

***Centrifugal pumps of metal  
with high resistance  
to wear for diverse  
industrial fluids***

## Technical data

- Delivery rate  
 $Q_{\max} = 400 \text{ l/min}$
- Delivery head  
 $H_{\max} = 48 \text{ m}$
- Temperature range  
PMS:  $0 \text{ }^{\circ}\text{C}$  to  $+80 \text{ }^{\circ}\text{C}$   
PMS-T:  $-70 \text{ }^{\circ}\text{C}$  to  $+170 \text{ }^{\circ}\text{C}$

## Product features

- Centrifugal pump,  
1- to 4-stage models
- Open impellers
- Port dimensions to  
DIN EN 12157
- Immersion depths of up to 560 mm
- Available in various materials
- "Slurp" type models  
for fluids containing trapped air



**Main applications**

- Machine tools
- Filtration systems
- Conditioning of coolants and oils
- Cooling systems
- Cleaning and degreasing installations
- Printing machines
- Erosion machines
- Wetting equipment and temperature stabilizers
- Surface coating
- Paraffin plants
- Optical machines
- Glassworking
- etc.

**Fluids delivered**

- Emulsions, also with chemical additives
- Oils
- Water with anticorrosion additives
- Waterbased paints
- Heattransfer oils
- etc.

Temperature range:

Standard version, PMS: 0 °C to 80 °C

Special material version, PMS-T: -70 °C to +170 °C

Special impellers are available for fluids with densities deviating from that of water.

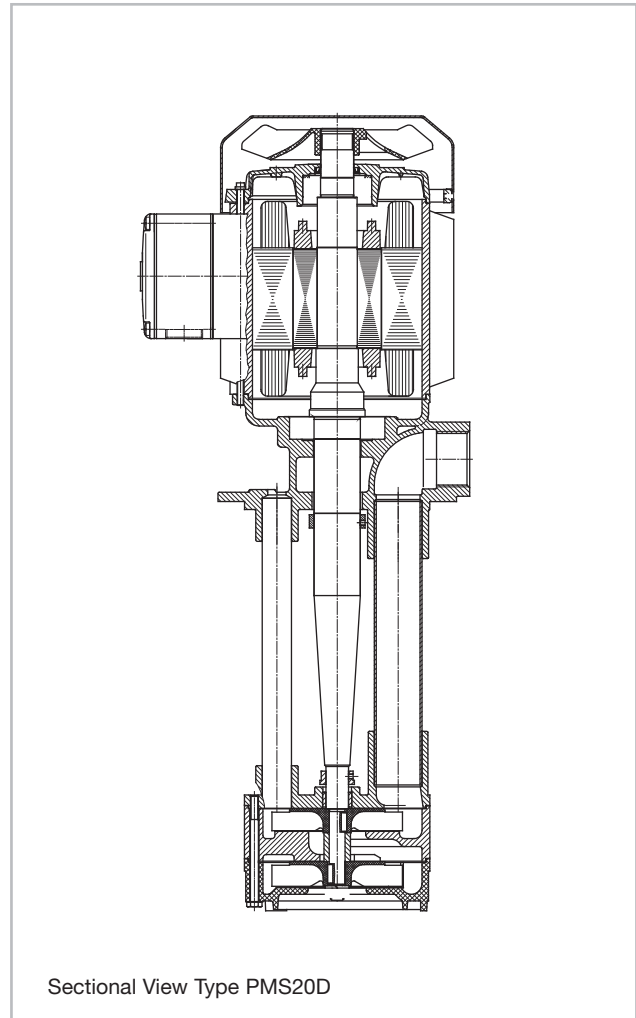
Contaminants with a small grain size are permissible.

Special pumps for slurp operation are available for fluids carrying large amounts of air. They are available in sizes 9, 11 and 15.

Their special design provides for a continuous rate of flow even when fluids contain trapped air.

