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[1] # EU-TYPE EXAMINATION CERTIFICATE

[2] **Equipment intended for use in potentially explosive atmospheres**
Directive 2014/34/EU – Annex III

[3] Certificate Number: **EPT 17 ATEX 2870 X** **issue 0**

[4] Equipment: **SOLDO™ Limit switch box series**
SF, SS

[5] Manufacturer: **ROTORK INSTRUMENTS ITALY S.R.L.**

[6] Address: Via Portico 17 - 24050 Orio al Serio (BG) - Italy

[7] This equipment and its accepted variations are specified in the annex to this Certificate.

[8] Eurofins Product Testing Italy S.r.l., Notified Body n. 0477 in accordance with Article 21 of the Directive 2014/34/EU of the European Parliament and of the Council of 26th February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II of the Directive. The examination and test results are recorded in the confidential Report N°EPT.17.REL.03/54277

[9] Compliance with the essential health and safety is assured through the verification of them and by compliance with the standard:

EN 60079-0:2012+A11:2013, EN 60079-11:2012, EN 60079-31:2014

[10] If the sign "X" is placed after the Certificate number, it indicates that the equipment is subject to the special conditions for safe use specified in the annex to this Certificate.

[11] This EU -TYPE EXAMINATION CERTIFICATE relates only to the design, the exam and the tests of the specified equipment.
Further requirements of the Directive 2014/34/EU apply to the manufacture and supply of this equipment. These requirements are not object of this Certificate.

[12] The equipment shall include the sign Ex and the following strings:

II 1 GD **Ex ia IIC T6...T4 Ga** **Ex ia IIIC T85°C...T120°C Da**	*or*	**II 2 GD** **Ex ib IIC T6...T4 Gb** **Ex ib IIIC T85°C...T120°C Db**	*or*	**II 2 D** **Ex tb IIIC T95°C...T120°C Db**

CE

Place and date of issue:
Torino, 2017-12-20

Dionisio Bucchieri
Directive Responsible

Paolo Trisoglio
Managing Director

Eurofins Product Testing Italy
eurofins
Notified Body N. 0477

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SGQ N° 133A
PRD N° 119B
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Signatory of EA, IAF and ILAC Mutual Recognition Agreements

This Certificate has 4 pages and it is reproducible only in its entirety. Conditions of validity are reported below.

[13] ANNEX
[14] EU-TYPE EXAMINATION CERTIFICATE N. EPT 17 ATEX 2870 X issue 0

[15] **Equipment description**

The limit switch box series SS, SF are electrical devices used to indicate the position, for example in valves and actuators, by means of electrical signal and visual indicator. These are mounted on actuator or manual valve with lever or gear.

The enclosure of the equipment can be realized in aluminium alloy (SF model) as well as stainless steel material (SS model) and can be painted upon customer request. The cable entries are machined according metric ISO 965-1 thread (M20x1.5 or M25x1.5), NPT thread (½" or ¾") or alternatively can be unthreaded.
The limit switch boxes can be mainly configured by the manufacturer according one of the following configurations:

Configuration 1:
4x Ex certified inductive switches or simple contact SPDT (or 2 x DPDT) electromechanical or reed type

Configuration 2:
2x Ex certified inductive switches or simple contact SPDT (or 1 x DPDT) electromechanical or reed type
1x Ex certified transmitter and potentiometer mechanically connected to the internal camshaft

Configuration 3:
1x Ex certified transmitter and potentiometer mechanically connected to the internal camshaft

Configuration with a lower number of switches can be realized. The limit switches are mounted on circuit board or dedicated support plate and are interfaced to the camshaft; this component intervenes mechanically (or electromagnetically) on the switch changing its state.
Some PCBs used in the above mentioned configurations can also include resistors used to draw a small quantity of current from the associated apparatus and then allowing to identify remotely a potential wiring interruption (this technique is called End of Line monitoring).
When the equipment is marked according the intrinsically safe requirements it can be powered up only by means of intrinsic safety barriers (associated apparatus).
In this case each switch has to be connected to an individual channel of intrinsic safety barrier and in case of presence of double throw contact (e.g. SPDT and DPDT switch) only one contact at time can be used and then the common connection of two intrinsically safe barriers is forbidden.
The input safety parameters comply with the ones of the certified devices installed inside the limit switch box; when only simple switches are installed these parameter are defined as follows:

Ui: 30 V Ii: 100 mA Pi: 750 mW Li≈ 0 uH Ci≈ 0 uF

The limit switch boxes can also be used without their connection to the intrinsically safe apparatus only for use in Zone 21 and in this case the protection type is "tb" and EPL is "Db".
In this case the safety related parameters are not involved in the marking and these are substituted by the electrical ratings of the switches internally installed.

