IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx EPS 16.0006X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2019-12-20) Issue 0 (2016-03-11)
Date of Issue:	2021-02-22		

Applicant: **EUROTEC Antriebszubehör GmbH**
Bildstock 37
88085 Langenargen
Germany

Equipment: **limit switch box type: EFX...ED... / EFE...ED..., EFX...EIA... / EFE...EIA..., EFX...IA... / EFE...IA... and EFX... K2D... / EFE...K2D...**

Optional accessory:

Type of Protection: **intrinsic safety "i", flameproof enclosures "d", increased safety "e", protection by enclosure "t"**

Marking:

EFE...IA... / EFX...IA...

Ex ia IIC/IIB T4 - T6 Gb

Ex ia IIIC T80°C - T135°C Db

EFE...ED... / EFX...ED...

Ex de IIC T4 - T6 Gb

Ex t IIIC T80°C - T135°C Db

EFE..EIA... / EFX... EIA...

Ex e ia IIC T4 - T6 Gb

Ex t IIIC T80°C - T135°C Db

EFE...K2D... / EFX...K2D...

Ex t IIIC T80°C - T135°C Db

Approved for issue on behalf of the IECEx Certification Body: **Holger Schaffer**

Position: **Certification Manager**

Signature: (for printed version)

Date: 2021-02-22

ZERTIFIZIERUNGSSTELLE BUREAU VERITAS 1828 Bureau Veritas CPS Germany GmbH

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Bureau Veritas Consumer Products Services Germany GmbH
Businesspark A96
86842 Türkheim
Germany

BUREAU VERITAS

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Manufacturer: **EUROTEC Antriebszubehör GmbH**
Bildstock 37
88085 Langenargen
Germany

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1:2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11:2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-31:2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7:2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/EPS/ExTR16.0006/02

Quality Assessment Report:

DE/EPS/QAR13.0003/06

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The limit switch boxes are used for feedback and control of the position of valves, which are actuated by pneumatic actuators. The shaft of the limit switch is positively connected to the shaft of the rotary actuator and is rotated in the rotational movement of the rotary actuator. The fixed to the shaft switching cams actuate thereby the built-in sensors, which are used for electronic signal transduction.

Rating:

U_o: 8.2V DC

U_i: 30V, I_i: 25mA, P_i: 34mW, C_i: 40nF, L_i: 50µH

Further information and electrical data: see attachment.

SPECIFIC CONDITIONS OF USE: YES as shown below:
See attachment.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Update new cover sheet and integration of an additional input voltage range of Ui = 11V to Ui = 30 V

Annex:

Euro_16TH0022_IECEx EPS 16.0006X_2_Attachment.pdf

Applicant:	EUROTEC Antriebszubehör GmbH Bildstock 37 88085 Langenargen Germany
Electrical Apparatus:	limit switch box type EFX...ED... / EFE...ED..., EFX...EIA... / EFE...EIA..., EFX...IA... / EFE...IA... and EFX...K2D... / EFE...K2D...

Description of equipment

The limit switch boxes are used for feedback and control of the position of valves, which are actuated by pneumatic actuators. The shaft of the limit switch is connected to the shaft of the rotary actuator and is rotated in the rotational movement of the rotary actuator. The fixed to the shaft switching cams actuate thereby the built-in sensors, which are used for electric signal transduction. The limit switch boxes fulfill the IP rating of IP66/67.

For the use to a minimum ambient temperature of -25°C the limit switch boxes type EFX can also be fitted with a viewing glass in the cover housing.

Viewing Glass:

2D	flat
3D	dome
3D1	dome with OPEN-CLOSE indicator
OS	without viewing glass

The flex Ex de tb limit switch boxes type EFX...ED... / EFE...ED... are, depending on the model, equipped with 1 to 3 mechanical Ex-d switches and also serve as ex-e terminal compartment for carrying a maximum of two electrical signals.

The flex Ex ia limit switch boxes type EFX...IA... / EFE...IA... are, depending on the model, equipped with 1 to 4 mechanical micro switches or separately certified intrinsically safe sensors. These include 1 to 4 inductive V3-sensors, 1 to 4 proximity switches, 1 to 2 cylindrical sensors or 1 double sensor. Additionally the device serves as a connection box for up to two intrinsic safe circuits which can be fed through.

The flex Ex eb ia limit switch boxes type EFX...EIA... / EFE...EIA... are, depending on the model, equipped with 1 to 4 mechanical micro switches or separately certified intrinsically safe sensors, analog to the type EFX...IA / EFE...IA.... They also serve as ex-e terminal compartments for carrying a maximum of two electrical signals.

The flex Ex tb limit switch boxes type EFX...K2D... / EFE...K2D... are intended for dust hazardous areas and can be equipped with different switch combinations. As for the type EFX...ED... / EFE...ED..., electrical signals can be fed through the box type EFX...K2D... / EFE...K2D... which thus serves as a connection box. The maximum allowed internally dissipated power, see section (17), shall never be exceeded.

The limit switch boxes type EFX are permitted to be equipped with a shaft feedthrough in the cover, which is from the same construction as above. By this another possibility occurs for an interface according to VDI/VDE3845. This construction then allows the connection of further components.

Electrical data:

EFX...ED... EFE...ED...	The electrical data depends on the according switch types and can be taken from the according datasheet or the user manual. Electrical fed through circuits: minimum cross section size 0,5 mm², maximum current 6 A
EFX...IA... EFE...IA...	The electrical data depends on the according switch types and can be taken from the according datasheet or the user manual. For mechanical gold contact switches or other simple apparatus the following values shall never be exceeded: Ui = 30 V ; Ii = 15 mA ; Pi = 35 mW The following values for the electrical fed through circuits shall never be exceeded: IIC: Ui = 28 V, Ii = 200 mA IIB: Ui = 32 V, Ii = 450 mA
EFX...EIA... EFE...EIA...	The electrical data depends on the according switch types and can be taken from the according datasheet or the user manual. For mechanical gold contact switches or other simple apparatus the following values shall never be exceeded: Ui = 30 V ; Ii = 15 mA ; Pi = 35 mW Electrical fed through circuits: minimum cross section size 0,5 mm², maximum current 6 A
EFX...K2D...	Maximum allowed internally dissipated power: 1 W

Special conditions for safe use / conditions of certification:

Maximum ambient temperature range:

EFX...ED... EFX...EIA... EFE...ED... EFE...EIA...	T6/T80°C: -55°C/-25°C to +40°C T5/T95°C: -55°C/-25°C to +60°C T4/T135°C: -55°C/-25°C to +75°C
EFX...IA...	Mechanical gold contact switches:
EFE...IA...	T6/T80°C: -55°C/-25°C to +70°C T5/T95°C: -55°C/-25°C to +80°C T4/T135°C: -55°C/-25°C to +100°C Certified switches: Depends on the respective switch type. See user manual and type plate.
EFX...K2D... EFE...K2D...	T80°C: -55°C/-25°C to +40°C T95°C: -55°C/-25°C to +60°C T135°C: -55°C/-25°C to +75°C

For the limit switch box type EFX...IA... / EFE...IA...alternative to the cable glands other, accordingly suited connectors for example M12-connector or plug connectors may be attached. These fasteners shall comply with the separation distances according to Table 5 of EN 60079-11. Unused connectors shall be covered with a dustproof cap.

The viewing glass type 2D, 3D and 3D1 is only allowed to be used to a minimum ambient temperature of -25°C.