



Safety instructions VEGATOR 141, 142

Intrinsic safety

TÜV 14 ATEX 145373

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

TÜV 14 ATEX 145375 X

II 3G Ex nA nC ic IIC T4 Gc



CE 0044



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VEGA

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Please note:

These safety instructions are part of the following documentation:

- 46838 - VEGATOR 141
- 46839 - VEGATOR 142
- 48796 - EC type approval certificate TÜV 14 ATEX 145373
- 48750 - Conformity statement TÜV 14 ATEX 145375 X

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DE	Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen, verfügbar in den Sprachen deutsch, englisch, französisch und spanisch.
EN	Safety instructions for the use in hazardous areas are available in German, English, French and Spanish language.
FR	Consignes de sécurité pour l'utilisation en atmosphère explosible, disponibles dans les langues allemande, anglaise, française et espagnole.
ES	Instrucciones de seguridad para el empleo en áreas con riesgo de explosión, disponible en los siguientes idiomas alemán, inglés, francés y español.
CZ	Pokud nastanou potíže při čtení bezpečnostních upozornění v otištěných jazycích, poskytneme. Vám na základě žádosti k dispozici kopii v jazyce Vaší země.
DA	Hvis De har svært ved at forstå sikkerhedsforskrifterne på de trykte sprog, kan De få en kopi på Deres sprog, hvis De ønsker det.
EL	Εάν δυσκολεύεστε να διαβάσετε τις υποδείξεις ασφαλείας στις γλώσσες που ήδη έχουν τυπωθεί, τότε σε περίπτωση ζήτησης μπορούμε να θέσουμε στη διάθεσή σας ένα αντίγραφο αυτών στη γλώσσα της χώρας σας.
ET	Kui teil on raskusi trükitud keeltes ohutusnõuete lugemisega, siis saadame me teie järelpärimise peale nende koopia teie riigi keeles.
FI	Laitteen mukana on erikielisiä turvallisuusohjeita. Voit tilata meiltä äidinkielistet turvallisuusohjeet, jos et selviä mukana olevilla kielillä.
HU	Ha a biztonságú előírásokat a kinyomtatott nyelveken nem tudja megfelelően elolvasni, akkor lépjen velünk kapcsolatba: azonnal a rendelkezésére bocsátunk egy példányt az Ön országában használt nyelven.
IT	Se le Normative di sicurezza sono stampate in una lingua di difficile comprensione, potete richiederne una copia nella lingua del vostro paese.
LT	Jeį Jums sunku suprasti saugos nuorodų tekstą pateiktomis kalbomis, kreipkitės į mus ir mes Jums duosime kopiją Jūsų šalies kalba.
LV	Ja Jums ir problēmas drošības noteikumus lasīt nodrukātajās valodās, tad mēs Jums sniegsim pēc pieprasījuma kopiju Jūsu valsts valodā.
MT	F'kaz li jkollok xi diffikulta' biex tifhem listruzzjonijiet ta' sigurta' kif ipprovduti, infurmana u ahna nibghatulek kopja billingwa tieghek.
NL	Als u moeite heeft met het lezen van de veiligheidsinstructies in de afgedrukte talen, sturen wij u op aanvraag graag een kopie toe in uw eigen taal.
PL	W przypadku trudności odczytania przepisów bezpieczeństwa pracy w wydrukowanych językach, chętnie udostępnimy Państwu kopię w języku obowiązującym w danym kraju.
PT	Caso tenha dificuldade de ler as instruções de segurança no idioma, no elas foram impressas, poderá solicitar junto a nós uma cópia em seu idioma.
SK	Pokiaľ nastanú problémy pri čítaní bezpečnostných pokynov vo vydaných jazykoch, poskytneme Vám na základe žiadosti k dispozícii kópiu v jazyku Vašej krajiny.
SL	Kadar se pojavijo težave pri branju varnostnih navodil v izdanih jeziki, vam bomo na osnovi zahtevka dali na razpolago kopijo v jeziku vaše države.
SV	Om du har problem att läsa säkerhetsanvisningarna på de här tryckta språken, ställer vi gärna på begäran en kopia på ditt språk till förfogande.

1 Area of applicability

These safety instructions apply for signal conditioning instruments VEGATOR TOR141**S/X****, TOR 142 according to EC type approval certificate TÜV 14 ATEX 145373 (certificate number on the type label) and conformity statement TÜV 14 ATEX 145375 X (certificate number on the type label) and for all instruments with the number of the safety instructions (48795) on the type label.

2 General information

The signal conditioning instruments VEGATOR TOR141**S/X****, TOR 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 TOR141**S/X****, TOR 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 TOR141.**X****, VEGATOR TOR141.**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 TOR141**S/X****, TOR 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.

