KROHNE

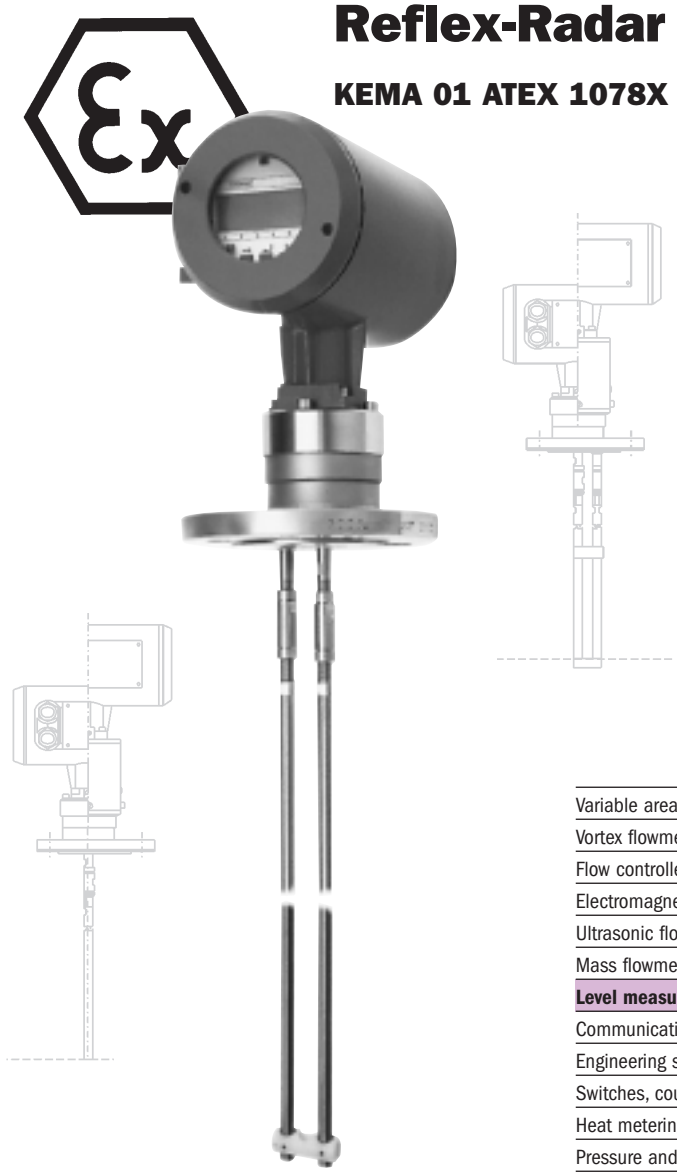
 7.02238.21.00

GR/LD

Supplementary Installation and Operating Instructions

BM 100 A
BM 100 Ai
Reflex-Radar

KEMA 01 ATEX 1078X



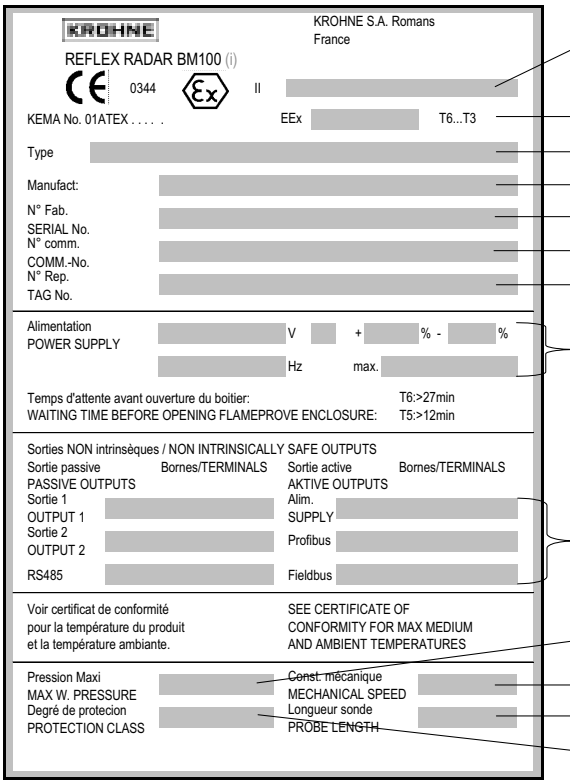
- Variable area flowmeters
- Vortex flowmeters
- Flow controllers
- Electromagnetic flowmeters
- Ultrasonic flowmeters
- Mass flowmeters
- **Level measuring instruments**
- Communications engineering
- Engineering systems & solutions
- Switches, counters, displays and recorders
- Heat metering
- Pressure and Temperature

