Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 09 ATEX 2001

(4) Equipment: Valve solenoid, type 1262

(5) Manufacturer: nass magnet GmbH

(6) Address: Eckenerstraße 4-6, 30179 Hannover, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 09-28302.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006 **EN 60079-11:2007** **EN 61241-1:2004**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex ia IIC T6 or II 2 G Ex ia IIB T4 or
II 2 D Ex tD A21 IP65 T80 °C or II 2 D Ex tD A21 IP65 T130 °C

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, January 16, 2009

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

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(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 2001

(15) Description of equipment

The valve solenoid of type 1262 is an intrinsically safe apparatus intended for the application inside of hazardous areas of equipment categories 2G (flammable gases and vapours) and 2D (combustible dusts).

When the valve solenoid is applied in areas where the existence of combustible dusts has to be expected, the appropriate plug connector of type 6-11174-0101 shall be used to assure the type of protection.

Electrical data

Supply ..... only for connection to a certified intrinsically safe circuit of type of protection Ex ia IIC

Maximum values:

U_i = 28 V
I_i = 115 mA

or

only for connection to a certified intrinsically safe circuit of type of protection Ex ia IIB

U_i = 32 V
I_i = 195 mA

L_i negligibly low
C_i negligibly low

For relationship between type of equipment, temperature class as well as the electrical and thermal maximum values, reference is made to the following table:

Type **1262 00.1-..** through Type **1262 49.1-..**	Temperature class	U_i / I_i	Permissible range of the ambient temperature	Ex tD A21
II 2 G Ex ia IIC	T6	28 V / 115 mA	-40 ... 50 °C	T80 °C
II 2 G Ex ia IIB	T6	32 V / 195 mA	-40 ... 50 °C	T80 °C

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SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 2001

Type **1262 50.1-..** through Type **1262 99.1-..**	Temperature class	U_i / I_i	Permissible range of the ambient temperature	Ex tD A21
II 2 G Ex ia IIC	T4	28 V / 115 mA	-40 ... 85 °C	T130 °C
II 2 G Ex ia IIB	T4	32 V / 195 mA	-40 ... 85 °C	T130 °C

(16) Test report PTB Ex 09-28302

(17) Special conditions for safe use

none

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, January 16, 2009

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 2001

(Translation)

Equipment: Valve solenoids, types 1262..

Marking: **⟨Ex⟩ I 2 G Ex ia IIC T6 or II 2 G Ex ia IIB T4 or**
II 2 D Ex tD A21 IP65 T80 °C or II 2 D Ex tD A21 IP65 T130 °C

Manufacturer: nass magnet GmbH

Address: Eckenerstraße 4-6
30179 Hannover, Germany

Description of supplements and modifications

In the future the valve solenoids of types 1262.. may also be manufactured according to the test documents listed in the test report.

The state of the standards has been updated.

The marking of the models has been modified.

Further modifications have not been made.

All further specifications of the EC-type examination certificate apply without changes.

Electrical data

Supply ..... only for connection to a certified intrinsically safe circuit of type of protection Ex ia IIC

Maximum values:

U_i = 28 V
I_i = 115 mA

or

only for connection to a certified intrinsically safe circuit of type of protection Ex ia IIB

U_i = 32 V
I_i = 195 mA

L_i negligibly low
C_i negligibly low

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1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 2001

For relationship between type of equipment, temperature class as well as the electrical and thermal maximum values, reference is made to the following table:

Type **1262 00.1-..** through Type **1262 49.1-..**	Temperature class	U_i / I_i	Permissible range of the ambient temperature	Ex tb
II 2 G Ex ia IIC	T6	28 V / 115 mA	-40 ... 50 °C	T80 °C
II 2 G Ex ia IIB	T6	32 V / 195 mA	-40 ... 50 °C	T80 °C

Type **1262 50.1-..** through Type **1262 99.1-..**	Temperature class	U_i / I_i	Permissible range of the ambient temperature	Ex tb
II 2 G Ex ia IIC	T4	28 V / 115 mA	-40 ... 85 °C	T130 °C
II 2 G Ex ia IIB	T4	32 V / 195 mA	-40 ... 85 °C	T130 °C

In the future the marking will read:

⟨Ex⟩ **II 2 G Ex ia IIC/IIB T6/T4 Ga and II 2 D Ex t IIIC T80 °C/T130 °C Db IP65**
alternatively
II 2 G Ex ia IIC/IIB T6/T4 and II 2 D Ex tb IIIC T80 °C/130 °C IP65

