

Safety instructions VEGAMIP MPR61/62.****R/T*** VEGAMIP MPT61.****R/T***

2591439 (LR 23257)





Document ID: 46629









Certificate of Compliance

Certificate: 2591439 (LR 23257) Master Contract: 15385

Project: 2700474 Date Issued: February 13, 2014

Issued to: VEGA Americas, Inc.

4241 Allendorf Dr Cincinnati, OH 45209 USA Attention: Ken Geiger

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Jelena Dzeletovíc

Issued by: Jelena Dzeletovic

PRODUCTS

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations -

Certified to US Standards

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

Class I Div 2, Groups A, B, C and D; Class II Div 2, Groups E, F and G; Class III, T1...T4, Encl Type 4X/6P

Ex nAmc IIC T4...T1 Gc (Receiver with relay version VEGAMIP MPR61 (*). AX**** R^* **, transmitter with transistor version VEGAMIP MPT61 (*). AX**** T^* **)

Ex nA IIC T4...T1 Gc (Receiver with transistor version, VEGAMIP MPR61 (*).AX****T***)

Class I, Zone 2, AEx nAmc IIC T4...T1 Gc (Receiver with relay version VEGAMIP MPR61 (*).AX****R***, transmitter with transistor version VEGAMIP MPT61 (*).AX****T***)

Class I, Zone 2, AEx nA IIC T4...T1 Gc (Receiver with transistor version VEGAMIP MPR61 (*).AX****T***), IP66

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

 Microwave Barrier for Level Detection, Models VEGAMIP Transmitter VEGAMIP MPT61(*).AX****T***:

input supply voltage

(terminals 1, 2 in the terminal compartment): AC 20...253V, 50/60Hz

DC 20...72V

power consumption: AC 1.8VA

DC ca. 1.3W

Receiver VEGAMIP MPR61(*).AX****R***: input supply voltage

(terminals 1, 2 in the terminal compartment): AC 20...253V, 50/60Hz DC 20...72V

DC 20...72 V

power consumption AC 1.8VA DC ca. 1.6W

relay circuit (maximal data)

contact set 1 (terminals 3, 4, 5), contact set 2 (terminals 6, 7, 8)

switching voltage: AC 253V

DC 253V

switching capacity: min. 50mW

AC 750VA, cosφ >0.5

DC 40W, cosφ =1

switched current: AC 5A

DC 1A

VEGAMIP MPR61(*).AX****T***: input supply voltage

(terminals 1, 2 in the terminal compartment): DC 20...55V

power consumption < 1W

signal circuit (maximal data)

(terminals 4, 5 in the terminal compartment) ULoad = DC 20...55V

ILoad ≤ 400mA





Project: 2700474 Date Issued: February 13, 2014

Temperature Class/Code	Temperature at the sensor	ambient temperature at the electronics enclosure
T4	-60°C +135 °C	-40°C +60 °C
T3	-60°C +200 °C	-40°C +60 °C
T2	-60°C +300 °C	-40°C+60 °C
T1	-60°C +450 °C	-40°C +60 °C

Notes:

The connection between transmitter and receiver is established via a radio link with following parameters:

High frequency parameters transmitting-/emitting frequency K-Band: approx.. 24GHz

output radiating power (normal operation): PEIRP = 0.1W

· Model VEGAMIP T61 AXabcdefg

where

- a = Version / Material: (A, B, C, D, F, J, E or X)
- b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.
- c = Seal / Process temperature (1, 2, 3, 4, 8, or 9)
- d = Electronics: (T)
- e = Sensor Housing / Protection: (A, V or K)
- f = Cable Entry: (M or N)
- g = Additional Equipment: (X, 1, V, or M)

· Model VEGAMIP R61 AXabcdefg

where

- a = Version / Material: (A, B, C, D, F, J, E or X)
- b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.
- c = Seal / Process temperature (1, 2, 4, or 8)

