Sicherheitshinweise / Safety instructions

ATEX / UKEX / IECEx / cULus

VEGABAR 28, 29, 38, 39

Eigensicherheit "i"

Intrinsic safety "i"

Document ID: 62859

1 **ATEX**

2 **UKEX**

3 **IECEx**

4 **cULus**

- EU-Baumusterprüfbescheinigung DEMKO 19 ATEX 2222X (Document ID: 62860)
- UK-Type Examination Certificate UL21UKEX2280X (Document ID: 66501)
- Certificate of Conformity IECEx ULD 19.0013X (Document ID: 62861)
- Certificate of Compliance cULus E498814 (Document ID: 62862)

Redaktionsstand: 2022-01-21

62859-UN-220121

DE Sicherheitshinweise
EN Safety instructions
FR Consignes de sécurité
ES Instrucciones de seguridad

VEGABAR 28, 29, 38, 39

Eigensicherheit "i"

Zweileiter 4 … 20 mA

0044

Document ID: 62859

VEGA

ATEX

Inhaltsverzeichnis

1 Geltung 4

2 Gerätekonfiguration/-eigenschaften 4

3 Allgemeines 4

4 Anwendungsbereich 4

5 Besondere Betriebsbedingungen ("X"-Kennzeichnung) 5

6 Sicherer Betrieb 5

7 Wichtige Hinweise für die Montage und Wartung 5

8 Elektrostatische Aufladung (ESD) 6

9 Elektrische Daten 7

10 Mechanische Daten 7

11 Thermische Daten 7

Ergänzende Dokumentation:

- Betriebsanleitungen VEGABAR 28, 29, 38, 39
- EU-Baumusterprüfbescheinigung DEMKO 19 ATEX 2222X (Document ID: 62860)
- EU-Konformitätserklärung (Document ID: 61834)

Redaktionsstand: 2021-11-11

62859-01-220131

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 explosiionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfare
FI	Turvallisuusohjeet räjähdysvaarallisisssa 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 francais 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.

62859-01-220131

1 Geltung

Diese Sicherheitshinweise gelten für die VEGABAR 28, 29, 38, 39 der Typenreihen:

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

Mit den Elektronikausführungen:

- Zweileiter 4 … 20 mA

Gemäß der EU-Baumusterprüfbescheinigung DEMKO 19 ATEX 2222X (Bescheinigungsnummer auf dem Typschild) und für alle Geräte mit dem Sicherheitshinweis 62859.

Die Zündschutzkennzeichnung sowie die zugrundeliegenden Normenstände können aus der EU-Baumusterprüfbescheinigung entnommen werden.

Normenstände:

- EN IEC 60079-0: 2018
- EN 60079-11: 2012
- EN 60079-26: 2015

Zündschutzkennzeichen:

- II 1G, 1/2G, 2G Ex ia IIC T4 Ga, Ga/Gb, Gb

2 Gerätekonfiguration/-eigenschaften

Die detaillierten Gerätekonfigurationen können mit Hilfe der Seriennummersuche auf unserer Homepage abgerufen werden.

Gehen Sie auf "www.vega.com" und geben Sie im Suchfeld die Seriennummer Ihres Gerätes ein.

Alternativ finden Sie alles über Ihr Smartphone:

- VEGA Tools-App aus dem "*Apple App Store*", "*Google Play Store*" oder " *Baidu Store*" herunterladen
- DataMatrix-Code auf dem Typschild des Gerätes scannen oder
- Seriennummer manuell in die App eingeben

3 Allgemeines

Die VEGABAR 28, 29, 38, 39 werden zur Messung der Druckarten Überdruck, Absolutdruck und Vakuum verwendet. Messmedien sind Gase, Dämpfe und Flüssigkeiten

Die VEGABAR 28, 29, 38, 39 bestehen aus einem Elektronikgehäuse, einem Prozessanschlusselement und einer Druckmesszelle.

Die VEGABAR 28, 29, 38, 39 sind geeignet für den Einsatz in explosionsfähiger Atmosphäre aller brennbaren Stoffe der Explosionsgruppen IIA, IIB und IIC.

Die VEGABAR 28, 29, 38, 39 sind für Anwendungen geeignet, die Betriebsmittel der Kategorie 1G (EPL Ga), 1/2G (EPL Ga/Gb) oder 2G (EPL Gb) erfordern.

4 Anwendungsbereich

Die VEGABAR 28, 29, 38, 39 werden mit dem mechanischen Befestigungselement (Prozessanschluss) im explosionsgefährdeten Bereich der Zone 0 errichtet, die ein Betriebsmittel der Kategorie 1G (EPL Ga) erfordern.

Die VEGABAR 28, 29, 38, 39 werden mit dem mechanischen Befestigungselement (Prozessan-

62859-01-220131

schluss) in der Trennwand zwischen Zone 1 und Zone 0 errichtet, die Bereiche voneinander trennt, in denen Betriebsmittel der Kategorie 2G (EPL Gb) oder 1G (EPL Ga) erforderlich sind.

Die VEGABAR 28, 29, 38, 39 werden mit dem mechanischen Befestigungselement (Prozessanschluss) im explosionsgefährdeten Bereich der Zone 1 errichtet, die ein Betriebsmittel der Kategorie 2G (EPL Gb) erfordern.

5 Besondere Betriebsbedingungen ("X"-Kennzeichnung)

Die nachfolgende Übersicht listet alle besonderen Eigenschaften des VEGABAR 28, 29, 38, 39, welche eine Kennzeichnung mit dem Symbol "X" hinter der Zertifikatsnummer erforderlich machen.

Elektrostatische Aufladung (ESD)
Die Details hierzu sind dem Kapitel "*Elektrostatische Aufladung (ESD)*" dieser Sicherheitshinweise zu entnehmen.

Umgebungstemperatur
Der in der EN 60079-0 festgelegte Umgebungstemperaturbereich kann eingeschränkt sein.

Die Details hierzu sind dem Kapitel "*Thermische Daten*" dieser Sicherheitshinweise zu entnehmen.

Wandstärke der Trennwand zwischen Zone 1 und Zone 0
Die für Geräte mit metallischer Messzellen in der EN 60079-26 festgelegte Wandstärke der Trennwand zwischen Zone 1 und Zone 0 liegt unter 1 mm. Die entsprechenden Hinweise im Kapitel "*Sicherer Betrieb*" sind zu beachten.

6 Sicherer Betrieb

Allgemeine Betriebsbedingungen
- Wenn die VEGABAR 28, 29, 38, 39 in explosionsgefährdeten Bereichen errichtet und betrieben werden, müssen die allgemeinen Errichtungsbestimmungen für den Explosionsschutz EN 60079-14 sowie diese Sicherheitshinweise beachtet werden
- Das Gerät muss nach der Zündtemperatur des Gases oder Dampfes und der Umgebungstemperatur ausgewählt werden, die Hinweise nach EN 60079-14 Kapitel 5.6 sind zu beachten
- Gerät nicht außerhalb der elektrischen, thermischen und mechanischen Angaben des Herstellers betreiben
- Das Gerät sollte nicht an Prozessanlagen montiert werden, bei denen der Druck den Bereich von 0,8 … 1,1 bar überschreiten kann

Anschlussbedingungen
- Die Anschlussleitung des VEGABAR 28, 29, 38, 39 ist fest und so zu verlegen, dass sie hinreichend gegen Beschädigungen geschützt ist
- Beträgt die Temperatur an den Einführungsteilen mehr als 70 °C müssen entsprechende temperaturbeständige Anschlussleitungen verwendet werden
- Dem VEGABAR 28, 29, 38, 39 kann bei Bedarf ein geeigneter Überspannungsschutz vorgeschaltet werden

7 Wichtige Hinweise für die Montage und Wartung

Allgemeine Hinweise
Für die Montage, die elektrische Installation, die Inbetriebnahme und die Wartung des Gerätes müssen folgende Voraussetzungen erfüllt werden:
- Das Personal muss über die Qualifikation entsprechend seiner Funktion und Tätigkeit verfügen
- Das Personal muss im Explosionsschutz ausgebildet sein

- Das Personal muss mit den entsprechenden gültigen Vorschriften vertraut sein, z. B. Projektierung und Errichtung entsprechend der EN 60079-14
- Bei Arbeiten am Gerät (Montage, Installation, Wartung) ist sicherzustellen, dass keine explosionsfähige Atmosphäre vorhanden ist, wenn möglich, Versorgungsstromkreise spannungslos schalten
- Gerät entsprechend den Herstellerangaben, der EU-Baumusterprüfbescheinigung und entsprechend den gültigen Vorschriften, Regeln und Normen installieren
- Veränderungen am Gerät können den Explosionsschutz und somit die Sicherheit beeinträchtigen, daher ist es nicht zulässig, dass Reparaturen durch den Endverbraucher durchgeführt werden

Montage

Bei Installation des Gerätes ist folgendes zu beachten:

- Das Gerät muss (über den Prozessanschluss oder eine externe Erdungsklemme) an das Erdungssystem angebunden werden
- Mechanische Beschädigungen am Gerät sind zu vermeiden
- Schlag- und Reibfunken sind zu vermeiden
- Wird das Gerät als Trennwandgerät verwendet, muss der Betreiber die gültigen anwendbaren Installationsvorschriften beachten, sowie einen genügend dichten Verbindungsspalt (IP66 oder IP67) zwischen dem weniger gefährdeten Bereich und Zone 0, welche EPL Ga erfordert, sicherstellen

Wartung

Zur Sicherstellung der Funktion des Gerätes wird eine periodische Sichtkontrolle empfohlen auf:

- Sichere Montage
- Keine mechanischen Beschädigungen oder Korrosion
- Durchgescheuerte oder anderweitig beschädigte Leitungen
- Keine lockere Verbindungen der Leitungsanschlüsse, Potenzialausgleichsanschlüsse
- Korrekte und eindeutig gekennzeichnete Leitungsverbindungen

Eigensicherheit "i"

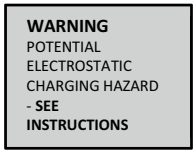
- Gültige Vorschriften für die Zusammenschaltung von eigensicheren Stromkreisen beachten, z. B. Nachweis der Eigensicherheit entsprechend der EN 60079-14
- Das Gerät ist ausschließlich für den Anschluss an bescheinigte, eigensichere Betriebsmittel geeignet

8 Elektrostatische Aufladung (ESD)

Bezüglich der Gefahr elektrostatischer Aufladungen ist zu beachten:

- Reibung an den Oberflächen vermeiden
- Isolierende Oberflächen nicht trocken reinigen

Das Warnschild weist auf die Gefahr hin:



Größte projezierte isolierende Oberfläche

- VEGABAR 28, 29: ≤ 11 cm²
- VEGABAR 28, 29: ≤ 38 cm²

Prozessanschluss aus Werkstoff PVDF
Die Geräte sind so zu errichten/installieren, dass Folgendes ausgeschlossen werden kann:

- elektrostatische Aufladungen durch Betrieb, Wartung und Reinigung
- prozessbedingte elektrostatische Aufladungen, z. B. durch vorbei strömende Messstoffe

Für Prozessmedien mit einer Leitfähigkeit kleiner 10^{-8} S/m darf der VEGABAR 28, 29, 38, 39 nicht zum Einsatz kommen, wenn an isolierenden Oberfläche stark ladungserzeugende Prozesse vorhanden sind.

9 Elektrische Daten

Versorgungs- und Signalstromkreis:	
M12-Steckverbinder: Pin 1[+], Pin 3[-] ISO 4400-Steckverbinder (mit Klappdeckel): Pin 1[+], Pin 2[-] Direkter Kabelabgang mit Aderfarbe braun [+], blau [-]	In Zündschutzart Eigensicherheit Ex ia IIC
	Zum Anschluss an einen bescheinigten, eigensicheren Stromkreis. $U_i \leq 30$ V DC $I_i \leq 131$ mA $P_i \leq 983$ mW
	Die wirksame innere Kapazität C_i ist vernachlässigbar klein. Die wirksame innere Induktivität L_i ist ≤ 5 µH.
	In der Ausführung mit fest montiertem Anschlusskabel sind folgende Werte zu berücksichtigen: $L_i = 0{,}55$ µH/m $C_{i\ Ader/Ader} = 58$ pF/m $C_{i\ Ader/Schirm} = 270$ pF/m

10 Mechanische Daten

Die folgenden mechanischen Daten gelten für alle Gehäuse- und Elektronikausführungen.

Mechanische Daten	
Schutzart (EN 60529)	M12-Steckverbinder: IP66/IP67 ISO 4400-Steckverbinder (mit Klappdeckel): IP65 Direkter Kabelabgang: IP68 (0,5 bar)/IP69
Überspannungskategorie	III
Verschmutzungsgrad	4

11 Thermische Daten

Temperaturklasse	**Zulässiger Prozesstemperaturbereich an der Messzelle**	**Zulässiger Umgebungstemperaturbereich am Elektronikgehäuse**
T4 … T1	$-40 \leq T_{process} \leq +100$ °C	$-40 \leq T_{amb} \leq +70$ °C

Contents

1 Area of applicability 10

2 Device configuration/-properties 10

3 General information 10

4 Application area 10

5 Specific conditions of use ("X" identification) 11

6 Safe operating mode 11

7 Important information for mounting and maintenance 11

8 Electrostatic charging (ESD) 12

9 Electrical data 13

10 Mechanical data 13

11 Thermal data 13

Supplementary documentation:

- Operating instructions VEGABAR 28, 29, 38, 39
- EU-type approval certificate DEMKO 19 ATEX 2222X (Document ID: 62860)
- EU declaration of conformity (Document ID: 61834)

Editing status: 2021-11-11

62859-01-220131

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 explosiionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfare
FI	Turvallisuusohjeet räjähdysvaarallisisssa 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 francais 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.

62859-01-220131

1 Area of applicability

These safety instructions apply to the VEGABAR 28, 29, 38, 39 of type series:

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

With the electronics versions:

- Two-wire 4 … 20 mA

According to EU type approval certificate DEMKO 19 ATEX 2222X (certificate number on the type label) and for all instruments with safety instruction 62859.

The classification as well as the respective standards are stated in the EU type approval certificate.

Standards:

- EN IEC 60079-0: 2018
- EN 60079-11: 2012
- EN 60079-26: 2015

Type of protection marking:

- II 1G, 1/2G, 2G Ex ia IIC T4 Ga, Ga/Gb, Gb

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to " www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the " *Apple App Store*", " *Google Play Store*" or " *Baidu Store*"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGABAR 28, 29, 38, 39 are used to measure the pressure types gauge pressure, absolute pressure and vacuum. Measured media are gases, vapours and liquids

The VEGABAR 28, 29, 38, 39 consist of an electronics housing, a process connection element and a pressure measuring cell.

The VEGABAR 28, 29, 38, 39 are suitable for applications in hazardous atmospheres of all combustible materials of explosion groups IIA, IIB and IIC.

The VEGABAR 28, 29, 38, 39 are suitable for applications requiring category 1G (EPL Ga), 1/2G (EPL Ga/Gb) or 2G (EPL Gb) instruments.

4 Application area

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 0 requiring category 1G (EPL Ga) instruments.

The VEGABAR 28, 29, 38, 39 are installed with the mechanical fastening element (process fitting) in the partition wall between zone 1 and zone 0, which separates areas from each other where category 2G (EPL Gb) or 1G (EPL Ga) instruments are required.

62859-01-220131

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 1 requiring category 2G (EPL Gb) instruments.

5 Specific conditions of use ("X" identification)

The following overview is listing all special properties of VEGABAR 28, 29, 38, 39, which make a labelling with the symbol "X" behind the certificate number necessary.

Electrostatic charging (ESD)
You can find the details in chapter " *Electrostatic charging (ESD)*" of these safety instructions.

Ambient temperature
The ambient temperature range stipulated in EN 60079-0 can be limited.

You can find the details in chapter " *Thermal data*" of these safety instructions.

Wall thickness of the separating wall between zone 1 and zone 0
The wall thickness of the partition wall between zone 1 and zone 0, which is specified for devices with metallic measuring cells in EN 60079-26, is less than 1 mm. The corresponding notes in chapter " *Safe operating mode*" must be observed.

6 Safe operating mode

General operating conditions
- If the VEGABAR 28, 29, 38, 39 are installed and operated in hazardous areas, the general Ex installation regulations EN 60079-14 as well as these safety instructions must be observed
- The device must be selected according to the ignition temperature of the gas or vapour and the ambient temperature, the instructions according to EN 60079-14 chapter 5.6 must be observed
- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer
- The equipment should not be mounted on process equipment, in which pressure can exceed the range of 0.8 … 1.1 bar

Connection conditions
- The connection cable of VEGABAR 28, 29, 38, 39 has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used
- If necessary, a suitable overvoltage arrester can be connected in front of the VEGABAR 28, 29, 38, 39

7 Important information for mounting and maintenance

General instructions
The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:

- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to EN 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.
- The instrument has to be mounted according to the manufacturer specifications, the EU type approval certificate and the valid regulations and standards

- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user

Mounting
When installing the device, observe the following:

- The instrument must be connected to the grounding system (via the process fitting or an external grounding clamp)
- Mechanical damage on the instrument must be avoided
- Impact and friction sparks are to be avoided
- If the device is used as a partition wall device, the operator must observe the valid applicable installation regulations and ensure a sufficiently tight joint (IP66 or IP67) between the less hazardous area and zone 0 are requiring EPL Ga

Maintenance
To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

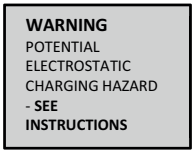
- Valid regulations for connection of intrinsically safe circuits, e.g. proof of intrinsic safety according to EN 60079-14 must be observed
- The instrument is only suitable for connection to certified, intrinsically safe instruments

8 Electrostatic charging (ESD)

Take note in case of danger of electrostatic charges:

- Avoid friction on the surfaces
- Do not clean insulating surfaces with a dry cloth

The warning label indicates danger:



Largest projected insulating surface

- VEGABAR 28, 29: ≤ 11 cm^2
- VEGABAR 28, 29: ≤ 38 cm^2

Process fitting of PVDF
The instruments must be mounted/installed in such a way that the following can be ruled out:

- electrostatic charges during operation, maintenance and cleaning.
- process-related electrostatic charges, e.g. by measuring media flowing past

For process media with a conductivity lower than 10^{-8} S/m, the VEGABAR 28, 29, 38, 39 must not be used if strongly charge generating processes are present on insulating surfaces.

