

Installation, Operating and Maintenance Instructions

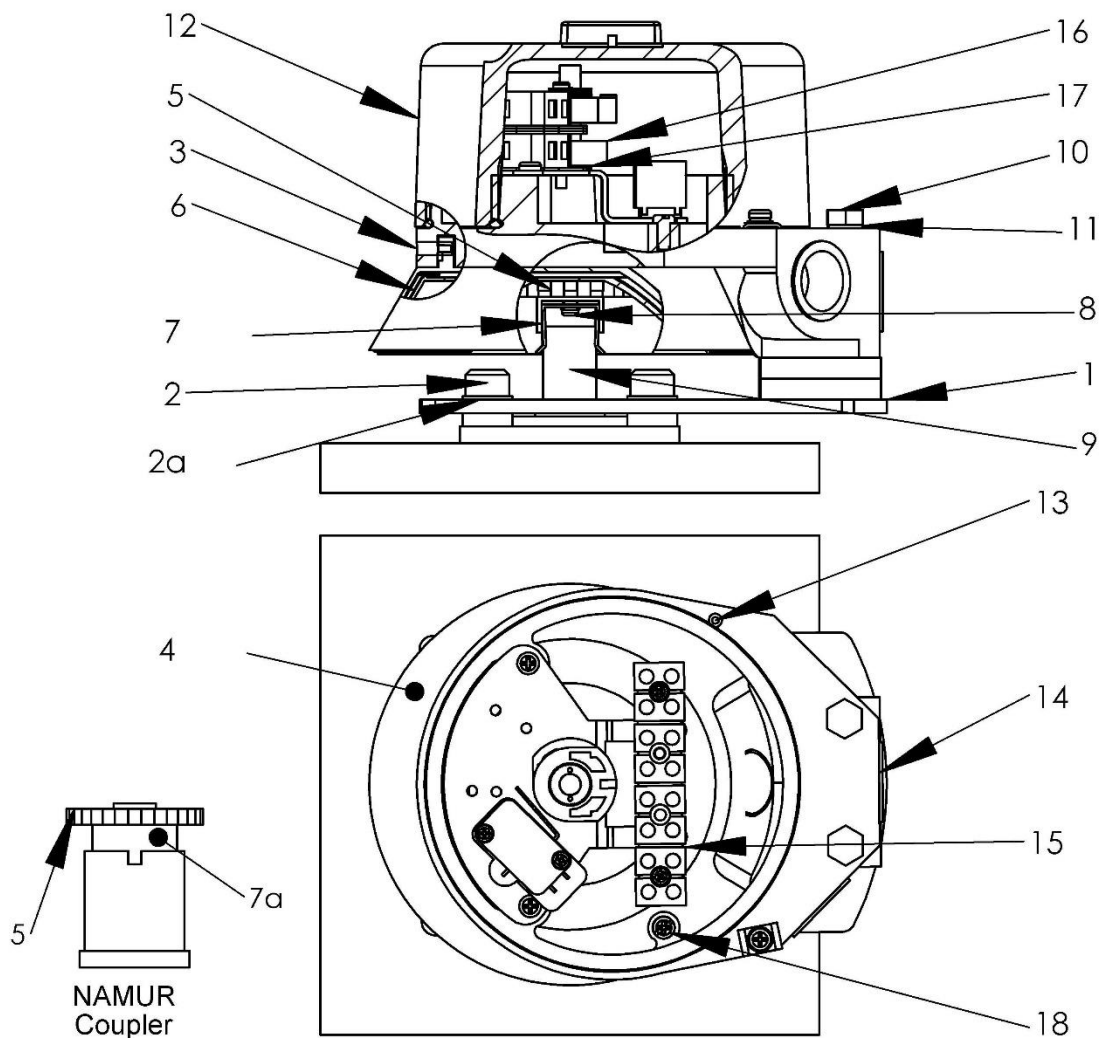
Model	DQ
Hazardous Classification	Exem (Increased Safety / Encapsulation)
Regional Certification	ATEX / IECEx / UKCA

Instructions

Type DQ Valve Position Monitors are designed to provide high accuracy feedback of valve position to plant control systems. These instructions outline the requirements for ensuring a long and trouble free service life from the monitors.