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

d = Electronics: (R or T)

e = Sensor Housing / Protection: (A, V or K)

f = Cable Entry: (M or N)

g = Additional Equipment: (X, 1, V or M)

Class II Div 1, Groups E, F and G; Class III T6...T1, Encl. Type 4X/6P

Ex t IIIC T* Da

Ex t IIIC T* Da/Db

Ex t IIIC T* Da/Dc

Ex t IIIC T* Db

IP66

Zone 20, AEx ta IIIC T* Da Zone 20/21, AEx tIIIC T* Da/Db Zone 20/22, AEx tIIIC T* Da/Dc Zone 21, AEx tIIIC T* Db

T*= temperature classification - see manual

Microwave Barrier for Level Detection, Models VEGAMIP. Electrical data

VEGAMIP MPT61 (*).GX****T***

input

supply voltage (terminals 1, 2 in the terminal compartment)

AC 20 ... 253 V, 50/60 Hz

DC 20 ... 72V

power consumption AC 1.8 VA

DC ca. 1.3W

VEGAMIP MPR61 /62(*).GX****R***

input

supply voltage (terminals 1, 2 in the terminal compartment)

DQD 507 Rev. 2012-05-22

age: 4





Project: 2700474 Date Issued: February 13, 2014

AC 20 ... 253 V, 50/60 Hz

DC 20 ... 72V

power consumption AC 1.8VA

DC ca. 1.6W

relay circuit (maximal data)

contact set 1 (terminals 3, 4, 5) AC 253V, 5 A

contact set 2 (terminals 6, 7, 8) DC 30V, 4 A

DC 125 V, 0.2 A

VEGAMIP MPR61/62(*).GX****T***

input

supply voltage (terminals 1, 2 in the terminal compartment)

DC 20 ... 55V

power consumption

< 1 W

signal circuit (maximal data)

(terminals 4, 5 in the terminal compartment)

U Load = DC 20 ... 55 V

ILoad ≤ 400 mA

High frequency parameters

transmitting-/emitting frequency K-Band

output radiating power (normal operation) PEIRP = $0.1~\mathrm{W}$

output radiating power (2 faults) PEIRP = 2,7 W

Thermal data

Permitted ambient temperature range

At the sensor (in zone 20 or 21)

DQD 507 Rev. 2012-05-22

age: 5





Project: 2700474 Date Issued: February 13, 2014

VEGAMIP MPR/T6*(*),GX****R/T*** -40°C ... +130 °C

VEGAMIP MPRIT6*(*),GXA/F***R/T*** -40°C ... +80 °C

high temperature version

VEGAMIP MPR/T6*(*).GX****R/T*** -60°C...+250°C

ceramics version

VEGAMIP MPR/T6*(*).GX****R/T*** -170°C...+450°C

At the electronics enclosure (in zone 20, 21 or 22)

VEGAMIP MPR/T6*(*).GX****R/T*** -40°C...+60°C

Max. surface temperature T

At the sensor (in zone 20 or 21) process temperature + 3 K

At the electronics enclosure (in zone 20, 21 or 22)

VEGAMIP MPR/T6*(*).GX****R/T*** with thermo fuse limited to 102°C

Degrees of protection according to IEC 60529 IP66

Note: The connection between transmitter and receiver is established via a radio link with following parameters:

High frequency parameters transmitting-/emitting frequency K-Band: approx.. 24GHz

output radiating power (normal operation): PEIRP = 0.1W

A new variant with mechanically and electrically separated evaluation unit is added to the receiver type VEGAMIP MPR61 (*).GX****T***. This variant has got the type designation VEGAMIP MPR62(*).GX****P/T***. Sensor unit and evaluation unit are located in two separate enclosures made of aluminium or stainless steel and are connected via cable (PUR, max. length 25 m). The enclosure of the evaluation unit is fixed on a twistable base.

· Model VEGAMIP T61 GXabcdefg

where

a = Version / Material: (A, B, C, D, F, J, E or X)

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.

