

Installation & Operating Instructions. Westlock 3000 Series – ATEX Certified.

With Mechanical Switches, Inductive Proximity Sensors or Magnum Proximity Switches.

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SIRA 05 ATEX 2242X

II 1 G Ex ia II* T* G*

II 1 D Ex ia IIIC T120°C Da IP6X

*variables based on construction and internal components.

Ta = -20°C to +40°C (plastic enclosure),

Ta = -40°C to +60°C (metal enclosure, subject to limitations of installed devices)

The equipment may be used in a CAT 1,2 or 3 environment (internal component dependant) in the presents of flammable gases / vapours and dusts. The apparatus groups cover IIA, IIB and IIC (internal component dependant) with temperature classes of T1 through to T4 or either T5 or T6 internal component dependant. The maximum ambient temperature range is -40 to +60°C (dependant on enclosure material and internal components).

The 3000 series valve position monitor provides end of travel indication by the means of either electrical switch or inductive sensors mounted within the enclosure. These are activated by cams mounted on the rotary shaft.

The 3000 series enclosure construction comprises of a shaft passing through the enclosure base and cover (when fitted with visual beacon). The two part enclosure has an integral gasket seal. The shaft has upto two 'O'ring seals in both the cover and housing bearings. This product is available in three materials, Zytel resin, Aluminium or Stainless Steel 316.

The housing has the option of upto three cable entries (dependant on enclosure material) for connection to an external power source via appropriate ATEX certified cable glands; M20 x 1.5p, M25 x 1.5p, 1/2"–14NPT, 3/4"–14 NPT, Pg13.5 or any other suitable thread that can maintain IP6X ingress rating.

The 3000 certification is compliant against the following standards;

EN 60079-0 : 2009	Explosive atmospheres. Equipment. General requirements
EN 60079-11 : 2007	Electrical apparatus for explosive gas atmospheres – Part 11 – Intrinsically Safe 'i'
EN 60079-26 : 2007	Explosive atmospheres. Equipment with equipment protection level (EPL) Ga
IEC 61241-0 : 2004	Electrical apparatus for use in the presence of combustible dust- General requirements
IEC 61241-11 : 2005	Electrical apparatus for use in the presence of combustible dust- Protection by intrinsic safety "iD"

NOTE: Before installation of this product, please ensure that the product and its certification is suitable for the intended application.

If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection provided by the equipment is not compromised. Installation of any cable entry devices, conduit entry devices or blanking devices shall not compromise the degree of ingress protection level IP6X for use in the presence of combustible dusts. The unit has an ingress protection of IP66/67 and therefore any conduit device fitted must maintain this.

WARNING: Electrostatic hazard, clean only with damp cloth.

WESTLOCK CONTROLS UK Ltd.

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This symbol warns the user of possible danger. Failure to heed this warning may lead to personal injury or death and/or severe damage to equipment.



This symbol identifies information about operating the equipment in a particular manner that may damage it or result in a system failure. Failure to heed this warning can lead to total failure of the equipment or any other connected equipment.



Note

This symbol draws attention to information that is essential for understanding the operation and/or features of the equipment.

1.0 Mounting Instructions.

- 1.1 Attach the mounting bracket and adaptor (if required) to the Accutrak housing and shaft with the fasteners provided with the mounting kit.
- 1.2 To ensure that the Accutrak is mounted correctly, it may necessary to stroke the actuator to the fully closed position.



Before stroking the actuator to the fully closed position, please ensure that the process is safe to do so.

- 1.3 With the actuator in the correct position, attach the Accutrak / bracket to the actuator using the hardware provided in the mounting kit.
- 1.4 To release the cover, loosen the cover retaining screws. Twist the cover approx 45° and lift up. See fig 1 below.

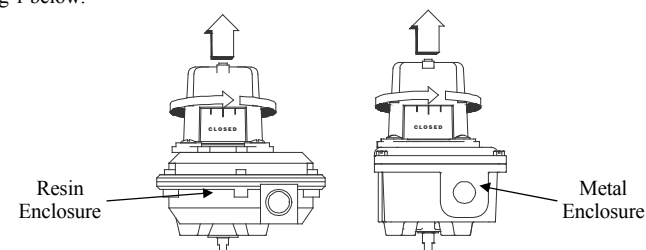


Fig 1

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- 1.5 To set switches, lift the bottom cam and turn until the switch has activated and then release. The spring will push the cam back onto the splined shaft.