3 Technical data

The VEGATOR TOR141**S/X****, TOR 142 include non-intrinsically safe circuits and one intrinsically safe circuit.

Non-intrinsically safe circuits

Voltage supply: (connections 16/17)	$U = 24 \dots 230 \text{ V AC } (-15 \dots +10 \%)$
	$U = 24 \dots 65 \text{ V DC } (-15 \dots +10 \%)$
	$U_m = 253 \text{ V}$
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)

4 Installation

Signal conditioning instruments VEGATOR TOR141**S/X****, TOR 142 must be mounted and operated outside hazardous areas and inside hazardous areas zone 2. The protection rating of VEGATOR TOR141**S/X****, TOR 142 corresponds to IP 20.

If the signal conditioning instruments VEGATOR TOR141**S/X****, TOR 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.

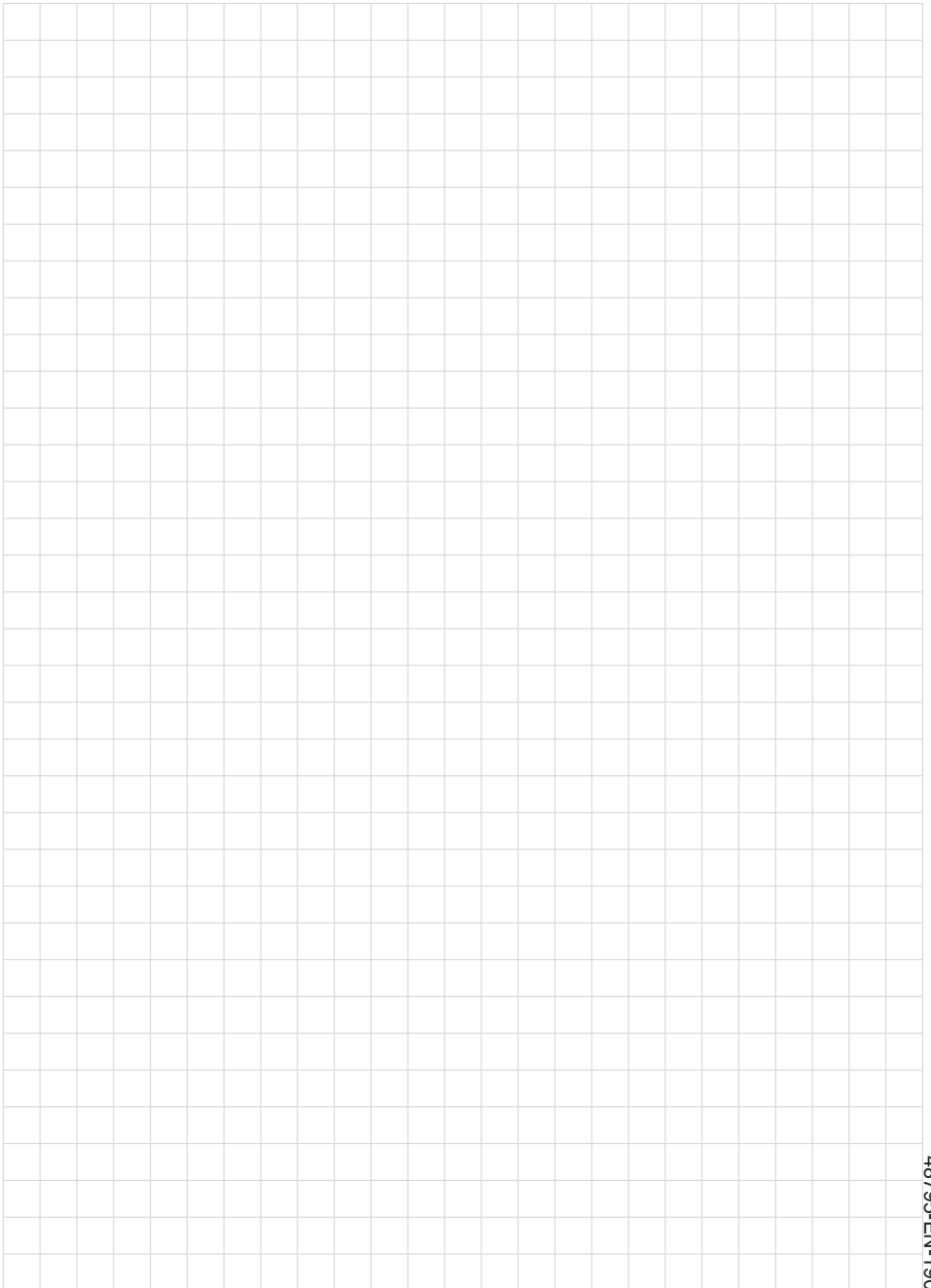
or

- 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.





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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