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 03 ATEX 2018 X

(4) Equipment: Solenoid, type 0515.. and type 1215..

(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 03-21355.

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

EN 50014:1997 + A1 + A2 **EN 50028:1987**

(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 or T4

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, June 16, 2003

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2018 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	0515..
Type of current	alternating current
Nominal voltage	12 V ... 240 V
Nominal current	0,158 A ... 0,010 A
Steady-state active power	2,3 W
Max. perm. ambient temperature	50 °C
Temperature class	T6
Frequency	50 Hz...60 Hz
Medium temperature	50 °C
Single mounting	yes

Type designation	0515..
Type of current	alternating current
Nominal voltage	12 V ... 240 V
Nominal current	0,158 A ... 0,010 A
Steady-state active power	2,3 W
Max. perm. ambient temperature	40 °C
Temperature class	T6
Frequency	50 Hz...60 Hz
Medium temperature	40 °C
Group mounting	yes, wall to wall

Type designation	1215..
Type of current	direct current
Nominal voltage	6 V ...220 V
Nominal current	0,435 A ... 0,012 A
Steady-state active power	2,5 W
Max. perm. ambient temperature	50 °C
Temperature class	T6
Medium temperature	50 °C
Single mounting	yes

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2018 X

Type designation	1215..
Type of current	direct current
Nominal voltage	6 V ...220 V
Nominal current	0,435 A ... 0,012 A
Steady-state active power	2,5 W
Max. perm. ambient temperature	40 °C
Temperature class	T6
Medium temperature	40 °C
Group mounting	yes, wall to wall

Type designation	0515..
Type of current	alternating current
Nominal voltage	12 V ... 240 V
Nominal current	0,212 A ... 0,015 A
Steady-state active power	3,4 W
Max. perm. ambient temperature	50 °C
Temperature class	T5
Frequency	50 Hz...60 Hz
Medium temperature	50 °C
Single mounting	yes

Type designation	0515..
Type of current	alternating current
Nominal voltage	12 V ... 240 V
Nominal current	0,212 A ... 0,015 A
Steady-state active power	3,4 W
Max. perm. ambient temperature	40 °C
Temperature class	T5
Frequency	50 Hz...60 Hz
Medium temperature	40 °C
Group mounting	yes, wall to wall

Type designation	1215..
Type of current	direct current
Nominal voltage	6 V ...220 V
Nominal current	0,531 A ... 0,014 A
Steady-state active power	3,3 W
Max. perm. ambient temperature	50 °C
Temperature class	T5
Medium temperature	50 °C
Single mounting	yes

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2018 X

Type designation	1215..
Type of current	direct current
Nominal voltage	6 V ...220 V
Nominal current	0,531 A ... 0,014 A
Steady-state active power	3,3 W
Max. perm. ambient temperature	40 °C
Temperature class	T5
Medium temperature	40 °C
Group mounting	yes, wall to wall

Type designation	0515..
Type of current	alternating current
Nominal voltage	12 V ... 240 V
Nominal current	0,380 A ... 0,024 A
Steady-state active power	4,6 W
Max. perm. ambient temperature	60 °C
Temperature class	T4
Frequency	50 Hz...60 Hz
Medium temperature	80 °C
Single mounting	yes
Group mounting	yes, wall to wall

Type designation	1215..
Type of current	direct current
Nominal voltage	6 V ...220 V
Nominal current	0,815 A ... 0,027 A
Steady-state active power	5,0 W
Max. perm. ambient temperature	50 °C
Temperature class	T4
Medium temperature	80 °C
Single mounting	yes
Group mounting	yes, wall to wall

(16) Test report PTB Ex Ex 03-21355

(17) Special conditions for safe use

A fuse corresponding to its rated current (max. $3*I_{rat}$ according IEC 60127-2-1) or a motor protecting switch with short-circuit and thermal instantaneous tripping (set 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 separately arranged. The rated voltage to the fuse shall be equal to or greater 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 perissible ripple of 20 % is valid for all magnets of direct-current desin.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Braunschweig, June 16, 2003

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1st SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2018 X

(Translation)

Equipment: Valve magnet, types 0515.. and 1215..

Marking:  **II 2 G EEx m II T6, T5 or T4**

Manufacturer: Nass Magnet GmbH

Address: Eckenerstraße 4-6
30179 Hannover, Germany

Description of supplements and modifications

Standard applied in addition: EN 50281-1-1:1998

The valve magnet, types 0515.. and 1215.. , consists of a plastic-encapsulated coil section with encapsulated adapter box. It may be employed in areas in which a potentially explosive atmosphere as a mixture of dust and air can occasionally form.