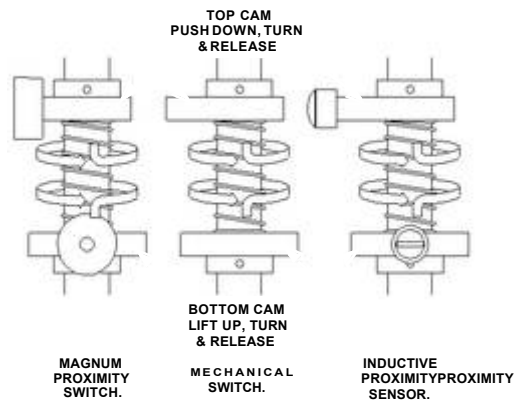
Before stroking the actuator, please ensure that the process is safe to do so and that all hands are kept away from the moving shaft.

- 1.6 Stroke the actuator to the opposite end of travel. Set the top cam by pushing down and turning the cam until the switch is activated.



Before stroking the actuator, please ensure that the process is safe to do so and that all hands are kept away from the moving shaft.

- 1.7 Stroke the actuator from one end of stroke to the other several times to check the switch operation. If the switches require adjustment, repeat steps 1.5 to 1.7.



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2.0 Field Wiring & Installation.



WARNING: The 3000 series should always be handled with care when the cover is removed.

NOTE: Before electrical installation, please read and follow the wiring diagram located inside the cover. The electrical ratings can be found on the product I.D label.

- 2.1 Field wiring must be carried out in accordance with site, local and national electrical codes / requirements. This includes special attention to earth bond to the Aluminium or Stainless Steel enclosure using the internal and external earth points provided.
- 2.2 Installation of this product shall be carried out by competent personnel in accordance with the applicable code of practice such as EN60079-14.
- 2.3 The certification applies to equipment **without** cable glands. When mounting the enclosure in the hazardous area, only suitably rated IP 66 / 67 or 68 ATEX certified glands **must be used**.
- 2.4 All unused cable entries **must** be plugged with a suitably rated IP 66 / 67 or 68 ATEX certified blanking devices.
- 2.5 The first two digits of the Westlock nomenclature signifies the series with the third digit defining whether the product has a visual beacon or not. The fourth digit identifies the switch / sensor type. The fifth digit details the enclosure material; R = plastic, A = Aluminium, S = St.St
The table below details the applicable ambient ranges;

Equipment	Tamb (Ta) Range	
	ATEX (1G)	(T6) -20°C to +55°C (T5) -20°C to +60°C
Inductive Proximity Sensor (IFM) Type: NS5002 (PTB 01ATEX2191) (IECEx BVS 06.0003)	IEC	-20°C to +60°C -25°C to +60°C
Inductive Proximity Sensor (TURK): Sensors Type Group A (KEMA 02ATEX1090X) (IECEx KEM 06.0036X)		-40°C to + °C (* See certificate ≤ +60°C)
Cylindrical Inductive Sensors (P+F) Types NC and NJ (PTB 00ATEX2048X)		-40°C to + °C (* See certificate ≤ +60°C)
Cuboidal Inductive Sensors (P+F) Types NJ and NC (PTB 00ATEX2032X)		-40°C to + °C (* See certificate ≤ +60°C)
SN-Sensors (Pepperl + Fuchs) Types NJ (PTB 00ATEX2049X)		(T1 – T6) -40°C to +60°C
MAGNUM XT90 Proximity Switch		(T1 – T6) -40°C to +60°C
V3 Micro Switches		(T1 – T6) -40°C to +60°C
CS Transmitter		(T1 - T4) -40°C to +60°C
RS Transmitter (Bourns Type 3852C)		(T1 - T4) -40°C to +60°C

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NOTE : 1) The working ambient temperature of the enclosures shall be as follows;

Zytel enclosure:- -20 to +40°C
Aluminium or St.St -40 to +60°C

- 2) The maximum upper ambient temperature of the equipment when installed with P&F sensors is dependant on its certificate parameters with regards to 'T' class and barrier type. The maximum upper ambient temperature shall not be considered to be higher than the following limits:-
Zytel enclosure = +40°C
Aluminium or St.St enclosure = +60°C.
- 3) If the CS or RS transmitter is used in conjunction with any switches, sensors or solenoids then the max surface temp for gas and dust shall be shown on the label.

