Instructions

Type SLR 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

Attach mounting bracket (1) to the actuator using fasteners (2) and lockwashers (2a) provided with mounting kit (if supplied by Imtex).

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) provided with the mounting kit.

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, loosen cover lock screw (3) and part rotate cover (4) counter-clockwise to remove.
Lift Inner Indicator (6) up to remove it from Indicator Alignment Spline (8).

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 of the 2 cams (16). Secure the cam by allowing it to fully re-engage with the spline (17).

Repeat the process for the upper switch by pushing down the upper cam (16), rotating and re-engaging on the upper spline (18) as desired position is reached.

For monitors with barrel or slotted sensors, or with a transmitter, consult page 2 of these instructions for 'Further Setting Instructions'.

Once completed, verify that indication is as required by fully stroking the actuator. Then refitting the Inner Indicator (6) to the Indicator Alignment Spline (8), ensuring that the indicated Open/Close meets the user requirement once the Cover (4) is refitted. If not, adjust the Indicator (6) position on the Spline (8) accordingly.

Align the Cover (4) to the Housing (11), ensuring the Cover Lugs (12) are positioned such that a Clockwise rotation of the cover will seal the Cover (4) onto the Housing O-Ring (14). Once located, secure the Cover (4) with the Cover Lock Screw (3).

SPECIAL CONDITIONS FOR CERTIFIED ENCLOSURES - ATEX/IECEx

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 - electrical parameters are listed on unit.

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

⚠ WARNING - Monitor includes 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

Maintenance (including Live Maintenance)

The Type SLR 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.

Unit cover may be removed in Hazardous Area when circuits are live ONLY when they are connected to certified Safety Barrier. Faulty Switches or Sensors can be interchanged for new if required by loosening applicable terminals (15) and retaining screws (19). TAMPERING WITH THE HOUSING OF THE SWITCH OR SENSOR TO GAIN ENTRY TO INTERNAL WIRING IS STRICTLY PROHIBITED.

Inspection & maintenance to ATEX/IECEx enclosures to be carried out by suitably trained personnel with applicable code of practice (eg IEC/EN60079-17). Repairs to Type SLR ATEX/IECEx enclosures are not normally permitted. Please consult factory.

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	PT	7.4.15		14-2318
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B	PT	18.9.15		15-2421B
C	PT	14.2.17		17-2618
D	PT	1.2.18		18-2692

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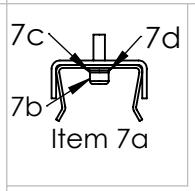
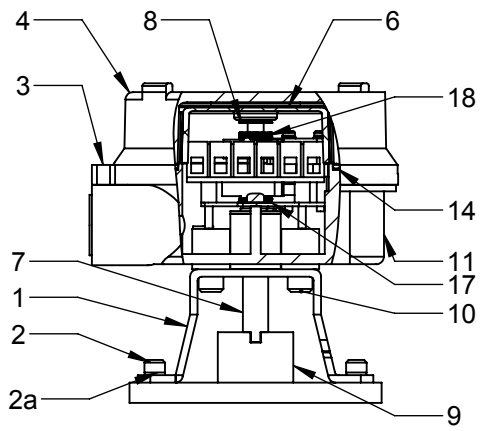
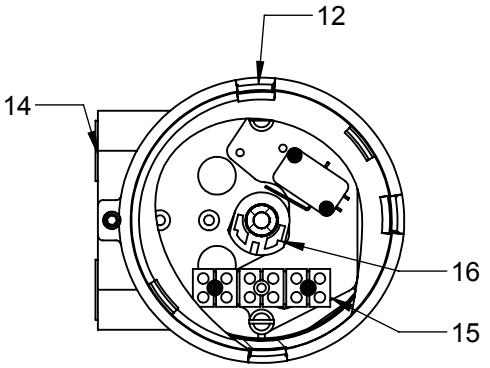
Reference Diagram







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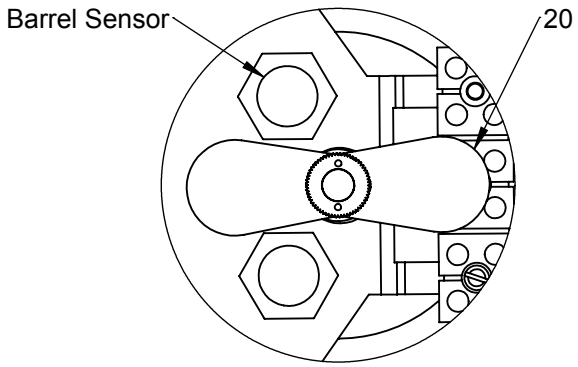
Further Setting Instructions

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 (20) 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 SLR 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.

Certification

Classification:

Ex ia IIC T4/T6 Gb Txx°C Db

Electrical Information

Applicable electrical information for the safe use of the unit can identified on the information labels fitted to the unit and through reference to document A190325 (supplied with unit).