The equipment can be manufactured with different of o-rings and gaskets materials that define the extension of the equipment ambient temperature ranges as follows:
EPDM gaskets: -50°C ÷ +80°C.
Silicone gaskets: -60°C ÷ +105°C.

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Electrical parameters:

Intrinsically safe mode of protection:

• Box with simple switches:

Ui: 30 V; Ii: 100 mA; Pi: 750 mW; Ci≈ 0 µF; Li≈ 0 µH

• Box with simple switches and end of line monitoring resistors :

Ui: 30 V; Ii: 100 mA; Pi: 650 mW; Ci≈ 0 µF; Li≈ 0 µH

• Box with already certified devices:

According to the certificate of device

Dust-tight mode of protection:

U: 250 Vac; I: 1 A; P: 2.47 W

Warning label

- Do not open in a gas/dust explosive atmosphere
- Due to risk of static hazard the enclosure must be only cleaned with a damp cloth
- Do not open when energized
- For safety instruction refers to document "IOM00125" *(this warning applies to intrinsically safe type of protection)*
- For safety instruction refers to document "IOM00126" *(this warning applies to dust tight type of protection)*

Routine tests

None

[16] **Assessment Report n°EPT.17.REL.03/54277**

This EU-Type Examination Certificate is released after the positive result of the conformity assessment of the Council Directive 2014/34/EU and to harmonized technical standards listed in this certificate performed by the Notified Body Eurofins Product Testing Italy S.r.l., and reported in the Assessment Report above cited.

[17] **Special condition for a safe use**

- Each switch involved in the equipment have to be powered only by a single channel of certified intrinsic safety barrier. Where changeover contacts are included in switches, only one contact at time can be used and then no common electrical connection of two intrinsic safety barrier can be achieved.

- SF enclosures are mainly made of aluminium material and then a proper installation have to be observed when placed in environment classified as Zone 0 and Zone 20 to avoid an ignition hazard due to impact or friction.

- When the protection type "ia" or "ib" is applied, intrinsic safety associated apparatus have to be powered by network circuits limited to overvoltage Category III.

[13] [14] **ANNEX**
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[18] **Essential Health and Safety Requirements**

Assured by compliance with harmonized standards.

[19] **Descriptive documents**

The equipment objects of this Certificate are described by the following documents.
Scheduled documents are indicated with the symbol "✓". They cannot be modified without the explicit authorization of the Notified Body.

Type of document	Document identification	Rev.	Date	Scheduled
Technical note	technical file ss-sf is-171220_rev00_20-12-2017	0	2017-12-20	✓
Drawing and scheme	A05	0	2017-12-05	✓
Installation & Operating Manual Intrinsically safe	IOM00125	0	2017-12-20	✓
Installation & Operating Manual Dust Tight	IOM00126	0	2017-12-20	✓
Templates of labels	A14	0	2017-12-05	✓
Configurations Chart	A15	0	2017-12-05	✓
Wiring diagram related to PCB drawing in A05	A16	0	2017-12-20	✓
EU Declaration of Conformity	A08	0	2017-12-20	-

[20] **Terms and conditions**

The product liability rests with the Manufacturer, his representative or, in the absence of a representative, with the importer, in accordance with the General Product Safety Directive 2001/95/EC.

The following conditions may render this certificate invalid:

- changes in the design or construction of the product;
- changes or amendments to the Directive;
- changes or amendments in the standards which form the basis for documenting compliance with the essential requirements of the 2014/34/EU Directive.

[21] **History**

This certificate is at its first issue.