Applied standards

EN 60079-0:2009 EN 60079-11:2012 EN 60079-31:2009

Test report: PTB Ex 12-22210

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, September 6, 2012

Dr.-Ing. T. Horn

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

DC-NDE-210614-02, language EN

CE 0102

EU Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer:

nass magnet GmbH
Eckenerstrasse 4-6
30179 Hannover, Germany

Product, Type-number / Object of the declaration:

Solenoid operator Type 1262 00 to 1262 99

The object of the declaration described above is in conformity with the relevant Community harmonisation legislation:

2014/34/EU
Equipment and protective systems intended for use in potentially explosive atmospheres
(recast of 26 February 2014)

2011/65/EU, with (EU) 2015/863 and (EU) 2018/741
on the restriction of the use of hazardous substances in electrical and electronic equipment
(recast of 8 June 2011, amended 31 March 2015 and 1 March 2018)

Regarding pressure-induced hazards, the relevant requirements of Directive 2014/68/EU are complied with.

Notified body (no.) that performed the EC-type examination and no. of the certificate:

Physikalisch Technische Bundesanstalt (No. 0102), PTB 02 ATEX 2154.

Relevant harmonised standards used and references to the specifications in relation to which conformity is declared. In case of newer editions as referenced in the certificate we confirm that the changed requirements are either not applicable or the products listed above comply with them:

EN IEC 60079-0:2018
Explosive atmospheres – Part 0: Equipment - General requirements

EN 60079-11:2012
Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"

EN 60079-31:2014
Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"

EN IEC 63000:2018
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

DIN VDE 0580:2011
Electromagnetic devices and components - General specifications

Signed for and on behalf of

nass magnet GmbH, Hannover, 14 June 2021

Patrick Oelkers
General Manager

nass magnet GmbH
Eckenerstrasse 4-6
D-30179 Hannover

Doc. No. 108-720-0019
Rev. 2
01.11.2013

GB

Ex i Solenoid Operator Type 1262

Operating Instructions

Dear Customer!

In order to guarantee the function and for your own safety, please read the enclosed operating instructions attentively before starting installation. Should there still arise any question or queries, please contact nass magnet GmbH.

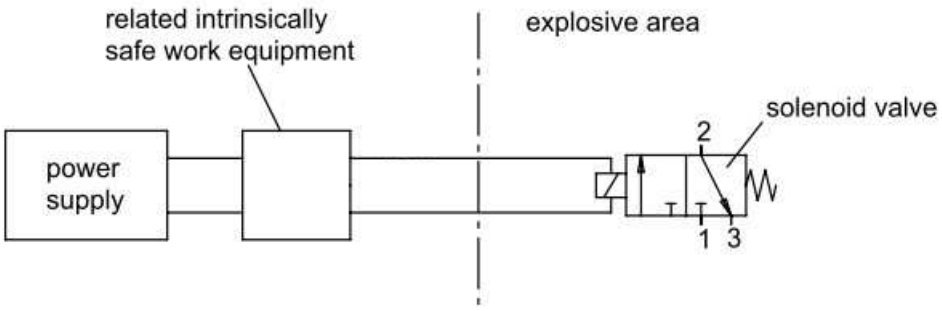
Phone ++49 (0) 511 6746-0
Fax ++49 (0) 511 6746-222
e-mail vertrieb@nassmagnet.de

General Conditions

- We are not liable for any damage caused by non-observation of this information as well as in case of improper intervention regarding this device. Furthermore, warranty for the devices and accessories will become void.
- The EC type-examination certificate exclusively covers solenoid operators with nass magnet armature assembly and with nass magnet solenoid coil; please consider the corresponding power levels.
- In its installed state the device is certified for equipment protection by **intrinsic safety "i"** for potentially explosive gas atmospheres or dust atmospheres of Group IIB, IIC or IIIC with an ignition temperature higher than T4 or optional T6. The Equipment Protection Level (EPL) is Ga and Db.
- Further to the valid generally accepted rules of technology the EC type-examination certificate and these operating instructions refer to special conditions and further application conditions that must be observed in any case. However, these operating instructions cannot consider all possible conditions and applications completely, and do not replace the specifications valid in each case.

