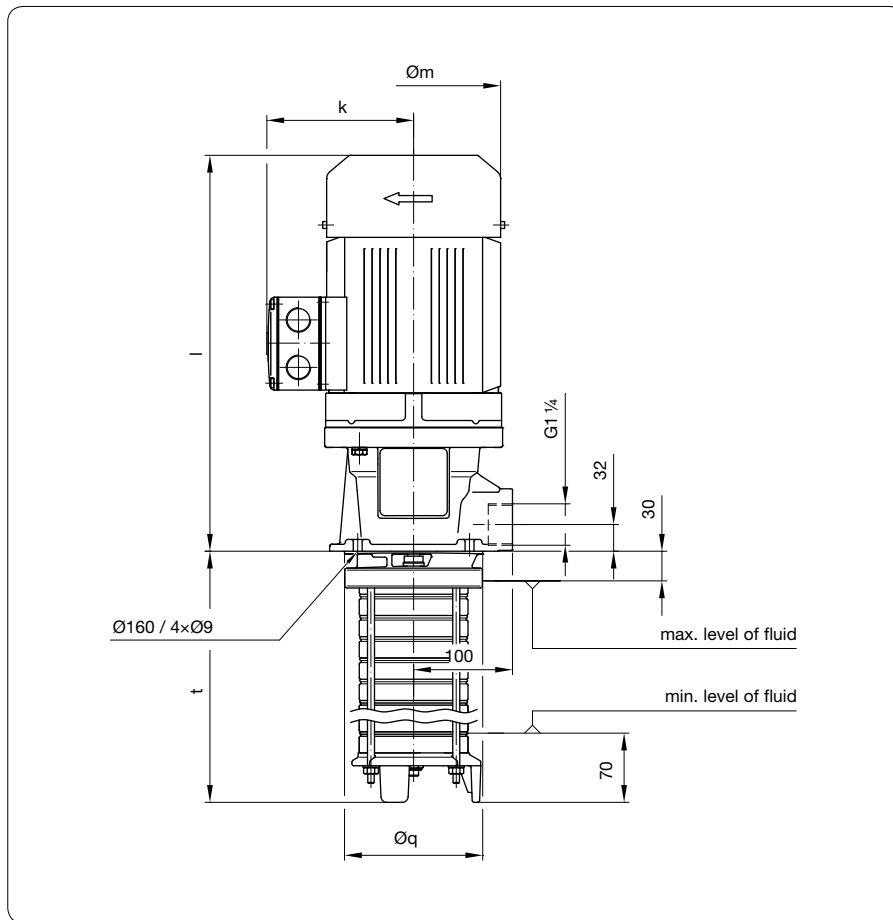
Variations

Component	Material
Flange	with chemical surface sealing or coated with paint
Bottom for extension tube	Stainless steel 1.4301
Intake strainer	Stainless steel 1.4301
Pumps bottom	Stainless steel 1.4308

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.

PSR 04 – Immersion pumps, sealless

50 Hz, closed impellers



PSR

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 $\Delta/Y I_N$ [A]	Speed n_N [min ⁻¹]	$\varnothing m$	k	l				$\varnothing q$
PSR	04	02	137	230/400	E	0,37	1,57/0,91	2902	140	114	223	140	13,1	G1 1/4	
		03	158		F	0,55	2,06/1,19	2836	140	114	223	140	13,4		
		04	180		G	0,63	2,56/1,48	2870	140	114	223	140	13,7		
		05	201		H	1,1	4,07/2,35	2730	140	114	223	140	14,0		
		06	223			14,7									
		07	244			15,0									
		08	266			15,3									
		09	287		J	1,5	4,95/2,86	2850	176	149	406	140	28,5		60
		10	309										28,8		
		11	330		K	2,2	7,15/4,13	2840	176	149	406	140	32,7		60
		12	352										33,0		
		14	395										33,6		
		16	438										36,2		
		18	481		L	3,0	10,0/5,75	2885	196	155	427	140	36,8		67
20	524	37,4													
22	567	M	4,0	13,0/7,5	2880	196	155	447	140	44,0	69				
24	610									44,6					
26	653									45,2					

