



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 12.0010X issue No.:1

Certificate history:
Issue No. 1 (2018-5-24)
Issue No. 0 (2012-2-20)

Status: **Current**

Date of Issue: **2018-05-24** Page 1 of 4

Applicant: **Taciak AG**
Kattenbeck 20
59394 Nordkirchen
Germany

Equipment: **Reed Sensor type *MC** * * * * ***
Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i", Equipment with Equipment Protection Level (EPL) Ga**

Marking: Ex ia IIC T4 / T3 Ga Ex ia IIB T4 Ga
Ex ia IIC T4 / T3 Ga/Gb Ex ia IIB T4 Ga/Gb
Ex ia I Ma Ex ia I Mb

Approved for issue on behalf of the IECEx Certification Body: Jörg Koch
Position: Head of Certification Body

Signature: (for printed version) _____
Date: _____ 29.5.18

- 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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:
DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany





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Manufacturer: **Taciak AG**
Kattenbeck 20
59394 Nordkirchen
Germany

Additional Manufacturing location(s):

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 apparatus 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 : 2017 Edition: 7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2014-10 Edition: 3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical 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/BVS/ExTR12.0010/01](#)

Quality Assessment Report:
[DE/BVS/QAR09.0011/08](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

General remarks:
see Annex

Subject and type:
see Annex

Description:
see Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

Special conditions for safe use:
see Annex



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

- Extension with new variants of construction
- Update of Annex IEC 60079-0 to Ed. 7 and revision of Annex IEC 60079-11 with regard to Corrigenda, Interpretation Sheets, Decision Sheets
- Update of Annex IEC 60079-26 to Ed. 3 and changes in Annex IEC 60079-0, due to IEC 60079-26 Ed. 3
- Marking 'Ex ia I Mb' instead of 'Ex ia I Ma' may be used as an alternate option.



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General product information:

Type Code

Reed Sensor type *MG ** ** * ** * ** * ** * ** * ** *
 aMG bb cc ddd ee ff g h ii jjjj

a W = path- or position-sensor
 N = level sensor

bb variant, 05 = 0 Ω .. 25 kΩ/m,	U _i = 30 V
variant, 06 = 0 Ω.. 50 kΩ/m,	U _i = 30 V
variant, 11 = U 0.5 .. 4.5 V,	U _i = 14 V
variant, 11.1 = U 0.5 .. 4.5 V,	U _i = 14 V ¹⁾
variant, 12 = U 0.5 .. 4.5 V,	U _i = 14 V
variant, 51 = 100 .. xΩ,	U _i = 8 V
variant, 52 = 200 .. xΩ,	U _i = 11 V
variant, 53 = 400 .. xΩ,	U _i = 15 V
variant, 54 = 1000 .. xΩ,	U _i = 30 V
variant, 56 = measuring chain Var. 1	U _i = 15 V
variant, 57 = measuring chain Var. 2	U _i = 30 V
variant, 71 = U 0.5 .. 4,5 Volt	U _i = 30 V
variant, 72 = U 1 .. 5 Volt,	U _i = 30 V
variant, 73 = U 1 .. 10 Volt,	U _i = 30 V
variant, 81 = I 4 .. 20 mA,	U _i = 30 V 2-wire

