

## Installation, Operating and Maintenance Instructions

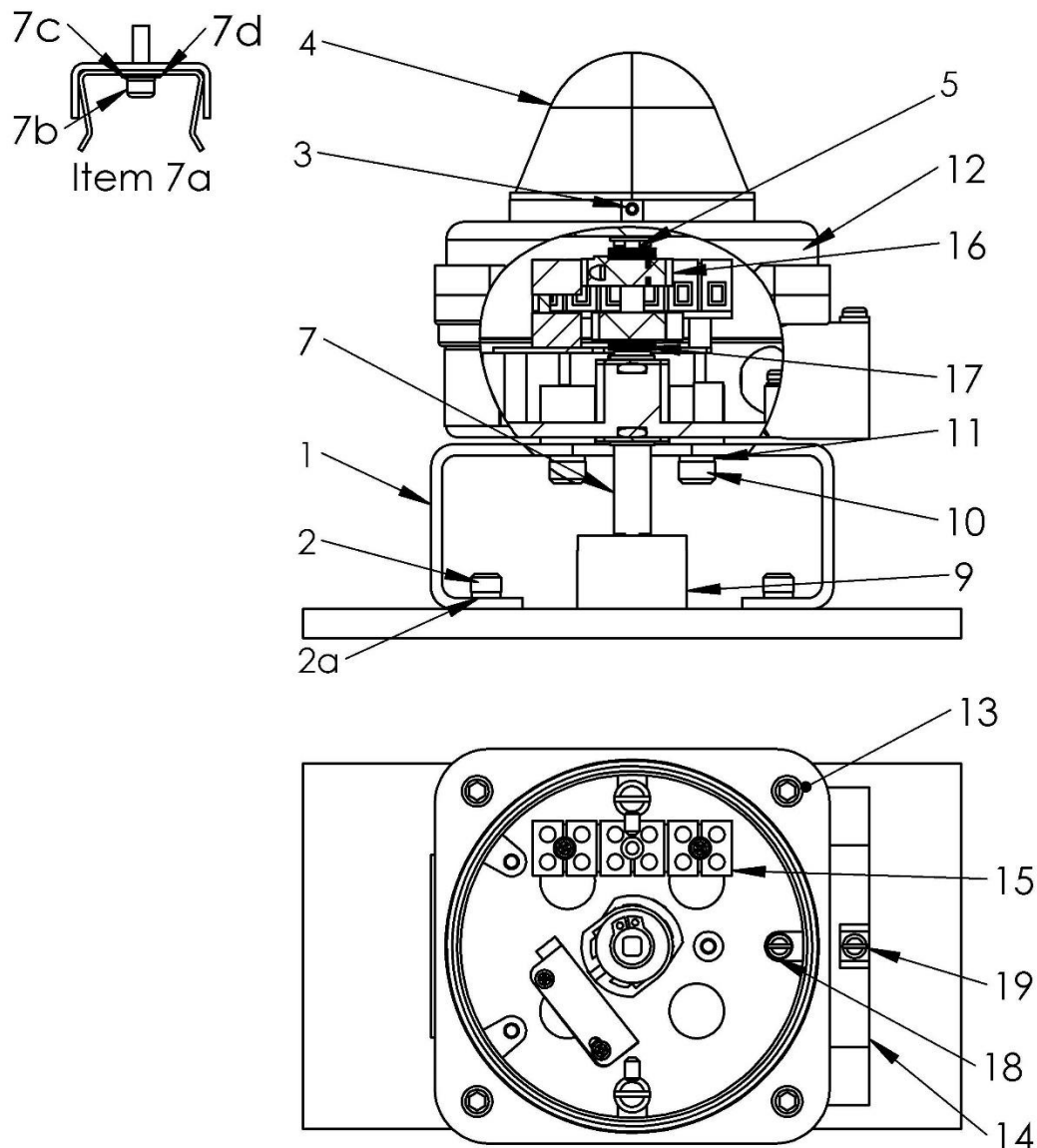
<b>Model</b>	SRA-SRX
<b>Hazardous Classification</b>	Exi (Intrinsically Safe)
<b>Regional Certification</b>	ATEX / IECEx / UKCA

### Instructions

Type SRX 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).

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

Fit monitor assembly to actuator ensuring that the NAMUR shaft (7) engages the shaft of the actuator (9). If a torque coupler (7a) is used instead of the NAMUR shaft on Non-NAMUR actuators, ensure this is securely fitted to the underside of the monitor using the screw, flatwasher and lockwasher supplied (7b/7c/7d) before fitting over the flats on the actuator shaft (9).

Secure the assembly using the screws (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 screws (10). Retighten screws when satisfied with alignment.

### **Installation - Wiring & Switch Setting**

Once the monitor is fitted to the actuator, remove cover (12) by loosening and removing the cover lock screws (13).