PSR 04 – Immersion pumps, sealless

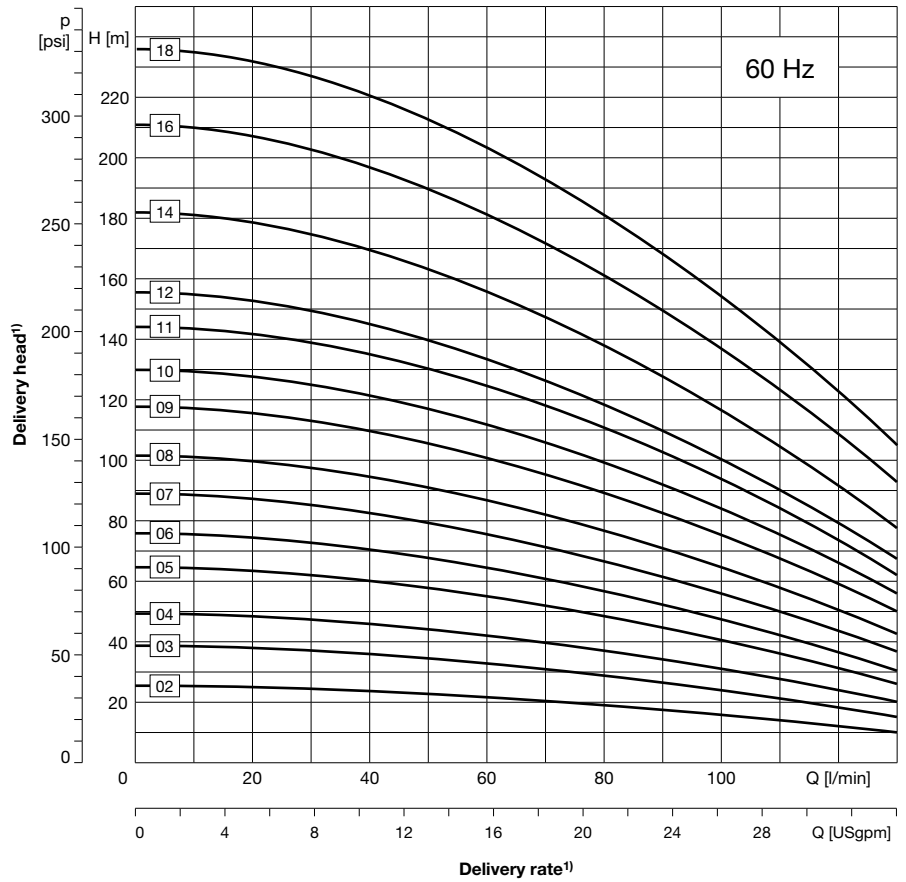
60 Hz, closed impellers



PSR

Features

- Vertical multistage coolant pump
- Connector dimensions as per DIN EN 12157
- For delivery of slightly contaminated types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G1 1/4



Technical Data

Delivery rate Q_{max}	130 l/min
Delivery head H_{max}	238 m
Immersion depth t_{max}	481 mm
Kinematic viscosity	max. 20 mm ² /s
Delivery temperature	-10 °C to +80 °C
Grain size	max. Ø2 mm
Contamination	max. 50 g/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, cleaning liquids, water, mild acids