¹⁾ version 11.1: equal to 11, but current limiting resistors lead type

cc electrical connection, 01 = plug M8x1
 electrical connection, 02 = plug M12x1
 electrical connection, 05 = socket M12x1
 electrical connection, 06 = plug M8x1
 electrical connection, 11 = terminal box
 electrical connection, 21 = plug DIN 43650
 electrical connection, 22 = plug DIN 43650
 electrical connection, 51 = single strands
 electrical connection, 54 = screened cable 2 x 0.14
 electrical connection, 55 = cable 3 x 0.14
 electrical connection, 56 = cable 2 x 2 x 0.14
 electrical connection, 57 = cable 3 x 2 x 0.14
 electrical connection, 58 = cable 4 x 2 x 0.14
 electrical connection, 59 = cable 5 x 2 x 0.14
 electrical connection, 64 = screened cable 2 x 0.25
 electrical connection, 65 = cable 3 x 0.25
 electrical connection, 66 = cable 2 x 2 0.25
 electrical connection, 67 = cable 3 x 2 x 0.25
 electrical connection, 68 = cable 4 x 2 x 0.25
 electrical connection, 69 = cable 5 x 2 x 0.25
 electrical connection, 75 = screened cable 3 x 0.14
 electrical connection, 76 = screened cable 2 x 2 x 0.14
 electrical connection, 77 = screened cable 3 x 2 x 0.14
 electrical connection, 78 = screened cable 4 x 2 x 0.14
 electrical connection, 79 = screened cable 5 x 2 x 0.14
 electrical connection, 85 = screened cable 3 x 0.25
 electrical connection, 86 = screened cable 2 x 2 0.25
 electrical connection, 87 = screened cable 3 x 2 x 0.25
 electrical connection, 88 = screened cable 4 x 2 x 0.25
 electrical connection, 89 = screened cable 5 x 2 x 0.25
 electrical connection, 91 = screened cable 2 x 0.5
 electrical connection, 92 = SiHF cable 2 x 0.5



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electrical connection, 93 = SiHF cable	4 x 0.25
electrical connection, 96 = screened cable	2 x 2 x 0.5
electrical connection, 97 = ASS cable	2 x 2 x 0.25
electrical connection, 98 = screened cable	3 x 0.75

ddd Length of connecting cable in cm, e.g. 005 = 5 cm

ee material / tube diameter 01 = 1.4571, Ø 12 x 1

material / tube diameter 02 = 1.4571, Ø 14 x 1

material / tube diameter 03 = 1.4571, Ø 16 x 1

material / tube diameter 04 = 1.4571, Ø 16 x 1,5

material / tube diameter 05 = 1.4571, Ø 18 x 2

material / tube diameter 06 = 1.4571, Ø 24 x 4

material / tube diameter 07 = 1.4571, Ø 8 x 1

material / tube diameter 08 = 1.4571, Ø 10 x 1

material / tube diameter 09 = 1.4571, Ø 20 x 3

material / tube diameter 10 = 1.4571, Ø 16 x 2

material / tube diameter 15 = 1.4571, Ø 16 x 3

material / tube diameter 51 = PVC-U, Ø 12 x 1

material / tube diameter 52 = PVC-U, Ø 10 x 0.8

material / tube diameter 53 = PVC-U, Ø 8 x 0.8

material / tube diameter 55 = PVC-U, Ø 16 x 1.2

material / tube diameter 61 = PVC-U, Ø 20 x 2.3

ff mechanical, insert nozzle type X

mechanical, insert nozzle type Y

mechanical, insert nozzle type Z

g pressure range, 1 = 6 bar

pressure range, 2 = 16 bar

pressure range, 3 = 25 bar

pressure range, 4 = 100 bar

pressure range, 5 = 200 bar

pressure range, 6 = 300 bar

pressure range, 7 = 400 bar

pressure range, 8 = 500 bar

pressure range, 9 = 600 bar

pressure range, 0 = 1000 bar

h accessories mounted, 1 = 1 x PT 100

accessories mounted, 2 = 2 x PT 100

accessories mounted, 3 = 3 x PT 100

accessories mounted, 4 = 1 x PT 1000

accessories mounted, 5 = 2 x PT 1000

accessories mounted, 6 = three contacts

accessories mounted, 8 = one contact

accessories mounted, 9 = two contacts

accessories mounted, 0 = without accessories

i resolution in mm, e.g. 05 = 5 mm

jjjj length measured in full text, e.g. 0050 = 50 mm

The type coding can be supplemented at the end by further markings such as numbers of variants or customer-specific variants; however, these are not relevant for the explosion protection.



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Description

The Reed Sensor type WMG** * * * * * serves the purpose of path or position sensing in liquid or gaseous media in an intrinsically safe manner.

The Reed Sensor type NMG** * * * * * serves the purpose of level sensing of liquid media in an intrinsically safe manner.

A printed circuit board has been mounted into a tube construction of either metal or plastic. On this printed circuit board reed-switches and resistors are mounted as well as an electronic circuit, depending on the variant.