9 Electrical data

Supply and signal circuit:	
M12 plug connector: Pin 1[+], Pin 3[-] ISO 4400 plug connector (with hinged cover): Pin 1[+], Pin 2[-] Direct cable outlet with wire colour brown [+], blue [-]	In type of protection intrinsic safety Ex ia IIC
	For connection to a certified, intrinsically safe circuit. $U_i \leq 30$ V DC $I_i \leq 131$ mA $P_i \leq 983$ mW
	The effective internal capacitance C_i is negligibly small. The effective internal inductance L_i is ≤ 5 µH.
	In the version with fix mounted connection cable, the following values must be taken into consideration: $L_i = 0.55$ µH/m $C_{i\ wire/wire} = 58$ pF/m $C_{i\ wire/screen} = 270$ pF/m

10 Mechanical data

The following mechanical data are valid for all housing and electronics versions.

Mechanical data	
Protection (EN 60529)	M12 plug connector: IP66/IP67 ISO 4400 plug connection (with flap lid): IP65 Direct cable outlet: IP68 (0.5 bar)/IP69
Overvoltage category	III
Pollution degree	4

11 Thermal data

Temperature class	**Permissible process temperature range at the measuring cell**	**Permissible ambient temperature range on the electronics housing**
T4 … T1	$-40 \leq T_{process} \leq +100$ °C	$-40 \leq T_{amb} \leq +70$ °C

Table des matières

1 Validité 16

2 Configuration / propriétés des appareils 16

3 Généralités 16

4 Domaine d'application 16

5 Conditions d'utilisation particulières (caractérisation "X") 17

6 Fonctionnement sécurisé 17

7 Instructions importantes pour le montage et l'entretien 17

8 Charge électrostatique (ESD) 18

9 Caractéristiques électriques 19

10 Caractéristiques mécaniques 19

11 Caractéristiques thermiques 19

Documentation complémentaire:

- Notices de mise en service VEGABAR 28, 29, 38, 39
- Certificat de contrôle de type UE DEMKO 19 ATEX 2222X (ID de document : 62860)
- Déclaration de conformité UE (ID du document : 61834)

Date de rédaction : 2021-11-11

62859-01-220131

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 explosiionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfare
FI	Turvallisuusohjeet räjähdysvaarallisisssa 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 francais 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 Validité

Ces consignes de sécurité sont valables pour les VEGABAR 28, 29, 38, 39 des séries :

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

Avec les versions électroniques :

- Deux fils 4 … 20 mA

Conformément au certificat de contrôle de type UE DEMKO 19 ATEX 2222X (numéro du certificat sur la plaque signalétique) et pour tous les appareils portant le numéro de la consigne de sécurité 62859.

L'identification de protection contre l'inflammation ainsi que les états normalisés sur lesquels elle se fonde figurent dans le certification de contrôle de type UE.

États normalisés :

- EN IEC 60079-0: 2018
- EN 60079-11: 2012
- EN 60079-26: 2015

Mode de protection :

- II 1G, 1/2G, 2G Ex ia IIC T4 Ga, Ga/Gb, Gb

2 Configuration / propriétés des appareils

Vous pouvez consulter la configuration détaillée de l'appareil au moyen de la recherche de numéros de série sur notre page d'accueil.

Rendez-vous sur " www.vega.com" et indiquez dans la zone de recherche le numéro de série de votre appareil.

Vous trouverez en alternative tout sur votre smartphone :

- Télécharger l'application VEGA Tools depuis l'" *Apple App Store*", le " *Google Play Store*" ou le " *Baidu Store*"
- Numériser le code DataMatrix situé sur la plaque signalétique de l'appareil ou
- Entrer le numéro de série manuellement dans l'application

3 Généralités

Les VEGABAR 28, 29, 38, 39 sont utilisés pour la mesure des types de pression suivants : surpression, pression absolue et vide. La mesure est effectuée dans les gaz, les vapeurs et les liquides.

Les VEGABAR 28, 29, 38, 39 sont composés d'un boîtier de l'électronique, d'un élément de raccord process et d'une cellule de mesure.

Les VEGABAR 28, 29, 38, 39 sont appropriés pour l'utilisation dans des atmosphères explosives de toutes les matières inflammables des groupes d'explosion IIA, IIB et IIC.

Les VEGABAR 28, 29, 38, 39 sont appropriés pour les applications nécessitant un matériel de la catégorie 1G (EPL Ga), 1/2G (EPL Ga/Gb) ou 2G (EPL Gb).

4 Domaine d'application

Les VEGABAR 28, 29, 38, 39 sont installés avec l'élément de fixation mécanique (raccord process) dans l'atmosphère explosible de la zone 0 nécessitant un matériel de la catégorie 1G (matériel EPL Ga).

62859-01-220131

Les VEGABAR 28, 29, 38, 39 sont installés avec l'élément de fixation mécanique (raccord process) dans la paroi de séparation entre la zone 1 et la zone 0 qui sépare les uns des autres les lieux dans lesquels des matériels de la catégorie 2G (EPL Gb) ou 1G (EPL Ga) sont nécessaires.

Les VEGABAR 28, 29, 38, 39 sont installés avec l'élément de fixation mécanique (raccord process) dans l'atmosphère explosible de la zone 1 nécessitant un matériel de la catégorie 2G (matériel EPL Gb).

5 Conditions d'utilisation particulières (caractérisation "X")

L'aperçu ci-après liste toutes les caractéristiques spécifiques au VEGABAR 28, 29, 38, 39 nécessitant une caractérisation par le symbole "X" après le numéro de certificat.

Charge électrostatique (ESD)
Les détails à cet effet sont indiqués au chapitre " *Charge électrostatique*" des présentes consignes de sécurité.

Température ambiante
La plage de température ambiante déterminée dans EN 60079-0 peut être limitée.

Les détails sont indiqués au chapitre " *Caractéristiques thermiques*" des présentes consignes de sécurité.

Épaisseur de la paroi de séparation entre zone 1 et zone 2
L'épaisseur de paroi de séparation entre la zone 1 et la zone 2 définie dans la norme EN 60079-26 pour les appareils avec cellules de mesure est inférieure à 1mm. Respectez impérativement les instructions correspondantes du chapitre " *Fonctionnement sûr*".

6 Fonctionnement sécurisé

Conditions de service générales

- Si les VEGABAR 28, 29, 38, 39 sont installés et exploités en atmosphères explosibles, il faudra respecter les règles d'installation générales concernant la protection contre les explosions, EN 60079-14, ainsi que les présentes consignes de sécurité
- Il convient de choisir l'appareil en fonction de la température d'ignition du gaz ou de la vapeur et de la température ambiante, tenez compte à cet effet des instructions selon EN 60079-14 au chapitre 5.6.
- Ne pas utiliser l'appareil hors des spécifications électriques, thermiques et mécaniques du fabricant
- L'appareil ne devrait pas être monté sur des installations process sur lesquelles la pression peut dépasser la plage de 0,8 … 1,1 bar.

Conditions de raccordement

- Le câble de raccordement du VEGABAR 28, 29, 38, 39 doit être posé de manière fixe et de telle manière qu'il soit suffisamment protégé contre les endommagements.
- Si la température au niveau des entrées de câble dépasse 70 °C, il faudra utiliser du câble de raccordement adéquat et résistant aux températures sur site
- Si besoin est, une protection appropriée contre les surtensions peut être installée en amont du VEGABAR 28, 29, 38, 39

7 Instructions importantes pour le montage et l'entretien

Remarques générales
Pour le montage, l'installation électrique, la mise en service et l'entretien de l'appareil, les conditions suivantes doivent être réunies :

- Le personnel doit disposer des qualifications correspondant à ses fonctions et activités
- Le personnel doit être formé à la protection contre les explosions
- Le personnel doit être familier des dispositions en vigueur, par ex. sur la conception, sélection et construction d'installations électriques selon la norme EN 60079-14
- Lors des opérations sur l'appareil (montage, installation, entretien), il est impératif de s'assurer de l'absence totale d'atmosphère explosible, et si possible mettre les circuits électriques d'alimentation hors tension.
- Installer l'appareil conformément aux indications du fabricant, au certificat de contrôle de type UE et aux réglementations en vigueur.
- Les modifications de l'appareil peuvent affecter la protection anti-déflagrante et ainsi la sécurité, il n'est donc pas autorisé que les réparations soient effectuées par l'utilisateur final

Montage

Il convient de prendre en compte ce qui suit lors de l'installation de l'appareil :

- L'appareil doit être intégré dans le système de mise à la terre (via le raccord process ou au moyen d'une borne de terre externe)
- Éviter les dommages mécaniques à l'appareil
- Évitez impérativement les étincelles dues aux chocs ou à la friction
- Si l'appareil est utilisé comme paroi de séparation, l'exploitation est tenu de respecter les préconisations d'installation applicables en vigueur ainsi que d'assurer une fente de liaison suffisamment étanche (IP66 ou IP67) entre la zone la moins dangereuse et la zone 0, qui exige l'EPL Ga.

