



Safety instructions

VEGAMET 381

Intrinsic safety

TÜV 05 ATEX 2719

⊕ II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC



CE 0044



Document ID: 30390



VEGA

Contents

1	Area of applicability	4
2	General information	4
3	Technical data	4
4	Installation	5

Please note:

These safety instructions are part of the following documentation:

- 30418 - VEGAMET 381 Ex
- 32844 - EC type approval certificate TÜV 05 ATEX 2719

Editing status: 2017-06-8

DE	Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen
EN	Safety instructions for the use in hazardous areas
FR	Consignes de sécurité pour une application en atmosphères explosibles
IT	Normative di sicurezza per l'impiego in luoghi con pericolo di esplosione
ES	Instrucciones de seguridad para el empleo en áreas con riesgo de explosión
PT	Normas de segurança para utilização em zonas sujeitas a explosão
NL	Veiligheidsaanwijzingen voor gebruik op plaatsen waar ontploffingsgevaar kan heersen
SV	Säkerhetsanvisningar för användning i explosionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfære
FI	Turvallisuusohjeet räjähdysvaarallisissa tiloissa käyttöä varten
EL	Υποδείξεις ασφαλείας για τη χρησιμοποίηση σε περιοχές που υπάρχει κίνδυνος έκρηξης

DE	Die vorliegenden Sicherheitshinweise sind im Download unter www.vega.com standardmäßig in den Sprachen deutsch, englisch, französisch und spanisch verfügbar. Weitere EU-Landessprachen stellt VEGA nach Anforderungen zur Verfügung.
EN	These safety instructions are available as a standard feature in the download area under www.vega.com in the languages German, English, French and Spanish. Further EU languages will be made available by VEGA upon request.
FR	Les présentes consignes de sécurité sont disponibles au téléchargement sous www.vega.com en standard en allemand, en anglais, en français et en espagnol. VEGA met à disposition d'autres langues de l'Union Européenne selon les exigences.
ES	Las indicaciones de seguridad presentes están disponibles en la zona de descarga de www.vega.com de forma estándar en los idiomas inglés, francés y español. VEGA pone a disposición otros idiomas de la UE cuando son requeridos.

1 Area of applicability

These safety instructions apply to the signal conditioning instruments VEGAMET 381.C_* according to the EC type approval certificate TÜV 05 ATEX 2719 with the 1st supplement (certification number on the type label).

2 General information

The VEGAMET 381.C_* signal conditioning instruments are accessory electrical devices 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.C_* is used for power supply of intrinsically safe sensors that are installed and operated in hazardous areas, the general Ex mounting instructions EN 60079-14 as well as these safety instructions have to be observed.

The operating instructions as well as the installation regulations or standards that apply for explosion protection of electrical systems must generally be observed.

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

3 Technical data

The VEGAMET 381.C_* includes non-intrinsically safe circuits and an intrinsically safe circuit.

Non-intrinsically safe circuits

Voltage supply: (terminals 5, 6)

Operating voltage	20 ... 253 V AC, 50/60 Hz, 20 ... 253 V DC
Reference voltage U_m	253 V AC

Relay outputs: (terminals 8/9/10, 11/12/13, 14/15/16, 17/18)

Switching voltage	min. 10 mV DC, max. 250 V AC/DC
Switching current	min. 10 μ A DC, max. 3 A AC, 1 A DC
Breaking capacity	min. 50 mW, max. 500 VA, max. 40 W DC

Current output: (terminals 3/4)

Range	0/4 ... 20 mA
Reference voltage U_m	253 V AC

3.1 Intrinsically safe circuit

Sensor input (terminals 1/2)

Type of input (switchable)	
– mode active	Sensor is powered by VEGAMET 381.C_*
– mode passive	Sensor has an own power supply
Max. terminal voltage U_o	22.5 V
Max. current I_o	
– mode active	104 mA
– mode passive	70 mA (Ex ia IIC), 200 mA (Ex ia IIB)
Max. power P_o (operation mode active)	580 mW

Characteristics	Linear
Effective internal capacitance C_i	0 nF
Effective internal inductance L_i	0 mH
Permissible external inductance/capacitance Ex ia IIC (operating mode active)	
– External inductance L_o	0.2 mH, 0.5 mH
– External capacitance C_o	130 nF, 97 nF
Permissible external inductance/capacitance Ex ia IIB (operating mode active)	
– External inductance L_o	0.5 mH, 1 mH
– External capacitance C_o	640 nF, 560 nF
Permissible external inductance/capacitance Ex ia IIC (mode of operation passive)	
– External inductance L_o	0.2 mH
– External capacitance C_o	110 nF
Permissible external inductance/capacitance Ex ia IIB (mode of operation passive)	
– External inductance L_o	0.9 mH
– External capacitance C_o	420 nF
Separation of intrinsically safe - non intrinsically safe circuit	
– Peak value of nominal voltage	375 V