Optionally, one side of the tube construction may feature a permanently connected cable or a terminal box or a plug connection for the intrinsically safe circuits.

All variants providing connectors are intended to be connected to a single intrinsically safe 2-wire or multi-wire circuit.

The open leads of variants providing permanently connected cable may be fitted optionally with a connector type TSV024-*-*-*-*.

Variants fitted with a connector type TSV024-*-*-*-* may be enhanced with prefabricated extension cable.

Path length or position values are generated by means of a position probe, which is placed on the tube construction. The position probe actuates the reed-switches via ring magnet inside and is moved for instance by an external machine part at variant Reed Sensor type WMG * * * * *.

Filling level values are generated by means of a float lever, which is placed on the tube construction. The float lever actuates the reed-switches via ring magnet inside and is moved by the liquid level at variant Reed Sensor type NMG * * * * *.

The ring magnet inside the float lever is unbalanced; in order to achieve a constant electrostatically conductive connection with the tube construction

Listing of all components used referring to older standards: not applicable.

The allocation of the different variants of the Reed Sensor regarding types of ignition protection, temperature classes, ambient temperature range and 'Equipment Protection Levels (EPLs)' is provided in the tables below.

Particularities or restrictions to be observed are listed in 'Specific Conditions of Use', numbers 1 to 10.

1) Reed Sensor (metal variant) with plug connection

Reed Sensor type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 01 ddd 0*/10/15 ff g h ii jjjj NMG bb 02 ddd 0*/10/15 ff g h ii jjjj NMG bb 05 ddd 0*/10/15 ff g h ii jjjj NMG bb 06 ddd 0*/10/15 ff g h ii jjjj NMG bb 21 ddd 0*/10/15 ff g h ii jjjj NMG bb 22 ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 1, 4.*	-30 °C ≤ T _a ≤ +80 °C
NMG 56 ** ddd 0* ff g h ii jjjj NMG 57 ** ddd 0* ff g h ii jjjj	Ex ia IIC T3 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 1, 4.*	-15 °C ≤ T _a ≤ +150 °C
WMG bb 01 ddd 0*/10/15 ff g h ii jjjj WMG bb 02 ddd 0*/10/15 ff g h ii jjjj WMG bb 05 ddd 0*/10/15 ff g h ii jjjj WMG bb 06 ddd 0*/10/15 ff g h ii jjjj WMG bb 21 ddd 0*/10/15 ff g h ii jjjj WMG bb 22 ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 1, 2.*	-30 °C ≤ T _a ≤ +80 °C



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WMG 56 ** ddd 0* ff g h ii jjjj WMG 57 ** ddd 0* ff g h ii jjjj	Ex ia IIC T3 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 1, 2.*	-15 °C ≤ T _a ≤ +150 °C
Note: at variant *MG 56 / 57 ** ddd 0* ff g h ii jjjj the asterisks '**' will be replaced by the marking for connectors 01, 02, 05, 06, 21, 22 according to suitability for use in high temperatures				

2) Reed Sensor (plastic variant) with plug connection

Reed Sensor Type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 01 ddd 51/52/53/55/61 ff g h ii jjjj NMG bb 02 ddd 51/52/53/55/61 ff g h ii jjjj NMG bb 05 ddd 51/52/53/55/61 ff g h ii jjjj NMG bb 21 ddd 51/52/53/55/61 ff g h ii jjjj	Ex ia IIB T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 1, 5.*	-30 °C ≤ T _a ≤ +60 °C
WMG bb 01 ddd 51/52/53/55/61 ff g h ii jjjj WMG bb 02 ddd 51/52/53/55/61 ff g h ii jjjj WMG bb 05 ddd 51/52/53/55/61 ff g h ii jjjj WMG bb 21 ddd 51/52/53/55/61 ff g h ii jjjj	Ex ia IIB T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 1, 3.*	-30 °C ≤ T _a ≤ +60 °C

