



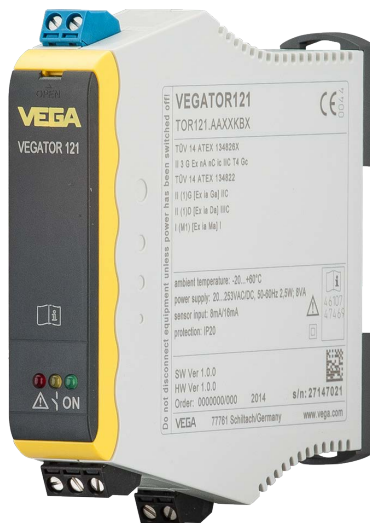
# Safety instructions

## VEGATOR 121, 122

Intrinsic safety

TÜV 14 ATEX 134822

TÜV 14 ATEX 134826 X



CE 0044



Document ID: 47469



# VEGA

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Supplementary documentation:

- Operating Instructions VEGATOR 121, 122
- EU-type approval certificate TÜV 14 ATEX 134822, Issue 01 (Document ID: 47470)
- Conformity statement TÜV 14 ATEX 134826 X, Issue 01 (Document ID: 47556)
- EU declaration of conformity (Document ID: 46604)

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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 <a href="http://www.vega.com">www.vega.com</a> 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 <a href="http://www.vega.com">www.vega.com</a> 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 <a href="http://www.vega.com">www.vega.com</a> 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 <a href="http://www.vega.com">www.vega.com</a> 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 for controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 according to EU type approval certificate TÜV 14 ATEX 134822, Issue 01 (certificate number on the type label) and conformity statement TÜV 14 ATEX 134826 X, Issue 01 (certificate number on the type label) and for all instruments with the number of the safety instructions (47469) on the type label.

## 2 Important specification in the type code

### VEGATOR 121.abcdefg

Position		Feature	Description
a	Scope	A	Europe
b	Approval	A	II 3G Ex nA nC ic IIC T4 Gc + II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I
		F	II 3G Ex nA nC ic IIC T4 Gc + II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I + WHG
		C	II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I
		U	II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I + WHG
		O	II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I + Ship approval (DNV GL, ABS, BV, RINA, LR)
c	Version	X	Single channel (8/16 mA) for point level detection
		S	Single channel (8/16 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 <sup>2</sup> / Ex sensor: 1 x blue; output and operating voltage: 2 x black
g	Certificates	X	No
		M	Yes

### VEGATOR 122.abcdefg

Position		Feature	Description
a	Scope	A	Europe
b	Approval	A	II 3G Ex nA nC ic IIC T4 Gc + II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I
		F	II 3G Ex nA nC ic IIC T4 Gc + II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I + WHG
		C	II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I
		U	II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I + WHG
		O	II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I + Ship approval (DNV GL, ABS, BV, RINA, LR)
c	Version	X	Double channel (8/16 mA) for point level detection

Position		Feature	Description
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 <sup>2</sup> / Ex sensor: 2 x blue; output and operating voltage: 2 x black
g	Certificates	X	No
		M	Yes

### 3 General information

The controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 are used for intrinsically safe power supply of two-wire transmitters, the reliable galvanic separation from all other circuits and the processing of analogously transmitted measured data. The controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 depending on limit values are used for generation of binary output signals on the floating, non-contact relay output.

The controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 work in conjunction with 8/16 mA (current jump signal) limit switches and are mainly used for level detection or pump control for VEGASWING, VEGAVIB and VEGAWAVE vibrating level switches with electronics version "Two-wire". Hence simple control tasks can be solved.

Typical applications are monitoring functions such as overflow and dry run protections. The 8 mA/16 mA input signals and relay outputs or used for control and monitoring of levels. The single channel controllers VEGATOR TOR121\*\*X\*\*\*\*, VEGATOR TOR121\*\*S\*\*\*\* (with additional fail safe relay in the output) are for connection of a current jump signal (8 mA/16 mA) sensor and the double channel controller VEGATOR 122 for connection of two current jump signal (8 mA/16 mA) sensors.

Controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 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.