Maintenance

Pour garantir le fonctionnement de l'appareil, un contrôle visuel périodique est recommandé concernant :

- Fiabilité du montage
- Aucune détérioration mécanique ou corrosion
- Câbles usés ou autrement détériorés
- Aucune connexion lâche des raccordements de conduite, raccordements de compensation de potentiel
- Connexions de câbles correctes et clairement marquées

Sécurité intrinsèque "i"

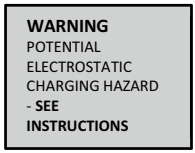
- Respecter les prescriptions en vigueur pour l'interconnexion de circuits courant à sécurité intrinsèque, par ex. la preuve de la sécurité intrinsèque selon EN 60079-14
- L'appareil est exclusivement destiné au raccordement sur des matériels certifiés à sécurité intrinsèque

8 Charge électrostatique (ESD)

À respecter en matière de risques électrostatiques :

- éviter les frottements sur les surfaces
- Ne pas nettoyer les surfaces isolantes à sec

La plaque signalétique avertit contre le danger :



Plus grande surfaces isolante projetée

- VEGABAR 28, 29: ≤ 11 cm^2
- VEGABAR 28, 29: ≤ 38 cm^2

Raccord process en PVDF

Installer les appareils de manière à pouvoir exclure les problèmes suivants :

- charges électrostatiques lors du fonctionnement, de la maintenance et du nettoyage
- charges électrostatiques causées par le process, par ex. par le flux des produits à mesurer

Pour les produits de process avec une conductivité inférieure à 10^{-8} S/m, il est interdit d'utiliser le VEGABAR 28, 29, 38, 39 si la surface isolante est soumise à des procédés générant de fortes charges.

9 Caractéristiques électriques

Circuit d'alimentation et signal :	
Connecteur M12 : broche 1[+], broche 3[-]	En mode de protection sécurité intrinsèque Ex ia IIC
Connecteur ISO 4400 avec couvercle rabattable) : broche 1[+], broche 2[-] Sortie de câble directe avec couleur de conducteur brun [+], bleu [-]	Pour le raccordement à un circuit courant de sécurité intrinsèque certifié. $U_i \leq 30$ V DC $I_i \leq 131$ mA $P_i \leq 983$ mW
	La valeur de la capacité interne effective C_i est tout à fait négligeable. L'inductance interne effective L_i est ≤ 5 µH.
	Dans la version avec câble de raccordement monté à demeure, il faudra tenir compte des valeurs suivantes : $L_i = 0{,}55$ µH/m $C_{i\ conducteur/conducteur} = 58$ pF/m $C_{i\ conducteur/blindage} = 270$ pF/m

10 Caractéristiques mécaniques

Les caractéristiques mécaniques suivantes sont valides pour toutes les versions de boîtiers et d'électronique.

Caractéristiques mécaniques	
Protection (EN 60529)	Connecteur M12 : IP66/IP67 Connecteur ISO 4400 (avec couvercle rabattable) : IP65 Sortie de câble directe : IP68 (0,5 bar)/IP69
Catégorie de surtensions	III
Degré de pollution	4

11 Caractéristiques thermiques

Classe de température	**Plage de température process admissible sur la cellule de mesure**	**Température ambiante admissible sur le boîtier de l'électronique**
T4 … T1	$-40 \leq T_{process} \leq +100$ °C	$-40 \leq T_{amb} \leq +70$ °C

Índice

1 Vigencia 22

2 Configuración/propiedades del equipo 22

3 Informaciones generales 22

4 Campo de aplicación 22

5 Condiciones de operación especiales (Identificación "X") 23

6 Funcionamiento seguro 23

7 Indicaciones importantes para el montaje y mantenimiento 23

8 Carga electrostática (ESD) 24

9 Datos eléctricos 25

10 Datos mecánicos 25

11 Datos térmicos 25

Documentación adicional:

- Manual de instrucciones VEGABAR 28, 29, 38, 39
- Certificado de examen de tipo UE DEMKO 19 ATEX 2222X (Document ID: 62860)
- Declaración de conformidad EU (Document ID: 61834)

Estado de redacción: 2021-11-11

62859-01-220131

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 explosiionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfare
FI	Turvallisuusohjeet räjähdysvaarallisisssa 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 francais 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 Vigencia

Las presentes instrucciones de seguridad son validas para los VEGABAR 28, 29, 38, 39 de la serie:

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

Con las versiones electrónicas:

- De dos hilos 4 … 20 mA

Según el certificado de examen de tipo UE DEMKO 19 ATEX 2222X (Número de certificación en la placa de tipos) y para todos los instrumentos con la instrucción de seguridad 62859.

La etiqueta de protección contra ignición, así como los estados de las normas correspondientes se pueden tomar del certificado de examen de tipo UE.

Estados normalizados

- EN IEC 60079-0: 2018
- EN 60079-11: 2012
- EN 60079-26: 2015

Símbolo de protección e:

- II 1G, 1/2G, 2G Ex ia IIC T4 Ga, Ga/Gb, Gb

2 Configuración/propiedades del equipo

Las configuraciones detalladas de los equipos se pueden consultar con ayuda de la búsqueda de números de serie en nuestra página web.

Vaya a " www.vega.com" e introduzca el número de serie de su dispositivo en el campo de búsqueda.

Opcionalmente, también podrá encontrar todo lo relacionado con su smartphone:

- Descargar las aplicaciones VEGA Tools desde " *Apple App Store*", " *Google Play Store*" o " *Baidu Store*"
- Escanear DataMatrix-Code de la placa de tipos del instrumento o
- Entrar el número de serie manualmente en el App

3 Informaciones generales

Los VEGABAR 28, 29, 38, 39 se utilizan para medir los tipos de presión: sobrepresión, presión absoluta y vacío. Los medios de medición son gases, vapores y líquidos

Los VEGABAR 28, 29, 38, 39 se componen de una carcasa para la electrónica, un elemento de conexión a proceso y una celda de medición de presión.

Los VEGABAR 28, 29, 38, 39 son apropiados para el empleo en una atmósfera explosiva de todas las sustancias inflamables de los grupos de explosión IIA, IIB y IIC.

Los VEGABAR 28, 29, 38, 39 son apropiados para aplicaciones que requieren medios de producción de la categoría 1G (EPL Ga), 1/2G (EPL Ga/Gb) ó 2G (EPL Gb).

4 Campo de aplicación

Los VEGABAR 28, 29, 38, 39 con el elemento de fijación mecánica (conexión a proceso) se instalan en el área con riesgo de explosión de la zona 0 que requieren instrumentos categoría 1G (EPL Ga).

Los VEGABAR 28, 29, 38, 39 se instalan con el elemento de fijación mecánica (conexión a proceso) en la pared de separaión de la zona 1 y la zona 0, que separa las zonas que requieren equipos categoría 2G (EPL Gb) o 1G (EPL Ga) .

Los VEGABAR 28, 29, 38, 39 con el elemento de fijación mecánica (conexión a proceso) se instalan en el área con riesgo de explosión de la zona 0 que requieren instrumentos categoría 2G (EPL Gb).

5 Condiciones de operación especiales (Identificación "X")

La siguiente tabla muestra todas las propiedades especiales del VEGABAR 28, 29, 38, 39 que requieren una marca con el símbolo "X" después del número de certificado.

Carga electrostática (ESD)
Para detalles al respecto, consultar el capítulo " *Carga electrostática (ESD)*" de estas instrucciones de seguridad.

Temperatura ambiente
La gama de temperatura ambiente especificada en EN 60079-0 puede estar restringida.

Los detalles se pueden encontrar en el capítulo " *Datos térmicos*" de estas instrucciones de seguridad.

Espesor de la pared de separación entre la zona 1 y la zona 0
El grosor de pared de la separación entre la zona 1 y la zona 0 para los dispositivos con células de medición metálicas según la norma EN 60079-26 es menos de 1 mm. Hay que tener en cuenta las indicaciones correspondientes del capítulo *Funcionamiento seguro*.