**Design features**

- sealless
- freefloating shaft supported only by bearing assembly in the motor
- open impellers
- 1- to 4-stage models
- connecting dimensions to DIN EN 12157
- immersion depths of up to 560 mm



**Mechanical design**

Component	Type PMS	Type PMS-T
Motor housing	aluminum	aluminum
Pump support	cast iron and steel	cast iron and steel
Pump bottom	POM	cast iron
Intermediate chamber	cast iron	cast iron
Impeller	POM	cast iron
Shaft	ETG	ETG
Splash ring	NBR (Perbunan)	steel
Antifriction bearings	radial deep-groove ball bearing with 2 side plates (2 Z) with permanent lubrication	side plate (1 Z) with special grease
Small parts (in contact with fluid)	steel	steel

**Optional materials:**

Special models of stainless steel are possible:

Shaft of stainless steel 1.4122 or 1.4571, pump parts on request.

### Electrical design

The drive motors conform to VDE regulations as well as to European motor standards (DIN EN 60034-1/11.95) and the requirements of the CE mark.

Designs in conformity with non-European regulations, e.g. Canadian Standards Association (CSA), Underwriters Laboratories INC. (UL) or special requirements, e.g. the USA or Japan, are possible. Moreover, we also produce models for special operating conditions (e.g. exposure to humidity or dust).

The regular models have motor windings designed for continuous operation and connection to a mains voltage of 230/400 V ± 10%, 50 Hz in accordance with IEC 38/5.87.

On request the motors can be customized to all common mains values.

	Standard	Options
Degree of protection (DIN EN 60034-5/4.88)	IP 54	IP 55
Insulation class	F,B	F
Ambient temperature (DIN EN 60034-1/02.99)	max. 40 °C	50 °C and higher
Relative humidity (DIN 50015)	max. 92 %	95 % and higher
Site altitude (DIN EN 60034-1/11.95)	< 1000 m above sea level	on request
Electrical parameters	230/400 V, 50 Hz 255/440 V, 60 Hz	on request
Mains operation	three-phase	single-phase AC
Number of poles	2-poles	4-poles
Terminal box		
- layout (DIN EN 12157)	layout 1	layout 2, 3 or 4
- material	high-impact plastic	light metal
- cable entry (DIN 40430/2.71)	PMS 4 C, 5 B, 6 C, 7 B: 2x M 16x1.5 PMS 9 C, 11 C, 17 C, 20 C: M 16x1.5 PMS 15 D, 20 D, 30 D, 38 D, 48 D: 2x M 25x1.5	on request
		industrial plug-in connector
Protective surface coating	synthetic-resin lacquer, color: RAL 9005 (black, matt)	Special finish on request
Special protection		Motor protection (thermistors in the winding/PTC); fan cowl with canopy.



### Installation and operation

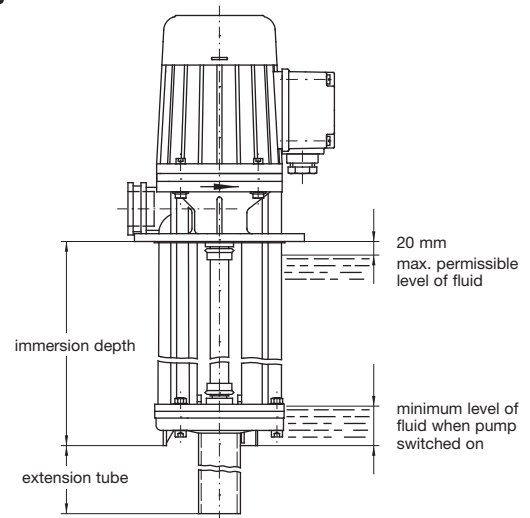
The unit is installed upright. The maximum permissible level of fluid amounts to 20 mm below the mounting flange (cf. following drawing).

Dry running is not permitted. Before startup, fill the pump with fluid for pumping. There is only limited support for short-term operation without such fluid during the feeding operation.

Operation against dead head is possible.

Direction of rotation: counterclockwise, as viewed looking down on the motor's ventilation side.

### Options



### Model with extension tube

if immersion depth deviates from standard.

### Order example

**PMS 7 B-350**

Model \_\_\_\_\_

Size \_\_\_\_\_

Immersion depth t \_\_\_\_\_

Please indicate electrical parameters, e.g. 230/400 V, 50 Hz.

When ordering spare parts, always indicate the 10-place serial number (see motor rating plate).

