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 PTB 07.0032X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2007-06-25		
Applicant:	**UNI-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH** Holtumsweg 13 47652 Weetze **Germany**		
Equipment:	**Solenoid Actuator**		
Optional accessory:			
Type of Protection:	**increased safety, encapsulation**		
Marking:	Ex mbe II T4 or T5		

Approved for issue on behalf of the IECEx Certification Body: **Dr.-Ing. U. Johannsmeyer**

Position: **Head of department Intrinsic Safety and Safety of Systems**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

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Manufacturer: **UNI-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH**
Holtumsweg 13
47652 Weetze
Germany

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 60079-0:2004 Edition:4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-18:2004 Edition:2.0	Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation 'm' electrical apparatus
IEC 60079-7:2001 Edition:3	Electrical apparatus for explosive gas atmospheres - Part 7: 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/PTB/ExTR07.0035/00

Quality Assessment Report:

DE/PTB/QAR07.0006/00

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

see attachment

SPECIFIC CONDITIONS OF USE: YES as shown below:
see attachment

Annex:

C07032X_attachment.pdf

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

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

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

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.