The marking is, therefore, changed to read:

 **II 2 G/D EEx m II T6, T5 or T4 IP 65 T 80 °C, T 95 °C, T 130 °C**

Test report: PTB Ex 04-14208

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, September 10, 2004

Dr.-Ing. U. Klausmeyer
Regierungsdirektor

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2. E R G Ä N Z U N G

gemäß Richtlinie 94/9/EG Anhang III Ziffer 6

zur EG-Baumusterprüfbescheinigung PTB 03 ATEX 2018 X

Gerät: Ventilmagnet Typ 0515.. und Typ 1215..

Kennzeichnung: ⟨Ex⟩ **II 2 G/D EEx m II T6, T5 bzw. T4 IP 65 T 80 °C, T 95 °C, T 130 °C**

Hersteller: nass magnet GmbH

Anschrift: Eckenerstraße 4-6
30179 Hannover, Deutschland

Beschreibung der Ergänzungen und Änderungen

Die Beschreibung der Ventilmagnete wird durch die beigefügte Ergänzung erweitert.

Die elektrischen Daten und die "Besonderen Bedingungen" bleiben unverändert.

Prüfbericht: PTB Ex 04-24379

Zertifizierungsstelle Explosionsschutz
Im Auftrag

Braunschweig, 10. Dezember 2004

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Beschreibung zur 2. Ergänzung Pos. 15 EG-Baumusterprüfbescheinigung

Die Ankerführung bildet den druckdichten Teil des Magneten. Das Ankerführungsrohr wird mit dem 1,5 fachen des Betriebsdrucks geprüft. Das Ankerführungsrohr ist je nach Ausführung für Gewinde- oder Flanschbefestigung geeignet.

Die Wicklung besteht aus Kupferlackdrähten der thermischen Klasse H. Diese Magnetspule wird in einer Spritzform mit vorplastifizierten Kunststoffgranulat umspritzt.
An den Anschlussstiften des umgossenen Spulenteils wird eine Leiterplatte mit elektronischen Bauteilen aufgelötet. Ein Gehäuse aus glasfaserverstärkten Polyamid 6 wird über den Anschlussbereich montiert und vergossen

Der Ventilmagnet besteht aus einer Magnetspule, einem Ankersystem und einer Befestigungsmutter..

Bei der Erweiterung des Ventilmagneten zu einem Magnetventil müssen für den Ventilgehäusewerkstoff folgende Bedingungen eingehalten werden:

Gusslegierung: Mg-Gehalt < 6%
Kunststoff : Oberflächenwiderstand < 1 G Ω oder durch
Begrenzung der Oberfläche auf max. 20 cm² projiziert in jeder Richtung, einschließlich der Magnetspulenoberfläche, nach EN 50014 7.3.2.

nass magnet
nass magnet GmbH
Eckenerstraße 4-6
30179 Hannover

22. 11. 2004
i. V.

PTB Ex 04-24379

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 24

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

3. S U P P L E M E N T

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2018 X

(Translation)

Equipment: Valve magnets, types 0515 / 1215

Marking: ⟨Ex⟩ **II 2 G/D EEx m II T4, T5, T6 IP 65 T 130 °C, T 95 °C, T80 °C**

Manufacturer: nass magnet GmbH

Address: Eckenerstraße 4-6, 30179 Hannover, Germany

Description of supplements and modifications

In addition to the technical modifications of the input circuitry an alternate impregnating agent may be used for the coil.

In the future the equipment shall be marked as follows:

⟨Ex⟩ **II 2 G Ex mb II T6, T5, T4**

and ⟨Ex⟩ **II 2 D Ex tD A21 IP65 T80 °C, T95 °C, T130 °C**

All other specifications of the EC-type examination certificate as well as the "Special Conditions" apply without changes.

Applied standards

EN 60079-0:2006 **EN 60079-18:2004** **EN 61241-0:2006** **EN 61241-1:2004**

Assessment and test report: PTB Ex 09-28113

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. U. Gerlach
Oberregierungsrat

Braunschweig, October 6, 2009

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Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

4. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2018 X

(Translation)

Equipment: Valve magnet, type 0515.. and 1215

Marking: **II 2 G Ex mb II T6, T5, T4**
II 2 D Ex tD A21 IP65 T80 °C, T95 °C, T130 °C

Manufacturer: nass magnet GmbH

Address: Eckenerstraße 4-6
30179 Hannover, Germany

Description of supplements and modifications

In the future the valve magnet, type 0515.. and 1215 shall be marked as follows:

II 2 G Ex mb IIC T6, T5, T4

II 2 D Ex mb tb IIIC T80 °C, T95 °C, T130 °C
IP 65

Applied standards

EN 60079-0:2009, EN 60079-18:2009, EN 60079-31:2009

Test report: PTB Ex 11-21300

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Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, January 23, 2012

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

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