



(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 06 ATEX 2055 X

(4) Equipment: Solenoid, type 3040, 3041, 3042, 3043, 3044 and 3045

(5) Manufacturer: Norgren GmbH

(6) Address: Stuttgarter Str. 120, 70736 Fellbach, 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 06-26327.

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

EN 50014:1997 + A1 + A2

EN 50028:1987

EN 50281-1-1:1998

(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 EEx m II T6, T5, T4

II 2 D IP 65 T 80 °C, T 95 °C, T 130 °C

Zertifizierungsstelle Explosionschutz

By order:

Braunschweig, December 21, 2006

Dr.-Ing. U. Johannsmeyer
Direktor und Professor



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 06 ATEX 2055 X

(15) Description of equipment

The solenoid consists of a magnet coil, an armature system and a fixing nut. The armature guide forms the pressure-proof part of the magnet, the guide tube is tested at 1.5 times the nominal operating pressure. The guide tube is specified either for thread-mounting or flange-mounting. The winding consists of varnished copper wire of insulation class H. This coil is injection-moulded with pre-plastified granules. A circuit board with electronic components is soldered onto the terminal posts of the encapsulated part of the coil. The terminals are mounted into a housing made of glass-fibre-reinforced polyimide 6 and casted afterwards.

Electrical data

Type designation	3045
Type of current	alternating current
Frequency	50 Hz ... 60 Hz
Nominal voltage	12 V ... 240 V
Rated current	0.158 A ... 0.010 A
Limit power	2.3 W
Temperature class	T6
Single mounting	yes
Max. permissible ambient temperature	50 °C
Medium temperature	50 °C
Butt mounting	yes, wall-to-wall
Max. permissible ambient temperature	40 °C
Medium temperature	40 °C

Type designation	3044
Type of current	direct current
Nominal voltage	6 V ... 220 V
Rated current	0.435 A ... 0.012 A
Limit power	2.5 W
Temperature class	T6
Single mounting	yes
Max. permissible ambient temperature	50 °C
Medium temperature	50 °C
Butt mounting	yes, wall-to-wall
Max. permissible ambient temperature	40 °C
Medium temperature	40 °C

Type designation	3043
Type of current	alternating current
Frequency	50 Hz ... 60 Hz
Nominal voltage	12 V ... 240 V
Rated current	0.212 A ... 0.015 A
Limit power	3.4 W
Temperature class	T5
Single mounting	yes
Max. permissible ambient temperature	50 °C
Medium temperature	50 °C
Butt mounting	yes, wall-to-wall
Max. permissible ambient temperature	40 °C
	40 °C

Type designation	3042
Type of current	direct current
Nominal voltage	6 V ... 220 V
Rated current	0.531 A ... 0.014 A
Limit power	3.3 W
Temperature class	T5
Single mounting	yes
Max. permissible ambient temperature	50 °C
Medium temperature	50 °C
Butt mounting	yes, wall-to-wall
Max. permissible ambient temperature	40 °C
Medium temperature	40 °C

Type designation	3041
Type of current	alternating current
Frequency	50 Hz ... 60 Hz
Nominal voltage	12 V ... 240 V
Rated current	0.380 A ... 0.024 A
Limit power	4.6 W
Temperature class	T4
Max. permissible ambient temperature	60 °C
Medium temperature	80 °C
Single mounting	yes
Butt mounting	yes, wall-to-wall

Type designation	3040
Type of current	direct current
Nominal voltage	6 V ... 220 V
Rated current	0.815 A ... 0.027 A
Limit power	5.0 W
Temperature class	T4
Max. permissible ambient temperature	50 °C
Medium temperature	80 °C
Single mounting	yes
Butt mounting	yes, wall-to-wall

(16) Test report PTB Ex 06-26327

(17) Special conditions for safe use

A fuse corresponding to its rated current (max. $3 \cdot I_{\text{rat}}$ according IEC 60127-2-1) or a motor protecting switch with short-circuit and thermal instantaneous tripping (adjusted to rated current) shall be connected in series to each solenoid as short circuit protection. For very low rated currents of the solenoid the fuse of lowest current value according to the indicated IEC standard will be sufficient. The fuse may be accommodated in the associated supply unit or shall be arranged separately. The rated voltage of the fuse shall be equal to or higher than the stated rated voltage of the magnet coil. The breaking capacity of the fuse-link shall be as high as or higher than the maximum expected short circuit current at the location of the installation (usually 1500 A).

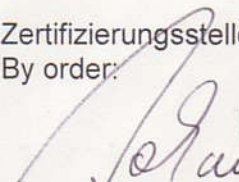
A maximum permissible ripple of 20 % applies to all solenoids of d.c.-design.

The solenoid may also be applied in areas where the occasional occurrence of an explosive atmosphere consisting of dust/air-mixtures has to be assumed.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

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