

Safety instructions

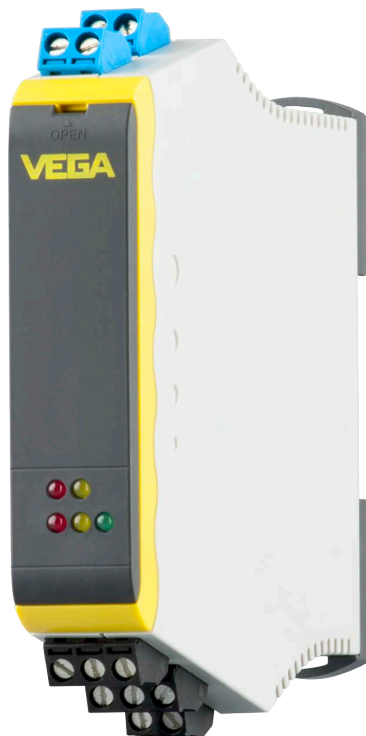
VEGATOR 141, 142

Appropriate instruments

Zone 2

Intrinsic safety

IECEx TUN 14.0031X



Document ID: 48797



VEGA

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Supplementary documentation:

- Operating Instructions VEGATOR 141, 142
- Certificate of Conformity IECEx TUN 14.0031X, Issue No. 1 (Document ID: 48798)

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1 Area of applicability

These safety instructions apply to the signal conditioning instruments VEGATOR 141**S/X****, VEGATOR 142 according to the Certificate of Conformity IECEx TUN 14.0031X, Issue No. 1 (certificate number on the type label) and to all instruments with the number of the safety instruction (48797) on the type label.

2 Important specification in the type code

VEGATOR 141.abcdefg

Position		Feature	Description
a	Scope	I	Worldwide
b	Approval	A	Ex nA nC ic [ia Ga] [ia IIIC Da] [ia I Ma] IIC T4 Gc
		C	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
		U	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + WHG
		O	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + Schiffzulassung (DNV GL, ABS, BV, RINA, LR)
c	Version	X	Single channel 4 ... 20 mA for point level detection
		S	Single channel 4 ... 20 mA for point level detection with fail safe relay
d	SIL qualification	X	without
		S	with, incl. Safety Manual
e	Housing / Protection	K	Plastic /IP 20
f	Terminal blocks / Connection	B	detachable 2,5 mm ² / Ex sensor: 1 x blue; output and operating voltage: 2 x black
g	Certificates	X	No
		M	Yes

VEGATOR 142.abcdefg

Position		Feature	Description
a	Scope	I	Worldwide
b	Approval	A	Ex nA nC ic [ia Ga] [ia IIIC Da] [ia I Ma] IIC T4 Gc
		C	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I
		U	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + WHG
		O	[Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I + Schiffzulassung (DNV GL, ABS, BV, RINA, LR)
c	Version	X	Double channel 4 ... 20 mA for point level detection
d	SIL qualification	X	without
		S	with, incl. Safety Manual
e	Housing / Protection	K	Plastic /IP 20
f	Terminal blocks / Connection	B	detachable 2,5 mm ² / Ex sensor: 1 x blue; output and operating voltage: 2 x black

Position		Feature	Description
g	Certificates	X	No
		M	Yes

3 General information

The signal conditioning instruments VEGATOR 141**S/X****, VEGATOR 142 are used for intrinsically safe power supply of two-wire transmitters, the reliable galvanic separation of this circuits from all other circuits and the processing of the measured data transmitted analogously. The VEGATOR 141**S/X****, VEGATOR 142 is a signal conditioning instrument for level detection for continuously measuring 4 ... 20 mA sensors.

It processes the measured values of a sensor and delivers a switching signal according to the adjusted switching threshold. Hence simple control tasks can be solved.

Typical applications are monitoring functions such as overflow and dry run protections or gauge monitoring tasks. The 4 ... 20 mA input signals and relay outputs are used for control and monitoring of levels. The single channel signal conditioning instruments VEGATOR 141.**X****, VEGATOR 141.**S**** (with additional fail safe relay in the output) are for connection of a 4 ... 20 mA sensor and the double channel signal conditioning instrument VEGATOR 142 for connection of two 4 ... 20 mA sensors.

The current is adjusted with the potentiometer on which the output status changes. The switching point can be changed with the potentiometer in the range between 4 and 20 mA, in mid position, the output switches at approx. 12 mA. With VEGATOR 142, one potentiometer is available for each channel.

Signal conditioning instruments VEGATOR 141**S/X****, VEGATOR 142 must be mounted and operated outside hazardous areas and inside hazardous areas zone 2.

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.

Ignition protection label

Ex nA nC ic [ia Ga] [ia IIIC Da] [ia I Ma] IIC T4 Gc

or

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

4 Technical data

The VEGATOR 141**S/X****, VEGATOR 142 include non-intrinsically safe circuits and one intrinsically safe circuit.

