

# VEGA

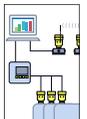
## Safety instructions

### VEGAMET MET381.C\*\*\*\*

IECEX TUN 05.0001

[Ex ia] IIC

[Ex iaD]



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Please note:

These safety instructions are part of the following documentation:

- 30418 - VEGAMET 381 Ex
- 41267 - IECEx Certificate of Compliance IECEx TUN 05.0001

## 1 Area of applicability

These safety instructions apply to signal conditioning instruments VEGAMET MET381.CI\* according to the IECEx Certificate of Compliance IECEx TUN 05.0001 (certificate number on the type label) with issue No. 1 and for all instruments with the number of the safety instruction (30487) on the type label.

## 2 General information

The VEGAMET 381 signal conditioning instruments is an associated electrical apparatus used to process intrinsically safe 4 ... 20 mA/HART signals as well as to supply intrinsically safe sensors with power. They are also used to galvanically isolate intrinsically safe circuits from non-intrinsically safe circuits.

If the VEGAMET 381 is used for power supply of intrinsically safe sensors that are installed and operated in hazardous areas, the general Ex mounting instructions IEC 60079-14 as well as these safety instructions have to be observed.

The operating instructions as well as the corresponding valid Ex installation regulations or standards for electrical equipment must be observed.

The installation of explosion-endangered systems must always be carried out by qualified personnel.

## 3 Technical data

The VEGAMET MET381.CI\* include non-intrinsically safe circuits and one intrinsically safe circuit.

### Non-intrinsically safe circuits

Power supply: (connections KI5, KI6)	U = 20 ... 253 V U <sub>m</sub> = 253 V AC
Relay outputs	
– Relay output 1: (connections KI8, KI9, KI10)	Maximum values: 250 V AC, 3 A, 500 VA 250 V DC, 1 A, 40 W
– Relay output 2: (connections KI11, KI12, KI13)	
– Relay output 3: (connections KI14, KI15, KI16)	
– Relay output 4: (connections KI17, KI18)	
Current output: (connections KI3, KI4)	4 ... 20 mA U <sub>m</sub> = 253 V

### Intrinsically safe circuit

Signal circuit and power supply: (connections KI1 [+], KI2 [-])	In type of protection intrinsic safety Ex ia IIC, Ex ia IIB
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**Slide switch position Ia: 4 ... 20 mA active;** for connection to passive intrinsically safe circuits

Maximum values of the active signal circuit:  
 $U_o = 22.5 \text{ V}$   
 $I_o = 104 \text{ mA}$   
 $P_o = 580 \text{ mW}$   
 Characteristics: linear  
 Effective internal capacity  $C_i = 0$  and inductance  $L_i = 0$   
 The permissible values for the external capacities  $C_o$  and inductances  $L_o$  which result from the combination of  $C_o$  and  $L_o$ , can be found in the following chart.

	Ex ia IIC		Ex ia IIB	
	Max. permissible external inductance $L_o$	0.2 mH	0.5 mH	0.5 mH
Max. permissible external capacitance $C_o$	130 nF	97 nF	640 nF	560 nF

**Slide switch position Ip: 4 ... 20 mA passive;** For connection to active intrinsically safe linear circuits.

Maximum values of the active intrinsically safe circuit connectable to terminals KI1 and KI2:

**for IIC**

$U_o = 22,5 \text{ V}$

$I_o = 70 \text{ mA}$

**for IIB**

$U_o = 22,5 \text{ V}$

$I_o = 200 \text{ mA}$

Effective internal capacity  $C_i = 0$  and inductance  $L_i = 0$   
 The permissible values for the external capacities  $C_o$  and inductances  $L_o$  which result from the combination of  $C_o$  and  $L_o$ , can be found in the following chart.

	Ex ia IIC	Ex ia IIB
Max. permissible external inductance $L_o$	0.2 mH	0,9 mH
Max. permissible external capacitance $C_o$	110 nF	420 nF

The maximum values of the tables are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances

The intrinsically safe signal circuit and power supply is separated from the non-intrinsically safe circuits up to a peak value of the nominal voltage of 375 V.

### 3.1 Application conditions

#### Ambient conditions

Ambient temperature	-20 ... +60 °C (-4 ... +140 °F)
Protection	IP 20

## 4 Installation

If the signal conditioning instruments VEGAMET MET381.CI\* are not set up in dry and clean environments, they must be mounted in a housing with the required protection rating.

The signal conditioning instruments VEGAMET MET381.CI\* must be operated outside hazardous areas. The separating wall must be installed before setup.

If the intrinsically safe circuit is fed into explosive areas of zone 0/1 or 20/21, please make sure that the instruments connected to these circuits meet the requirements of zone 0/1 or 20/21 and are certified accordingly.







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