Installation

- At installation and maintenance it is essential to keep to the concerning Ex standards, especially IEC/EN 60079-14.
- After removing the packing, make sure that dirt cannot penetrate into the system.
- Before mounting the system, check that there is no dirt in the piping or the valve housing.
- Make sure not to detach pipes and valves of pressurized systems.
- Take suitable measures to exclude unintentional activation or inadmissible impairment.
- Make sure not to damage o-rings and seals during assembly.
- Mounting is admissible in any position. Preferably the solenoid coil points upwards.
- The solenoid coil can be locked when offset by 45°.
- At choice of the material of the valve bodies must be observed:
    - Casting alloys:
      The maximum admissible percent by weight may not exceed the following limits according to the desired Equipment Protection Levels:
      Group II EPL Ga: in total 10 % aluminium, magnesium, titanium and zirconium;
      Group II EPL Gb and Group III EPL Db: in total 7.5 % magnesium and titanium;
    - Plastics:
      In order to avoid the build-up of electrostatic charges the requirements according to IEC/EN 60079-0 section 7.4 must be observed.
- Electrical connection: The connector is part of the equipment must not be removed permanently; otherwise the protection marking becomes void. Note here the necessary and maximum torque of the fixing screw and the tool provided for that.
- The solenoid has to be connected by inserting related intrinsically safe work equipment (e.g. isolating element or barrier) in accordance with the manufacturer's instructions.



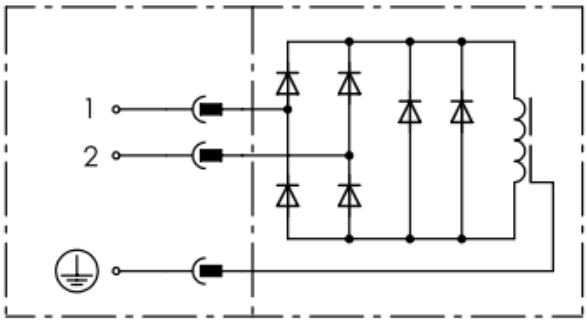
- Connection to a certified intrinsically safe circuit of type of protection:

Ex ia IIC	with maximum values	Ui = 28 V	Ii = 115 mA
Ex ia IIB	with maximum values	Ui = 32 V	Ii = 195 mA

- The effective inductance and capacitance is negligible low (Li ≈ 0, Ci ≈ 0).

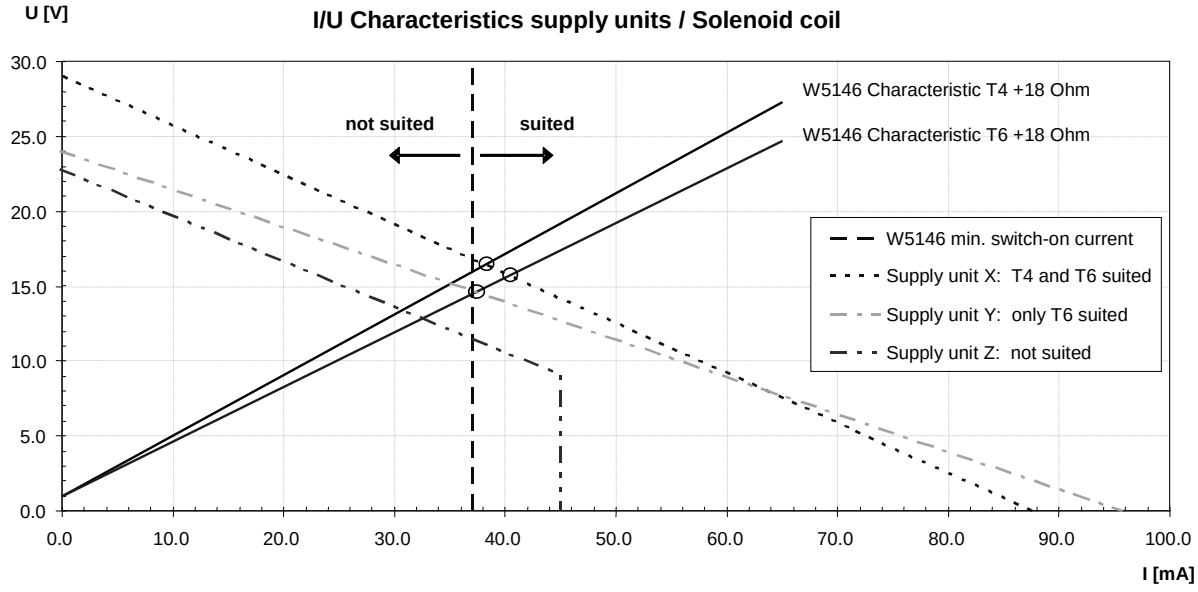
- For ensuring the switching function in the entire temperature range a minimum switch-on current is necessary. At maximum temperature rise of the coil, an equivalent resistance of the coil must be assumed (values see table). In the characteristic diagram have been considered an additional line resistance of 18 Ohm and a series voltage of 1 V, needed for the internal electronics.