Non-intrinsically safe circuits

Voltage supply: (connections 16/17)	U = 24 ... 230 V AC (-15 ... +10 %)
	U = 24 ... 65 V DC (-15 ... +10 %)
	U _m = 253 V
Relay outputs: (10/11/12, 13/14/15)	Maximum values:
	253 V AC, 3 A
	50 V DC, 1 A

Intrinsically safe circuit

Signal circuit: (connections 1/2, 4/5)

Ignition protection type intrinsic safety Ex ia IIC, IIB, I

Maximum values:

$$U_o \leq 22.4 \text{ V}$$

$$I_o \leq 113.5 \text{ mA}$$

$$P_o \leq 636 \text{ mW}$$

Characteristics: linear

The effective internal inductance L_i and capacity C_i are negligibly small.

The max. values of the table can also be used as concentrated capacitances and concentrated inductances.

The values for IIC and IIB are also permitted for explosive dust atmospheres.

Ex ia	IIC	IIB	I
Max. permissible external inductance L_o	0.5 mH	10 mH	10 mH
Max. permissible external capacitance C_o	0.095 μF	0.55 μF	1.2 μF

Application conditions

Permissible ambient temperatures

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

5 Installation

Signal conditioning instruments VEGATOR 141**S/X****, VEGATOR 142 must be mounted and operated outside hazardous areas and inside hazardous areas zone 2. The protection rating of VEGATOR 141**S/X****, VEGATOR 142 corresponds to IP 20.

If the signal conditioning instruments VEGATOR 141**S/X****, VEGATOR 142 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.

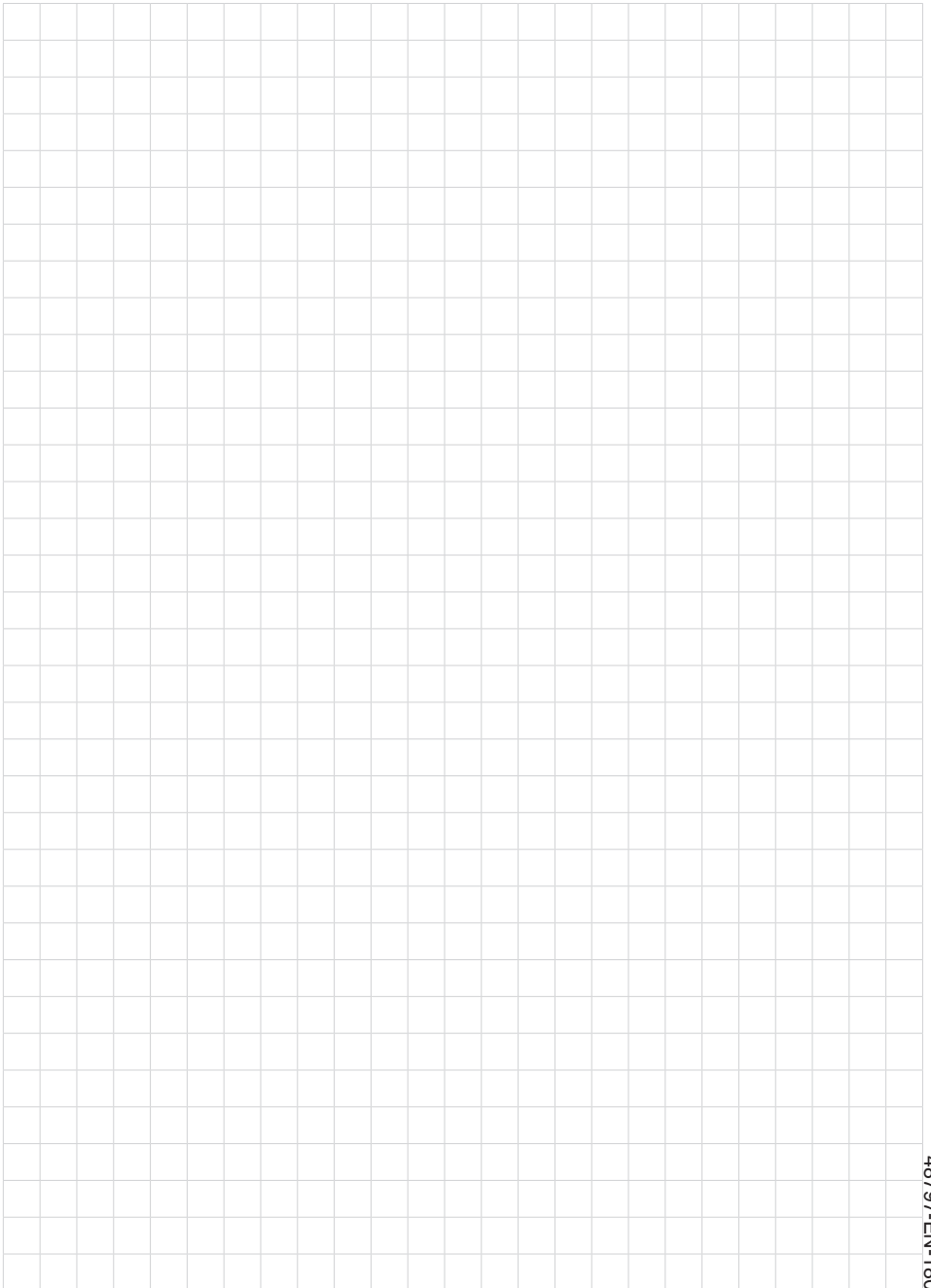
or

- 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 pollution degree 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.

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.



A large grid of graph paper for taking notes, consisting of 30 columns and 40 rows of small squares.

Printing date:

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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

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