Application conditions

Ambient conditions

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

Electrical protective measures

Protection rating

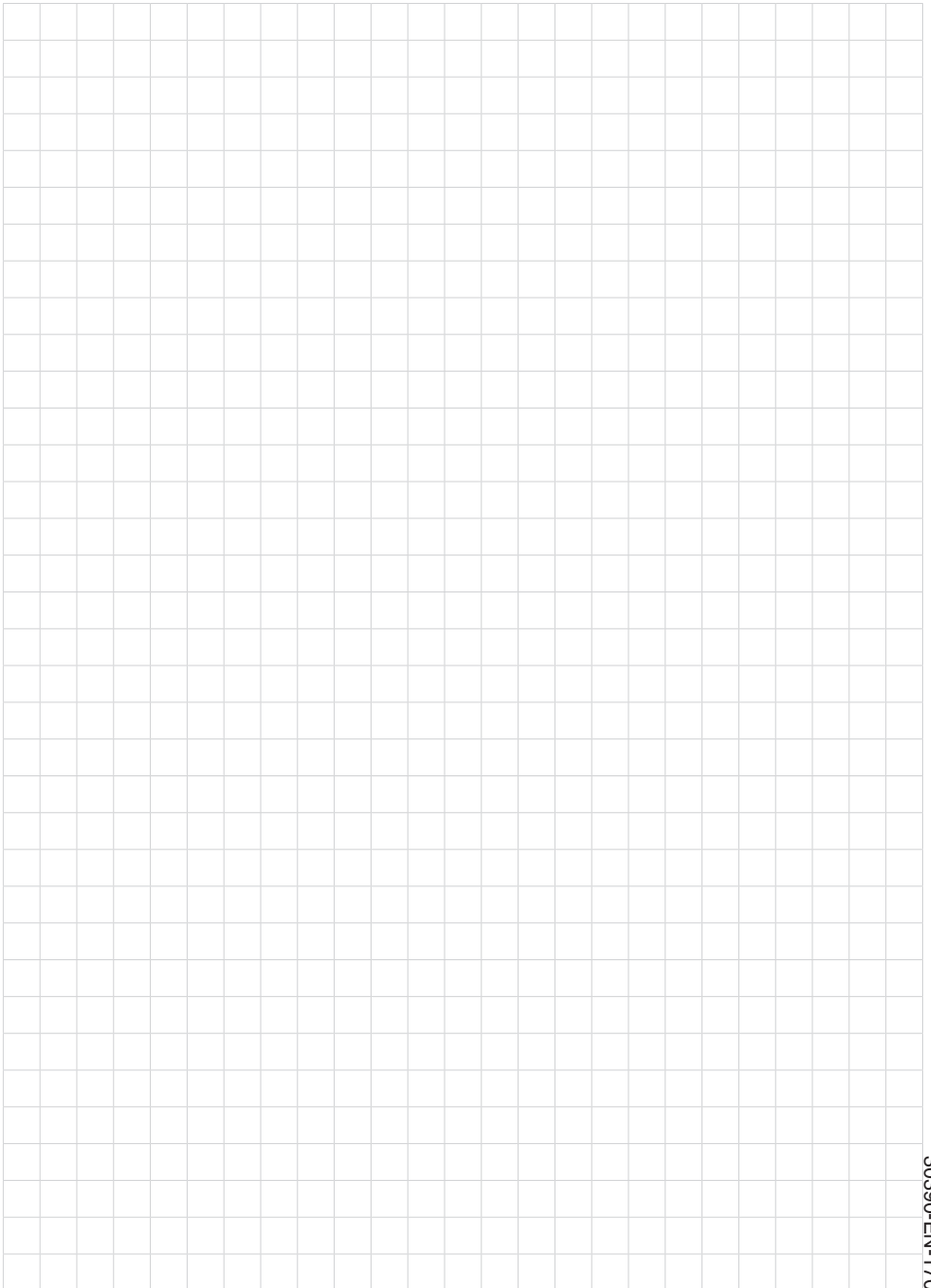
– Wall, rail mounting	IP 20
– Front panel mounting	IP 40

4 Installation

The VEGAMET 381.C_* must be operated outside the hazardous area. The separating wall must be installed before setup. Please observe the instructions in the operating instructions manual.

The VEGAMET 381.C_* may be operated only in areas that allow protection IP 20. Otherwise, it must be mounted in an outer housing with the necessary protection rating.

If the intrinsically safe circuit is led into dust-explosive areas of zone 20 or 21, please make sure that the instruments connected to these circuits meet the requirements of category 1D or 2D and are certified respectively.





Printing date:

VEGA

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

© VEGA Grieshaber KG, Schiltach/Germany 2017



30390-EN-170608

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

Phone +49 7836 50-0
Fax +49 7836 50-201
E-mail: info.de@vega.com
www.vega.com