Contents

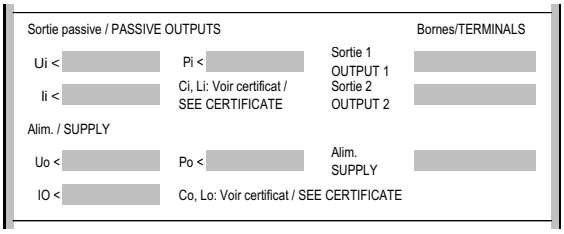
Nameplate

Signal converter without intrinsically safe I/O function

Nameplate for the version with non-intrinsically safe I/O functions, such as current output, RS485, etc.

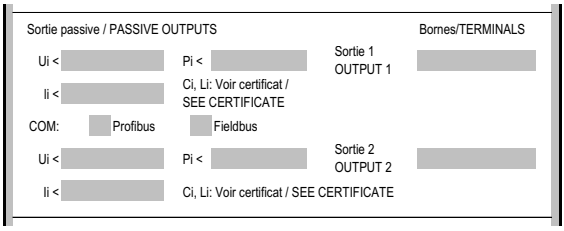


Signal converter with intrinsically safe current outputs



For the BM 100 A i with 1 or 2 intrinsically safe passive current outputs or with one intrinsically safe active current output, the part containing the terminal markings of the outputs and their maximum safety values will change.

Signal converter with intrinsically safe I/O functions



For the BM 100 A i with intrinsically safe communication module (PA-PROFIBUS or Foundation Fieldbus) and one optional intrinsically safe current output, the part containing the terminal markings of the outputs and their maximum safety values will change.

Range of application

The BM 100 A and BM 100 Ai Reflex-Radar level gauges are designed solely for measuring the distance, level,volume and interface of liquids, solids and particulate materials. They can be operated on storage and process tanks and also on still pipes and reference vessels.

Product liability and warranty

Responsibility for suitability and intended use of these level gauges rests solely with the user.

Improper installation and operation of our devices may lead to loss of warranty.

In addition, the “General conditions of sale“, forming the basis of the purchasing contract, are applicable.

General safety information

These Supplementary Instructions may only be used in conjunction with the standard Installation and Operating Instructions for the BM 100 A level gauge. If you do not have these standard Instructions, please contact your nearest KROHNE office.

Special regulations are applicable to use in hazardous locations, and these are described in these Supplementary Instructions (supplied only with “Ex” devices).

The information given in these Instructions contains only the data relevant to explosion protection. The technical details given in the standard Installation and Operating Instructions apply unchanged unless excluded or superseded by these Supplementary Instructions.

Standards / Approvals

In compliance with European Directive 94/9 EC (ATEX 100a), the level gauges described in these Supplementary Instructions are certified in conformity with European Standards EN 50014, EN 50018, EN 50019, EN 50020, EN 50284 and EN 50281-1-1 for use in hazardous locations by the KEMA certification body under **KEMA 01 ATEX 1078 X**.

It is absolutely necessary that the details contained in this approval certificate, together with its boundary conditions, are observed.

The level gauges of the BM 100 A series are suitable for use in explosive atmospheres of all flammable substances of Gas Group IIA, IIB and IIC (with the exception of the cases named in these Supplementary Instructions) and for applications requiring Category 1/2G, 1/2D, 2G or 2D equipment.

Assembly, installation, start-up and maintenance may only be carried out by **"personnel trained in explosion protection"** !

1 Main safety-relevant characteristics

1.1 Approved categories

1.1.1 1/2 G and 1/2 D

The signal converter is installed in hazardous locations requiring Category 2 G or 2 D equipment. The probe is installed in hazardous locations requiring Category 1 G or 1 D equipment. The devices are suitable for use in explosive atmospheres of all flammable substances of Gas Group IIA, IIB and IIC.

Please take note of the following exceptions:

- Plastic-coated probes may not be used in connection with Gas Group IIC substances.
- Devices with plastic-coated probes may not be used for applications requiring Category 1/2 D equipment, unless effective measures have been taken to avoid electrostatic discharge.

1.1.2 2 G and 2 D

BM 100 A level gauges are installed in areas requiring Category 2 G or 2 D equipment. The devices are suitable for use in explosive atmospheres of all combustible substances of Gas Group IIA, IIB and IIC.

Please take note of the following exceptions:

- Plastic-coated probes may not be used in connection with substances of Gas Group IIC.
- Devices with plastic-coated probes may not be used for applications requiring Category 2 D equipment, unless effective measures have been taken to avoid electrostatic discharge.