3) Reed Sensor (metal variant) with light alloy terminal box

Reed Sensor type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 11 ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga/Gb	not applicable	see 4.*	-30 °C ≤ T _a ≤ +80 °C
NMG 56 11 ddd 0* ff g h ii jjjj NMG 57 11 ddd 0* ff g h ii jjjj	Ex ia IIC T3 Ga/Gb	not applicable	see 4.*	-15 °C ≤ T _a ≤ +150 °C
WMG bb 11 ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga/Gb	not applicable	see 2.*	-30 °C ≤ T _a ≤ +80 °C
WMG 56 11 ddd 0* ff g h ii jjjj WMG 57 11 ddd 0* ff g h ii jjjj	Ex ia IIC T3 Ga/Gb	not applicable	see 2.*	-15 °C ≤ T _a ≤ +150 °C

4) Reed Sensor (plastic variant) with light alloy terminal box

Reed Sensor type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 11 ddd 51/55/61 ff g h ii jjjj NMG bb 11 ddd 52/53 ff g h ii jjjj	Ex ia IIB T4 Ga/Gb	not applicable	see 5.*	-30 °C ≤ T _a ≤ +60 °C
WMG bb 11 ddd 51/55/61 ff g h ii jjjj WMG bb 11 ddd 52/53 ff g h ii jjjj	Ex ia IIB T4 Ga/Gb	not applicable	see 3.*	-30 °C ≤ T _a ≤ +60 °C



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5) Reed Sensor (metal variant) with permanently connected cable, single wires or unscreened cable

Reed Sensor type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 5* ddd 0*/10/15 ff g h ii jjjj NMG bb 6* ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 4.*	-30 °C ≤ T _a ≤ +80 °C
NMG 56 ** ddd 0* ff g h ii jjjj NMG 57 ** ddd 0* ff g h ii jjjj	Ex ia IIC T3 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 4.*	-15 °C ≤ T _a ≤ +150 °C
WMG bb 5* ddd 0*/10/15 ff g h ii jjjj WMG bb 6* ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 2.*	-30 °C ≤ T _a ≤ +80 °C
WMG 56 ** ddd 0* ff g h ii jjjj WMG 57 ** ddd 0* ff g h ii jjjj	Ex ia IIC T3 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 2.*	-15 °C ≤ T _a ≤ +150 °C

Note:
at variant *MG 56 / 57 ** ddd 0* ff g h ii jjjj the asterisks will be replaced by the following marking for unscreened connecting cables suited for high temperatures: 92, 93 or 97

6) Reed Sensor (plastic variant) with permanently connected cable, single wires or unscreened cable

Reed Sensor Type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 5* ddd 51/52/53/55/61 ff g h ii jjjj NMG bb 6* ddd 51/52/53/55/61 ff g h ii jjjj	Ex ia IIB T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 5.*	-30 °C ≤ T _a ≤ +80 °C
WMG bb 5* ddd 51/52/53/55/61 ff g h ii jjjj WMG bb 6* ddd 51/52/53/55/61 ff g h ii jjjj	Ex ia IIB T4 Ga/Gb	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 3.*	-30 °C ≤ T _a ≤ +80 °C

7) Reed Sensor (metal variant) with permanently connected cable; screened cable

Reed Sensor type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 7* ddd 0*/10/15 ff g h ii jjjj NMG bb 8* ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 8.*	-30 °C ≤ T _a ≤ +80 °C
WMG bb 7* ddd 0*/10/15 ff g h ii jjjj WMG bb 8* ddd 0*/10/15 ff g h ii jjjj	Ex ia IIC T4 Ga	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 6.*	-30 °C ≤ T _a ≤ +80 °C

8) Reed Sensor (plastic variant) with permanently connected cable; screened cable

Reed Sensor Type	Ex-marking, temperature class and EPL		Particularities or restrictions	Ambient temperature range
	Group II	Group I		
NMG bb 7* ddd 51/52/53/55/61 ff g h ii jjjj NMG bb 8* ddd 51/52/53/55/61 ff g h ii jjjj NMG bb 9* ddd 51/52/53/55/61 ff g h ii jjjj	Ex ia IIB T4 Ga	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 9.*	-30 °C ≤ T _a ≤ +60 °C
WMG bb 7* ddd 51/52/53/55/61 ff g h ii jjjj WMG bb 8* ddd 51/52/53/55/61 ff g h ii jjjj WMG bb 9* ddd 51/52/53/55/61 ff g h ii jjjj	Ex ia IIB T4 Ga	Ex ia I Ma (or optional) Ex ia I Mb	see 10, 7.*	-30 °C ≤ T _a ≤ +60 °C