circuit diagram



winding W	minimum switch-on current [mA]	nominal resistance [Ω]	equivalent resistance T4 [Ω]	equivalent resistance T6 [Ω]	NW / operating pressure [mm] / [kPa] / [bar]
5146	37	275	385	345	0.8 / 800 / 8
					0.6 / 1000 / 10
7210	27	400	510	455	0.6 / 800 / 8

- As an example, three possible characteristics of supply units are charted below. At interconnection, the units work at the point of intersection of the respective characteristics. The operating point must be on the right side of the characteristic of the minimum switch-on current (in this example 37 mA). In the following example, the results are as follows:
  Supply unit X is suited.
  Supply unit Y is only suited for T6.
  Supply unit Z is not suited.



For characteristics of the supply units refer to the supplier's data sheets.

- Before initial operation of the device, make sure that the overall equipment respectively the unit meets the requirements of the applicable EU directives (e.g. the EMC directive).
- Please order spare parts completely by indicating the identification number provided on the units (imprint / type plate).

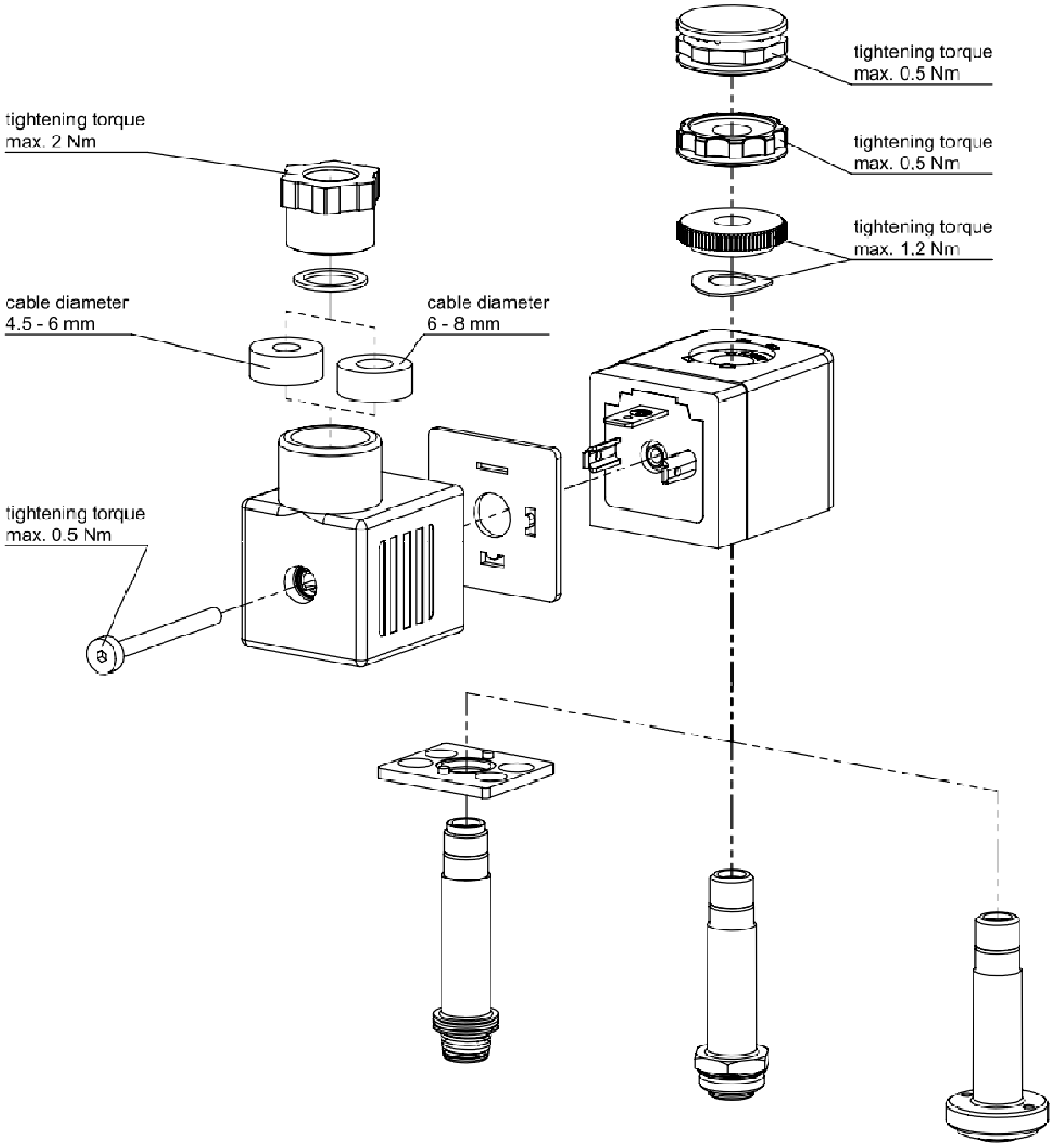
Operation

- The solenoid operators 1262 00 to 1262 49 of Temperature Class T6 are suitable for the following conditions:
    - Ambient temperature range from -40 °C to +50 °C
    - Maximum admissible media temperature: +70 °C
- The solenoid operators 1262 50 to 1262 99 of Temperature Class T4 are suitable for the following conditions:
    - Ambient temperature range from -40 °C to +85 °C
    - Maximum admissible media temperature: +80 °C
- The solenoid operators are suitable for single and series mounting at a 100% duty cycle.
- **Caution! Risk of injury! The solenoid's surface can get very hot during continuous operation.**
- The device's operating pressure depends on the armature system used. The nass magnet standard armature system is suited for up to 12 bars (1200 kPa) and has no extra identification mark. For operating pressures greater than 12 bars other documents are available.
- Admissible media are gas and liquids that do not affect the system and the gasket material contained therein.
- Prevent the device's exterior surfaces from getting in contact with liquid or corrosive media.
- Do not strain the system by bending or torsion.
- Prevent the connecting cables from being buckled or damaged in order to avoid short circuits and interruptions.

Malfunctions