Mechanical design

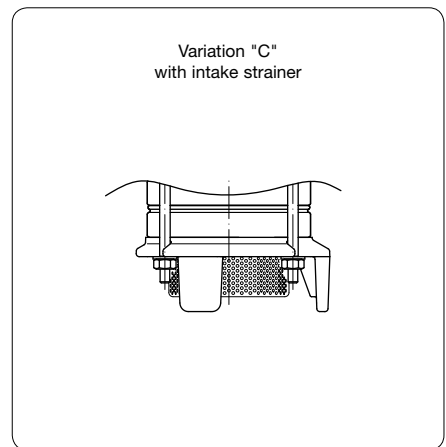
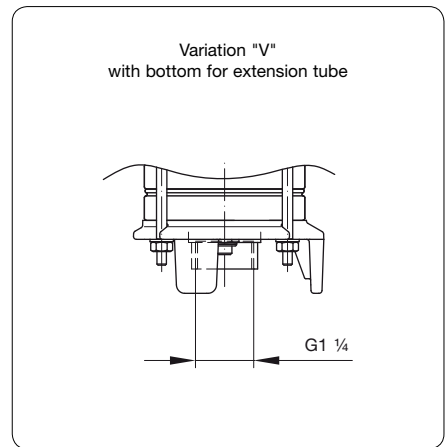
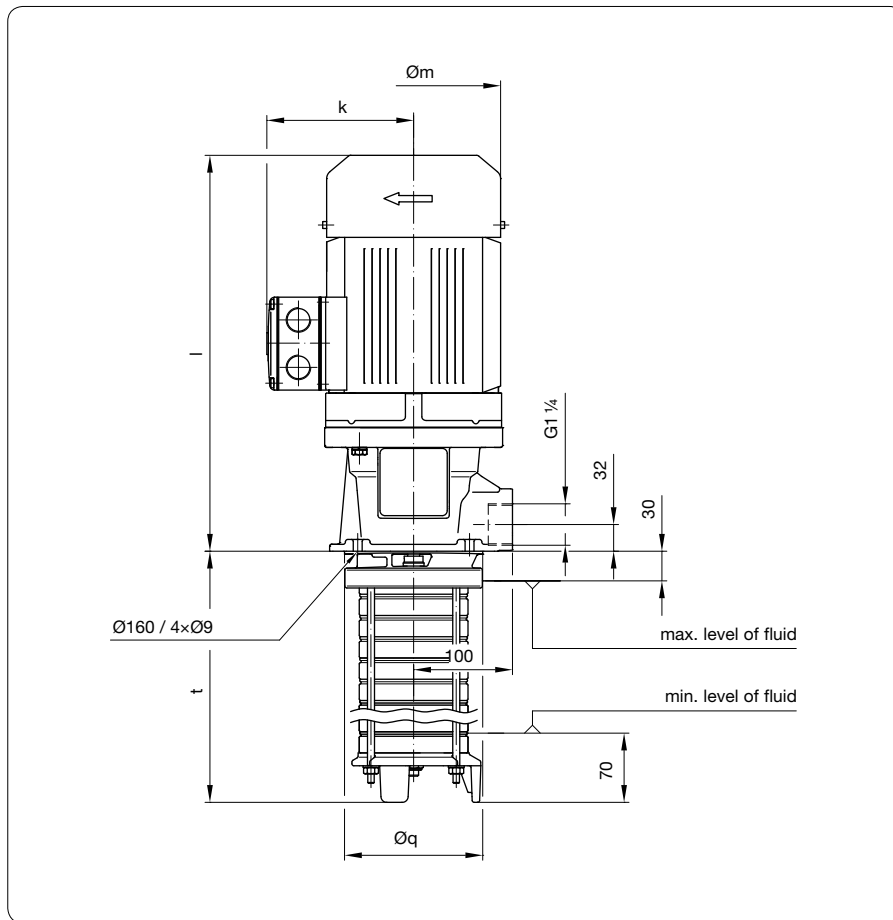
Component	Material
Flange	EN-GJL-200
Shaft	Stainless steel 1.4122
Gap bush ($H_{max} < 150$ m)	POM
Mechanical seal ($H_{max} > 150$ m)	WC, carbon, FKM, stainless steel 1.4571
Impeller	Stainless steel 1.4301
Intermediate chamber	Stainless steel 1.4301
Tension anchor	Stainless steel 1.4057
Bushing	Stainless steel 1.4301
Pumps bottom	EN-GJL-200
Elastomers	FPM

Variations

Component	Material
Flange	with chemical surface sealing or coated with paint
Bottom for extension tube	Stainless steel 1.4301
Intake strainer	Stainless steel 1.4301
Pumps bottom	Stainless steel 1.4308

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.

