

## Instructions

### Measurement evaluation unit type UM-... Ex

#### I Range of application

The measurement evaluation unit type UM-... Ex can serve as part of an overfilling prevention system.

#### II Standards

See EC-type examination certificate including supplements.

#### III Instructions for safe ...

##### III.a ... use

The measurement evaluation unit serves as associated equipment and is not approved for use inside potentially explosive atmospheres. The intrinsically safe sensor circuit of the measurement evaluation unit can be lead in zone 0 and is suitable for all gas groups (IIA, IIB and IIC).

The approval is valid only for the versions of the device

UM-Ex

UM-O Ex

##### III.b ... assembling and dismantling

The measurement evaluation unit is suitable for wall mounting. The evaluation unit must be installed outside potentially explosive atmospheres.

##### III.c ... installation

Wiring work may only be performed with the power disconnected. The special EN regulations including EN 60079-14 and local installation regulations must be observed.

The wiring from the sensor (for example TORRIX Ex ...) to the measurement evaluation unit (preferably blue coloured cable) may not exceed the permissible inductance and capacitance according to section V.

Terminal designation:

Power supply circuit:	L, N and PE (22, 21 and 20)
Acknowledge circuit:	Ack. (19 and 18)
Outputs:	Relay 5 (17, 16 and 15) Relay 4 (14, 13 and 12) Relay 3 (11, 10 and 9) Relay 2 (8, 7 and 6) Relay 1 (5, 4 and 3)
Sensor circuit:	- + Probe 4..20 mA (2 and 1)

##### III.d ... putting into service

Before putting into service, all devices must be checked to ensure they are properly connected and installed. The power supply, also of connected equipment, must be checked.

##### III.e ... maintenance (servicing and emergency repair)

In general, the measurement evaluation unit is maintenance-free. In case of a defect it must be send back to FAFNIR or one of its representations.

#### IV Equipment marking

1	Manufacturer:	FAFNIR GmbH, Hamburg				
2	Type designation:	UM-... Ex				
3	Certificate number:	TÜV 07 ATEX 345770				
4	Ex marking::	⊕ Ex II (1) G [Ex ia Ga] IIC				
5	CE marking:	CE 0044				
6	Technical data:	$T_a \leq +50 \text{ °C}$ $U_o \leq 28.4 \text{ V}$ $I_o \leq 99.5 \text{ mA}$ $P_o \leq 705 \text{ mW}$				
			IIC		IIB	
		$L_o \leq$	680 $\mu\text{H}$	500 $\mu\text{H}$	5 mH	2 mH
		$C_o \leq$	59 nF	67 nF	240 nF	290 nF

#### V Technical data

The power supply for the evaluation unit, depending on model

- U = 24 V DC  $\pm$  20 %, ~4,7 W, or
- U = 24 V AC  $\pm$  10 %, 50 ... 60 Hz, ~7,5 VA, or
- U = 115 V AC  $\pm$  10 %, 50 ... 60 Hz, ~7,5 VA, or
- U = 230 V AC  $\pm$  10 %, 50 ... 60 Hz, ~7,5 VA.

The maximum safety voltage is

- $U_m = 33 \text{ V}$  at 24 V AC/DC, resp.
- $U_m = 130 \text{ V}$  at 115 V AC, resp.
- $U_m = 253 \text{ V}$  at 230 V AC.

The electric circuit of the sensor is designed with "Intrinsic safety" (ia) ignition protection class with a linear output characteristic. Output values per electric circuit are

Output voltage	$U_o \leq 28.4 \text{ V}$
Output current	$I_o \leq 99.5 \text{ mA}$
Output power	$P_o \leq 705 \text{ mW}$
Internal capacitance	$C_i$ negligibly small
Internal inductance	$L_i$ negligibly small
Permissible external	IIC
inductance	IIB
	$L_o \leq$
	680 $\mu\text{H}$
	500 $\mu\text{H}$
	5 mH
	2 mH
capacitance	$C_o \leq$
	59 nF
	67 nF
	240 nF
	290 nF

The intrinsically safe sensor circuits are galvanically isolated from the supply circuit safely up to a peak crest voltage of 375 V.

As outputs five relays are available each with potential-free relay contacts. The terminal values are:

- Alternating current AC  $U \leq 250 \text{ V}; I \leq 5 \text{ A}; P \leq 100 \text{ VA}; \cos \varphi \geq 0.7$
- Direct current DC  $U \leq 250 \text{ V}; I \leq 250 \text{ mA}; P \leq 50 \text{ W}$

When an acknowledge button is used it must be potential-free, as the connectors are wired-up to the power supply!

The evaluation unit can be used in the following ambient temperature range:

$$T_a = -20 \text{ °C} \dots +50 \text{ °C}$$