6 Funcionamiento seguro

Condiciones de operación generales
- Cuando los VEGABAR 28, 29, 38, 39 se instalan y operan en zonas con riesgo de explosión, hay observar las disposiciones generales de instalación para la protección contra explosión EN 60079-14, así como estas instrucciones de seguridad
- Hay que seleccionar el dispositivo de acuerdo con la temperatura de ignición del gas o del vapor y la temperatura ambiente, y tener en cuenta las instrucciones según la norma EN 60079-14, capítulo 5.6.
- No operar ningún instrumento fuera de las especificaciones eléctricas, térmicas y mecánicas del fabricante
- El equipo no debe montarse en instalaciones de proceso donde la presión pueda superar el rango de 0,8 … 1,1 bar

Condiciones de conexión
- Hay que tender y fijar cable de conexión del VEGABAR 28, 29, 38, 39 de forma tal que quede completamente protegido contra daños.
- Si la temperatura en las piezas de entrada es mayor de 70 °C, hay que emplear líneas de conexión adecuadas resistentes a la temperatura
- En caso necesario se puede conectar una protección contra sobretensiones adecuada previa al VEGABAR 28, 29, 38, 39

7 Indicaciones importantes para el montaje y mantenimiento

Instrucciones generales
Para el montaje, la instalación eléctrica, la puesta en marcha y el mantenimiento del instrumento hay cumplir los requisitos siguientes:

- El personal debe tener las calificaciones de acuerdo a su función y actividad
- El personal tiene que estar entrenado en la protección contra explosión
- El personal debe estar familiarizado con la normativa vigente, por ejemplo, planificación y construcción de acuerdo con la norma EN 60079-14
- Cuando trabaje en el dispositivo (instalación, instalación, mantenimiento), asegúrese de que no haya atmósfera potencialmente explosiva; si es posible, desconecte los circuitos de la fuente de alimentación.
- Instale el dispositivo de acuerdo con las instrucciones del fabricante, el certificado de examen de tipo UE y las reglamentaciones, reglas y normas aplicables.
- Cambios en el instrumento pueden afectar la protección contra explosión y por lo tanto la seguridad, la seguridad, por lo tanto, no está permitido que el usuario final realice reparaciones

Montaje
Durante la instalación del equipo hay que tener en cuenta lo siguiente:

- El equipo tiene que estar conectado (a través de la conexión al proceso o de una abrazadera de puesta a tierra externa) al sistema de puesta a tierra.
- Hay que evitar daños mecánicos en el instrumento
- Hay que evitar las chispas por impacto o fricción
- Si el aparato se utiliza como dispositivo de pared divisoria, el operador debe observar las normas de instalación aplicables y garantizar una separación de conexión suficientemente estrecha (IP66 o IP67) entre el área menos peligrosa y la zona 0, que requiere EPL Ga

Mantenimiento
Para asegurar el funcionamiento del instrumento se recomienda realizar un control visual periódico de los siguientes puntos:

- Montaje seguro
- Ningún deterioro mecánico o corrosión
- Líneas desgastadas o dañadas de otra manera
- Ninguna conexión floja de las conexiones de los cables, conexiones de compensación de potencial
- Conexiones de líneas marcadas de forma clara y correcta

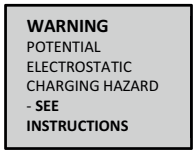
Seguridad intrínseca "i"
- Deberán observarse las medidas válidas para la interconexión de los circuitos de seguridad intrínseca, p. Ej. prueba de seguridad intrínseca según la norma EN 60079-14
- El equipo sólo es adecuado para la conexión a instrumentos de seguridad intrínseca certificados

8 Carga electrostática (ESD)

Respecto al peligro de cargas electrostáticas tener en cuenta:

- Evitar fricción en las superficies
- No limpiar en seco las superficies aislantes

El cartel de advertencia indica el riesgo:



Mayor superficie aislante proyectada

- VEGABAR 28, 29: ≤ 11 cm^2
- VEGABAR 28, 29: ≤ 38 cm^2

Conexión a proceso de material PVDF
Hay que instalar los instrumentos de forma que se pueda excluir lo siguiente:

- cargas electrostáticas a causa de la operación, mantenimiento y limpieza
- carga electrostática inducida por el proceso, por ejemplo, a causa del flujo de productos a medir

El VEGABAR 28, 29, 38, 39 no se puede utilizar para medios de proceso con una conductividad inferior a 10^{-8} S/m, en caso de existir procesos de generación de cargas fuertes en la superficie aislante.

9 Datos eléctricos

Circuito de alimentación y señal.	
Conector enchufable M12: Pin 1[+], Pin 3[-]	En tipo de protección seguridad intrínseca Ex ia IIC
Conector enchufable ISO 4400 (con tapa abatible): Pin 1[+], Pin 2[-] Salida de cable directa con color del cable marrón [+], azul [-]	Para la conexión a un circuito con seguridad intrínseca certificado. U_i ≤ 30 V DC I_i ≤ 131 mA P_i ≤ 983 mW
	La capacidad interna efectiva C_i es despreciablemente pequeña. La Inductividad interna efectiva L_i es ≤ 5 µH.
	En la versión con cable de conexión montado fijo hay que considerar los valores siguientes: L_i = 0,55 µH/m $C_{i\ conductor/conductor}$ = 58 pF/m $C_{i\ Conductor/Blindaje}$ = 270 pF/m

10 Datos mecánicos

Los siguientes datos mecánicos se aplican a todas las versiones de carcasas y electrónicas.

Datos mecánicos	
Grado de protección (EN 60529)	Conector M12: IP66/IP67 Conector enchufable ISO 4400 (con tapa abatible): IP65 Salida de cable directa: IP68 (0,5 bar)/IP69
Categoría de sobretensión	III
Grado de contaminación	4

11 Datos térmicos

Clase de temperatura	**Rango de temperatura de proceso admisible en la celda de medición**	**Rango de temperatura ambiente homologada en la carcasa de la electrónica**
T4 … T1	-40 ≤ $T_{process}$ ≤ +100 °C	-40 ≤ T_{amb} ≤ +70 °C

Druckdatum:

Die Angaben über Lieferumfang, Anwendung, Einsatz und Betriebsbedingungen der Sensoren und Auswertsysteme entsprechen den zum Zeitpunkt der Drucklegung vorhandenen Kenntnissen.
Änderungen vorbehalten

62859-01-220131

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Deutschland

Telefon +49 7836 50-0
E-Mail: info.de@vega.com
www.vega.com

ATEX

Safety instructions
VEGABAR 28, 29, 38, 39

Intrinsic safety "i"

Two-wire 4 … 20 mA

0891

Document ID: 62859

UKEX

Contents

1 Area of applicability 3

2 Device configuration/-properties 3

3 General information 3

4 Application area 3

5 Specific conditions of use ("X" identification) 4

6 Safe operating mode 4

7 Important information for mounting and maintenance 4

8 Electrostatic charging (ESD) 5

9 Electrical data 6

10 Mechanical data 6

11 Thermal data 6

Supplementary documentation:

- Operating instructions VEGABAR 28, 29, 38, 39
- UK Type Examination Certificate UL21UKEX2280X (Document ID: 66501)
- UK Declaration of Conformity (Document ID: 66268)

Editing status: 2021-12-16

62859-EN-211216

1 Area of applicability

These safety instructions apply to the VEGABAR 28, 29, 38, 39 of type series:

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

With the electronics versions:

- Two-wire 4 … 20 mA

According to UK Type Examination Certificate UL21UKEX2280X (certificate number on the type label) and for all instruments with safety instruction 62859.

The classification as well as the respective standards are stated in the UK type approval certificate.

Standards:

- EN IEC 60079-0: 2018
- EN 60079-11: 2012
- EN 60079-26: 2015

Type of protection marking:

- II 1G, 1/2G, 2G Ex ia IIC T4 Ga, Ga/Gb, Gb

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to " www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the " *Apple App Store*", " *Google Play Store*" or " *Baidu Store*"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGABAR 28, 29, 38, 39 are used to measure the pressure types gauge pressure, absolute pressure and vacuum. Measured media are gases, vapours and liquids

The VEGABAR 28, 29, 38, 39 consist of an electronics housing, a process connection element and a pressure measuring cell.

The VEGABAR 28, 29, 38, 39 are suitable for applications in hazardous atmospheres of all combustible materials of explosion groups IIA, IIB and IIC.

The VEGABAR 28, 29, 38, 39 are suitable for applications requiring category 1G (EPL Ga), 1/2G (EPL Ga/Gb) or 2G (EPL Gb) instruments.

4 Application area

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 0 requiring category 1G (EPL Ga) instruments.

The VEGABAR 28, 29, 38, 39 are installed with the mechanical fastening element (process fitting) in the partition wall between zone 1 and zone 0, which separates areas from each other where category 2G (EPL Gb) or 1G (EPL Ga) instruments are required.

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 1 requiring category 2G (EPL Gb) instruments.

5 Specific conditions of use ("X" identification)

The following overview is listing all special properties of VEGABAR 28, 29, 38, 39, which make a labelling with the symbol "X" behind the certificate number necessary.

Electrostatic charging (ESD)
You can find the details in chapter " *Electrostatic charging (ESD)*" of these safety instructions.

Ambient temperature
The ambient temperature range stipulated in EN 60079-0 can be limited.

You can find the details in chapter " *Thermal data*" of these safety instructions.

Wall thickness of the separating wall between zone 1 and zone 0
The wall thickness of the partition wall between zone 1 and zone 0, which is specified for devices with metallic measuring cells in EN 60079-26, is less than 1 mm. The corresponding notes in chapter " *Safe operating mode*" must be observed.