PSR 04 – Immersion pumps, sealless 60 Hz, closed impellers



PSR

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 [A]	Speed n_N [min ⁻¹]	$\varnothing m$	k	l				$\varnothing q$		
PSR	04	02	137	$265/460$	F	0,62	2,06/1,19	3446	140	114	223	140	13,1	60	G1 $1/4$		
		03	158		G	0,73	2,56/1,48	3410	140	114	223	140	13,4	60			
		04	180		H	1,26	4,07/2,35	3368	140	114	223	140	14,1	60			
		05	201		J	1,8	5,0/2,9	3460	176	149	406	140	26,6	64			
		06	223			26,9											
		07	244			30,8											
		08	266		K	2,6	7,5/4,3	3400	176	149	406	140	31,1	64			
		09	287			33,8											
		10	309			34,1											
		11	330		L	3,6	10,1/5,82	3500	196	155	427	140	34,4	70			
		12	352										41,0				
		14	395										41,6				
		16	438	M	4,5	12,7/7,3	3480	196	155	447	140	54,2	72				
		18	481									54,8					
						$\Delta\ 460$	N	6,2	$\Delta\ 11,5$	3490	257	182	530	140			

PSR 06 – Immersion pumps, sealless

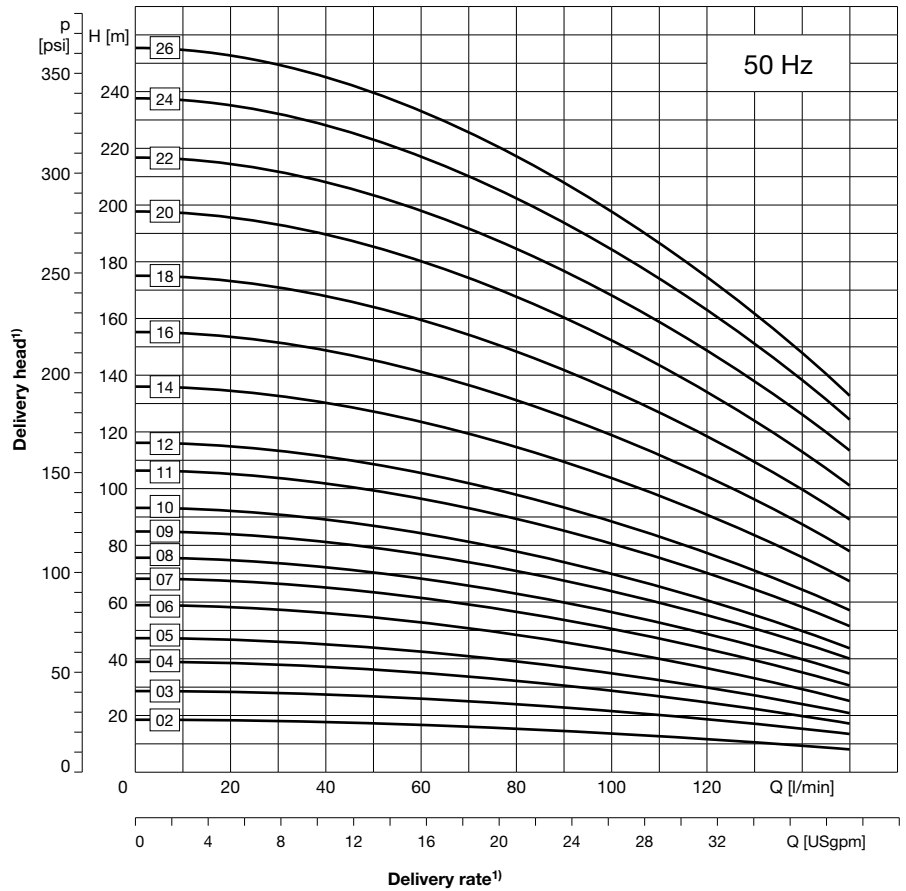
50 Hz, closed impellers



PSR

Features

- Vertical multistage coolant pump
- Connector dimensions as per DIN EN 12157
- For delivery of slightly contaminated types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G1 1/4



Technical Data

Delivery rate Q_{max}	150 l/min
Delivery head H_{max}	255 m
Immersion depth t_{max}	747 mm
Kinematic viscosity	max. 20 mm ² /s
Delivery temperature	-10 °C to +80 °C
Grain size	max. Ø2 mm
Contamination	max. 50 g/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, cleaning liquids, water, mild acids

Mechanical design

Component	Material
Flange	EN-GJL-200
Shaft	Stainless steel 1.4122
Gap bush ($H_{max} < 150$ m)	POM
Mechanical seal ($H_{max} > 150$ m)	WC, carbon, FKM, stainless steel 1.4571
Impeller	Stainless steel 1.4301
Intermediate chamber	Stainless steel 1.4301
Tension anchor	Stainless steel 1.4057
Bushing	Stainless steel 1.4301
Pumps bottom	EN-GJL-200
Elastomers	FPM