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Rating:

- | | | |
|--|---------------------------------|---------------------------------|
| 1) Reed Sensor type series with connectors | aMG bb 01 ddd ee ff g h ii jjjj | |
| ff g h ii jjjj | | aMG bb 02 ddd ee |
| ff g h ii jjjj | | aMG bb 05 ddd ee |
| ff g h ii jjjj | | aMG bb 06 ddd ee |
| | | aMG bb 21 ddd ee ff g h ii jjjj |
| | | aMG bb 22 ddd ee ff g h ii jjjj |

Parameters in type coding		Supply circuit				
bb	h	Voltage U_i	Current I_i	Power P_i	Internal effective capacitance C_i	Internal effective inductance L_i
05	0 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
06	0 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
11	0 to 6, 8/9	DC 14 V	N / A	N / A	10 nF	negligible
11.1	0 to 6, 8/9	DC 14 V	N / A	N / A	10 nF	negligible
12	0 to 6, 8/9	DC 14 V	N / A	N / A	negligible	negligible
51	0 to 6, 8/9	AC/DC 8 V	N / A	N / A	negligible	negligible
52	0 to 6, 8/9	AC/DC 11 V	N / A	N / A	negligible	negligible
53	0 to 6, 8/9	AC/DC 15 V	N / A	N / A	negligible	negligible
54	0 to 6, 8/9	DC 30 V	N / A	N / A	negligible	negligible
56	0 to 6, 8/9	DC 15 V	N / A	N / A	negligible	negligible
57	0 to 6, 8/9	DC 30 V	N / A	N / A	negligible	negligible
71	0 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
72	0 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
73	0 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
81	0 to 6, 8/9	DC 30 V	160 mA	800 mW	10 nF	negligible

Parameters in type coding		Pt100 / Pt1000 - or switch circuit(s) (additionally to the supply circuit) Not galvanically separated from the supply circuit				
bb	h	Voltage U_i	Current I_i	Power P_i *)	Internal effective capacitance C_i	Internal effective inductance L_i
05	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
06	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
11	1 to 6, 8/9	DC 14 V	160 mA	800 mW	negligible	negligible
11.1	1 to 6, 8/9	DC 14 V	160 mA	800 mW	negligible	negligible
12	1 to 6, 8/9	DC 14 V	160 mA	800 mW	negligible	negligible
51	1 to 6, 8/9	AC/DC 8 V	160 mA	800 mW	negligible	negligible
52	1 to 6, 8/9	AC/DC 11 V	160 mA	800 mW	negligible	negligible
53	1 to 6, 8/9	AC/DC 15 V	160 mA	800 mW	negligible	negligible
54	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
56	1 to 6, 8/9	DC 15 V	160 mA	800 mW	negligible	negligible
57	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
71	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
72	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
73	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible



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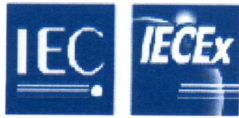
81	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
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*) if more than one Pt100 / Pt1000 - or switch circuit sum of all values

2) Reed Sensor type series with terminal box aMG bb 11 ddd ee ff g h ii jjjj

Parameters in type coding		Supply circuit				
bb	h	Voltage U_i **)	Current I_i	Power P_i	Internal effective capacitance C_i	Internal effective inductance L_i
05	0 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
06	0 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
11	0 to 6, 8/9	DC 14 V	N / A	N / A	10 nF	negligible
11.1	0 to 6, 8/9	DC 14 V	N / A	N / A	10 nF	negligible
12	0 to 6, 8/9	DC 14 V	N / A	N / A	negligible	negligible
51	0 to 6, 8/9	AC/DC 8 V	N / A	N / A	negligible	negligible
52	0 to 6, 8/9	AC/DC 11 V	N / A	N / A	negligible	negligible
53	0 to 6, 8/9	AC/DC 15 V	N / A	N / A	negligible	negligible
54	0 to 6, 8/9	DC 30 V	N / A	N / A	negligible	negligible
56	0 to 6, 8/9	DC 15 V	N / A	N / A	negligible	negligible
57	0 to 6, 8/9	DC 30 V	N / A	N / A	negligible	negligible
71	0 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
72	0 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
73	0 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
81	0 to 6, 8/9	DC 30 V	160 mA	800 mW	10 nF	negligible