6 Safe operating mode

General operating conditions
- If the VEGABAR 28, 29, 38, 39 are installed and operated in hazardous areas, the general Ex installation regulations EN 60079-14 as well as these safety instructions must be observed
- The device must be selected according to the ignition temperature of the gas or vapour and the ambient temperature, the instructions according to EN 60079-14 chapter 5.6 must be observed
- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer
- The equipment should not be mounted on process equipment, in which pressure can exceed the range of 0.8 … 1.1 bar

Connection conditions
- The connection cable of VEGABAR 28, 29, 38, 39 has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used
- If necessary, a suitable overvoltage arrester can be connected in front of the VEGABAR 28, 29, 38, 39

7 Important information for mounting and maintenance

General instructions
The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:

- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to EN 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.
- The instrument has to be mounted according to the manufacturer specifications, the UK type approval certificate and the valid regulations and standards

- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user

Mounting

When installing the device, observe the following:

- The instrument must be connected to the grounding system (via the process fitting or an external grounding clamp)
- Mechanical damage on the instrument must be avoided
- Impact and friction sparks are to be avoided
- If the device is used as a partition wall device, the operator must observe the valid applicable installation regulations and ensure a sufficiently tight joint (IP66 or IP67) between the less hazardous area and zone 0 are requiring EPL Ga

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

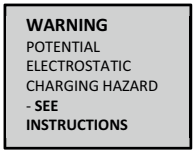
- Valid regulations for connection of intrinsically safe circuits, e.g. proof of intrinsic safety according to EN 60079-14 must be observed
- The instrument is only suitable for connection to certified, intrinsically safe instruments

8 Electrostatic charging (ESD)

Take note in case of danger of electrostatic charges:

- Avoid friction on the surfaces
- Do not clean insulating surfaces with a dry cloth

The warning label indicates danger:



Largest projected insulating surface

- VEGABAR 28, 29: ≤ 11 cm^2
- VEGABAR 28, 29: ≤ 38 cm^2

Process fitting of PVDF

The instruments must be mounted/installed in such a way that the following can be ruled out:

- electrostatic charges during operation, maintenance and cleaning.
- process-related electrostatic charges, e.g. by measuring media flowing past

For process media with a conductivity lower than 10^{-8} S/m, the VEGABAR 28, 29, 38, 39 must not be used if strongly charge generating processes are present on insulating surfaces.

9 Electrical data

Supply and signal circuit:	
M12 plug connector: Pin 1[+], Pin 3[-] ISO 4400 plug connector (with hinged cover): Pin 1[+], Pin 2[-] Direct cable outlet with wire colour brown [+], blue [-]	In type of protection intrinsic safety Ex ia IIC
	For connection to a certified, intrinsically safe circuit. $U_i \leq 30$ V DC $I_i \leq 131$ mA $P_i \leq 983$ mW
	The effective internal capacitance C_i is negligibly small. The effective internal inductance L_i is ≤ 5 µH.
	In the version with fix mounted connection cable, the following values must be taken into consideration: $L_i = 0.55$ µH/m $C_{i\ wire/wire} = 58$ pF/m $C_{i\ wire/screen} = 270$ pF/m

10 Mechanical data

The following mechanical data are valid for all housing and electronics versions.

Mechanical data	
Protection (EN 60529)	M12 plug connector: IP66/IP67 ISO 4400 plug connection (with flap lid): IP65 Direct cable outlet: IP68 (0.5 bar)/IP69
Overvoltage category	III
Pollution degree	4

11 Thermal data

Temperature class	**Permissible process temperature range at the measuring cell**	**Permissible ambient temperature range on the electronics housing**
T4 … T1	$-40 \leq T_{process} \leq +100$ °C	$-40 \leq T_{amb} \leq +70$ °C

Printing date:

62859-EN-211216

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

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

UKEX

Safety instructions
VEGABAR 28, 29, 38, 39

Intrinsic safety "i"

Two-wire 4 … 20 mA

Document ID: 62859

IECEx

Contents

1 Area of applicability 3

2 Device configuration/-properties 3

3 General information 3

4 Application area 3

5 Specific conditions of use ("X" identification) 4

6 Safe operating mode 4

7 Important information for mounting and maintenance 4

8 Electrostatic charging (ESD) 5

9 Electrical data 6

10 Mechanical data 6

11 Thermal data 6

Supplementary documentation:

- Operating instructions VEGABAR 28, 29, 38, 39
- Certificate of Conformity IECEx ULD 19.0013X (Document ID: 62861)

Editing status: 2021-11-11

62859-EN-220128

1 Area of applicability

These safety instructions apply to the VEGABAR 28, 29, 38, 39 of type series:

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

With the electronics versions:

- Two-wire 4 … 20 mA

according to Certificate of Conformity IECEx ULD 19.0013X (certificate number on the type label) and for all instruments with safety instruction 62859.

The classification as well as the respective standards are stated in the Certificate of Conformity.

Standards:

- IEC 60079-0: 2017
- IEC 60079-11: 2011
- IEC 60079-26: 2014-10

Type of protection marking:

- Ex ia IIC T4 Ga, Ga/Gb, Gb

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to " www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the " *Apple App Store*", " *Google Play Store*" or " *Baidu Store*"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGABAR 28, 29, 38, 39 are used to measure the pressure types gauge pressure, absolute pressure and vacuum. Measured media are gases, vapours and liquids

The VEGABAR 28, 29, 38, 39 consist of an electronics housing, a process connection element and a pressure measuring cell.

The VEGABAR 28, 29, 38, 39 are suitable for applications in hazardous atmospheres of all combustible materials of explosion groups IIA, IIB and IIC.

The VEGABAR 28, 29, 38, 39 are suitable for applications requiring EPL Ga, EPL Ga/Gb or EPL Gb instruments.

4 Application area

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 0 requiring EPL Ga instruments.

The VEGABAR 28, 29, 38, 39 are installed with the mechanical fastening element (process fitting) in the partition wall between zone 1 and zone 0, which separates areas from each other where category EPL Gb or EPL Ga instruments are required.

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 1 requiring EPL Gb instruments.

5 Specific conditions of use ("X" identification)

The following overview is listing all special properties of VEGABAR 28, 29, 38, 39, which make a labelling with the symbol "X" behind the certificate number necessary.

Electrostatic charging (ESD)
You can find the details in chapter " *Electrostatic charging (ESD)*" of these safety instructions.

Ambient temperature
The ambient temperature range stipulated in IEC 60079-0 can be limited.

You can find the details in chapter " *Thermal data*" of these safety instructions.

Wall thickness of the separating wall between zone 1 and zone 0
The wall thickness of the partition wall between zone 1 and zone 0, which is specified for devices with metallic measuring cells in IEC 60079-26, is less than 1 mm. The corresponding notes in chapter " *Safe operating mode*" must be observed.

6 Safe operating mode

General operating conditions
- If the VEGABAR 28, 29, 38, 39 are installed and operated in hazardous areas, the general Ex installation regulations IEC 60079-14 as well as these safety instructions must be observed
- The device must be selected according to the ignition temperature of the gas or vapour and the ambient temperature, the instructions according to IEC 60079-14 chapter 5.6 must be observed
- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer
- The equipment should not be mounted on process equipment, in which pressure can exceed the range of 0.8 … 1.1 bar

Connection conditions
- The connection cable of VEGABAR 28, 29, 38, 39 has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used
- If necessary, a suitable overvoltage arrester can be connected in front of the VEGABAR 28, 29, 38, 39

7 Important information for mounting and maintenance

General instructions
The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:
- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to IEC 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.
- The instrument has to be mounted according to the manufacturer specifications and the valid regulations and standards

- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user

Mounting

When installing the device, observe the following:

- The instrument must be connected to the grounding system (via the process fitting or an external grounding clamp)
- Mechanical damage on the instrument must be avoided
- Impact and friction sparks are to be avoided
- If the device is used as a partition wall device, the operator must observe the valid applicable installation regulations and ensure a sufficiently tight joint (IP66 or IP67) between the less hazardous area and zone 0 are requiring EPL Ga

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

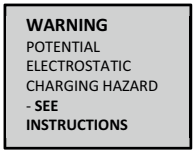
- Valid regulations for connection of intrinsically safe circuits, e.g. proof of intrinsic safety according to IEC 60079-14 must be observed
- The instrument is only suitable for connection to certified, intrinsically safe instruments

8 Electrostatic charging (ESD)

Take note in case of danger of electrostatic charges:

- Avoid friction on the surfaces
- Do not clean insulating surfaces with a dry cloth

The warning label indicates danger:



Largest projected insulating surface

- VEGABAR 28, 29: ≤ 11 cm^2
- VEGABAR 28, 29: ≤ 38 cm^2

Process fitting of PVDF

The instruments must be mounted/installed in such a way that the following can be ruled out:

- electrostatic charges during operation, maintenance and cleaning.
- process-related electrostatic charges, e.g. by measuring media flowing past

For process media with a conductivity lower than 10^{-8} S/m, the VEGABAR 28, 29, 38, 39 must not be used if strongly charge generating processes are present on insulating surfaces.