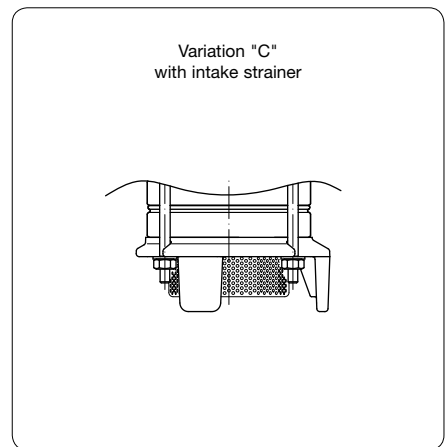
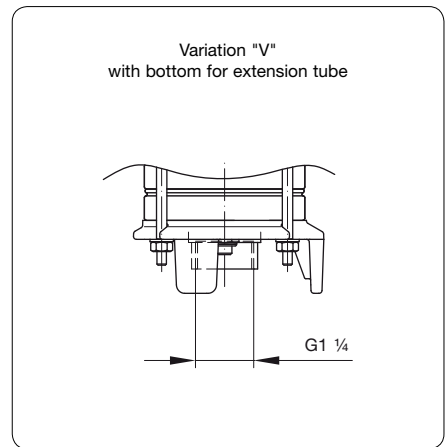
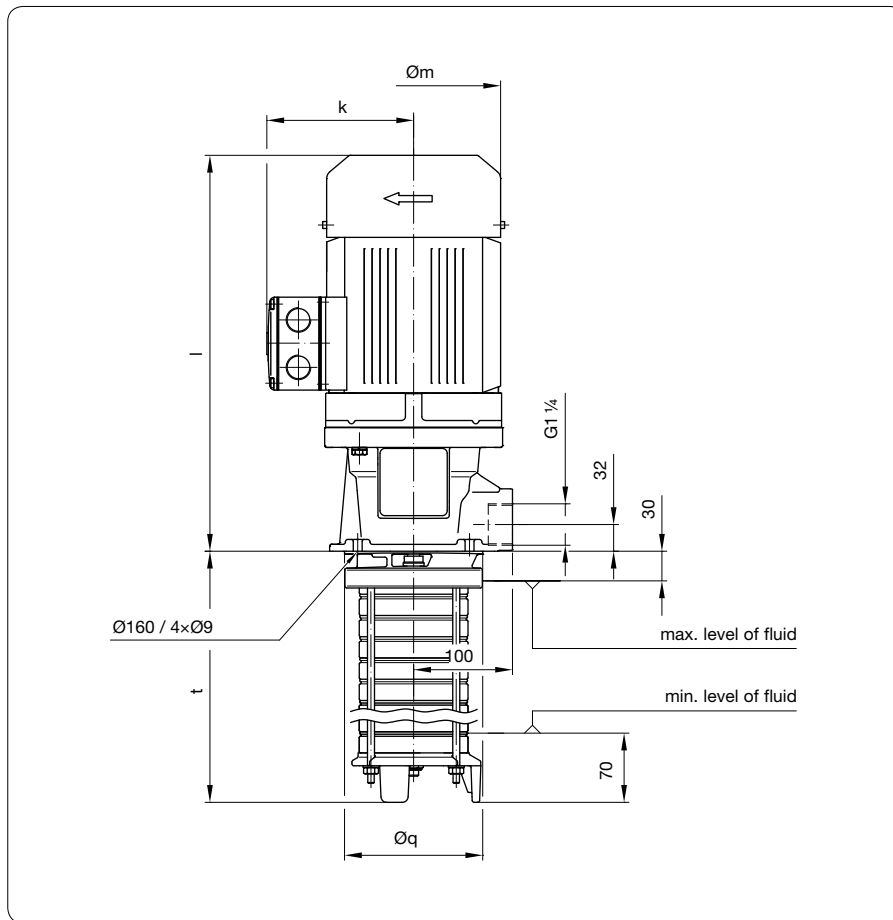
Variations

Component	Material
Flange	with chemical surface sealing or coated with paint
Bottom for extension tube	Stainless steel 1.4301
Intake strainer	Stainless steel 1.4301
Pumps bottom	Stainless steel 1.4308

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.