Parameters in type coding		Pt100 / Pt1000 or switch circuit(s) (additionally to the supply circuit) galvanically separated from the supply circuit				
bb	h	Voltage U_i **)	Current I_i	Power P_i *)	Internal effective capacitance C_i	Internal effective inductance L_i
05	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
06	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
11	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
11.1	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
12	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
51	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
52	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
53	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	negligible	negligible
54	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
56	1 to 6, 8/9	DC 15 V	160 mA	800 mW	negligible	negligible
57	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible



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71	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
72	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
73	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible
81	1 to 6, 8/9	DC 30 V	160 mA	800 mW	negligible	negligible

*) if more than one Pt100 / Pt1000 - or switch circuit sum of all values

**) to AC 30 V the following applies: sum of peak values of voltages of different circuits ≤ 60 V

3) Reed Sensor type series with permanently connected cable

aMG bb 51 ddd ee ff g h ii jjjj	(single strand)
aMG bb 55/56/57/58/59 ddd ee ff g h ii jjjj	(permanently connected cable unscreened)
aMG bb 64/65/66/67/68/69 ddd ee ff g h ii jjjj	(permanently connected cable unscreened)
aMG bb 75/76/77/78/79 ddd ee ff g h ii jjjj	(permanently connected cable screened)
aMG bb 85/86/87/88/89 ddd ee ff g h ii jjjj	(permanently connected cable screened)
aMG bb 91/96/98 ddd ee ff g h ii jjjj	(permanently connected cable screened)
aMG bb 92/93/97 ddd ee ff g h ii jjjj	
aMG bb 92/93/97 ddd ee ff g h ii jjjj	(permanently connected cable SiHF / ASS cable)

Parameters in type coding		Supply circuit				
bb	h	Voltage U_i **)	Current I_i	Power P_i	Internal effective capacitance C_i	Internal effective inductance L_i
05	0 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
06	0 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
11	0 to 6, 8/9	DC 14 V	N / A	N / A	10 nF + 0.2 nF/m	1 μ H/m
11.1	0 to 6, 8/9	DC 14 V	N / A	N / A	10 nF + 0.2 nF/m	1 μ H/m
12	0 to 6, 8/9	DC 14 V	N / A	N / A	0.2 nF/m	1 μ H/m
51	0 to 6, 8/9	AC/DC 8 V	N / A	N / A	0.2 nF/m	1 μ H/m
52	0 to 6, 8/9	AC/DC 11 V	N / A	N / A	0.2 nF/m	1 μ H/m
53	0 to 6, 8/9	AC/DC 15 V	N / A	N / A	0.2 nF/m	1 μ H/m
54	0 to 6, 8/9	DC 30 V	N / A	N / A	0.2 nF/m	1 μ H/m
56	0 to 6, 8/9	DC 15 V	N / A	N / A	0.2 nF/m	1 μ H/m
57	0 to 6, 8/9	DC 30 V	N / A	N / A	0.2 nF/m	1 μ H/m
71	0 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
72	0 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
73	0 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
81	0 to 6, 8/9	DC 30 V	160 mA	800 mW	10 nF + 0.2 nF/m	1 μ H/m

Parameters in type coding		Pt100 / Pt1000 - or switch circuit(s) *** (additionally to the supply circuit) galvanically separated from the supply circuit				
bb	h	Voltage U_i **)	Current I_i	Power P_i *)	Internal effective capacitance C_i	Internal effective inductance L_i
05	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
06	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
11	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
11.1	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
12	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
51	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m
52	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 μ H/m