9 Electrical data

Supply and signal circuit:	
M12 plug connector: Pin 1[+], Pin 3[-] ISO 4400 plug connector (with hinged cover): Pin 1[+], Pin 2[-] Direct cable outlet with wire colour brown [+], blue [-]	In type of protection intrinsic safety Ex ia IIC
	For connection to a certified, intrinsically safe circuit. $U_i \leq 30$ V DC $I_i \leq 131$ mA $P_i \leq 983$ mW
	The effective internal capacitance C_i is negligibly small. The effective internal inductance L_i is ≤ 5 µH.
	In the version with fix mounted connection cable, the following values must be taken into consideration: $L_i = 0.55$ µH/m $C_{i\ wire/wire} = 58$ pF/m $C_{i\ wire/screen} = 270$ pF/m

10 Mechanical data

The following mechanical data are valid for all housing and electronics versions.

Mechanical data	
Protection (IEC 60529)	M12 plug connector: IP66/IP67 ISO 4400 plug connection (with flap lid): IP65 Direct cable outlet: IP68 (0.5 bar)/IP69
Overvoltage category	III
Pollution degree	4

11 Thermal data

Temperature class	**Permissible process temperature range at the measuring cell**	**Permissible ambient temperature range on the electronics housing**
T4 … T1	$-40 \leq T_{process} \leq +100$ °C	$-40 \leq T_{amb} \leq +70$ °C

Printing date:

62859-EN-220128

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

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

IECEx

Safety instructions
VEGABAR 28, 29, 38, 39

Intrinsic safety "i"

Two-wire 4 … 20 mA

Document ID: 62859

Contents

1 Area of applicability 3
2 Device configuration/-properties 3
3 General information 3
4 Application area 3
5 Special operating conditions 4
6 Safe operating mode 4
7 Important information for mounting and maintenance 4
8 Electrostatic charging (ESD) 5
9 Electrical data 6
10 Mechanical data 6
11 Thermal data 6
12 Installation diagram 7

Supplementary documentation:

- Operating instructions VEGABAR 28, 29, 38, 39
- Certificate of Compliance cULus E498814 (Document ID: 62862)

Editing status: 2021-12-09

62859-EN-211209

1 Area of applicability

These safety instructions apply to the VEGABAR 28, 29, 38, 39 of type series:

- VEGABAR 28
- VEGABAR 29
- VEGABAR 38
- VEGABAR 39

With the electronics versions:

- Two-wire 4 … 20 mA

According to Certificate of Compliance cULus E498814 (certificate number on the type label) and for all instruments with safety instruction 62859.

The classification as well as the respective standards are stated in the Certificate of Conformity.

Type of protection marking:

- Class I, Division 1, Grps. A, B, C, D, T4
- Ex ia IIC T4 Ga, Ga/Gb, Gb
- Class I, Zone 0, 0/1, 1 Ex/AEx ia IIC T4 Ga, Ga/Gb, Gb

2 Device configuration/-properties

The detailed device configurations can be retrieved using the serial number search on our homepage.

Move to " www.vega.com" and enter in the search field the serial number of your instrument.

Alternatively, you can find all via your smartphone:

- Download the VEGA Tools app from the " *Apple App Store*", " *Google Play Store*" or " *Baidu Store*"
- Scan the DataMatrix code on the type label of the instrument or
- Enter the serial number manually in the app

3 General information

The VEGABAR 28, 29, 38, 39 are used to measure the pressure types gauge pressure, absolute pressure and vacuum. Measured media are gases, vapours and liquids

The VEGABAR 28, 29, 38, 39 consist of an electronics housing, a process connection element and a pressure measuring cell.

4 Application area

The VEGABAR 28, 29, 38, 39 are suitable for use in hazardous atmospheres of all combustible substances of explosion grous A, B, C, D, requiring class I, Div 1 devices.

The VEGABAR 28, 29, 38, 39 are suitable for use in explosive atmospheres of all combustible materials of explosion group IIA, IIB, IIC, which require class I, Zone 0, 0/1, 1 AEx ia IIC T4, Ga, Ga/Gb, Gb or Ex ia IIC T4 Ga, Ga/Gb, Gb devices

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas requiring Div 1.

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 0 requiring EPL Ga instruments.

The VEGABAR 28, 29, 38, 39 are installed with the mechanical fastening element (process fitting) in the partition wall between zone 1 and zone 0, which separates areas from each other where category EPL Gb or EPL Ga instruments are required.

The VEGABAR 28, 29, 38, 39 with the mechanical fixing element (process fitting) are installed in hazardous areas of zone 1 requiring EPL Gb instruments.

If the VEGABAR 28, 29, 38, 39 are installed and operated in hazardous areas, the general Ex installation regulations in the Canadian Electrical Code, National Electrical Code, IEC 60079-14 as well as these safety instructions must be observed.

5 Special operating conditions

Electrostatic charging (ESD)
You can find the details in chapter " *Electrostatic charging (ESD)*" of these safety instructions.

Ambient temperature
You can find the details in chapter " *Thermal data*" of these safety instructions.

6 Safe operating mode

General operating conditions
- If the VEGABAR 28, 29, 38, 39 are installed and operated in hazardous areas, the general Ex installation regulations IEC 60079-14 as well as these safety instructions must be observed
- The device must be selected according to the ignition temperature of the gas or vapour and the ambient temperature, the instructions according to IEC 60079-14 chapter 5.6 must be observed
- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer
- The equipment should not be mounted on process equipment, in which pressure can exceed the range of 0.8 … 1.1 bar

Connection conditions
- The connection cable of VEGABAR 28, 29, 38, 39 has to be wired fix and in such a way that damages can be excluded
- If the temperature at the entry parts exceeds 70 °C, temperature-resistant connection cables must be used
- If necessary, a suitable overvoltage arrester can be connected in front of the VEGABAR 28, 29, 38, 39

7 Important information for mounting and maintenance

General instructions
The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:
- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the relevant valid regulations which are necessary for the safe installation and operation of the device.
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.
- The instrument has to be mounted according to the manufacturer specifications and the valid regulations and standards
- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user

Mounting
When installing the device, observe the following:

62859-EN-211209

- The instrument must be connected to the grounding system (via the process fitting or an external grounding clamp)
- Mechanical damage on the instrument must be avoided
- Impact and friction sparks are to be avoided
- If the device is used as a partition wall device, the operator must observe the valid applicable installation regulations and ensure a sufficiently tight joint (IP66 or IP67) between the less hazardous area and zone 0 are requiring EPL Ga

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

Intrinsic safety "i"

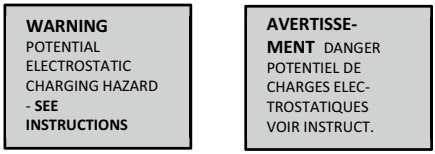
- Observe the valid regulations for the interconnection of intrinsically safe circuits.
- The instrument is only suitable for connection to certified, intrinsically safe instruments

8 Electrostatic charging (ESD)

Take note in case of danger of electrostatic charges:

- Avoid friction on the surfaces
- Do not clean insulating surfaces with a dry cloth

The warning label indicates danger:



Largest projected insulating surface

- VEGABAR 28, 29: ≤ 11 cm^2
- VEGABAR 28, 29: ≤ 38 cm^2

Process fitting of PVDF

The instruments must be mounted/installed in such a way that the following can be ruled out:

- electrostatic charges during operation, maintenance and cleaning.
- process-related electrostatic charges, e.g. by measuring media flowing past

For process media with a conductivity lower than 10^{-8} S/m, the VEGABAR 28, 29, 38, 39 must not be used if strongly charge generating processes are present on insulating surfaces.

9 Electrical data

Supply and signal circuit:	
M12 plug connector: Pin 1[+], Pin 3[-] ISO 4400 plug connector (with hinged cover): Pin 1[+], Pin 2[-] Direct cable outlet with wire colour brown [+], blue [-]	In type of protection intrinsic safety Ex ia
	For connection to a certified, intrinsically safe circuit. $U_i \leq 30$ V DC $I_i \leq 131$ mA $P_i \leq 983$ mW
	The effective internal capacitance C_i is negligibly small. The effective internal inductance L_i is ≤ 5 µH.
	In the version with fix mounted connection cable, the following values must be taken into consideration: $L_i = 0{,}55$ µH/m $C_{i\ wire/wire} = 58$ pF/m $C_{i\ wire/screen} = 270$ pF/m

