

Flow Monitor

SPM



Operation

The flow monitors type SPM are paddle switches

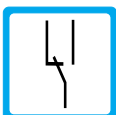
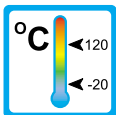


Application

The flow monitors type SPM are used for monitoring volumeflow of liquid media in pipe constructions and open ducts.

Areas of application:

- Coolingsystems and cooling-circuits
- Heating and air-conditioning systems
- Research and development



Features

The SPM series proves itself through reliable function and easy handling. A bellow separates the electrical and the wetted part of the SPM.

All instruments without a T-piece are supplied with four separate paddles, which can be combined.

The choice of the combination is determined by the pipe diameter (refer to table 3 on page 2).

If necessary the paddles have to be shortened according to pipe size.

Further characteristics of this sturdy type are:

- low sensitivity to dirt
- high contact rating
- easy installation
- low pressure drop

Hints

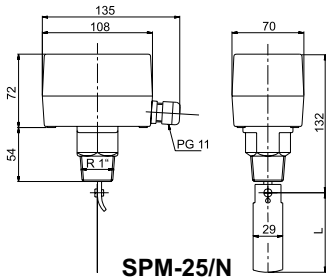
The installation of the flow monitor can be done in any way in the system. The flow direction must be observed. Flow-straightening sections of at least 5x the pipe diameter should be considered up- and down-stream of the SPM. The switchpoint must be re-adjusted for vertical installation to compensate the paddle weight.

If the monitor is installed upside down, it must be observed that no deposits can clog the bellow!

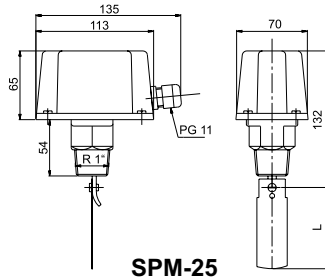
The flow monitor must not be used as a supporting part in a pipe construction!



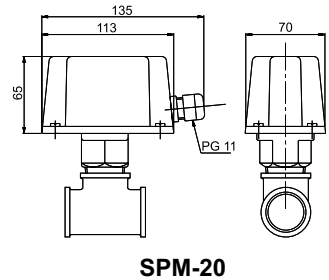
Technical Data



SPM-25/N

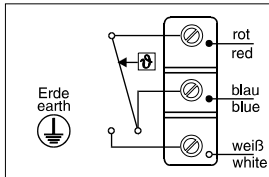


SPM-25



SPM-20

Connection diagram



red: common

blue: N. C. (Normally closed)

white: N. O. (Normally open)

For switch values refer to table 3.

The instruments are factory adjusted for minimum switch values.

By turning the spanscrew clockwise the switch values can be increased (refer to operating instruction).

Table 1: Overview

Type	Pipe size	p _{max} [bar]	Material
SPM-15	1/2"	11	Brass
SPM-20	3/4"	11	Brass
SPM-25	1" - 8"	11	Brass
SPM-25 VA	1" - 8"	30	SS: 316L
SPM-25T*	1" - 8"	11	Brass
SPM-25/N	1" - 8"	11	Brass
SPM-25/N VA	1" - 8"	30	SS: 316L
SPM-25R	1" - 8"	11	Brass
SPM-25R VA	1" - 8"	30	SS: 316L
SPM-25R/N	1" - 8"	11	Brass
SPM-25R/N VA	1" - 8"	30	SS: 316L

* SPM-25T is TÜV certified

Table 2: Paddle lengths and paddle material

Paddle	Length L	Material
1	standard (as of DN 50): 28,5 mm	SS: 316
	with DN 25 the paddle must be cut to size	
2	standard: 54,5 mm	SS: 316
3	standard: 83,5 mm	SS: 316
4	standard (ab DN 175): 162,5 mm	SS: 316
	*Special length for DN 100: 92,0 mm	
	*Special length for DN 125: 117 mm	
	*Special length for DN 150: 143 mm	

*By shorten the standard paddle, the user can obtain the special lengths

Table 3: Switch values for H₂O

Types: SPM-15 (with T-piece), SPM-20 (with T-piece)

Type	Connection	switch-off value [l/h]	switch-on value [l/h]
SPM-15	1/2"	174 - 846	480 - 948
SPM-20	3/4"	138 - 768	408 - 858

Types: SPM-25, SPM-25 VA, SPM-25T, SPM-25/N, SPM-25/N VA

DN	fitted paddle				switch-off value [m ³ /h]	switch-on value [m ³ /h]
25	1				0,6 - 2,0	1,0 - 2,1
32	1				0,8 - 2,8	1,3 - 3,0
40	1				1,1 - 3,7	1,7 - 4,0
50	1	2			2,2 - 5,7	3,1 - 6,1
65	1	2			2,7 - 6,5	4,0 - 7,0
80	1	2	3		4,3 - 10,7	6,2 - 11,4
100	1	2	3		11,4 - 27,7	14,7 - 29,0
100	1	2	3	4	6,1 - 17,3	8,0 - 18,4
125	1	2	3		22,9 - 53,3	28,4 - 55,6
125	1	2	3	4	9,3 - 25,2	12,9 - 26,8
150	1	2	3		35,9 - 81,7	43,1 - 85,1
150	1	2	3	4	12,3 - 30,6	16,8 - 32,7
200	1	2	3		72,6 - 165,7	85,1 - 172,5
200	1	2	3	4	38,6 - 90,8	46,5 - 94,2

Types: SPM-25R, SPM-25R VA, SPM-25R/N, SPM-25R/N VA

DN	fitted paddle				switch-off value [m ³ /h]	switch-on value [m ³ /h]
25	1				0,2 - 1,0	0,6 - 1,1
32	1				0,25 - 1,4	0,9 - 1,6
40	1				0,5 - 1,9	1,2 - 2,2
50	1	2			0,9 - 3,6	2,3 - 4,1
65	1	2			1,2 - 4,9	3,1 - 5,5
80	1	2	3		2,1 - 7,4	4,9 - 8,2
100	1	2	3		4,9 - 17,1	11,3 - 19,1
100	1	2	3	4	3,3 - 11,6	7,7 - 13,0
125	1	2	3		9,7 - 34,0	22,4 - 37,9
125	1	2	3	4	5,0 - 17,5	11,5 - 19,6
150	1	2	3		13,6 - 47,6	31,5 - 53,2
150	1	2	3	4	6,1 - 21,4	14,1 - 23,9
200	1	2	3		25,7 - 90,1	59,6 - 100,7
200	1	2	3	4	21,7 - 55,3	36,5 - 61,8

Technical Data

Housing:	Galvanized steel bottom plate with ABS-Cover; Ingress protection: IP 65		
optional (SPM-.../N):	Painted aluminium bottom housing with ABS-Cover; Ingress Protection: IP 65		
Contact:	Dust tight micro switch	switch values:	15 (8) A, 24 - 250 V AC
optional:	Gold contacts on request		
Medium temperature:	-20 °C to 120 °C	Ambient temperature max.:	85 °C