#### Type of protection marking:

II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIIC, I(M1) [Ex ia Ma] I

II 3G Ex nA nC ic IIC T4 Gc

### 4 Technical data

The VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 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 <sub>m</sub> = 253 V
Relay outputs: (10/11/12, 13/14/15)	Maximum values:
	253 V AC, 3 A
	50 V DC, 1 A

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## Intrinsically safe circuit

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

Type of protection 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 $\mu$ F	0.55 $\mu$ F	1.2 $\mu$ F

## Application conditions

### Permissible ambient temperatures

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

## 5 Installation

Controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 must be mounted and operated outside hazardous areas and inside hazardous areas zone 2. The protection rating of VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 corresponds to IP 20.

If the Controllers VEGATOR TOR121\*\*S/X\*\*\*\*, TOR 122 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.

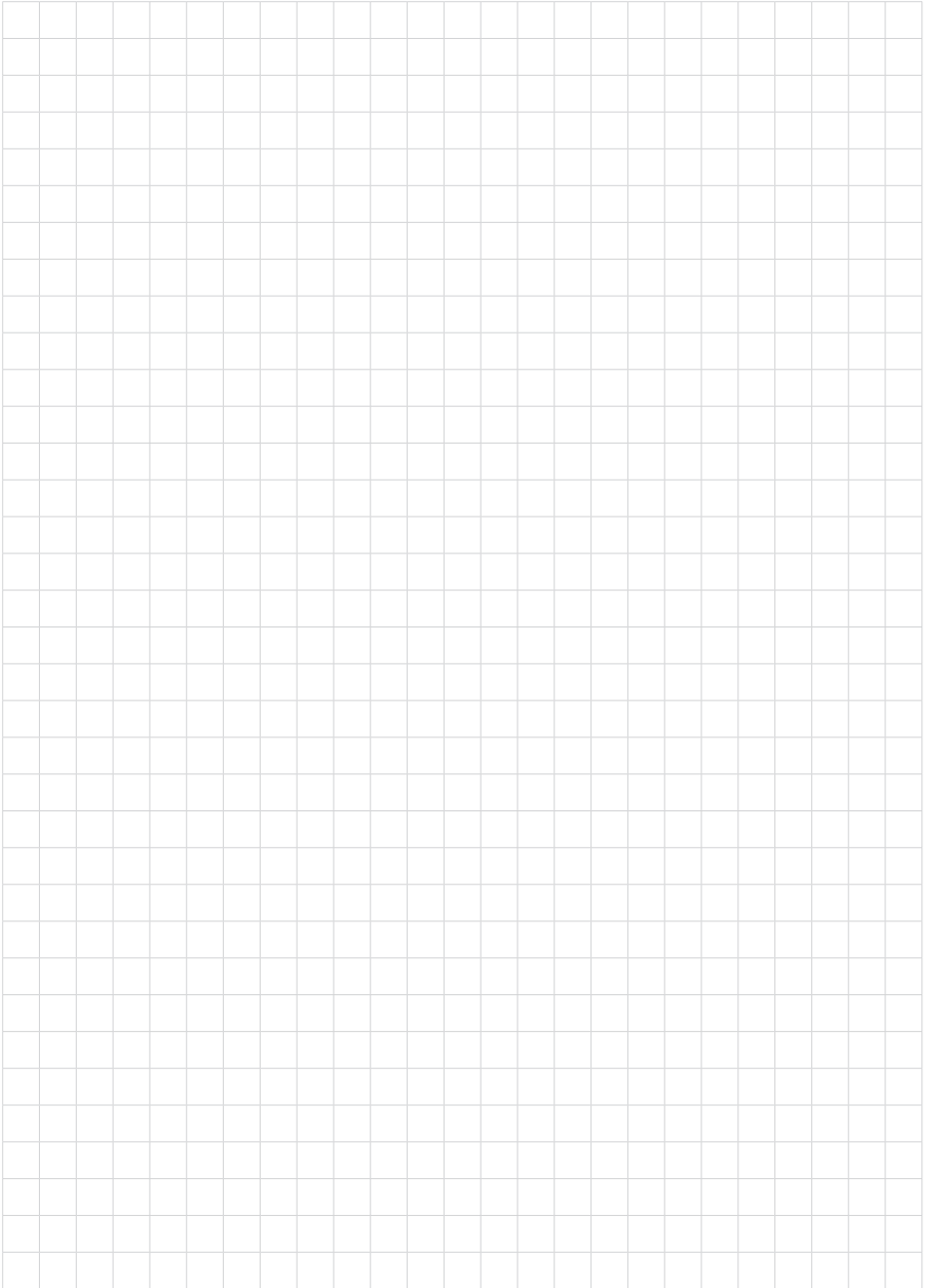
or

- 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.



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.

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