1.2 Electrical limits

1.2.1 Intrinsically safe I/O functions

Intrinsically safe circuits for I/O functions of the BM 100 A are safety-separated from ground and also from each other (test voltage > 500 V AC). In addition, all intrinsically safe circuits are safety-separated from the non-intrinsically safe power circuits up to a peak voltage of 375 V.

Only certified intrinsically safe equipment with EEx ia IIC type of protection may be connected to the I/O output circuits. This requirement applies independent of the required category and also in cases where the device is not operated in the hazardous location.

The connected equipment may not exceed the following maximum safety values:

I/O function	Marking	Maximum safety values		
Passive current output	EEx ia IIC or EEx ib IIC	Ui ≤ 30V Ci ≤ 5nF	Ii ≤ 250mA Li = 10µH	Pi ≤ 1.0W
Active current output	EEx ia IIC or EEx ib IIC	Uo ≤ 23.5V Co ≤ 110nF	Io ≤ 98mA Lo = 3.98µH	Po ≤ 0.4W
Interface PROFIBUS-PA(1)	EEx ia IIC or EEx ib IIC/IIB	Ui ≤ 30V Ci ≤ 5nF	Ii ≤ 300mA Li = 10µH	Pi ≤ 4.2W
Interface FF	EEx ia IIC or EEx ib IIC/IIB	Ui ≤ 30V Ci ≤ 5nF	Ii ≤ 300mA Li = 10µH	Pi ≤ 4.2W
(1) suitable for connection to intrinsically safe fieldbus systems based on the FISCO model				

1.2.2 Non-intrinsically safe I/O functions

For devices with non-intrinsically safe I/O functions the following restrictions should be noted.

I/O function(1)	Rated values of the non-certified receiver instrument	Restriction for non-certified receiver instruments
Refer to standard Installation and Operating Instructions	Refer to standard Installation and Operating Instructions	Supply power for receiver instruments: max. 250V
(1) only for connection to circuits with “functional extra-low voltage with safety separation (PELV)“		

1.3 Allowable pressure

The maximum allowable operating pressure for level gauges installed in locations requiring Category 2 G or 2 D equipment is dependent on the device flange, the flange material and the maximum operating temperature. The maximum allowable pressure is 10000 kPa (PN100 flange). The upper limit applies e.g. to a stainless steel flange at ambient and process temperatures of 20°C (e.g. DN 50, PN 100). Higher pressure ratings are not allowed.

For applications requiring Category 1/2 G or 1/2 D equipment, atmospheric application conditions (operating pressure 80 - 110kPa) must prevail inside the tank.

1.4 Allowable temperatures

1.4.1 Process temperature

For applications requiring Category **1/2 G** or **1/2 D** equipment, the following process temperatures are allowed as a function of the Temperature Class:

Temperature Class	Process temperature
T6	-20…+85°C
T5	-20…+100°C
T4	-20…+135°C
T3	-20…+150°C
	-20…+200°C at flange temperatures ≤ 150°C and probes with distance piece

For applications requiring Category **2 G** or **2 D** equipment, the following process temperatures are allowed as a function of the Temperature Class:

Temperature Class	Process temperature
T6	-50…+85°C
T5	-50…+100°C
T4	-50…+135°C
T3	-50…+150°C
	-50…+200°C at flange temperatures ≤ 150°C and probes with distance piece

1.4.2 Ambient temperature

The minimum and maximum ambient temperatures (-20…+50°C) for the electronic equipment are independent of Temperature Class and Category.

1.4.3 Surface temperature

For applications requiring Category **1/2 D** or **2 D** equipment,

- with a dust layer of ≤ 5 mm,

- an ambient temperature of ≤ 50°C, and

- a flange temperature of ≤ 150°C,

the maximum surface temperature at any point of the measuring device shall be equal to the process temperature, but at least 75°C.

2 Installation

In accordance with current installation standards for hazardous locations (e.g. EN 60079-14 / VDE 0165), assembly and installation may only be carried out by specialist personnel who have received training in explosion protection.

The notes given in the standard Installation and Operating Instructions and in these Supplementary Instructions and the EC Type Test Certificate (see Attachment A.2) shall be observed without fail.

2.1 Probes

The various probe types shall be installed such that they cannot come into contact with the tank wall, and that, in consideration of internals and flow conditions in the tank, buckling or breakage of the probes can be ruled out with sufficient certainty.