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 IP6x rated cable glands, blanking plugs and thread adaptors must be used to maintain monitor IP rating.

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

For monitors fitted with standard cam/spline activated switches/sensors, 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.

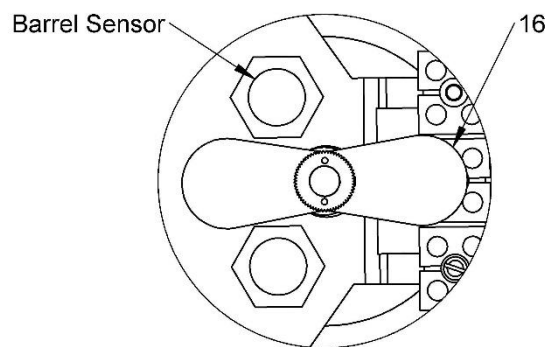
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### Barrel/Slot Sensor Setting

Drive the actuator to the first required indication position and set the first switch by pushing round the lower metal shim on the shaft (16) to cover the sensor.

Repeat the process for each sensor in-turn by driving the actuator to the indication position and adjusting the appropriate shim to cover the corresponding sensor.



### Transmitter Setting

NOTE: The Type SRX Transmitter is factory set to provide position information over a 90 Degree span. Specific information on the method for setting the zero and span for the transmitter option supplied is detailed on the attached Set Up Sheet.

Drive the actuator to the position intended to indicate the 'low' signal. Set the zero point for the transmitter either locally (when available) or using suitable configuration software. Drive the actuator to the position intended to indicate the 'high' signal. Set the span point either locally (where applicable) or using suitable configuration software.

To set the switches/sensors, if supplied, refer to previous instructions.

Once completed, verify that indication is as required by fully stroking the actuator. Then refit cover (12) and secure using the cover lock screws (13). NOTE: The shaft inside the monitor is a 'split' design at the point indicated (5). The top portion which drives the indicator MUST properly engage the bottom portion before re-tightening the screws (13). When fitting the cover, gently 'rotate' it until the shafts engage and the cover drops into place. DO NOT APPLY EXCESSIVE FORCE.

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### **SPECIAL CONDITIONS FOR CERTIFIED ENCLOSURES**

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

Each connected circuit **MUST** be wired to a compatible, certified Intrinsically Safe Barrier.

Only suitably IP rated cable glands, thread adaptors and blanking plugs are permitted for use with enclosure.

- ⚠ WARNING - Monitor includes external plastic parts and presents Electrostatic Hazard: 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

### **SPECIAL CONDITIONS FOR SAFE USE**

The user/installer shall ensure that versions of the monitors that use an enclosure that operates light metals are installed in a manner that minimises the risk of impact or friction with other metal surfaces.

Parts of the monitor are made of plastic. By virtue of its shape, design and position of use, it is assessed that this device is not considered to be an electrostatic risk; however, it shall not be installed in a position where it may be subjected to an excessive air/fluid flow or be subjected to rubbing that may cause an electrostatic build-up, it shall also be cleaned with a damp cloth.

The user/installer shall install the monitor taking into account any restrictions or special conditions for safe use that are applicable to the previously certified devices that are fitted in the devices.

### **Maintenance**

The Type SRX 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 of certified enclosures to be carried out by suitably trained personnel with applicable code of practice (eg IEC/EN60079-17). Repairs to Type SRX certified enclosures are not normally permitted. Please consult factory.

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#### Certification

Exia IIC T4/T5/T6 Gb

#### 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

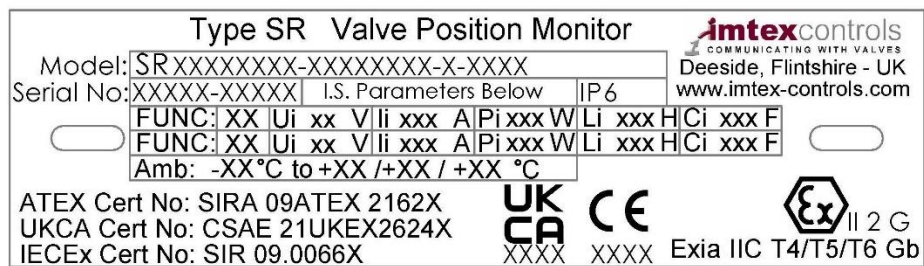
IEC60079-11:2011 6th Ed

IEC/EN60079-0:2018

EN60079-11:2012

#### 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 7th 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 - **SRX17S5SR-ZOO**

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
B	(2) ½" NPT

#### Format 2 - **SRX21700000-SSOO2SR2-0-WGOO**

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
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
9	(2) M25 x 1.5	J	(2) ¾" 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 – SRX**XX**xxxx-xxx