PSR 06 – 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 $\Delta/Y I_N$ [A]	Speed n_N [min ⁻¹]	$\varnothing m$	k	l				$\varnothing q$
PSR	06	02	147	230/400	F	0,55	2,06/1,19	2836	140	114	223	140	13,2	58	G1 1/4
		03	172		G	0,63	2,56/1,48	2807	140	114	223	140	13,6	58	
		04	197		H	1,1	4,07/2,35	2730	140	114	223	140	13,9	58	
		05	222			14,3									
		06	247		J	1,5	4,95/2,86	2850	176	149	396	140	26,8	60	
		07	272			27,1									
		08	297			28,5									
		09	322		K	2,2	7,15/4,13	2840	176	149	406	140	28,8	60	
		10	347			29,2									
		11	372			32,2									
		12	397		L	3,0	10,0/5,75	2885	196	155	427	140	32,5	67	
		14	447			33,1									
		16	497	35,1											
		18	547	M	4,0	13,0/7,5	2880	196	155	447	140	35,8	69		
		20	597		47,8										
22	647	48,5													
24	697	Δ 400	N	5,5	11,2	2900	257	182	530	140	49,2	71			
26	747										50,0				

PSR 06 – Immersion pumps, sealless

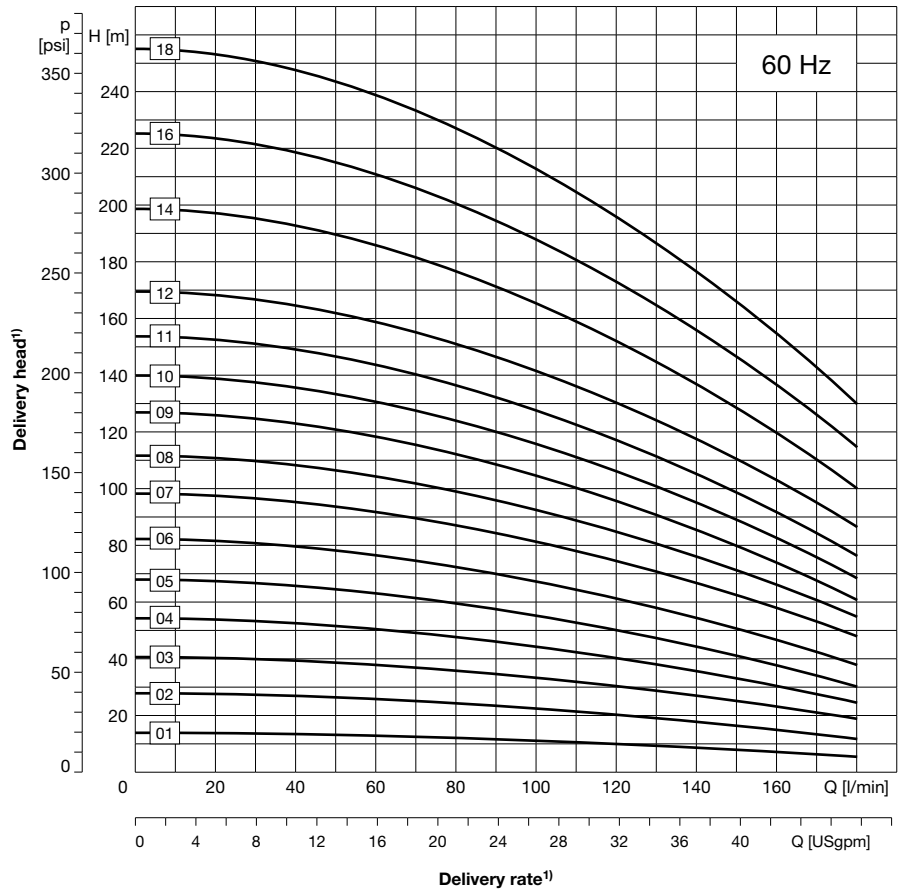
60 Hz, closed impellers



PSR

Features

- Vertical multistage coolant pump
- Connector dimensions as per DIN EN 12157
- For delivery of slightly contaminated types of fluids
- Installation directly into the reservoir
- Pressure port is located above the reservoir plate and designed with internal thread G1 1/4



