Safety instructions
VEGATRENN 151.******
VEGATRENN 152.******

IECEx TUN 15.0030 X

[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I

Ex nA IIC T4 Gc

Document ID: 50861

Contents

Please note:

These safety instructions are part of the following documentation:

- 50782 - VEGATRENN 151
- 50783 - VEGATRENN 152
- 50862 - Certificate of Conformity IECEx TUN 15.0030 X

Editing status: 2015-07-17

50861-EN-150826

1 Area of applicability

These safety instructions apply to the single channel and double channel Ex-separators VEGATRENN 151/152 according to the Certificate of Conformity IECEx TUN 15.0030 X (certificate number on the type label) and to all instruments with the number of the safety instruction (50861) on the type label.

Object and type

The single channel separators VEGATRENN 151.*******

Scope

A	Europe
I	worldwide

Approval

X	For EX-free area
A	ATEX II3GExnAIICT4Gc+II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I
C	ATEX II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I
O	ATEX II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I+Ship
U	ATEX II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I+WHG
A	IEC Ex nA IICT4Gc+[ExiaGa/Da]IIC/IIIC,[ExiaMa]I
C	IEC [ExiaGa/Da]IIC/IIIC,[ExiaMa]I
O	IEC[ExiaGa/Da]IIC/IIIC,[ExiaMa]I+ Ship
U	IEC[ExiaGa/Da]IIC/IIIC,[ExiaMa]I+WHG

Version / Angle

X	Single channel separator for 4 .. 20mA sensors

SIL qualification

X	without
S	with, incl. Safety Manual

Housing / Protection

K	Plastic / IP20
U	Plastic IP66/IP67

Terminal blocks / Connection

X	2,5mm² detachable terminal blocks 1 x black / 2 x black
B	2,5mm² detachable terminal blocks 1 x blue / 2 x black

Certificate

M	yes
X	no

The double channel separators VEGATRENN 152.*******

Scope

A	Europe
I	worldwide

Approval

X	For EX-free area
A	ATEX II3GExnAIICT4Gc+II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I
C	ATEX II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I
O	ATEX II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I + Ship
U	ATEX II(1)G/D[ExiaGa/Da]IIC/IIIC, I(M1)[ExiaMa]I+WHG
A	IEC Ex nA IICT4+[ExiaGa/Da]IIC/IIIC,[ExiaMa]I
C	IEC[ExiaGa/Da]IIC/IIIC,[ExiaMa]I
O	IEC[ExiaGa/Da]IIC/IIIC,[ExiaMa]I+Ship
U	IEC[ExiaGa/Da]IIC/IIIC,[ExiaMa]I+WHG

Version / Angle

X	Double channel separator for 4 .. 20mA sensors

SIL qualification

X	without
S	with, incl. Safety Manual

Housing / Protection

K	Plastic / IP20
U	Plastic / IP66/IP67

Terminal blocks / Connection

X	2,5mm² detachable terminal blocks 1 x black / 2 x black
B	2,5mm² detachable terminal blocks 1 x blue / 2 x black

Certificate

M	yes
X	no

2 General information

The single channel separators VEGATRENN 151 and the double channel separators VEGATRENN 152 are used for galvanic separation, intrinsically safe power supply as well as signal transmission of Ex approved 4 … 20 mA sensors in hazardous areas.

The sreparator is ideal in conjunction with signal conditioning instruments, having no own Ex-approval and have to allow bidirectional HART transmission.

The instruments are used for separation of intrinsically safe and non-intrinsically safe circuits.

The VEGATRENN 151/152 is a passive safety barrier, the intrinsically safe current of a sensor in Ex area must be detected and made available to a non-intrinsically safe, passive output.

Since the VEGATRENN 151/152 has no internal voltage supply, only voltage limitations are required. Possible undervoltages on the sensor side must be monitored by the sensor.

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-protected systems must always be carried out by qualified personnel.

The Ex separators of the series VEGATRENN 151 / 152.*A/C/O/U**** were tested and issued on the basis of standard IEC 60079-0 : 2011 IEC 60079-11 : 2011 , IEC 60079-15.

3 Technical data

The VEGATRENN 151/152 include non-intrinsically safe circuits and one intrinsically safe circuit.

Non-intrinsically safe circuits

Voltage supply:	Passive, no extra voltage supply U = 15 … 35 V DC., 4 … 20 mA U_m = 253 V a.c.

Intrinsically safe circuit

Signal circuit: (connections KI1, KI2)	Ignition protection type intrinsic safety [Ex ia] IIC/IIB Max. values of the intrinsically safe circuit: $U_o \leq 18$ V $I_o \leq 32$ mA $P_o \leq 569$ mW Characteristics: rectangular Effective internal capacitance $C_i = 0$ Effective internal inductance $L_i = 0$ The permissible values for the external capacitances 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	IIB	I
Max. permissible external inductance L_o	2 mH	5 mH	10 mH
Max. permissible external capacitance C_o	0.15 µF	1.3 µF	1.5 µF

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.

Application conditions
Permissible ambient temperatures

Permissible ambient temperature at the installation location of an instrument	-20 … +60 °C (-4 … +140 °F)

4 Installation

The single chamber separators VEGATRENN 151 and double chamber separators VEGATRENN 152 can be installed and operated outside hazardous areas and inside hazardous areas Zone 2. The protection rating of VEGATRENN 151/152 corresponds to IP 20.

If the separators VEGATRENN 151/152 are not set up in dry and clean environments, they must be mounted in a housing with the required protection rating.

With zone 2 applications, the following special conditions must be noted:

According to EN/IEC 60079-15, paragraph 6.3.1 the following applies for this instrument:

- The instrument must be installed in a housing tested according to IEC 60079-0 meeting the requirements of protection rating IP 54.

or

- The instrument must be installed in a housing tested according to IEC 60079-0 meeting the requirements of protection rating IP 4X. The instrument must then be exclusively installed in areas offering also a suitable protection against penetration of impurities or liquids.

The degree of pollution of the area where the instrument is used must not exceed 2.

With zone 2 applications, the torque of the terminals should be between 0.4 Nm and 0.5 Nm.

The wire cross-section can be used between 0.25 mm^2 and 2.5 mm^2.

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:

50861-EN-150826

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