10 Mechanical data

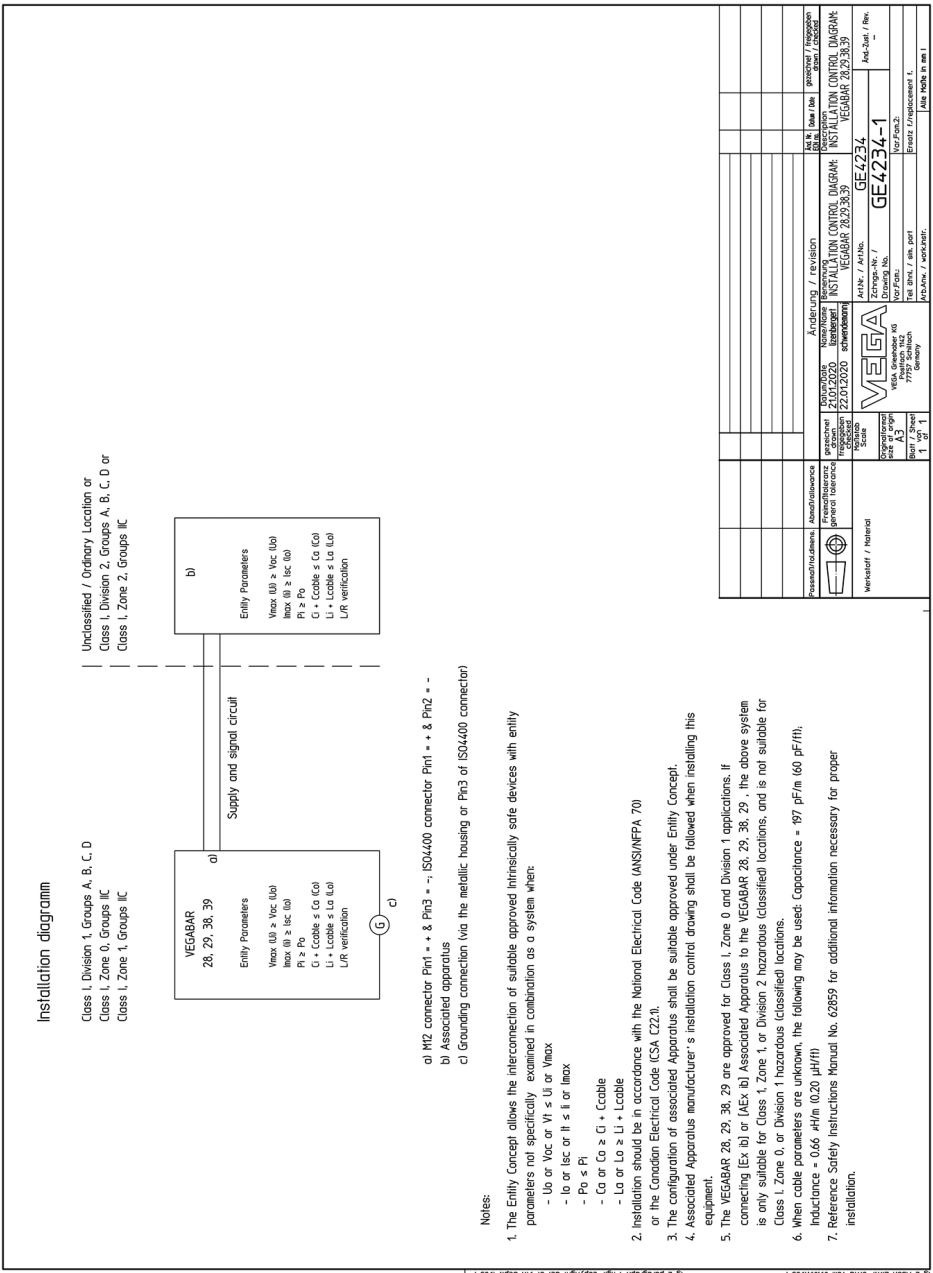
The following mechanical data are valid for all housing and electronics versions.

Mechanical data	
Protection (IEC 60529)	M12 plug connector: IP66/IP67 ISO 4400 plug connection (with flap lid): IP65 Direct cable outlet: IP68 (0.5 bar)/IP69
Overvoltage category	III
Pollution degree	4

11 Thermal data

Temperature class	**Permissible process temperature range at the measuring cell**	**Permissible ambient temperature range on the electronics housing**
T4 … T1	$-40 \leq T_{process} \leq +100$ °C	$-40 \leq T_{amb} \leq +70$ °C

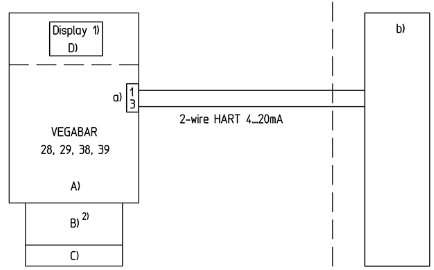
12 Installation diagram



Control Drawing VEGABAR 28, 29, 38, 39 with M12x1 plug connector

Class I, Division 1, Groups A, B, C, D or
Class I, Zone 0, Group IIC
Class I, Zone 1, Group IIC

Unclassified / Ordinary Location or
Class I, Division 2, Groups A, B, C, D or
Class I, Zone 2, Groups IIC



Intrinsically safe parameter of supply and signal circuit

VEGABAR 28, 29, 38, 39	Ui (V)	Ii (mA)	Pi (mW)	Ci (µF)	Li (µH)
Terminals 1,3	30	131	983	→0 3)	≤5 3)

a) M12x1 connector Pin1 = + & Pin3 = -
b) Associated Apparatus with entity parameters IS Barrier Uo ≤ Ui, Io ≤ Ii, Po ≤ Pi, Co ≥ Ci + Ccable, Lo ≥ Li + Lcable

A) Housing
B) Process fitting
C) Pressure measuring cell
D) Display (only for VEGABAR 38, 39)

1) Optional only for VEGABAR 38, 39
2) Industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards
3) Additionally for application with fixed mounted cable: Li' = 0.55 µH/m, Ci'wire/wire = 58 pF/m, Ci'wires/shield = 270 pF/m

Passmaß/tol.dimens. | Abmaß/allowance | Freimaßtoleranz general tolerance | Werkstoff / Material

Änderung / revision

gezeichnet / drawn: Datum/Date 21.01.2020, Name/Name lizenbergert
freigegeben / checked: 22.01.2020, schwendemann
Maßstab / Scale
Originalformat / size of origin: A3
Blatt / Sheet 1 von / of 1

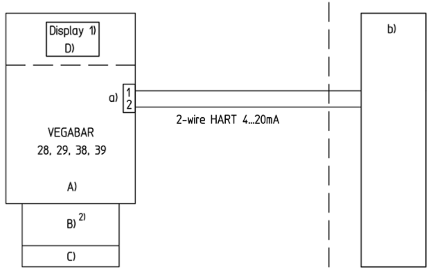
VEGA Grieshaber KG
Postfach 1142
77757 Schiltach
Germany

Benennung / Description: INSTALLATION CONTROL DIAGRAM: VEGABAR 28,29,38,39
Art.Nr. / Art.No.: GE4234
Zchngs.-Nr. / Drawing No.: GE4234-2
Änd.-Zust. / Rev.: -
Var.Fam.: | Var.Fam.2:
Teil ähnl. / sim. part | Ersatz f./replacement f.
Arb.Anw. / work.instr. | Alle Maße in mm !

Control Drawing VEGABAR 28, 29, 38, 39 with 4-pole plug ISO 4400 connector

Class I, Division 1, Groups A, B, C, D or
Class I, Zone 0, Group IIC
Class I, Zone 1, Group IIC

Unclassified / Ordinary Location or
Class I, Division 2, Groups A, B, C, D or
Class I, Zone 2, Groups IIC



Intrinsically safe parameter of supply and signal circuit

VEGABAR 28, 29, 38, 39	Ui (V)	Ii (mA)	Pi (mW)	Ci (µF)	Li (µH)
Terminals 1,2	30	131	983	→ 0	≤5

a) ISO4400 connector Pin1 = + & Pin2 = -
b) Associated Apparatus with entity parameters IS Barrier Uo ≤ Ui, Io ≤ Ii, Po ≤ Pi, Co ≥ Ci + Ccable, Lo ≥ Li + Lcable

A) Housing
B) Process fitting
C) Pressure measuring cell
D) Display (only for VEGABAR 38, 39)

1) Optional only for VEGABAR 38, 39
2) Industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards

Passmaß/tol.dimens. | Abmaß/allowance | Freimaßtoleranz general tolerance | Werkstoff / Material

Änderung / revision | Änd. Nr. ECN no. | Datum / Date | gezeichnet / freigegeben drawn / checked

gezeichnet drawn: 21.01.2020 lizenbergert
freigegeben checked: 22.01.2020 schwendemannj
Maßstab Scale
Originalformat size of origin: A3
Blatt / Sheet 1 von of 1

VEGA Grieshaber KG
Postfach 1142
77757 Schiltach
Germany

Benennung Description: INSTALLATION CONTROL DIAGRAM: VEGABAR 28,29,38,39
Description: INSTALLATION CONTROL DIAGRAM: VEGABAR 28,29,38,39
Art.Nr. / Art.No.: GE4234
Zchngs.-Nr. / Drawing No.: GE4234-3
Änd.-Zust. / Rev.: -
Var.Fam.:
Var.Fam.2:
Teil ähnl. / sim. part
Ersatz f./replacement f.
Arb.Anw. / work.instr.
Alle Maße in mm !

Printing date:

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

62859-EN-211209

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

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

c-UL-us

Printing date:

62859-UN-220121

VEGA Grieshaber KG
Am Hohenstein 113
77761 Schiltach
Germany

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