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53	1 to 6, 8/9	AC/DC 30 V	160 mA	800 mW	0.2 nF/m	1 µH/m
54	1 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 µH/m
56	1 to 6, 8/9	DC 15 V	160 mA	800 mW	0,2 nF/m	1 µH/m
57	1 to 6, 8/9	DC 30 V	160 mA	800 mW	0,2 nF/m	1 µH/m
71	1 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 µH/m
72	1 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 µH/m
73	1 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 µH/m
81	1 to 6, 8/9	DC 30 V	160 mA	800 mW	0.2 nF/m	1 µH/m

*) if more than one PT100 / PT1000 - or switch circuit sum of all values

**) to AC 30 V the following applies: sum of peak values of voltages of different circuits ≤ 60 V

***) not possible for variant aMG bb 55/65/75/85/98 ddd ee ff g h ii jjjj

4) Ambient temperature range:

-30 °C $\leq T_a \leq$ +80 °C (type aMG bb cc ddd 01/02/03/04/05/06 ff g h ii jjjj)

-30 °C $\leq T_a \leq$ +60 °C (type aMG bb cc ddd 51/55//61 ff g h ii jjjj)

-15 °C $\leq T_a \leq$ +150 °C (type aMG 56/57 01/02/05/06/21/22 ddd 0* ff g h ii jjjj)

-15 °C $\leq T_a \leq$ +150 °C (type aMG 56/57 92/93/97 ddd 0* ff g h ii jjjj)

Specific Conditions of Use

- 1 Reed Sensor type aMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia I Ma' or 'Ex ia I Mb'
Reed Sensor with plug connection: type aMG bb 01/02/05/06//21/22 ddd ee ff g h ii jjjj
None
- 2 Reed Sensor type WMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIC T* Ga/Gb'
Reed Sensor type WMG bb cc ddd 01/02/03/04/05/06/07/09/10/15 ff g h ii jjjj;
(skid tube and position probe made of metal).
- 2.1 The Reed Sensor has to be mounted in boundary walls between areas that require EPL Ga equipment and less hazardous areas in such a manner that degree of protection IP67 according to IEC 60529 is ensured.
- 2.2 The enclosure of the Reed Sensor shall be integrated into the equipotential bonding.
- 2.3 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical damage by external mechanically moved parts have to be adhered too.
- 3 Reed Sensor type WMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIB T4 Ga/Gb'
Reed Sensor type WMG bb cc ddd 51/52/53/55/61 ff g h ii jjjj
(skid tube made of plastic, position probe made of metal).
- 3.1 The Reed Sensor has to be mounted in boundary walls between areas that require EPL Ga equipment and less hazardous areas in such a manner that degree of protection IP67 according to IEC 60529 is ensured.
- 3.2 The metallic fasteners of the Reed Sensor and the position probe moved by external machine parts shall be integrated into the equipotential bonding.
- 3.3 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical damage by external mechanically moved parts have to be adhered too.
- 4 Reed Sensor type NMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIC T* Ga/Gb'
Reed Sensor type NMG bb cc ddd 01/02/03/04/05/06/07/09/10/15 ff g h ii jjjj
(skid tube and float lever made of metal)



