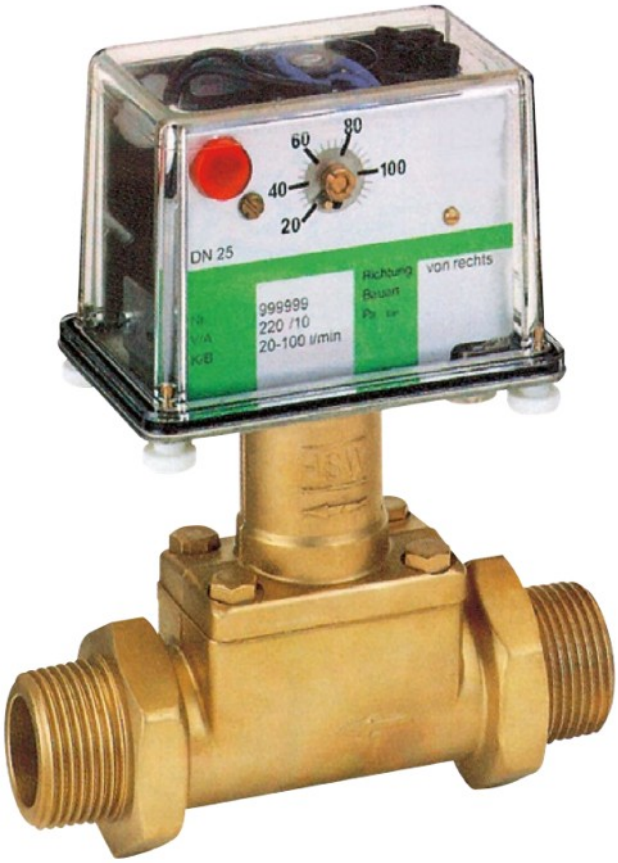
# DP05

## Paddle-Bellows Flow Switch with Variable Switching Point

- **for liquids**
- **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**
- **easy installation, for piping up to DN 600**
- **optical switching display by signal lamp**
- **measuring ranges: 1...25 l/min up to 420...4500 m³/h**
- **$P_{max}$: 16 bar, $T_{max}$: 250 °C**




**Description:**

The flow switches model DP05 operates 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 an adjustable contact unit. A bellow systems seals the mechanism hermetically from the liquid.
In case of malfunction, the spring returns the paddle plate to the zero position (no flow), which causes the system to signal a fault automatically.

**Typical applications:**

The DP05 paddle-bellows flow switch is suitable for monitoring thin and low-viscosity liquids in average to large flow volumes, eg. for industrial water circuits because they are relatively insensitive to dirty/contaminated fluids. For nominal pipe sizes over DN 50, installation with a special intermediate mounting flange yields a price/performance ratio of exceptional economy.

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Subject to technical changes

## Models:

The DP05 flow monitors are available in 3 versions and different material combinations:

**DP05.R…** **with T-fitting and pipe-thread connection from R 3/8 to R 2 male thread**

**DP05.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
flanges made of galvanized 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
flanges made of st. steel 1.4571

**DP05.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 steel, coated, DN 25

**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, DN 25

## Technical Data:

| | |
|---|---|
| **Max. pressure:** | 16 bar |
| **max. med.-temperature:** | 130 °C<br>High temperature version:<br>250 °C |
| **Accuracy:** | ± 5 % up to 20 l/min<br>± 4 % from 21…200 l/min<br>± 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<br>(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:** | **DP05.** | **R025.** | **B.** | **1.** | **20-100.** | **0** |
|---|---|---|---|---|---|---|

**Paddle-bellows flow switch**

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

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

**Switching output:**
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. switch point (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 temperature**
- **mounting position and direction of flow**
- **ratings of electrical connections**

## Measuring ranges:

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

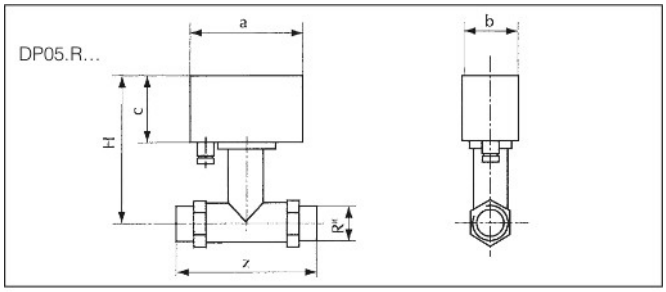
| Process connection DP05.R… DP05.F... | Flow rate [l/min] | | Flow ratio |
|---|---|---|---|
| | min | max | |
| 3/8"/DN 10 | 1 | 25 | 1:5 |
| 1/2"/DN 15 | 1 | 55 | 1:5 |
| 3/4"/DN 20 | 5 | 100 | 1:5 |
| 1"/DN 25 | 6 | 150 | 1:5 |
| 1 1/4"/DN 32 | 10 | 250 | 1:5 |
| 1 1/2"/DN 40 | 20 | 400 | 1:5 |
| 2"/DN 50 | 50 | 600 | 1:5 |

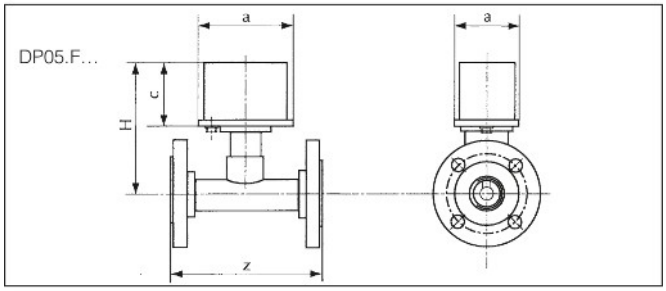
**Instruments with weld on flange**

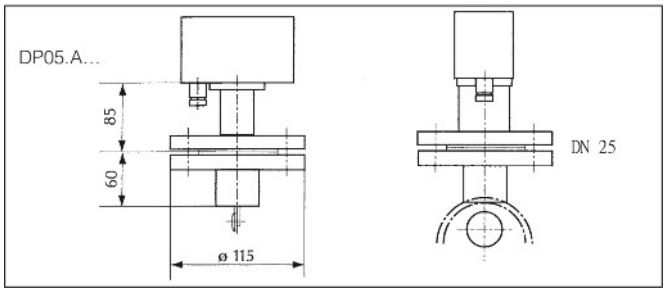
| Process connection DP05.A… | Flow rate [l/min] | | Flow ratio |
|---|---|---|---|
| | min | max | |
| DN 40 | 1,2 | 24 | 1:4 |
| DN 50 | 3 | 36 | 1:4 |
| DN 65 | 4,8 | 60 | 1:4 |
| DN 80 | 7,2 | 90 | 1:4 |
| DN 100 | 12 | 144 | 1:4 |
| DN 125 | 18 | 255 | 1:4 |
| DN 150 | 24 | 330 | 1:4 |
| DN 200 | 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] |
|---|---|---|---|
| | DP05.R… | DP05.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 |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