



## ***Instruction Manual***

### ***DP03***

***Plastic paddle-type flow switch with cable***



PKP Prozessmesstechnik GmbH  
Borsigstraße 24  
D-65205 Wiesbaden-Nordenstadt  
Tel.: ++49-(0)6122-7055-0  
Fax: ++49-(0)6122-7055-50  
Email: [info@pkp.de](mailto:info@pkp.de)

## **Table of Contents**

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Safety Information.....	2
Functional Description.....	3
Installation general.....	3
Installation Types.....	4
Electrical Connection.....	4
Adjusting the switch point.....	4

## **Safety Information**

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### **General Instructions**

To ensure safe operation, the device should only be operated according to the specifications in the instruction manual. The requisite Health & Safety regulations for a given application must also be observed. This statement also applies to the use of accessories.

Every person who is commissioned with the initiation or operation of this device must have read and understood the operating instructions and in particular the safety instructions!

The liability of the manufacturer expires in the event of damage due to improper use, non-observance of this operating manual, use of insufficiently qualified personnel and unauthorized modification of the device.

### **Proper Usage**

The plastic flow switches DP03 are designed to control the flow of liquids which do not attack the device materials. All other usage is regarded as being improper and outside the scope of the device.

In particular, applications in which shock loads occur (for example, pulsed operation) should be discussed and checked in advance with our technical staff.

The series DP03 flow switches should not be deployed as the sole agents to prevent dangerous conditions occurring in plant or machinery. Machinery and plant need to be designed in such a manner that faulty conditions and malfunctions do not arise that could pose a safety risk for operators.

### **Dangerous substances**

For dangerous media such as e.g. Oxygen, Acetylene, flammable or toxic substances as well as refrigeration systems, compressors, etc. must comply with the relevant regulations beyond the general rules.

## ***Qualified Personnel***

The DP03 devices may only be installed by trained, qualified personnel who are able to mount the devices correctly. Qualified personnel are persons, who are familiar with assembling, installation, placing in service and operating these devices and who are suitably trained and qualified.

## ***Inward Monitoring***

Please check directly after delivery the device for any transport damages and deficiencies. Additional with reference to the accompanying delivery note the number of parts must be checked.

Claims for replacement or goods which relate to transport damage can only be considered valid if the delivery company is notified without delay.

## ***Functional Description***

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The flow switch DP03 works according to the paddle principle. The flowing medium hits the baffle plate attached to the end of pendulum. The pendulum is deflected by the corresponding dynamic pressure.

On the opposite side a magnet is attached. A second outboard magnet repels the paddle magnet creating a restoring force. This force is adjustable by changing the distance of the magnets by means of a screw, so that the switching point of the device can be adjusted easily and accurately. By means of the magnet, which is located on the pendulum, an external reed switch is operated without contact.

## ***Installation general***

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### ***Mounting orientation:***

The flow switches are designed to be installed directly in a pipe system. The units can be installed in any desired position. If the switch-point is pre-adjusted, changes in mounting position can cause small deviations of the switch-point especially at flow-switches for bigger pipe sizes.

### ***Flow direction:***

It is essential that the unit is mounted so that flow is as indicated by the arrow on the body. The unit will not operate unless installed correctly in this way.

### ***Position of mounting:***

The following points must be observed:

- To avoid damages at the measuring system it is especially important to have the biggest possible distance from magnet valves and ball valves. If valves are require

they have to be installed **after** the instrument. To avoid pressure shocks, it is very important to open the valves slowly.

- It is advantageous to install the unit in a straight piece of pipe and to choose a place of mounting which has the biggest possible distance from elbows, valves etc. In order to have an accurate function of the device we recommend a straight length of  $10 \times d$  at input side and  $5 \times d$  at the output side ( $d$ = internal diameter of pipe).

## ***Installation Types***

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### ***Insertable model:***

The device has to be screwed in a 1/2" thread socket. Ensure that the target plate is placed completely in the flow.

