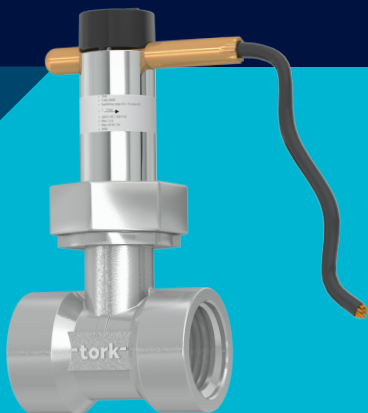




T-AS SERIES PADDLE FLOW SWITCH USER GUIDE



JANUARY 2023
PLEASE READ THE INSTRUCTIONS BEFORE USE!



ROHS



ISO 14001

ISO 45001

DNVGL

TS 16949

TS 16949

TS 16949

PRODUCT DESCRIPTION

Pedal flow switch is a device which is used to create and interrupt electric current in a pipeline to indicate to the end user whether there is flow in a pipeline. Additionally, it is used for monitoring and controlling the flow velocity of the medium.

PROPER USAGE OF FLOW SWITCH

This product includes an adjustable switch to monitor liquid flow. Only low viscosity liquids compatible with the selected material combination are allowed to be monitored. If higher viscosity fluid is used, large deviations from the specified switching range may occur. The components of this product are relatively insensitive to dirt, but large particles can block the fluid path and cause false alarm conditions; Likewise, ferritic particles may accumulate on the magnet and cause malfunction. In case of doubt, please contact the manufacturer.



OPERATING PRINCIPLE

This device serves as a flow monitor via magnetic triggering of a reed switch by liquid flow. Basically the device consists of a brass body, tube housing, paddle arm, balance arm, magnet and a reed switch assembly.

The liquid fluid which flows inside the body moves the flat surface of the paddle arm and therefore a magnet which is assembled at the end of same paddle arm.

Moved magnet triggers the reed switch which is assembled in the brass tube.

By this way reed switch contact changes its situation from open to close or close to open according to brass tube position.

This situation change is transmitted via a cable to a control panel which final user sees whether there is a flow or not in the line.

PRODUCT CODING SYSTEM

T-AS-10GB

TORK PRODUCT CODE ←

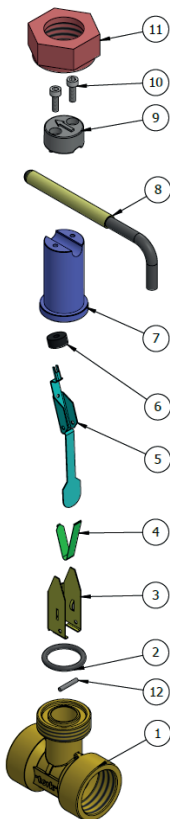
SIZE	
10	DN10
15	DN15
20	DN20
25	DN25

THREAD TYPE	
G	British Pipe BSPP
N	American Pipe NPT

MATERIAL	
B	Brass
S	Stainless Steel

EXPLODED VIEW & MATERIAL LIST

Part No	Part Name	Material	Qty
1	Body	Brass (nickel coated)	1
2	O-ring	FKM	1
3	Balance Arm	AISI 316	1
4	Flat Spring	AISI 316	1
5	Paddle	AISI 316	1
6	Magnet	Hard Ferrite	1
7	Paddle Guiding Tube	Brass (nickel coated)	1
8	Sensor Assembled Cable		1
9	Plastic Cap	PP	1
10	Bolt	AISI 304	2
11	Nut	Brass (nickel coated)	1
12	Pin	AISI 316	1



TECHNICAL SPECIFICATION

Switch	: Reed switch
Nominal Size	: DN10 - DN15 - DN20 - DN25
Threaded Connection	: Female G3/8", G1/2", G3/4", G1"
Switching Range	: 3.5 ...18 l/min H ₂ O (for details see table of ranges in below)
Qmax	: to 60 L/min
Tolerance	: ±15 % of full scale value
Pressure Rating	: PN25
Medium Temperature	: -20 °C / 80 °C with NBR sealing -20 °C / 110 °C with FKM sealing
Media	: Water (on request oils, gases and aggressive media)
Installation Position	: Standard is horizontal inlet. Other positions are possible however installation position affects switching point.

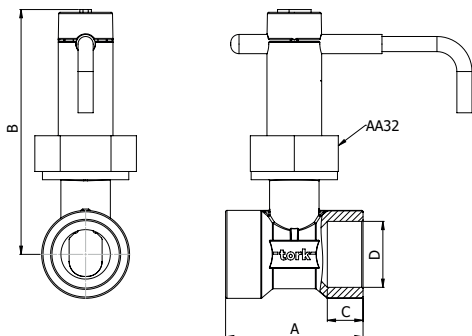
SWITCHING RANGES

G	DN	Switch Range l/min H ₂ O	Qmax l/min (recommended) H ₂ O
G3/8"	DN 10	3.0 - 6.4	10
G1/2"	DN 15	3.4 - 6.7	20
G3/4"	DN 20	7.1 - 10	40
G1"	DN 25	8.2 - 15	60

ELECTRICAL CHARACTERISTICS

Switching Voltage	: max 200 V DC / 250 V AC
Switching Current	: max 1.5 A
Switching Capacity	: max 50 W / VA
Protection Class	: IP68
Electrical Connection	: cable 1,5 m, on request longer cable length

DIMENSIONS



Product Code	D	A	B	C	AF	Weight
				mm		kg
T-AS-10GB	G3/8"	50	82	10	20	0.280
T-AS-15GB	G1/2"		82	10		0.285
T-AS-20GB	G3/4"		89	12	26	0.310
T-AS-25GB	G1"		87	12	34	0.365

PRODUCT INSTALLATION

! Before the installation, product and its parts must be controlled. If there is a damage or missing part, product does not be received.