Technical Data

Delivery rate Q_{max}	180 l/min
Delivery head H_{max}	255 m
Immersion depth t_{max}	547 mm
Kinematic viscosity	max. 20 mm ² /s
Delivery temperature	-10 °C to +80 °C
Grain size	max. Ø2 mm
Contamination	max. 50 g/m ³
Direction of rotation	clockwise (as viewed looking down on the motor's ventilation side)
Fluids delivered	Emulsions, cooling and cutting oils, cleaning liquids, water, mild acids

Mechanical design

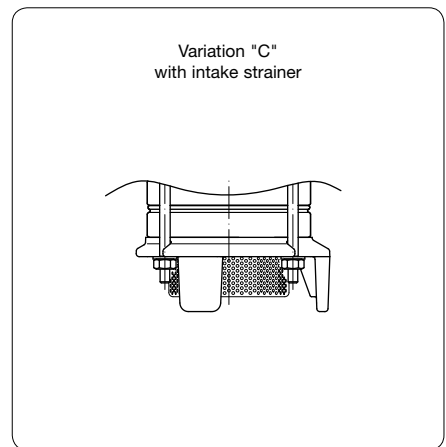
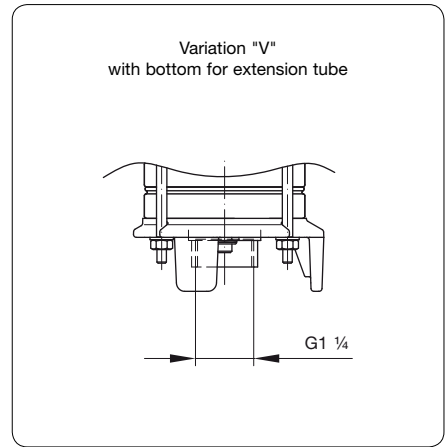
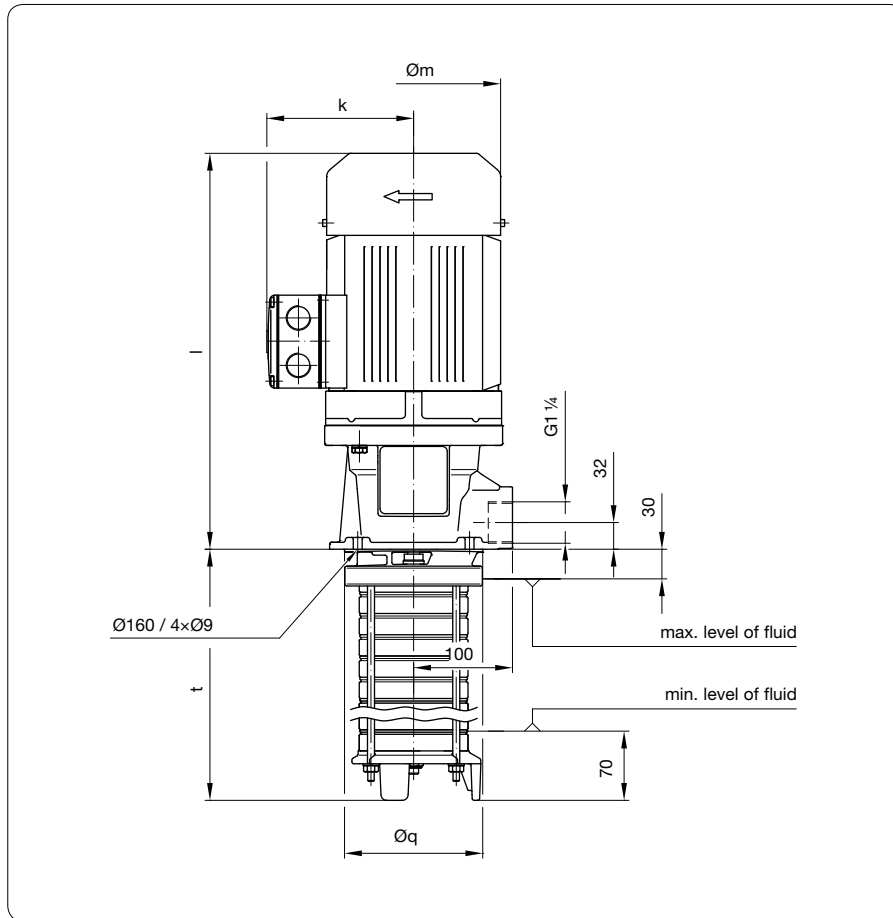
Component	Material
Flange	EN-GJL-200
Shaft	Stainless steel 1.4122
Gap bush ($H_{max} < 150$ m)	POM
Mechanical seal ($H_{max} > 150$ m)	WC, carbon, FKM, stainless steel 1.4571
Impeller	Stainless steel 1.4301
Intermediate chamber	Stainless steel 1.4301
Tension anchor	Stainless steel 1.4057
Bushing	Stainless steel 1.4301
Pumps bottom	EN-GJL-200
Elastomers	FPM