Model	Characteristics																						
	Delivery rate Q [l/min] at delivery head H [m]																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
<b>PMS4C</b>	48	39	25	5																			
<b>PMS5B</b>	57	47	36	23	10																		
<b>PMS6C</b>	80	66	54	40	20	1																	
<b>PMS7B</b>	96	86	75	62	48	32	4																
▶ <b>PMS9C</b>	270	256	236	211	186	161	124	85	37														
▶ <b>PMS11C</b>	280	264	247	230	206	181	157	127	95	64	20												
▶ <b>PMS15D</b>	400	380	355	340	320	290	265	245	220	180	140	100	50	15									
<b>PMS17C</b> 2-stage	228	224	213	202	191	180	169	159	148	137	126	114	110	88	75	58	39						
<b>PMS20D</b> 2-stage	258	254	244	234	225	215	204	192	179	166	154	140	126	111	96	80	64	46	28	8			
<b>PMS20C</b> 2-stage	190	186	179	173	167	158	148	139	130	120	111	101	91	81	72	61	50	37	24	11			
<b>PMS30D</b> 3-stage	260	248	242	236	230	224	217	210	204	197	190	182	175	167	160	150	142	133	125	115	105	95	85
<b>PMS38D</b> 3-stage	221	218	212	208	205	201	197	192	188	183	179	174	170	164	161	154	149	144	138	134	127	122	116
<b>PMS48D</b> 4-stage																				157 *)	153	149	144
<b>PMS5BT</b>	57	47	36	23	10																		
<b>PMS6CT</b>	87	77	64	50	33	13																	
<b>PMS7BT</b>	96	86	75	62	48	32	4																

▶ Also available as “System Spandau” slurp model

PMS .. T pumps are suitable for fluid temperatures of -70 °C to +170 °C.

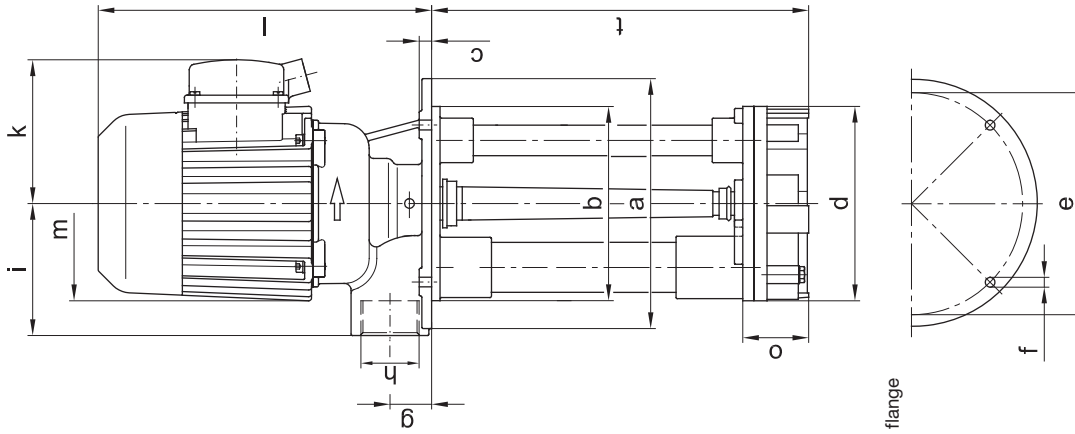
The data apply for fluids with viscosity of 1mm<sup>2</sup>/s at a density of 1 kg/dm<sup>3</sup>.

\*) Pumps may only be operated at this level or higher.

Characteristics														Electrical data				
24	25	26	27	28	29	30	32	34	36	38	40	44	48	Rated power [kW]	Rated voltage Δ / Y [V]	Rated current Δ / Y [A]	Rated speed 50 Hz [rpm]	Noise level [dB(A)]
														0.08	230/400	0.42/0.24	2707	46
														0.12	230/400	0.5/0.29	2655	46
														0.14	230/400	0.78/0.45	2506	55
														0.2	230/400	0.93/0.54	2800	55
														0.75	230/400	2.72/1.57	2753	59
														0.75	230/400	2.72/1.57	2753	59
														1.5	230/400	5.7/3.3	2815	59
														0.75	230/400	3.46/2	2846	59
														1.5	230/400	5.7/3.3	2875	59
														0.9	230/400	3.86/2.23	2807	59
75	65	50	40	25	15									1.5	230/400	5.7/3.3	2815	65
110	104	98	90	84	76	70	55	38	16	1				2.2	230/400	8/4.6	2825	65
140	134	130	126	121	116	110	100	90	78	66	53	24	1	2.2	230/400	8/4.6	2730	65
														0.12	230/400	0.71/0.41	2637	46
														0.25	230/400	1.11/0.64	2701	55
														0.25	230/400	1.11/0.64	2701	55