Installation – Mounting

(refer to diagram below)



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Attach mounting plate (1) to the actuator using fasteners (2) and lockwashers (2a) provided with mounting kit (if supplied by Imtex). Ensure there is clearance between the indicator on the Monitor and the plate it is mounted to (either through use of a spacer or adequate clearance) to prevent the potential for icing preventing the free movement of the indicator.

Loosen indicator cover set screw (3) and rotate indicator cover (4) to desired viewing angle. Retighten set screw (3).

Rotate coupling spacer (5) and indicator drum (6) to desired position (OPEN or CLOSED appearing through indicator window).

Fit torque coupler (7) or NAMUR drive block (7a) using screw (8) supplied in kit.

Fit monitor assembly to actuator ensuring that the torque coupler/NAMUR drive block (7/7a) engages the pinion of the actuator (9). Secure the assembly using the bolts (10) and lockwashers (11) provided with the mounting kit. Fine tune the indicator cover (4) by loosening set screw (3). Retighten set screw when completed.

Operate the actuator to ensure proper alignment between monitor and actuator. Eccentricity of the shaft must not exceed 0.25mm. If it should be necessary, re-align monitor by loosening mount bolts (10). Retighten bolts when satisfied with alignment.

Installation - Wiring & Switch Setting

Once the monitor is fitted to the actuator, remove cover (12). NOTE: The cover lock screw (13) must be loosened prior to cover removal.

Bring field wiring into the enclosure via the conduit entries (14) fitted with a suitable cable gland. Use blanking plugs to block off any un-used cable entries. NOTE: Suitable certified, IP6x rated cable glands, blanking plugs and thread adaptors must be used to maintain monitor certification and IP rating.

Connect field wiring to the terminals (15) within the enclosure according to the wiring diagram and terminal labelling.

Drive the actuator to the first required indication position and set the bottom switch by lifting and rotating the bottom cam (16). Secure the cam by allowing it to fully re-engage with the spline (17). Repeat the process for each switch in-turn by lifting/pushing down the appropriate cam, rotating and re-engaging as desired position is reached.

Once completed, verify that indication is required by fully stroking the actuator. Then refit cover (12).

SPECIAL CONDITIONS FOR CERTIFIED ENCLOSURES

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Installation should be carried out by suitably trained personnel to an applicable Code of Practice (eg IEC/EN60079-14).

Only suitably certified and temperature rated cable glands and blanking plugs are permitted for use with certified enclosures.

- ⚠ WARNING - The cable entry temperature rise is 2 °C above ambient - ensure use of suitably temperature rated cable & gland.
- ⚠ WARNING - The unit contains non-conducting parts and must not be installed in locations where external conditions (such as high pressure steam) might cause a build-up of electrostatic charge. In addition clean only with a damp cloth.
- ⚠ WARNING - Do not install on an external source of heating or cooling e.g. by hot/cold air blowing temperature units
- ⚠ WARNING - Locate monitor to prevent propagating brush discharges
- ⚠ WARNING - Monitor should not be opened when energised or an explosive atmosphere may be present.

The cover screw (13) must be loosened before opening and re-tightened before the monitor re-enters service.

SPECIAL CONDITIONS FOR SAFE USE

The equipment shall be supplied via a fuse that is mounted externally in a safe area and rated at 120 V, 1 A maximum, The fuse shall be capable of withstanding a prospective short circuit current of 1500 A.

Bridges shall not be used with the terminals.

Maintenance

The Type DQ requires no servicing during normal working life, if installed correctly. However, it is advisable to check mounting screws/bolts, o-rings and terminal wiring for signs of loosening or corrosion as part of the routine plant maintenance to ensure continued operation.

Ensure safety warnings are observed during maintenance. Inspection & maintenance to certified enclosures to be carried out by suitably trained personnel with applicable code of practice (eg IEC/EN60079-17).

Repairs to Type DQ certified enclosures are not normally permitted. Please consult factory.