2.6 The electrical rating of the internal components are as follows;

Switch Type	Electrical Rating	CAT N°
V3 Mechanical SPDT Gold Plated – Simple Apparatus.	Ui = 30V, Ii = 100mA, Pi = 1W, Ci = 10nF, Li = 10 µH	1
Magnum XT90 Proximity Switch – Simple Apparatus.	Ui = 30V, Ii = 100mA, Pi = 1W, Ci = 10nF, Li = 10 µH	1
CS Transmitter	Ui = 28V, Ii = 100mA, Pi = 0.75W, Ci = 68.3nF, Li = 0 µH	1
RS Transmitter (Bourns type 3852C)	Ui = 28V, Ii = 100mA, Pi = 0.75W	1
IFM NS5002 (BVS 04 ATEX E153) Ex ia IIB only*	Ui = 15V, Ii = 50mA, Pi = 120mW, Ci = 80nF, Li = 110 µH	1
Turck Sensors (KEMA 02 ATEX 1090X – TYPE GROUP 'A')	Ui = 20V, Ii = 60mA, Pi = 200mW, Ci = 150nF, Li = 150µH	1

P&F Sensor Number	Certificate Number	CAT N°	P&F Sensor Number	Certificate Number	CAT N°
NJ2-V3-N...	PTB00ATEX2032X (SUPP 2)	1	NJ2-12GM-N...	PTB00ATEX2048X (SUPP 1)	1
NCB2-V3-N0...	PTB00ATEX2032X (SUPP 2)	1	NJ4-12GM-N...	PTB00ATEX2048X (SUPP 1)	1
			NJ5-18GM-N...	PTB00ATEX2048X (SUPP 1)	1
NCB1,5-...M...-N0...	PTB00ATEX2048X (SUPP 1)	1	NJ8-18GM-N...	PTB00ATEX2048X (SUPP 1)	1
NCB2-12GM...-N0...	PTB00ATEX2048X (SUPP 1)	1			
NCN4-12GM...-N0...	PTB00ATEX2048X (SUPP 1)	1	NJ2-11-SN-G...	PTB00ATEX2049X (SUPP 1)	1
NCB5-18GM...-N0...	PTB00ATEX2048X (SUPP 1)	1	NJ2-11-SN...	PTB00ATEX2049X (SUPP 1)	1
NCN8-18GM...-N0...	PTB00ATEX2048X (SUPP 1)	1	NJ2-12GK-SN...	PTB00ATEX2049X (SUPP 1)	1
NCB10-30GM...-N0...	PTB00ATEX2048X (SUPP 1)	1	NJ3-18GK-S1N...	PTB00ATEX2049X (SUPP 1)	1
NCN15-30GM...-N0...	PTB00ATEX2048X (SUPP 1)	1	NJ4-12GK-SN...	PTB00ATEX2049X (SUPP 1)	1
NJ2-11-N...	PTB00ATEX2048X (SUPP 1)	1	NJ5-18GK-SN...	PTB00ATEX2049X (SUPP 1)	1
NJ2-11-N-G...	PTB00ATEX2048X (SUPP 1)	1	NJ5-30GK-S1N...	PTB00ATEX2049X (SUPP 1)	1
			NJ8-18GK-SN...	PTB00ATEX2049X (SUPP 1)	1

- 2.7 Before replace the enclosure cover, ensure that both of the housing and cover sealing surfaces are clean and undamaged. Tighten the cover screws hand tight using a suitably sized screwdriver or a metric 8mm A/F spanner / socket.

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3.0 Product repair & service.

- 3.1 Inspection of this product shall be carried out by periodically by suitably trained personnel in accordance with the applicable code of practice such as EN60079-17 to ensure that it is maintained in a satisfactory condition.
- 3.2 The equipment is not intended to be repaired by the user. The repair of this equipment is to be carried out by the manufacturer, or their approved agents, in accordance with the applicable code of practice such as EN60079-19.
- 3.3 The equipment contained within this product can be replaced with like for like parts / assemblies.
- 3.4 The certification of this product has been approved based on the material of construction as per the drawings listed in the schedule within this certificate. Any replacement parts that are not made in accordance to the listed drawing will invalidate the approval / certification.
- 3.5 Replacement parts must be purchased through Westlock Controls UK Ltd or via an approved Westlock Controls distributor.

Alternative Manufacturing location:
Westlock Controls Corporation,
280 Midland Avenue,
Saddle Brook,
New Jersey,
07663

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