3 Electrical installation

3.1 Terminal compartment

Connection to power and I/O functions is effected in the terminal compartment of the signal converter. The terminal compartment can be constructed in ignition protection categories EEx e, EEx d, EEx ei and EEx di:

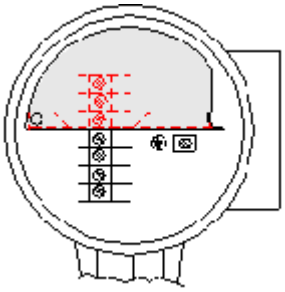
Type of protection EEx e or EEx ei

Only parts certified to EN 50 019 are permitted as cable entries and blanking plugs. The cable clamping area for the supplied cable entries measures 8.5 - 16 mm for the outside cable diameter. If a shielded cable is used, the outside diameter of the inside insulator must be between 6 and 12 mm. Use only cables with the appropriate diameter or approved cable entries with matching clamping area in accordance with their test certificate.

Type of protection EEx d or EEx di

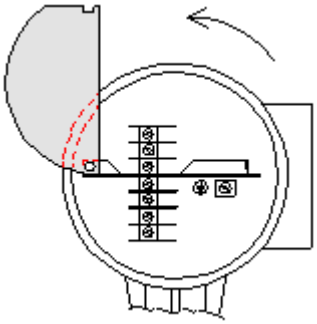
- Direct entry of the connecting cables **by way of flameproof cable glands** into the flameproof terminal compartment requires a separate test certificate in conformity with EN 50 018 for the flameproof glands.
- Direct entry of the connecting cables **by way of conduits** into the flameproof terminal compartment requires, after the flameproof cable conduit has been screwed in, a flameproof joint in accordance with ISO 965 / DIN 13 with a minimum of 5 full turns depth of engagement. A suitable mechanical stopping box shall be provided within 450 mm of the entry into the terminal compartment. Installation of the conduit must be carried out as specified in its separate test certificate. As a rule, an EN 50018 certified adapter is required between the ´PG` thread (heavy-gauge conduit thread) of the terminal compartment and the conduit thread.

Type of protection EEx di or EEx ei



Devices with intrinsically safe I/O functions must be provided with an additional separator in the terminal compartment.

The separator is used for dividing the terminal compartment safely into an area for the supply lines and one for the I/O connection cables.



Turn the separator upwards and to the side to wire up the I/O connecting cables.

3.2 Connecting cables

The connecting cables for the non-intrinsically safe power circuits and the non-intrinsically safe or intrinsically safe I/O circuits must be in keeping with the valid installation standard (e.g. EN 60079-14 / VDE 0165).

Where elevated process temperatures (above 100°C) are concerned, use heat-resistant cables with a continuous service temperature of ≥ 75°C in conformity with the type test certificate.

3.3 Connection of supply power and I/O functions

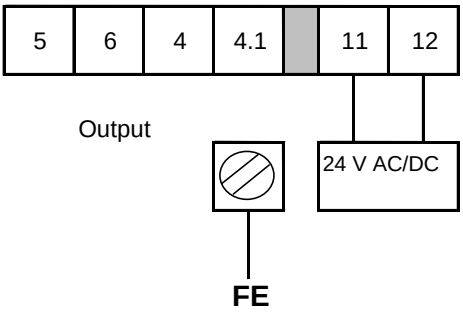
- Before connecting or disconnecting the electrical interconnecting cables of the device, make sure that all cables leading to the signal converter are isolated from the reference potential (ground) of the hazardous location ,. This also applies to protective conductors (PE) and equipotential bonding conductors (PA).
- Carefully insulate all cores and shields of the connecting cables not safety-connected to the equipotential bonding system for the hazardous location from each other and from ground (insulation test voltage 500V_{rms} for conductors in intrinsically safe cables, insulation test voltage 1500V_{rms} for conductors in non-intrinsically safe cables).
- Connect all shields by the shortest possible route to the press-fitted U-clamp terminal (FE) in the terminal compartment. If shields are to be grounded at both ends (e.g. for EMC reasons), adequate equipotential bonding is required between the two shield ends to avoid unacceptable equalizing currents.

- Independent of the type of supply power, the device must be incorporated in the equipotential bonding system in the hazardous location. This can be done by way of an appropriately conductive connection between the device flange system and the tank. If connection to the equipotential bonding system is to be made via a separate conductor, this must be connected to the outer press-fitted U-clamp terminal on the signal converter flange.

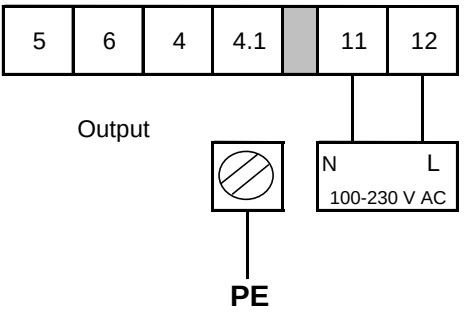
For device versions with intrinsically safe I/O functions (BM 100 A i), only certified intrinsically safe equipment with the maximum values (see Type Test Certificate, Attachment A.2) may be connected to the power terminals. This requirement also applies when the device is not operated in the hazardous location!

3.4 Connection of supply power

For all BM 100 A variants, the power connection is not intrinsically safe.



Functional extra-low voltage with safety separation (PELV). Connection of a functional ground FE is not mandatory.



Low voltage

3.5 Options, current output

Options 1 to 7 apply to devices with intrinsically safe outputs (BM 100 A i) and to devices with non-intrinsically safe outputs (BM 100 A). Options 8 and 9 apply to devices with non-intrinsically safe outputs.

Outputs with Intrinsic Safety type of protection may only be connected to certified feed devices.

I/O functions of the BM 100A (i)						
Option	I/O function		Power terminals	EEx 'e' BM 100 A	EEx 'ia' BM 100 Ai	Electrical data
1	Current output HART®	passive	-5; +6	x	x	see Section 3.3
2	Current output HART +current output	passive passive	-5; +6 -4; +4.1	x	x	
3	Current output HART	active	-5; +4.1*	x	x	
4	PROFIBUS-PA	passive	4; 4.1	x	x	
5	PROFIBUS-PA +current output	passive passive	4; 4.1 -5; +6	x	x	
6	FF	passive	4; 4.1	x	x	
7	FF + current output	passive passive	4; 4.1 -5; +6	x	x	
8	Interface RS485	active	B4; A4.1	x	/	
9	Interface RS485 +current output	active passive	B4; A4.1 -5; +6	x	/	
* power terminals 6 and 4 must be shorted						

4 Initial start-up

Disconnect from power before starting work!

Check the following points before device start-up:

- Do probe, flange and gaskets have adequate corrosion resistance to the tank product?
- Do the data on the signal converter nameplate agree with your operating data?
- Check that the measuring device has been properly installed on the tank.
- Is the equipotential bonding system correctly connected?
- Are supply power and I/O functions correctly connected?
- Are the covers of the terminal and electronics compartments firmly in place?
- Have the special cover locks been tightened down?

Further start-up procedures are described in the standard Installation and Operating Instructions for the BM 100 A.

5 Operation

In a potentially explosive atmosphere you can parametrize the device with the aid of the supplied bar magnet (control via magnetic sensors without opening the housing) or digitally via the signal output.

Do not open the covers of terminal compartment and electronics compartment while operating in a potentially explosive atmosphere.

6 Service / maintenance

The device has no maintenance requirement when used for the intended purpose and in standard applications.

6.1 Signal converter

Disconnect from power before starting work!

Should it prove necessary to open the flameproof enclosure or the electronics compartment in the presence of an explosive atmosphere, allow the waiting time specified on the nameplate of the signal converter to elapse first:

- 27 min for Temperature Class T6
- 12 min for Temperature Class T5

Before connecting or disconnecting the electrical interconnecting cables, make sure that all **cables** leading into the signal converter are **isolated** from the ground (reference potential) of the hazardous location. This also applies to protective conductors (PE) and equipotential bonding conductors (PA).

After carrying out any maintenance work, always **regrease** the flameproof **cover thread** of the signal converter housing, including the **cover gaskets,** with a resin-free and acid-free all-purpose grease.

Dismantling of the electronic unit is described in the standard Installation and Operating Instructions. Use only same-construction units with identical supply voltage and configuration of the output modules.

i Within the scope of checks required to be carried out in hazardous locations to maintain systems in proper working order, carry out the following visual inspections at regular intervals:

- Check housing, cables entries and incoming cables for signs of corrosion and damage.
- Check the tank connections for leakages.

6.2 Probes

The probes do not require any maintenance when used for the intended purpose and under normal operating conditions. However, heavy deposits on the probe can cause measurement deviations or faulty operation.

If the probe is dirty, clean according to the directions given in the standard Installation and Operating Instructions. When dismantling the probe, be aware of working conditions (e.g. check for presence of flammable liquid and/or potentially explosive atmosphere in or around the tank, pressurized tank, etc.).

6.3 Replacement of complete device

Make quite sure that all process connections and the tank are non-pressurized.

In connection with environmentally critical products, carefully decontaminate the wetted parts of the flange system after dismantling.

6.4 Maintenance

Maintenance work of a safety-relevant nature within the meaning of explosion protection may only be carried out by the manufacturer, his authorized representative or under the supervision of authorized inspectors.

Attachment 1 Statement of Conformity to ISO/IEC Guide 22

Konformitätserklärung

Wir: KROHNE SA
Usine des Ors
26103 ROMANS
France

erklären in alleiniger Verantwortung, daß das Produkt:

Füllstandmesser
BM100 A

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt:

Niedrigspannung	NF EN 61010-1
EMV	EN 50081-1
	EN 50082-2
ATEX	EN 50014
	EN 50016
	EN 50019
	EN 50020
	EN 50284
	EN 50281-1-1

gemäß den Bestimmungen der Richtlinien 89/336/EWG (Elektromagnetische Verträglichkeit), 73/23/EWG (Niederspannungsrichtlinie) und 94/9/EG (ATEX).

Romans, den 29. Oktober 2001

Christian Schwarz
Geschäftsleiter

Declaration of Conformity

We: KROHNE SA
Usine des Ors
26103 ROMANS
France

declare under our sole responsibility that the product:

Level Measuring Instrument
BM100 A

to which this declaration relates, is in conformity with the following standards or other normative documents:

Low tension	NF EN 61010-1
EMC	EN 50081-1
	EN 50082-2
ATEX	EN 50014
	EN 50016
	EN 50019
	EN 50020
	EN 50284
	EN 50281-1-1

according to the provisions of Directives 89/336/EEC (Electromagnetic Compatibility), 73/23/EEC (Low Voltage Directive) and 94/9/EC (ATEX).

Romans, October 29th, 2001

Christian Schwarz
General Manager

Déclaration de conformité

Nous: KROHNE SA
Usine des Ors
26103 ROMANS
France

déclarons sous notre seule responsabilité que le produit:

Transmetteur de niveau
BM100 A

auquel se réfère cette déclaration, est conforme aux normes ou autres documents normatifs:

Basse tension	NF EN 61010-1
CEM	EN 50081-1
	EN 50082-2
ATEX	EN 50014
	EN 50016
	EN 50019
	EN 50020
	EN 50284
	EN 50281-1-1

conformément aux dispositions des directives 89/336/CEE (Compatibilité Electromagnétique), 73/23/CEE (Basse Tension) et 94/9/CE (ATEX).

Romans, le 29 octobre 2001

Christian Schwarz
Directeur Général

Attachment 2 EC Type Test Certificate KEMA 01 ATEX 1078 X

KEMA

EC-TYPE EXAMINATION CERTIFICATE

KEMA

EG-Baumusterprüfbescheinigung

KEMA

SCHEDULE

KEMA

Anlage

KEMA

(15) **ANLAGE**

(16) **EG-Baumuster Prüfbescheinigung KEMA 01ATEX1015 X**

Elektrische Daten (Fortsetzung)

Eigensicherer Signalausgang

Aktive Signalausgang ..... = Zündschutzart Eigensicherheit
EEx ia IIC mit folgenden maximalen Werten:
U_o = 23,0 V
I_o = 99 mA (Kreis-Charakteristik)
P_o = 0,6 W
Maximal zulässige externe Induktivität L_o = 3,98 mH,
und oder maximal zulässige externe Kapazität C_o = 110 nF.

Passive Signalausgänge ..... = Zündschutzart Eigensicherheit
HART Protokoll optional EEx ia IIC nur zum Anschluss an bescheinigte eigensichere Stromkreise mit folgenden maximalen Werten:
U_i = 30 V
I_i = 250 mA
und oder P_i = 1 W

Feldbus (PA oder FF) ..... = Zündschutzart Eigensicherheit
EEx ia IIC nur zum Anschluss an bescheinigte eigensichere Stromkreise mit folgenden maximalen Werten:
U_i = 30 V
I_i = 300 mA
P_i = 4,2 W

Für jeden eigensicheren Steuerstromkreis gilt: die effektive Eigenkapazität C_i = 5 nF und die effektive Eigeninduktivität L_i = 10 µH.
Die Signalstromkreise sind untereinander verbunden und von allen übrigen Stromkreisen bis zu einem Scheitelwert der Nennspannung von 375 V sicher galvanisch getrennt.

Nicht eigensicherer Steuerstromkreis-Anschluss:
Aktiver oder passiver Ausgang ..... $U_o \leq 35$ V
HART, Feldbus (PA oder FF) $I_o \leq 95$ mA
U_o = 250 V AC

Montagehinweise

Für die Verlegung von Hilfsenergie und Signalkabeln müssen zugelassene Kabeleinführungen verwendet werden, die für die Anwendung geeignet sind und diese müssen richtig installiert werden.

Bei Einsatz bei Prozesstemperaturen ≥ 100°C muss das Verbindungskabel für Betriebstemperaturen von mindestens 75°C geeignet sein.

Interne Übersetzung — Seite 2/3

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(15) **SCHEDULE**

(16) **to EC-Type Examination Certificate KEMA 01ATEX1015 X**

Electrical data (continued)

Active signal circuit ..... = type of explosion protection intrinsic safety EEx ia IIC, with following maximum values:

U_o = 23.0 V
I_o = 99 mA (linear characteristic)
P_o = 0.6 W

Maximum allowed external inductance L_o = 3.98 mH, maximum allowed external capacitance C_o = 110 nF.

and/or

Passive signal circuit(s) ..... = type of explosion protection intrinsic safety
HART protocol optional EEx ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

U_i = 30 V
I_i = 250 mA
P_i = 1 W

and/or

Fieldbus (PA or FF) ..... = type of explosion protection intrinsic safety
EEx ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

U_i = 30 V
I_i = 300 mA
P_i = 4.2 W

Of any intrinsically safe signal circuit, the effective internal capacitance C_i = 5 nF and the effective internal inductance L_i = 10 µH.
The intrinsically safe circuits are galvanically isolated from the non-intrinsically safe circuits up to a peak value of the rated voltage of 375 V.

Non-intrinsically safe signal circuits:

Active or passive circuit (HART, Fieldbus (PA or FF)) ..... $U_o \leq 35$ V
$I_o \leq 95$ mA
U_o = 250 V AC

Installation instructions

For the connection of the supply and signal cables, certified cable entries must be used, suitable for the application and properly installed.

In applications with a process temperature ≥ 100 °C, the connected cables must be suitable for an operation temperature of at least 75 °C.

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KEMA

(15) **ANLAGE**

(16) **EG-Baumuster Prüfbescheinigung KEMA 01ATEX1015 X**

(17) **Prüfbericht:**
KEMA Nr. 20 0680

(17) **Sonderbedingungen für den sicheren Einsatz**

1. Wenn die Sonde aus Füllstandmessgeräte mit einer metallenden Beschichtung versehen ist, darf diese Sonde nur in einem Gefahrenbereich installiert werden, in dem Geräte der Kategorie 1 G eingeschrieben sind, der Beschriftung der Apparatengruppe auf 80.
2. Der Einsatz eines Füllstandmessgeräte mit einer Sonde mit nichtleitender Beschichtung ist in einem explosionsgefährdeten Bereich, der durch brennbarer Staub entsteht, nicht zulässig, sofern nicht konstruktionsmaßnahmen ergriffen werden, um elektrostatische Entladungen zu vermeiden. Der Anwender muss durch einen Warnhinweis auf dieser Aspekt aufmerksam gemacht werden.
3. Der eigensichere Feldbus Stromkreis (PA oder FF) ist zur Nutzung in Übereinstimmung mit dem FISCO -Modell bestimmt.
4. Die Sonde darf nur in Bereiche eingebaut werden, in der eine explosive Mischung ständig oder für längen Zeitdauer besteht und die explosive Atmosphäre atmosphärische Bedingungen hat (-20 °C ... + 60 °C und 80 ... 100 mPa).

(18) **Grundlegende Sicherheits- und Gesundheitsanforderungen**

Grundlegende Sicherheits- und Gesundheitsanforderungen, die nicht durch die unter (9) aufgeführten Normen erfüllt werden	
Abschnitt	Gegenstand
1.0.5	Kennzeichnung
1.0.6(b)	Bedienungsanleitung
2.1.2	Explosionsfähige Atmosphären durch Luftgemisch-Gemische

Diese grundlegenden Sicherheits- und Gesundheitsanforderungen wurden geprüft und positiv beurteilt. Die Ergebnisse sind in dem unter (9) genannten Bericht aufgeführt.

(19) **Prüfungsdokumentation**

1. EG-Typ-Prüfzertifikat PTB 01 ATEX 1047 U
   EG-Typ-Prüfzertifikat PTB 97 ATEX 2065 U

			Unterschrift
2.	Beschreibung (45 Seiten)	)	
		)	
3.	Zeichnung Nr.	F68207012-05)	
		F68207012-06)	
		F68207012-07)	
		F68207012-09)	19.01.2001
		F68207012-10)	
		F68207012-11)	
		F68207012-12)	
		F68207012-14)	
		F68207012-16)	

Interne Übersetzung — Seite 4/3

KEMA

(15) **SCHEDULE**

(16) **to EC-Type Examination Certificate KEMA 01ATEX1015 X**

(17) **Report**
KEMA No. 20 0680

(17) **Special conditions for safe use**

1. When the probe of a Level Transmitter is coated with a non-conductive layer, this probe may only be installed in a hazardous area where equipment category 1 G is required, under restriction of the apparatus group to IIB.
2. The use of a Level Transmitter with a version with a non-conductive layer is not allowed in a potentially explosive atmosphere caused by combustible dust, unless precautions are taken to prevent electrostatic discharges. This must be pointed out to the user by means of a warning.
3. The intrinsically safe Fieldbus (PA or FF) circuit is intended to be used in accordance with the FISCO model.
4. The probe may only be installed at on area where an explosive mixture is present continuously or for long periods, if the explosive atmosphere is under atmospheric conditions (-20 °C ... + 60 °C and 80 ... 100 mPa).

(18) **Essential Health and Safety Requirements**

Essential Health and Safety Requirements not covered by the standards listed in (9)	
Clause	Subject
1.0.5	Marking
1.0.6(b)	Instructions
2.1.2	Explosive atmospheres caused by air/dust mixtures

These Essential Health and Safety Requirements are examined and positively judged. The results are laid down in the report listed at (9).

(19) **Test documentation**

1. EC-Type Examination Certificate PTB 01 ATEX 1047 U
   EC-Type Examination Certificate PTB 97 ATEX 2065 U

2.	Description (45 pages)	)	
		)	
3.	Drawing No.	F68207012-05)	
		F68207012-06)	
		F68207012-07)	
		F68207012-09)	19.01.2001
		F68207012-10)	
		F68207012-11)	
		F68207012-12)	
		F68207012-14)	
		F68207012-16)	

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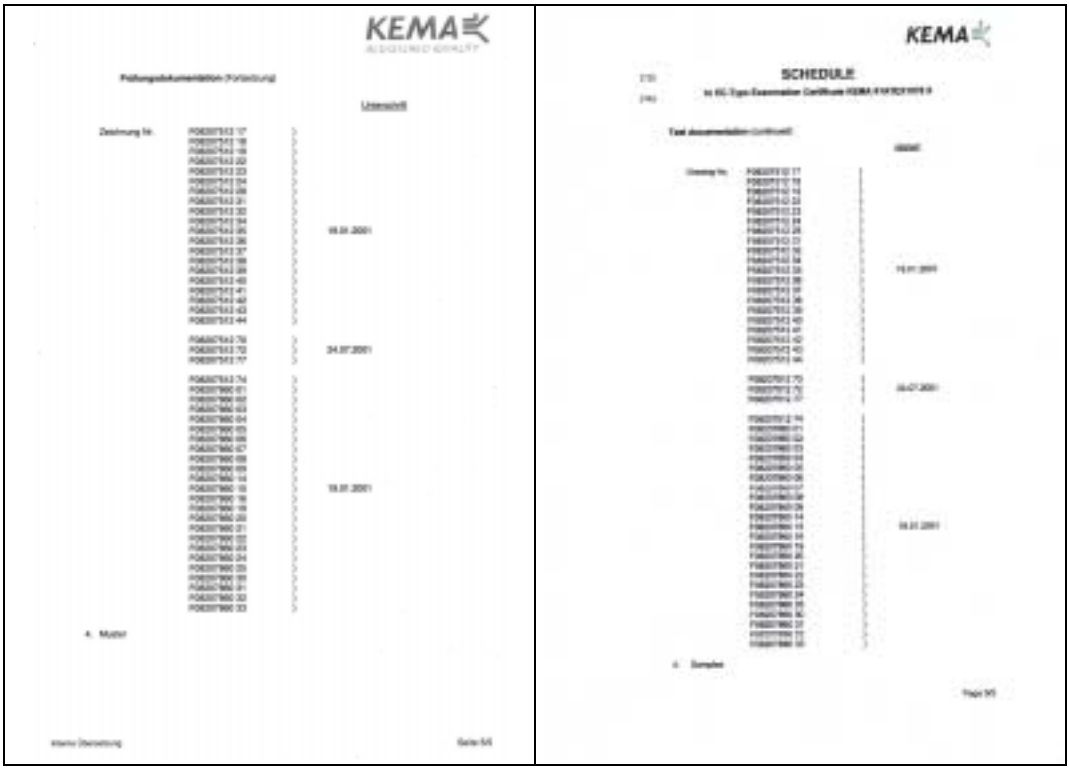

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SCHEDULE

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