- c = Seal / Process temperature (1, 2, 3, 4, 8 or 9)
- d = Electronics: (T)
- e = Sensor Housing / Protection: (A, V or K)
- f = Cable Entry: (M, N, or J)
- g = Additional Equipment: (X, 1, V or M)

· Model VEGAMIP R61 GXabcdefg

where

- a = Version / Material: (A, B, C, D, F, J, E or X)
- $b = Process \ fitting \ / \ Material: \ two \ digit \ alphanumeric \ variable \ for \ connections, \ which \ represents \ a \ TRICLAMP, \ DN \ or \ ASME \ industry \ type \ flange \ process \ ratings, \ and \ any \ type \ of \ process \ connections \ which \ comply \ with \ international \ standard.$
- c = Seal / Process temperature (1, 2, 3, 4, 8 or 9)
- d = Electronics: (R or T)
- e = Sensor Housing / Protection: (A, V or K)
- f = Cable Entry: (M or N)
- g = Additional Equipment: (X, 1, V or M)

· Model VEGAMIP R62 GXabcdefghi

where

- a = Version / Material: (A, B, C, D, F, J, E, K or X)
- b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.
- c = Seal / Process temperature (1, 2, 3, 4, 8 or 9)
- d = Electronics: (R or T)

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

e = Sensor Housing / Protection: (A, V or K)

f = Connection Cable Length: (1, 4, 2, 5, 3, 6 or 7)

g = Remote Adjustment Housing: (A or V)

h = Cable Entry: (M or N)

i = Additional Equipment: (X, 1, V or M)

Class I Div 1, Groups A, B, C and D; Encl. Type 4X/6P Ex d IIC T6...T1 Ga/Gb $\,$

Ex d IIC T6...T1 Gb IP66 Class I, Zone 0/1, AEx d IIC T6...T1 Gb

Class I, Zone 1, AEx d IIC T6...T1 Gb IP66

Microwave Barrier for Level Detection, Models VEGAMIP Electrical data

VEGAMIP MPT61 (*).DX****T***

input

supply voltage (terminals 1, 2 in the terminal compartment)

AC 20 ... 253 V, 50/60 Hz

DC 20 ... 72V

power consumption AC 1.8 VA

DC ca. 1.3W

VEGAMIP MPR61(*).DX****R***

innut

supply voltage (terminals 1, 2 in the terminal compartment)

AC 20 ... 253 V, 50/60 Hz

DC 20 ... 72V

power consumption AC 1.8VA

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

DC ca. 1.6W

relay circuit (maximal data)

contact set 1 (terminals 3, 4, 5) AC 253V, 5 A

contact set 2 (terminals 6, 7, 8) DC 30V, 4 A

DC 125 V, 0.2 A

VEGAMIP MPR61(*).DX****T***

input

supply voltage (terminals 1, 2 in the terminal compartment)

DC 20 ... 55V

power consumption < 1 W

signal circuit (maximal data)

(terminals 4, 5 in the terminal compartment)

U Load = DC 20 ... 55 V

ILoad ≤ 400 mA High frequency parameters

transmitting-/emitting frequency K-Band ca.24GHz output radiating power (normal operation) PEIRP = 0.1 W

output radiating power (2 faults) PEIRP = 0.2 W

Thermal data:

EPL Ga/Gb

Temperature Class/ Code T6 T5 T4 T3 T2 T1

permitted process temperature

at the sensor (Zone 0) $-20^{\circ}\text{C...} \quad -20^{\circ}\text{C...} \quad -20^{\circ}\text{C...} \quad -20^{\circ}\text{C...} \quad -20^{\circ}\text{C...}$