! Before using the product, label must be controlled if product, label, box and other informations are proper to each other. Before the installation the written switching range on label must be controlled if they are proper.

! Before the installation it must be controlled if the product's technical specs and the system are proper to each other. The limits, written on the label must not be exceeded.

! Before the installation, the line that the flow switch will be installed must be controlled if there is a flow. On the line there must be no flow and there is no possibility of flow during installation.

! The pressure inside flow switch body should be set to zero before removing it from the system.

MECHANICAL CONNECTION

Before installation

- Please check if actual flow matches with the switching range on product label.
- Ensure that the allowable maximum operating pressure and operating temperature of the product will not be exceeded.
- Remove all transport packing and be sure that no packing material is left in the instrument.
- The instrument may be installed in any position however the top half of the paddle switch must be vertically positioned in relation to the pipe axis and the arrow on plastic cap must match with flow direction.
- For dirty media, it is recommended that tube housing will be installed as close to vertical as possible, respectively with not more than 40° deviation from vertical.
- Check that the connection threads of the pipe are fully sealed.

ELECTRICAL CONNECTION

Ensure that the electrical supply lines are powerless.

Connect the connection cable with your cable.

After connecting the external equipment, the product is ready for operation.

MAGNETIC SWITCHES

The product is supplied with an adjustable contact (brass tube with reed sensor inside). The contact can be used either NO (normally open) or NC (normally closed).

The product is supplied as a normally closed contact in normal delivery.

Following contact modes are available depending on the positioning of the adjustable brass tube.

Normally Open

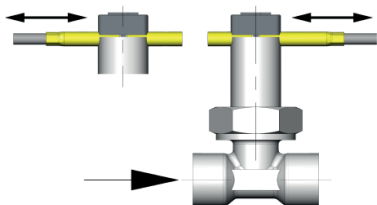
The contact closes when the flow increases and the set point value is reached or exceeded. The switch opens again with falling at the min value based on the switch hysteresis.

Normally Closed

The contact opens when the flow increases and the set point value is reached or exceeded. The switch closes again with falling at the min value based on the switch hysteresis.

ADJUSTMENT OF SWITCHING POINT

To be able to adjust switching point, loosen bolts at the top of the plastic cap and move the contact tube to the required direction by hand until getting contact and then tighten the bolts at the top of the plastic cap again.

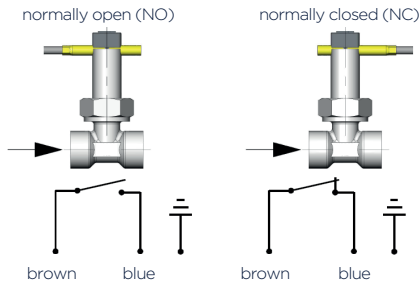


NORMALLY OPEN (NO) CONTACT

To be able to get NO contact, contact tube must be mounted in flow direction. Minimum switching point can be set by moving contact tube in flow direction and maximum switching point can be set by moving contact tube against flow direction.

NORMALLY CLOSED (NC) CONTACT

To be able to get NC contact, contact tube must be mounted against flow direction. Minimum switching point can be set by moving contact tube in flow direction and maximum switching point can be set by moving contact tube against flow direction.



MAINTENANCE OF THE FLOW SWITCH

Flow switch will remain maintenance-free unless flow medium is polluted.

Ferritic particles in the medium may be left on the magnet and this can cause problems. Bigger particles can also cause blocking of the flow switch mechanism. We recommend the installation of a magnet filter to avoid those type of situations.

Please also check and clean the instrument regularly to avoid any blocking caused by dirt in medium.

CLEANING OF THE INSTRUMENT

The device requires regular maintenance and cleaning. The intervals are determined by the operator to the environmental stresses on site. It should proceed as follows:

- Shut-off the flow through the instrument.
- Ensure that there is no flow through the pipe and that the pipe is empty and not under pressure.
- Loosen the sleeve nut with a wrench (hex size 32)
- The tube housing and paddle arm can then be removed for cleaning.
- When cleaning the paddle arm, check that the leaf spring is not damaged or bent.
- Prior to reinstallation, check that the o-ring is placed correctly on body. Dirt particles on the o-ring will cause sealing problems.
- Insert the leaf spring & paddle assembly into the body and replace tube housing.
- Tighten the sleeve nut and check if tube housing does not turn with the nut.
- Check seal tightness.

SHIPMENT

During shipment, this product should not fall down or be exposed to solid impact. The weights that may damage the product should not be placed on the packages of the flow switches. The products should be shipped in their original cardboard boxes.

WARRANTY PERIOD FOR THE PRODUCT

The warranty period for the TORK brand Paddle Flow Switches is two years. The maximum repair period is 20 working days.

The warranty does not include products if the flow switches are used out of scope of the terms of use specified when ordered from our company or in case of breaks resulted from the user's fault when the user tries to conduct the care and repair of the product.

To benefit from the warranty, please apply to the manufacturer company with the warranty certificate approved by the company within the warranty period. In the case when you send the flow switch via courier, please remember to add a description of your complaint, the photocopy of your warranty certificate, your address and telephone number.

tork

valve & automation

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