DP06

Paddle-Bellows Flow Meter and Switch

- **for liquids**
- **large 270°-dial gauge display for flow rate**
- **easy switching-point adjustment with small scale**
- **bellows keep liquid hermetically separated from the switching element**
- **insensitive to dirty / contaminated fluids**
- **1 or 2 independently adjustable microswitches**
- **insensitive to electromagnetic fields**
- **easy installation, for pipes up to DN 600**
- **measuring ranges: 1...25 l/min up to 420...4500 m³/h**
- **P_{max}: 16 bar, T_{max}: 250 °C**

Description:

The flow meters and switches model DP06 operate according to the paddle-bellows principle. The flowing liquid pushes against the surface area of a paddle mounted at the end of a pivoting arm.
The arm is deflected against the force of a spring. This deflection is mechanically transmitted to a 270° dial-gauge display and a separately adjustable contact unit. A bellow system seals the liquid off from the mechanism. In case of malfunction, the spring returns the paddle plate to the zero position (no flow), which causes the system to automatically signal a fault.

Typical Applications:

The DP06 paddle-bellows flow meter and switch is suitable for monitoring thin and low-viscosity liquids in average to large flow volumes, e.g. for industrial water circuits because they are relatively insensitive to dirty / contaminated fluids.
For nominal pipe sizes over DN 50, installation with an intermediate mounting flange yields a price/ performance ratio of exceptional economy.

Models:

The DP06 flow monitors are available in 3 versions and different material combinations:

DP06.R… **with T-fitting and pipe-thread connection from R 3/8 to R 2 male thread**

DP06.F… **with T-fitting and DIN flange from DN 10 to DN 50**

Material-combination A: T-fitting made of brass
pivoting system made of brass
bellows made of st. steel 1.4571
flange made of galvanized carbon steel

Material-combination B: T-fitting made of st. steel 1.4571
pivoting system made of st. steel 1.4571
bellows made of st. steel 1.4571
flange made of st. steel 1.4571

DP06.A… **with weld on flange for nominal pipe size DN 65 to DN 600**

Material-combination A: housing made of brass
pivoting system made of brass
bellows made of st. steel 1.4571
weld on flange made of carbon steel, painted

Material-combination B: housing made of st. steel 1.4571
pivoting system made of st. steel 1.4571
bellows made of st. steel 1.4571
weld-on flange made of st. steel 1.4571

Technical Data:

Max. pressure:	16 bar
max. med.-temperature:	130 °C High temperature version: 250 °C
Accuracy:	± 5 % up to 20 l/min ± 4 % from 21…200 l/min ± 3 % > 200 l/min
Switching hysteresis:	10 % (up to 2 bar)
Contacts:	
1 micro switch:	230 V, 10 A, SPDT
2 micro switches:	230 V, 5 A, SPDT
1 gold contact switch:	230 V, 100 mA, SPDT
Status display:	glow lamp or LED (depending on the con. voltage)
Protection class:	IP55 (IP65 on request)

Please specify the connection voltage 24 V or 230 V.

Order Code:

Order number:	**DP06.**	**R025.**	**B.**	**1.**	**20-100.**	**0**

Paddle bellows flow meter and switch

Process connection (xx=nominal pipe size):
R0xx = with male thread (R 3/8 to R 2 only)
F0xx = with flange (DN 10 to DN 50 only)
Axxx = with weld on flange (from DN 40 to DN 600)

Material combination:
A = brass / st. steel / steel zinc plated
B = completely of st. steel
PVC version (threaded socket, flange etc.) on request

Contact:
1 = 1 microswitch (250 V / 10 A)
2 = 2 microswitches (250 V / 5 A)
3 = 1 microswitch with gold contacts

Switching range:
xxxx-xxxx = min. - max. flow rate (see table „Measuring ranges“)

Options:
0 = without
1 = please specify in plain text
2 = oil dampening
HT = high temperature version (only for material combination B) up to 250 °C
HTF = high temperature version for flange connection (only for material combination B) up to 250 °C