**Dimensions and Weights**

Model	t [mm]	Weight [kg]	l	øm	øa	øb -0.2	c	ød	øe	øf	g	h	i	k <sup>1)</sup>	o	Air cooled motors																
<b>PMS4C</b> <b>PMS5B</b>	90	4.4	150	96	130	100	6	99	115	7	25	G $\frac{3}{4}$	70	88	45	-																
	120																															
	140																															
	170																															
	200																															
	220																															
<b>PMS6C</b>	250	4.4	168	96	130	100	6	99	115	7	25	G $\frac{3}{4}$	70	88	45	-																
	270																															
	350																															
	5																															
	<b>PMS7B</b>																90	6.3	162	120	130	100	6	99	115	7	25	G $\frac{3}{4}$	70	98	45	-
																	120															
140																																
170																																
200																																
220																																
<b>PMS9C</b> <b>PMS11C</b>	250	13.2	241	140	180	140	9	140	160	7	30	G1 $\frac{1}{4}$	95	112	48	X																
	270																															
	350																															
	440																															
	550																															
	16.3																															



The standard models of aircooled motors are supplied without a protective cover. The motors can also be provided with a protective cover if necessary – the respective safety regulations and valid machine protection laws must be observed.  
Dimension “l” is then increased approx. 31 mm.

**Dimensions and Weights**

Model	t mm	Weight [kg]	l	øm	øa	øb -0.2	c	ød	øe	øf	g	h	i	k	o
<b>PMS5BT</b>	120	6	168	96	130	100	6	99	115	7	25	G <sup>3/4</sup>	70	108	45
	170														
	220														
	270														
<b>PMS6CT</b>	350	7													
	270														
<b>PMS7BT</b>	120	9	180	120	130	100	6	99	115	7	25	G <sup>3/4</sup>	70	118	45
	170														
	220														
	250														
	270														
	350														

**Dimensions and Weights**

Model	t [mm]	Weight [kg]	l	øm	øa	øb -0.2	c	ød	øe	øf	g	h	i	k <sup>1)</sup>	o	Air cooled motors
<b>PMS15D</b>	210	23	291	176	180	140	9	140	160	7	32	G1 <sup>1/4</sup>	100	149	55	X
	240															
	280															
	320															
	360															
	560															
<b>PMS17C</b>	210	15.7	241	140	180	140	9	140	160	7	30	G1 <sup>1/4</sup>	95	112	88	X
	310															
	350															
	390															
	440															
	17															
<b>PMS20D</b>	270	24	291	176	180	140	9	140	160	7	32	G1 <sup>1/4</sup>	100	149	85	X
	310															
	350															
	390															
	480															
	27.5															
<b>PMS20C</b>	270	16.3	241	140	180	140	9	140	160	7	30	G1 <sup>1/4</sup>	95	112	88	X
	310															
	350															
	390															
	17.2															
<b>PMS30D</b>	280 <sup>2)</sup>	26.5	291	176	180	140	9	140	160	7	32	G1 <sup>1/4</sup>	100	149	125	X
	310															
<b>PMS38D</b>	350	29	317													
	390															
	430															
	470															
<b>PMS48D</b>	350	29	317	176	180	140	9	140	160	7	32	G1 <sup>1/4</sup>	100	149	165	X
	390															
	430															
	470															

▲ Also available as "System Spandau" slurp model.

**Please note:**  
All equipment may only be installed and/or assembled by qualified personnel.  
Observe existing safety regulations.

To avoid errors please consult our operating instructions.

<sup>1)</sup> Terminal box dimensions are some 20 mm larger in the case of versions for CSA/USA requirements and higher insulation classes or when the free ends of thermistors are fed into the terminal boxes.

<sup>2)</sup> Immersion depth 280 mm only with PMS38D.

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