- Check the cable connections, operating voltage and operating pressure.
- Check for externally visible damage.
- Should the problem persist the device must be put out of operation. Make sure to disconnect pressure and electrical power supply.
- Defective devices must not be repaired but must be replaced. Please order spare parts completely by indicating the identification number provided on the units (imprint / type plate).

Installation scheme



nass magnet GmbH
Eckenerstrasse 4-6
D-30179 Hannover

EU Declaration of Conformity

nass magnet GmbH, Hanover, declares and bears sole responsibility for the following products to be in compliance with the safety standards:

Solenoid operator 1262 00 to 1262 49	II 2 G Ex ia IIC T6 Ga II 2 G Ex ia IIB T6 Ga II 2 D Ex tb IIIC T80 °C Db IP65	Ex ia IIC T6 Ga Ex ia IIB T6 Ga Ex tb IIIC T80°C Db IP65
Solenoid operator 1262 50 to 1262 99	II 2 G Ex ia IIC T4 Ga II 2 G Ex ia IIB T4 Ga II 2 D Ex tb IIIC T130 °C Db IP65	Ex ia IIC T4 Ga Ex ia IIB T4 Ga Ex tb IIIC T130°C Db IP65

The EC type-examination certificate with the number

PTB 09 ATEX 2001 and IECEx PTB 13.0009

issued by Physikalisch Technische Bundesanstalt (registration entity no. 0102) are applicable for the named Ex-products.

The solenoid operator is an encapsulated safe electrical apparatus of Groups IIB, IIC and IIIC, designed for application in atmospheres according to Category 2 G and 2 D, Temperature Class T4 or T6, the Equipment Protection Level (EPL) is Ga and Db.

The device, that bears the CE marking, meets the following standards:

EN 60079-0:2009	Explosive atmospheres – Part 0: Equipment - General requirements
IEC 60079-0:2007 (Ed. 5)	Explosive atmospheres – Part 0: Equipment - General requirements
EN 60079-11:2012	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-11:2011 (Ed. 6)	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"
EN 60079-31:2009	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-31:2008 (Ed. 1)	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
EN 60 529:2000	Degrees of protection provided by enclosures (IP code)
DIN VDE 0580:2011	Electromagnetic devices and components – General specifications
Directive 94/9/EC	Equipment and protective systems intended for use in potentially explosive atmospheres
Directive 2011/65/EU	on the restriction of the use of hazardous substances in electrical and electronic equipment (recast of 8 June 2011)

Thomas Groetzinger
General Manager

Hanover, 01. Nov. 2013