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Certification

Exeb mb IIC T4/T6 Gb Ex tb IIIC T85°C / T100°C

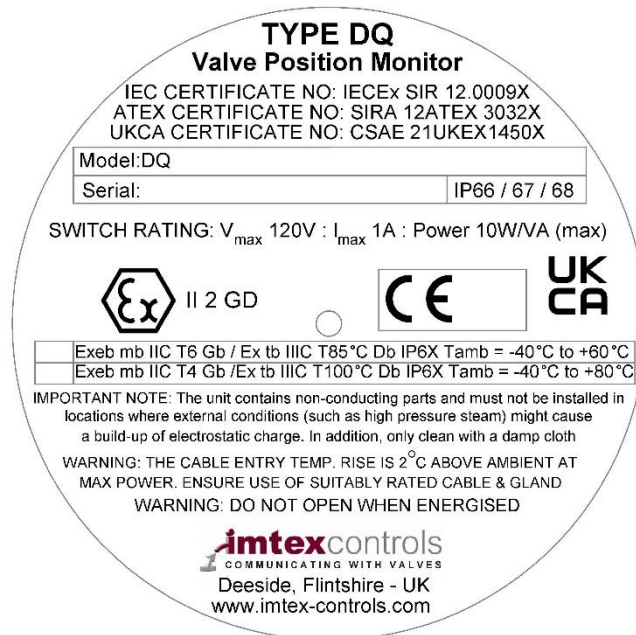
Referenced Standards

The following standards have been referred to in these instructions and are applicable to the use of this product when used in an environment where an explosive atmosphere may be present:

IEC 60079-0:2017 7th Ed
IEC60079-7:2015 5th Ed
IEC 60079-18:2014 4th Ed
EN60079-0:2012
EN60079-7:2015
EN60079-18:2015
EN IEC 60079-0:2018

Product Markings

The label on the monitor should be one of the two shown below:



NOTE: The year of manufacture of the monitor can be obtained from the last 2 digits of the serial number.

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Cable Entries

The number and type of cable entry on the Monitor can be determined by reference to the 6th digit of the Format 1 part number or the 5th digit of the 2nd block in Format 2 part number.

For example, in the following part numbers –

Format 1 – **DQ25S5SR-000**

the 7th digit is a '5' which corresponds to the monitor having 2 off M20 x 1.5 cable entry. Refer to table below for details.

DIGIT	ENTRIES SUPPLIED
5	(2) M20 X 1.5
6	(3) M20 X 1.5
8	(1) ¾" NPT (central) / (1) ½" NPT (offset)
9	(1) ¾" NPT (central) / (2) ½" NPT (offset)
B	(2) ½" NPT
C	(3) ½" NPT

Format 2 - **DQ22600000-SS002SR2-0-WMOO**

the 5th digit / 2nd block is a '2' which corresponds to the monitor having 2 off M20 x 1.5 cable entry. Refer to table below for details.

DIGIT	ENTRIES SUPPLIED	DIGIT	ENTRIES SUPPLIED
1	(1) M20 x 1.5	A	(1) ½" NPT
2	(2) M20 x 1.5	B	(2) ½" NPT
3	(3) M20 x 1.5	C	(3) ½" NPT
5	(1) M25 x 1.5	E	(1) ¾" NPT
6	(1) M25 x 1.5 / (1) M20 x 1.5	F	(1) ¾" NPT / (1) ½" NPT
7	(1) M25 x 1.5 / (1) M20 x 1.5	G	(1) ¾" NPT / (2) ½" NPT

NPT Threads conform to ANSI/ASME B1.20.1 and shall be made up wrench tight.

Metric Thread tolerance to ISO 965-1 and ISO 965-3

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Electrical Characteristics

Format 1 – DQ**XX**xxxx-xxx

Format 2 – DQ**xXXxXX**xx-xxxxxxxx-x-xxxx

Reed Switch (A140077)	
Function No	25 & 58 (format 1) / 26 (format 2)
Electrical Ratings	0.5A (switching) / 1.0A (Steady State) @ 120V Max 10W/VA Max
Temperature Range	-40 to +80°C
Operating Life	5,000, 000 Cycles
Where reed switches are installed at the end of long cable runs, it is the responsibility of the installer to ensure suitable precautions are taken to ensure cable capacitance does not induce premature switch failure. Consult Imtex for further information	

Terminal Wiring

Wiring connection details are provided in the unit, with detail of the assigned connection displayed on the terminal block.

Further Details

For further information on this product contact:

Imtex Controls Ltd
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 Deeside Industrial Estate
 Deeside, Flintshire, CH5 2UA
 United Kingdom
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sales@imtex-controls.com