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- 4.1 The Reed Sensor has to be mounted in boundary walls between areas that require EPL Ga equipment and less hazardous areas in such a manner that degree of protection IP67 according to IEC 60529 is ensured.
- 4.2 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical hazards caused by vibration or agitation have to be adhered too.
- 5 Reed Sensor type NMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIB T4 Ga/Gb'
Reed Sensor type NMG bb cc ddd 51/52/53/55/61 ff g h ii jjjj
(skid tube made of plastic, float lever made of metal)
- 5.1 The Reed Sensor has to be mounted in boundary walls between areas that require EPL Ga equipment and less hazardous areas in such a manner that degree of protection IP67 according to IEC 60529 is ensured.
- 5.2 The metallic fasteners of the Reed Sensor shall be integrated into the equipotential bonding.
- 5.3 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical hazards caused by vibration or agitation have to be adhered too.
- 5.4 The Reed Sensor may only be used in conjunction with liquids that are earthed and have a conductivity of ≥ 1000 pS/m.
- 6 Reed Sensor type WMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIC T* Ga'
Reed Sensor type WMG bb 7*/8*/9* ddd 01/02/03/04/05/06/07/09/10/15 ff g h ii jjjj;
(skid tube and position probe made of metal).
- 6.1 The permanently connected cable has to be fastened / screwed in the boundary wall between areas that require EPL Ga equipment and less hazardous area in such a manner that degree of protection IP67 is ensured according to IEC 60529.
- 6.2 The enclosure of the Reed Sensor, the position probe moved by external machine parts and the screen of the permanently connected cable shall be integrated into the equipotential bonding.
- 6.3 If the permanently connected cable is installed in Zone 0 (EPL Ga area), intensive electrostatic charges have to be prevented.
- 6.4 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical damage by external mechanically moved parts have to be adhered too.
- 7 Reed Sensor type WMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIB T4 Ga'
Reed Sensor type WMG bb 7*/8*/9* ddd 51/52/53/55/61 ff g h ii jjjj;
(skid tube mad of plastic; position probe made of metal).
- 7.1 The permanently connected cable has to be fastened / screwed in the boundary wall between areas that require EPL Ga equipment and less hazardous area in such a manner that degrees of protection IP67 are ensured according to IEC 60529.
- 7.2 The metallic fasteners of the Reed Sensor, the position probe moved by external machine parts and the screen of the permanently connected cable shall be integrated into the equipotential bonding.
- 7.3 If the permanently connected cable is installed in Zone 0 (EPL Ga area), intensive electrostatic charges have to be prevented.
- 7.4 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical damage by external mechanically moved parts have to be adhered too.



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- 8 Reed Sensor type NMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIC T* Ga'
Reed Sensor type NMG bb 7*/8*/9* ddd 01/02/03/04/05/06/07/09/10/15 ff g h ii jjjj
(skid tube and float lever made of metal)
- 8.1 The permanently connected cable has to be fastened / screwed in the boundary wall between areas that require EPL Ga equipment and less hazardous area in such a manner that degrees of protection IP67 are ensured according to IEC 60529.
- 8.2 The enclosure of the Reed Sensor and the screen of the permanently connected cable shall be integrated into the equipotential bonding.
- 8.3 If the permanently connected cable is installed in Zone 0 (EPL Ga area), intensive electrostatic charges have to be prevented.
- 8.4 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical hazards caused by vibration or agitation have to be adhered too.
- 9 Reed Sensor type NMG bb cc ddd ee ff g h ii jjjj marked with 'Ex ia IIB T4' Ga
Reed Sensor type NMG bb 7*/8*/9* ddd 51/52/53/55/61 ff g h ii jjjj
(skid tube made of plastic, float lever made of metal)
- 9.1 The permanently connected cable has to be fastened / screwed in the boundary wall between areas that require EPL Ga equipment and less hazardous area in such a manner that degrees of protection IP67 are ensured according to IEC 60529.
- 9.2 The metallic fasteners of the Reed Sensor and the screen of the permanently connected cable shall be integrated into the equipotential bonding.
- 9.3 If the permanently connected cable is installed in Zone 0 (EPL Ga area), intensive electrostatic charges have to be prevented.
- 9.4 The technical information provided by the manufacturer regarding the use of the Reed Sensor in conjunction with aggressive or corrosive media and the prevention of mechanical hazards caused by vibration or agitation have to be adhered too.
- 9.5 The Reed Sensor may only be used in conjunction with liquids that are earthed and have a conductivity of ≥ 1000 pS/m.
- 10 Reed Sensor with permanently connected cable (refers to all Ex-markings)
type aMG bb 51/56 to 59 ddd ee ff g h ii jjjj type aMG bb 66 to 69 ddd ee ff g h ii jjjj
type aMG bb 76 to 79 ddd ee ff g h ii jjjj type aMG bb 86 to 89 ddd ee ff g h ii jjjj
type aMG bb 93/96/97 ddd ee ff g h ii jjjj
If the permanently connected multi-strand cable carries different intrinsically safe circuits, it has to be protected against mechanical damage by suitable installation.