Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2096 X

(Translation)

Equipment: Solenoid actuators, types MG 004xm, MG 005xm, MG 008xm

Marking: **II 2 G EEx me II T4 and T5**

Manufacturer: UNI-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH

Address: Holtumsweg 13,
47652 Weeze, Germany

Description of supplements and modifications

The valve control, type TS200 for the solenoid actuators has been revised and will be substituted in the future by a new model. The solenoid actuators meet the applied standards stated below, also with the constructive modifications of the TS200 valve control.

In the future the equipment shall be marked as follows:

II 2 G Ex mbe II T4 or T5

Applied standards

EN 60079-0:2004 **EN 60079-7:2003** **EN 60079-18:2004**

Test report: PTB Ex 07-26294

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, June 29, 2007

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

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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 04 ATEX 2096 X

(4) Equipment: Solenoid actuators, types MG004m, MG008m, MG005A7m and MG008A8m

(5) Manufacturer: UNI-Geräte E. Mangelmann Elektrotechnische-Fabrik GmbH

(6) Address: Holtumsweg 13, 47652 Weeze, 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 04-21423 .

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

EN 50014:1997 + A1 + A2 **EN 50019:2000** **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 me II T4 and T5

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Braunschweig, November 11, 2004

(13) # S C H E D U L E

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2096 X

(15) Description of equipment

The solenoid actuators are used as drives for valves. The actuators may be operated with direct or alternating current. The a.c.-variant is equipped with a rectifier. The actuators of types MG005A7m and MG008A8m are equipped with a pickup winding and a holding winding. The built-in TS200-valve control switches over to the lower holding power by means of a time switch.

Electrical data

Type designation	MG004m
Type of current	direct current / alternating current
Nominal voltage	24 V... 60 V
Nominal current	624 mA... 261 mA
Steady-state active power	12 W
Max. perm. ambient temperature	60 °C
Temperature class	T4
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall

Type designation	MG004m
Type of current	direct current / alternating current
Nominal voltage	100 V... 230 V
Nominal current	246 mA... 117 mA
Steady-state active power	18 W
Max. perm. ambient temperature	60 °C
Temperature class	T4
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall

Type designation	MG008m
Type of current	direct current / alternating current
Nominal voltage	24 V... 230 V
Nominal current	1956 mA... 226 mA
Steady-state active power	35 W
Max. perm. ambient temperature	60 °C
Temperature class	T4
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2096 X

Type designation	MG005A7m
Type of current	direct current / alternating current
Nominal voltage	24 V... 230 V
Nominal current	1650 mA... 193 mA
Steady-state active power	35 W
Holding power	4 W
Max. perm. ambient temperature	60 °C
Temperature class	T5
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall
Operating cycles	max. 600c/h

Type designation	MG008A8m
Type of current	direct current / alternating current
Nominal voltage	24 V.
Nominal current	2741 mA
Steady-state active power	53 W
Holding power	6 W
Max. perm. ambient temperature	60 °C
Temperature class	T5
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall
Operating cycles	max. 600c/h

Type designation	MG008A8m
Type of current	direct current / alternating current
Nominal voltage	100 V/110 V
Nominal current	600 mA
Steady-state active power	56 W
Holding power	6 W
Max. perm. ambient temperature	60 °C
Temperature class	T5
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall
Operating cycles	max. 600c/h

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SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2096 X

Type designation	MG008A8m
Type of current	direct current / alternating current
Nominal voltage	205 V/230 V
Nominal current	321 mA
Steady-state active power	58 W
Holding power	6 W
Max. perm. ambient temperature	60 °C
Temperature class	T5
Frequency	40 Hz...60 Hz by alternating current
Medium temperature	60 °C
Single mounting	yes
Group mounting	yes, with 10 mm wall to wall

(16) Test report PTB Ex 04-21423

(17) Special conditions for safe use

1. Since temperatures higher than 70 °C occur at the cable entry and higher than 80 °C at the core junction, this equipment must be additionally marked with the higher temperature (label at the cable entry). Only a heat-resistant cable may be connected.
2. A fuse corresponding to its rated current (max. 3 x 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 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 prospective maximum short circuit current at the location of the installation (usually 1500 A).
3. When a silicon (or silicon containing) connecting lead is used or if the connecting lead is not scratch proof respectively, this has to be protected from mechanical damage (e.g. interrupted tube system with edge protection).
4. A maximum permissible ripple of 20 % is valid for all magnets of d.c.-design.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Braunschweig, November 11, 2004