Format 2 – SRX**XX**x**XX**xx-xxxxxxxx-x-xxxx

<b>Mechanical Switch w/ Gold Contacts</b>	
<b>Function No</b>	16 & 55 (format 1) / 16 (format 2)
<b>Electrical Ratings</b>	10.0A @ 125/250VAC 0.5A @ 125VDC
<b>Temperature Range</b>	-40 to +85°C
<b>Operating Life</b>	400, 000 Cycles
Not Recommended for circuits operating under 20mA @ 24VDC	

<b>Mechanical Switch w/ Gold Contacts</b>	
<b>Function No</b>	17 & 56 (format 1) / 17 (format 2)
<b>Electrical Ratings</b>	1.0A @ 125VAC 0.5A @ 30VDC
<b>Temperature Range</b>	-40 to +85°C
<b>Operating Life</b>	100, 000 Cycles
Recommended for use in 24VDC computer input circuits	

<b>Reed Switch (A140077)</b>	
<b>Function No</b>	25 & 58 (format 1) / 25 (format 2)
<b>Electrical Ratings</b>	0.5A (switching) / 1.0A (Steady State) @ 120V Max 10W/VA Max
<b>Temperature Range</b>	-50 to +85°C
<b>Operating Life</b>	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	

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<b>Reed Switch w/ Choke (A140077-SU)</b>	
<b>Function No</b>	25 & 58 (format 1) / 40 (format 2)
<b>Electrical Ratings</b>	0.15A @ 125VAC / 30VDC 680μH 10 Ohms
<b>Temperature Range</b>	-50 to +85°C
<b>Operating Life</b>	5,000, 000 Cycles
Where a reed switch with choke is used, the installer must carry out an ignition capability assessment of the full circuit (in accordance with EN60079-11:2012, Annex A).	

<b>Tungsten Reed Switch (A140088)</b>	
<b>Function No</b>	25 & 58 (format 1) / 30 (format 2)
<b>Electrical Ratings</b>	Max Current: 3.0A Max Power 100W/VA Max Min Power: 2 Watts
<b>Temperature Range</b>	-40 to +85°C
<b>Operating Life</b>	5,000, 000 Cycles
Not Recommended for circuits operating under 90mA @ 24VDC	

<b>V3 NAMUR Proximity Sensor</b>	
<b>Function No</b>	42 & 52 (format 1) / 42 (format 2)
<b>Electrical Ratings</b>	Target Present – Current < 1mA Target Absent – Current > 3mA 5 to 25VDC (Nominal 8VDC)
<b>Temperature Range</b>	-25 to +100°C
<b>Operating Life</b>	Unlimited Cycles
Use with intrinsically safe repeater barrier. Namur sensors fully conform to EN60947-5-6 (VDE0660 Part 212) standard.	

<b>Cylindrical/Slot NAMUR Proximity Sensor</b>	
<b>Function No</b>	43 & 53 (format 1) / 43 & 47 (format 2)
<b>Electrical Ratings</b>	Target Present – Current < 1mA Target Absent – Current > 3mA 5 to 25VDC (Nominal 8VDC)
<b>Temperature Range</b>	-50 to +100°C (sensor dependent)
<b>Operating Life</b>	Unlimited Cycles
Use with intrinsically safe repeater barrier. Namur sensors fully conform to EN60947-5-6 (VDE0660 Part 212) standard.	



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<b>Non-Contact Transmitter</b>	
<b>Function No</b>	70 (format 1) / 70 & 71 (format 2)
<b>Electrical Ratings</b>	12 to 28 VDC R < (U-9) / 0.02 Linearity < 1% FS Repeatability < 0.36°
<b>Temperature Range</b>	-40 to +85°C
<b>Operating Life</b>	Unlimited Cycles

<b>Programmable Transmitter</b>	
<b>Function No</b>	70 (format 1) / 72 (format 2)
<b>Electrical Ratings</b>	8 to 30 VDC Internal Consumption: 25mW to 0.8W Voltage Drop: 8VDC Warm Up Time: 5 min Min Response Time: 0.33s (model dependent) Linearity < 1% FS Repeatability < 0.36°
<b>Temperature Range</b>	-40 to +85°C
<b>Operating Life</b>	1, 000, 000 Cycles

<b>Potentiometer</b>	
<b>Function No</b>	70 (format 1) / 73 (format 2)
<b>Electrical Ratings</b>	Resistance: 10k ohms Output Smoothness: 0.1% (Max) Electrical Travel: 340° ± 3° Power Rating: 1.0W @ 70°C Tolerance: ± 20% Linearity: ± 2.0%
<b>Temperature Range</b>	-40 to +85°C
<b>Operating Life</b>	1, 000, 000 Cycles

#### **Terminal Wiring**

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

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#### Further Details

For further information on this product contact:

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