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

EN60079-0:2012
EN60079-11:2012

Cable Entries

The number and type of cable entry on the Monitor can be determined by reference to the 7th digit of the monitor part number. For example, in part number -

SLR17S5SR-1OO

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

CABLE ENTRY GUIDE	
DIGIT	ENTRIES SUPPLIED
5	(2) M20 x 1.5
B	(2) 1/2" NPT

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

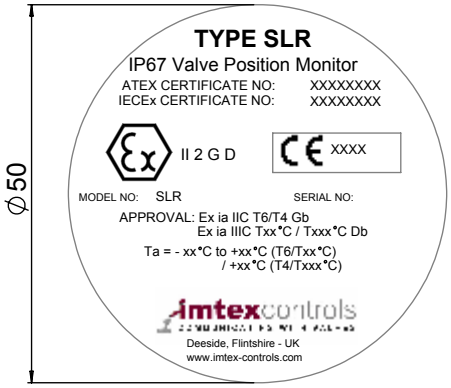
Metric Thread tolerance to ISO 965-1 and ISO 965-3

Product Markings

The label on the monitor should have the following appearance (exact form varies depending on the certification ofswitch/sensor fitted):

Top Marking

Electrical Marking (side of unit)



Intrinsically Safe Information
Switch/Sensor Type:
XXXXXXXXXXXXXXX
Intrinsically Safe Parameters:
U_i: xxx V I_i: xxx mA P_i: xxx W
L_i: xxx µH C_i: xxx nF

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

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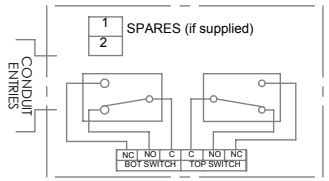
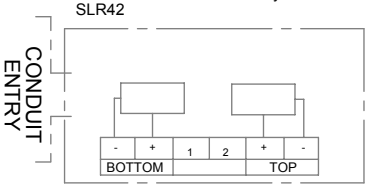
WIRING DIAGRAM ('X' Indicates the applicable Rating(s))

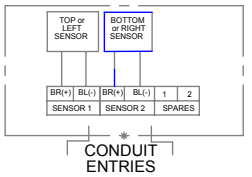
MONITOR - 2 x SPST/SPDT Switch - SLR17 & 40
For SPST, NC contact not available



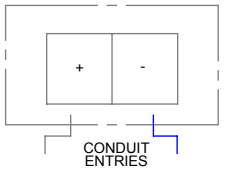
MONITOR - 2 x V3 Proximity Sensor
SLR42



MONITOR - 2 x 2-Wire Prox Sensor
SLR43



MONITOR - w/ 2 WIRE TRANSMITTER
SLR70



☐ 17 - Mechanical w/ Gold Contacts

Electrical Ratings: 1.0A @ 125VAC
0.5A @ 30 VDC
Temp Range: -40 to +60 °C
Operating Life: 100,000 Cycles

Recommended for use in 24VDC computer input circuits

☐ 40 - (A140077-SU) SPST & SPDT (Hermetically Sealed Reed w/ Choke)

Electrical Ratings: 0.15A @ 125VAC / 30VDC
Inductance: 680 µH
Resistance: 10Ω
Temp. Range: -40 to +60°C
Operating Life: 5,000,000 Cycles

☐ 40 - (A140077) - SPST & SPDT Reed Switch

Electrical Ratings: 0.5A (Switching Current)
1.0A Max (Steady State Current)
120V Max (Voltage)
10W/VA Max (Power)
Temp. Range: -50 to +60°C (T6) or +85 °C (T4)
Operating Life: 5,000,000 Cycles

☐ 42 - NAMUR Proximity Sensor

Current Ratings: Target Present - Current < 1.0mA
Target Absent - Current > 3.0mA
Voltage Range: 5 to 25VDC (nominal 8VDC)
Temp. Range: -25 to +60°C
Operating Life: Unlimited Cycles

Use with intrinsically safe repeater barrier. Namur sensors fully conform to EN60947-5-6 (VDE0660 Part 212) standard.

☐ 43 - Non-NAMUR Proximity Sensor

Current Ratings: Target Present - Current < 1.0mA
Target Absent - Current > 3.0mA
Voltage Range: 5 to 25VDC (nominal 8VDC)
Temp. Range: -40 to +60°C
Operating Life: Unlimited Cycles

Use with intrinsically safe repeater barrier. Namur sensors fully conform to EN60947-5-6 (VDE0660 Part 212) standard.

☐ 70 - Analogue Transmitter - Non-Contact Style

Supply Voltage: 12 to 24VDC
Load Impedance: R< (U - 9) / 0.02
Linearity: < 1% of FS
Repeatability: < 0.36°
Op Temp Range: -40 to +60 Deg C

☐ Other Details (see Individual Specification Sheet)

SPECIAL NOTES

Installation of Reed Switches (without Choke): 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

Installation of Reed Switches (withChoke): 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).

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