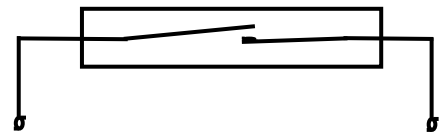
### ***Item with thread connection (T-piece):***

The pipe has to be connected directly with the device. We recommend sealing all threads with PTFE sealing tape.

## ***Electrical Connection***

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A reed-switch is founded in the switch enclosure, the reed switch is actuated magnetically. The electrical connection has to be made due to the circuit diagram. No electrical values indicated in the data sheet may be exceeded.



## ***Adjusting the switch point***

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- The contact is closed exceeding the switch point.
- The contact is opened if flow falls below the switch point
- The switch point can be adjusted with the help of the bright screw.  
Turning to the right increases the switching point  
Turning to the left decreases the switching point
- The screw can not be completely unscrewed



# DP03

## Plastic Paddle-Type Flow Switch with Cable

- for liquids
- plastic version no corrosion, low-cost
- no spring – always same restoring force
- simple switching point adjustment by means of adjusting screw
- with or without T-piece, for pipe sizes 3/8“ to 6“
- low pressure loss
- $P_{max}$ : 10 bar,  $T_{max}$ : 100 °C
- switching ranges: 1,5...4 bis 250...600 l/min



### Description:

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### Typical applications:

The flow switch DP03 provides a very cost effective yet flexible way to monitor flows.

In the standard version, the device is completely made of plastic. Special variants allow the combination with metal materials and thus expand the range of applications.

## Models / Technical Data:

	Screw-in/ T-piece	Housing / Pendulum	Tmax, Pmax (Medium)
DP03.E.	POM G 1/2 AG	Noryl GFN3	100 °C, PN 10
DP03.K.	PVC gluing sleeve	Noryl GFN3	60 °C, PN 6*
DP03.M.	brass/female	Noryl GFN3	100 °C, PN 10

\* 2,5 bar at 60 °C

## Electrical Data:

Reed contact:	N/O
Contact rating:	180 V, 0,5 A, 10 W
Connection cable:	1,5 m length PVC

## Adjustment range:

Nominal size	Adjustment range [l/min]	Possible model		
		DP03.E.	DP03.K.	DP03.M.
DN 10	1,5-4			x
DN 15	2-5		x	x
DN 20	4-10		x	x
DN 25	6-15		x	x
DN 32	10-25	x	x	x
DN 40	15-38	x	x	x
DN 50	20-50	x		x
DN 65	34-85	x		
DN 80	50-125	x		
DN 100	80-200	x		
DN 125	150-400	x		
DN 150	250-600	x		

## Dimensions:

Nominal size	Connection	A [mm]	B [mm]	C [mm]
<b>DP03.K.</b>				
DN 10	3/8"	-	-	-
DN 15	1/2"	54	103	119
DN 20	3/4"	66	109	126
DN 25	1"	79	113	133
DN 32	1 1/4"	96	117	142
DN 40	1 1/2"	116	122	153
DN 50	2"	-	-	-
<b>DP03.M.</b>				
DN 10	R 3/8 female	50	94	109
DN 15	R 1/2 female	50	94	109
DN 20	R 3/4 female	50	94	109
DN 25	R 1 female	50	98	116
DN 32	R 1 1/4 female	50	103	126
DN 40	R 1 1/2 female	50	108	135
DN 50	R 2 female	50	133	169

## Order Code:

Order number: DP03. E. 00. 0

Paddle type flow switch with cable

### Models:

E = screw G 1/2 male, POM  
K = gluing sleeve, PVC  
M = female thread (R-thread), brass

### Nominal size:

#### DP03.E:

00 = screw-in thread G 1/2 suitable for all nominal sizes from DN 32

#### DP03. K + M:

10 = 3/8" (only DP03.M)  
15 = 1/2"  
20 = 3/4"  
25 = 1"  
32 = 1 1/4"  
40 = 1 1/2"  
50 = 2" (only DP03.M)

### Options:

0 = without  
9 = please specify in plain text

## Dimensions:

