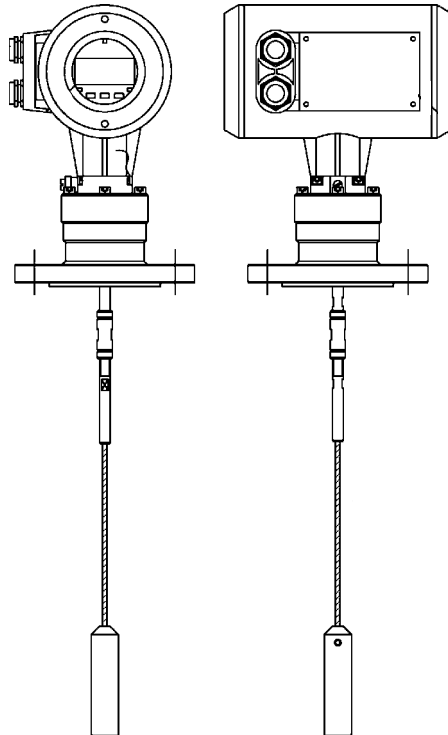




Supplementary Installation and Operating Instructions KEMA 03 ATEX 2572X

Reflex-Radar
VF04
VF04 i



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Redditch, Worcestershire, B98 7DP, England**
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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.

HYCONTROL		Hycontrol Ltd	
REFLEX RADAR VF04		Redditch, England.	
CE 0344	Ex II	Type of protection; approved Gas Group and Temperature Classes, e.g.: EEx d [ia] IIC T6-T3	
KEMA No.	EEx	T6..T3	Approved Category: Ex II 1/2 DT 75...150°C or Ex II 1/2 G
Type	Type code		
Manufact	Year of manufacture		
SERIAL No	Serial number		
COMM.-No	Purchase order number		
TAG No	Measuring point number		
POWER SUPPLY		V	Hz
		+ % Hz	% P max
WAITING TIME BEFORE OPENING FLAMEPROVE ENCLOSURE:		T6:>27min	T5:>12min
NON INTRINSICALLY SAFE OUTPUTS			
PASSIVE OUTPUTS	TERMINALS	ACTIVE OUTPUTS	TERMINALS
OUTPUT 1		SUPPLY	
OUTPUT 2		Profibus	
RS485		Fieldbus	
SEE CERTIFICATE OF CONFORMITY FOR MAX.MEDIUM AND AMBIENT TEMPERATURES			
MAX W. PRESSURE		MECHANICAL SPEED. SEE IN HOUSING	
PROTECTION CLASS		PROBE LENGTH	
Tel: +44 (0)1527 406800 www.hycontrol.com			

Terminal markings

Maximum working pressure (max. 100 bar)

Mechanical primary constant

Probe length

Housing protection class

Signal converter with intrinsically safe current outputs

PASSIVE OUTPUTS		TERMINALS	
Ui <	Pi <	OUTPUT 1	
Ii <	CI, LI: SEE CERTIFICATE	OUTPUT 2	
SUPPLY		SUPPLY	
Uo <	Po <		
IO <	Co, Lo: SEE CERTIFICATE		

For the VF04 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

PASSIVE OUTPUTS		TERMINALS	
Ui <	Pi <	OUTPUT 1	
Ii <	CI, LI: SEE CERTIFICATE	OUTPUT 2	
COM: Profibus		Fieldbus	
Ui <	Pi <		
Ii <	CI, LI: SEE CERTIFICATE		

For the VF04 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 VF04 and VF04i 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 VF04 level gauge. If you do not have these standard Instructions, please contact your nearest HYCONTROL 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 03 ATEX 2572 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 VF04 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**" !

1.1 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

VF04 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 VF04 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	$U_i \leq 30V$ $C_i \leq 5nF$	$I_i \leq 250mA$ $L_i = 10\mu H$	$P_i \leq 1.0W$
Active current output	EEx ia IIC or EEx ib IIC	$U_o \leq 23.5V$ $C_o \leq 110nF$	$I_o \leq 98mA$ $L_o = 3.98\mu H$	$P_o \leq 0.4W$
Interface PROFIBUS-PA ⁽¹⁾	EEx ia IIC or EEx ib IIC/IIB	$U_i \leq 30V$ $C_i \leq 5nF$	$I_i \leq 300mA$ $L_i = 10\mu H$	$P_i \leq 4.2W$
Interface FF	EEx ia IIC or EEx ib IIC/IIB	$U_i \leq 30V$ $C_i \leq 5nF$	$I_i \leq 300mA$ $L_i = 10\mu H$	$P_i \leq 4.2W$
⁽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 $\leq 150^\circ\text{C}$ 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 $\leq 150^\circ\text{C}$ 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 $\leq 50^\circ\text{C}$, and
- a flange temperature of $\leq 150^\circ\text{C}$,

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:

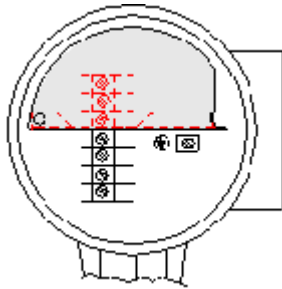
Type of protection EEx e or EEx ei

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

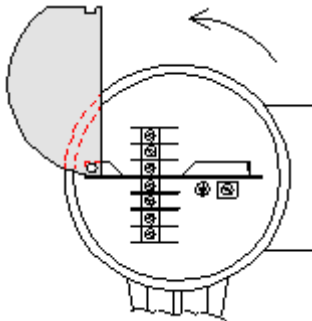
- Direct entry of the connecting cables **by way of flameproof cable glands** into the flameproof terminal compartment requires a separate test certificate in conformity with EN 50 018 for the flameproof glands.
- Direct entry of the connecting cables **by way of conduits** into the flameproof terminal 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 $\geq 75^{\circ}\text{C}$ in conformity with the type test certificate.

3.3 Connection of supply power and I/O functions

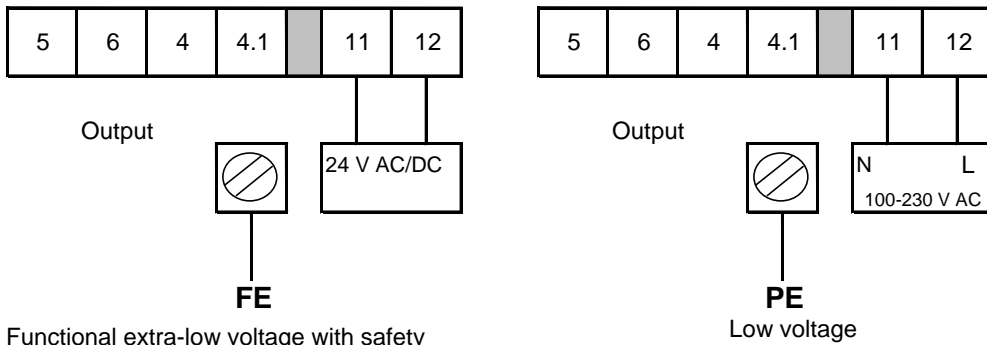
- Before connecting or disconnecting the electrical interconnecting cables of the device, make sure that all cables leading to the signal converter are isolated from the reference potential (ground) of the hazardous location. This also applies to protective conductors (PE) and equipotential bonding conductors (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 $1500\text{V}_{\text{rms}}$ 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 (VF04 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 VF04 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.

3.5 Options, current output

Options 1 to 7 apply to devices with intrinsically safe outputs (VF04 i) and to devices with non-intrinsically safe outputs (VF04). 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 VF04 (i)						
Option	I/O function		Power terminals	EEx 'e' VF04	EEx 'ia' VF04i	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 VF04.

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.

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.



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.

Declaration of Conformity

We: HYCONTROL LIMITED
Larchwood House, Orchard Street,
Redditch, Worcestershire, B98 7DP, England

Declare under our sole responsibility that the product:

**Level Measuring Instrument
VF04, VF04 i**

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 50018
	EN 50019
	EN 50020
	EN 50284
	EN 5028-1-1-1

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

Notified Body:
KEMA Quality BV (0344)
Utrechtseweg 310, 6802 ED Arnhem
The Netherlands.

EC Type Examination Certificate: KEMA 03ATEX2572X

Quality Assurance System monitored by:
LRAQ (0038)
Hiramford
Coventry, Warwickshire, CV3 4JF

Certificate No:

Signed:



Brian C Allen
Managing Director

Date: May 2005

KEMA 

(1) EC-TYPE EXAMINATION CERTIFICATE

(2) Equipment or protective system intended for use in potentially explosive atmospheres – Directive 94/9/EC

(3) EC-Type Examination Certificate Number: KEMA 03ATEX2572 X

(4) Equipment or protective system: Reflex Radar Level Transmitter type VF04... and type SF04...

(5) Manufacturer: Hycontrol Ltd.

(6) Address: Larchwood House, Orchard Street, Redditch, Worcestershire, B98 7DP, England

(7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 confidential report no. 2060596.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
 EN 50114 : 1997 EN 50018 : 2000 EN 50019 : 2000 EN 50020 : 2002
 EN 50284 : 1999 EN 50281-1-1 : 1998

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system 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 or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:
 II 12 GD T 75 °C ... 150 °C
 EEx d [a] IIC T6 ... T3 or EEx de [a] IIC T6 ... T3 or
 EEx d [a] IIB T6 ... T3 or EEx de [a] IIB T6 ... T3

Amhem 4 February 2004
 KEMA Quality B.V.

 Certification Manager

* This Certificate may only be reproduced in its entirety and without any change

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 DUTCH COUNCIL FOR
 ACCREDITATION 

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KEMA

13) **SCHEDULE**

14) to EC-Type Examination Certificate KEMA 03ATEX2572 X

15) **Description**

Reflex Radar Level Transmitter type VF04 ... and type SF04 ... consisting of an aluminium enclosure, containing the electronics circuits, and a passive probe, is used to measure the level or the volume of a fluid or solid process medium inside a vessel or tank. The distance to the surface of the process medium is determined by the reflexion time of an electro-magnetic pulse, transmitted in the probe system. The measured pulse delay is converted into an electrical output signal.

There are variations in the probe type, material and length, in the process connection, in the mounting of the transmitter and in the nature of the electrical output signal.

For the application of the apparatus in a potentially explosive atmosphere caused by the presence of air/gas mixtures, the enclosure is in type of explosion protection flameproof enclosure "d". The terminal compartment is either in type of explosion protection flameproof enclosure "d" or in type of explosion protection increased safety "e".

For the application of the apparatus in a potentially explosive atmosphere caused by the presence of air/dust mixtures, the ingress protection of the enclosure is at least IP 65 in accordance with EN 60529.

Ambient temperature range at the transmitter enclosure -20 °C ... +50 °C.

Following table shows the relation between ambient temperature, temperature of the mounting flange respectively process temperature and temperature class:

Temperature class	Ambient temperature	Process temperature or temperature of mounting flange
T6	≤ 50 °C	≤ 85 °C
T5	≤ 50 °C	≤ 100 °C
T4	≤ 50 °C	≤ 135 °C
T3	≤ 50 °C	≤ 150 °C

In temperature class T6, the temperature of the process medium may be higher than 85 °C, if the surface temperature at the mounting flange does not exceed 85 °C.

For use in a potentially explosive atmosphere caused by combustible dust, at a maximum ambient temperature of 50 °C, up to the maximum process temperature of 150 °C and with a dust layer of maximum 5 mm, the maximum surface temperature at any place of the apparatus is equal to the process temperature, but at least 75 °C.

Electrical data

Supply $U_n = 90 \dots 240 \text{ Vac } (\pm 10 \%)$ or
 (terminals 11 and 12) $24 \text{ Vdc or ac } (\pm 10 \%)$,
 $P_n = \text{max. } 8 \text{ W resp } 10 \text{ VA}$
 $U_m = 250 \text{ Vac}$

Output circuits depending on the signal modules used, the following
 (terminals 4, 1, 4 and 6, 5
 for all type of circuits) non-intrinsically safe signal circuits.

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KEMA

SCHEDULE

to EC-Type Examination Certificate KEMA 03ATEX2572 X

Intrinsically safe signal output circuits:

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

$U_n = 23,5 \text{ V}$
 $I_n = 98 \text{ mA}$ (linear characteristic)
 $P_n = 0,6 \text{ W}$

Maximum allowed external inductance $L_n = 3,98 \text{ mH}$,
 maximum allowed external capacitance $C_n = 110 \text{ nF}$.

and/or

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

$U_i = 30 \text{ V}$
 $I_i = 250 \text{ mA}$
 $P_i = 1 \text{ W}$

and/or

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

$U_i = 30 \text{ V}$
 $I_i = 300 \text{ mA}$
 $P_i = 4,2 \text{ W}$

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

Non-intrinsically safe signal output circuits:

Active or passive circuits (HART, Fieldbus (PA or FF) $U_n \leq 35 \text{ V}$
 $I_n \leq 50 \text{ mA}$
 $U_m = 250 \text{ Vac}$

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 $\geq 100 \text{ °C}$, the connected cables must be suitable for an operation temperature of at least 75 °C.

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KEMA

13) **SCHEDULE**

14) to EC-Type Examination Certificate KEMA 03ATEX2572 X

16) **Report**

KEMA No. 2060596.

17) **Special conditions for safe use**

- 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.
- The use of a Level Transmitter with a sensor 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.
- The intrinsically safe Fieldbus (PA or FF) circuit is intended to be used in accordance with the FISCO model.
- The probe may only be installed in an 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 kPa).

18) **Essential Health and Safety Requirements**

Covered by the standards listed at (8).

19) **Test documentation**

- EC-Type Examination Certificate KEMA 01ATEX1076 X
 signed
- Description (3 pages), rev. 01 05.11.2003
- Drawing No. F3.17254.01 05.11.2003
 F3.17254.02 05.11.2003
 F3.17254.03 05.11.2003

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