Additional specifications:

- **medium density and viscosity (if different from water)**
- **process pressure and temperatures**
- **mounting position and direction of flow**
- **ratings of electrical connections**

Measuring ranges:

Instruments with male thread or flange connection (T-piece)

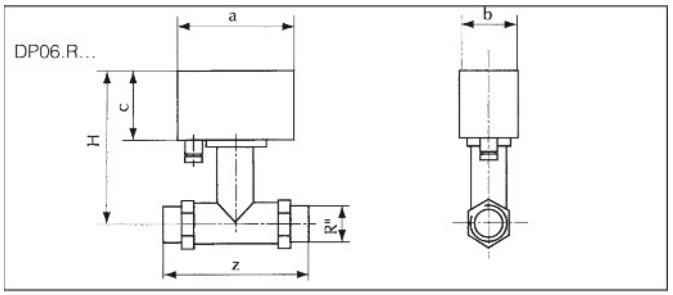
Process connection DP06.R… DP06.F...	Flow rate [l/min]		Flow ratio
	min	max	
3/8"/DN 10	1	25	1:5
1/2"/DN 15	1	55	1:5
3/4"/DN 20	5	100	1:5
1"/DN 25	6	150	1:5
1 1/4"/DN 32	10	250	1:5
1 1/2"/DN 40	20	400	1:5
2"/DN 50	50	600	1:5

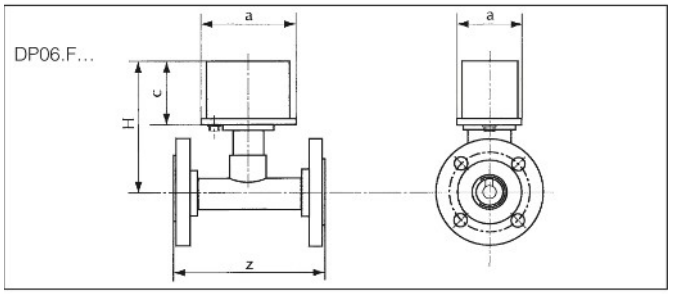
Instruments with weld on flange

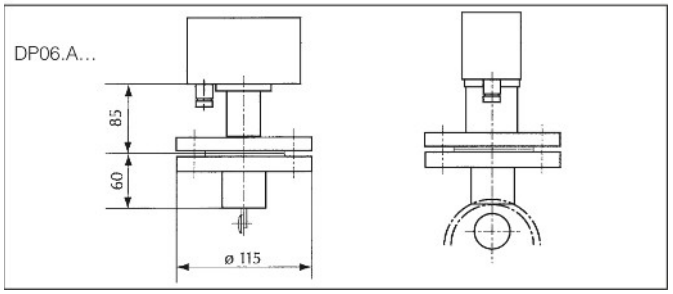
Process connection DP06.A…	Flow rate [l/min]		Flow ratio
	min	max	
DN 40	1,2	24	1:4
DN 50	3	36	1:4
DN 65	4,8	60	1:4
DN 80	7,2	90	1:4
DN 100	12	144	1:4
DN 125	18	255	1:4
DN 150	24	330	1:4
DN 200	42	600	1:4
DN 250	72	900	1:4
DN 300	102	1.200	1:4
DN 350	150	1.800	1:4
DN 400	180	2.400	1:4
DN 500	300	3.600	1:4
DN 600	420	4.500	1:4

Switching ranges apply to water at 20°C. Within the specified limits, all switching ranges can be achieved, provided that the max./min. ratio for the switching point is not exceeded. Example in the event of 1/2“: 1-5, 2-10 or 11-55 possible.

Dimensions:







Nominal size	Installation length Z [mm]		Installation height H [mm]
	DP06.R…	DP06.F…	
3/8" / DN 10	135	155	145
½" / DN 15	135	155	145
¾" / DN 20	135	160	145
1" / DN 25	135	160	145
1 ¼" / DN 32	170	190	150
1 ½" / DN 40	170	190	155
2" / DN 50	170	190	160