Variations

Component	Material
Flange	with chemical surface sealing or coated with paint
Bottom for extension tube	Stainless steel 1.4301
Intake strainer	Stainless steel 1.4301
Pumps bottom	Stainless steel 1.4308

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.

PSR 06 – Immersion pumps, sealless 60 Hz, closed impellers



PSR

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]	$\varnothing m$	k	l				$\varnothing q$
PSR	06	01	122	265/460	F	0,62	2,06/1,19	3446	140	114	223	140	13,2	60	G1 1/4
		02	147		G	0,73	2,56/1,48	3410	140	114	223	140	13,7	60	
		03	172		H	1,26	4,07/2,35	3368	140	114	223	140	14,1	60	
		04	197		J	1,75	4,95/2,86	3465	176	149	396	140	26,2	64	
		05	222		K	2,55	7,15/4,13	3460	176	149	406	140	27,5	64	
		06	247										27,9		
		07	272		L	3,45	10,0/5,75	3505	196	155	427	140	30,7	70	
		08	297										31,1		
		09	322										33,2		
		10	347		M	4,6	13,0/7,5	3495	196	155	447	140	33,6	72	
		11	372										34,0		
		12	397										46,0		
		14	447	Δ 460	N	6,2	11,5	3490	257	182	530	140	46,8	72	
		16	497										52,0		
		18	547										52,8		

PSR – Immersion pumps, sealless

Order key

P

S

R

Series

Frame size

- 02 = 2 m³/h (nominal delivery rate)
- 04 = 4 m³/h (nominal delivery rate)
- 06 = 6 m³/h (nominal delivery rate)

Stages

To determine the desired number of stages the corresponding characteristics has to be used.

- 01 = 1-stage
- ...
- 30 = 30-stages

Materials

- G = gray cast iron (standard)
- C = GG with chemical surface sealing
- T = GG coated with paint

Seal

- B = gap bush ($H_{max} < 150$ m)
- G = machanical seal ($H_{max} > 150$ m)

Pump design

- S = standard design
- V = bottom for extension tube
- C = bottom equipped with intake strainer

Immersion depth in mm

To determine the desired immersion depth the appropriate table "Electrical data, dimensions and weights" has to be used.

- 122 = 122 mm
- ...
- 739 = 739 mm

Motor index

To determine the desired motor index the appropriate table "Electrical data, dimensions and weights" has to be used. Example: **E** = 0,37 kW

Power supply

- 01 = 230/400 V at 50 Hz (to 4 kW)
265/460 V at 60 Hz (to 4,6 kW)
- 02 = Δ400 V at 50 Hz (from 5,5 kW)
Δ460 V at 60 Hz (from 6,3 kW)
- 05 = **Standard for Europe**
230/400 V at 50 Hz (from 4 kW)
Δ400 V at 50 Hz (from 4 kW)
- ... further designs on request

Motor design

- AA = standard to 0,55 kW (insulation class F, IP 54, 2-pole)
- BA = standard from 0,75 kW (insulation class F, IP 54, 2-pole, IE2)
- ... further designs on request

Order example: PSR0218GBS481J01BA

Series: **PSR**, Frame size: **02**, **18**-stages, Material: **G** grey cast iron, Seal: **B** gap bush, Pump design: **S** standard design, Immersion depth: **481** mm, Motor index: **J** 1,5 kW, Power supply: **01** 230/400 V 50 Hz; 265/460 V 60Hz, Motor design: **BA** standard form 0,75 kW

PSR

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