Project: 2700474 Date Issued: February 13, 2014

+60°C +60°C +60°C +60°C +60°C +60°C

permitted ambient temperature

at the electronics (Zone 1) -50°C...+60°C

EPL Gb

T6 **T5** T1 Temperature Class/ Code **T4 T3** T2 permitted process temperature -60°C... -60°C... -60°C... -60°C... -60°C... -60°C... at the sensor (Zone 1) + 85°C +100°C +135°C +200°C +300°C +450°C

permitted ambient temperature

at the electronics (Zone 1) -50°C...+60°C

Notes:

1. The connection between transmitter and receiver is established via a radio link with following parameters: High frequency parameters transmitting-/emitting frequency K-Band: approx.. 24GHz

output radiating power (normal operation):

PEIRP = 0.1V

- 2. A new variant with mechanically and electrically separated evaluation unit is added to the receiver type VEGAMIP MPR61 (*).DX****T***. This variant has got the type designation VEGAMIP MPR62(*).DX****RIT***. Sensor unit and evaluation unit are located in two separate enclosures made of aluminium or stainless steel and are connected via cable (PUR, max. length 25 m). The enclosure of the evaluation unit is fixed on a twistable base.
- · Model VEGAMIP T61 DXabcdefg

where

a = Version / Material: (A, B, C, D, F, J, E or X)

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.

- c = Seal / Process temperature (1, 2, 3, 4, 8, or 9)
- d = Electronics: (T)
- e = Sensor Housing / Protection: (A or V)
- f = Cable Entry: (M or N)
- g = Additional Equipment: (X, 1, V or M)

· Model VEGAMIP R61 DXabcdefg

where

- a = Version / Material: (A, B, C, D, F, J, E or X)
- b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.
- c = Seal / Process temperature (1, 2, 3, 4, 8 or 9)
- d = Electronics: (T)
- e = Sensor Housing / Protection: (A or V)
- f = Cable Entry: (M or N)
- g = Additional Equipment: (X, 1, V or M)

Class I Div 1, Groups A, B, C and D; Class II Div 1, Groups E, F and G; Class III; Encl. Type 4X/6P Ex d IIC T6...T1 Ga/Gb

Ex d IIC T6...T1 Gb Ex t IIIC T* Da/Db

Ex t IIIC T* Da/Dc Ex t IIIC T* Db

IP66 Class I, Zone 0/1, AEx d IIC T6...T1 Gb

Class I, Zone 1, AEx d IIC T6...T1 Gb

Zone 20/21, AEx t IIIC T* Da/Db Zone 20/22, AEx t IIIC T* Da/Dc Zone 21, AEx t IIIC T* Db T*= temperature classification - see manual

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

Microwave Barrier for Level Detection, Models VEGAMIP

Electrical data

VEGAMIP MPT61 (*).DK****T***

input

supply voltage (terminals 1, 2 in the terminal compartment)

AC 20 ... 253 V, 50/60 Hz

DC 20 ... 72V

power consumption AC 1.8 VA

DC ca. 1.3W

VEGAMIP MPR61 /62(*).DK****R***

input

supply voltage (terminals 1, 2 in the terminal compartment)

AC 20 ... 253 V, 50/60 Hz

DC 20 ... 72V

power consumption

AC 1.8VA

DC ca. 1.6W

relay circuit (maximal data)

contact set 1 (terminals 3, 4, 5)

AC 253V, 5 A DC 30V, 4 A

contact set 2 (terminals 6, 7, 8)

DC 125 V, 0.2 A

VEGAMIP MPR61/62(*).DK****T***

input

supply voltage (terminals 1, 2 in the terminal compartment)

DC 20 ... 55V

power consumption

< 1 W

DQD 507 Rev. 2012-05-22





signal circuit (maximal data)

(terminals 4, 5 in the terminal compartment)

U Load = DC 20 ... 55 V

ILoad ≤ 400 mA

High frequency parameters

transmitting-/emitting frequency K-Band

output radiating power (normal operation) PEIRP = 0.1 W

output radiating power (2 faults) PEIRP = 2,7 W

Thermal data:

Permitted ambient temperature range

At the sensor (in zone 20 or 21)

VEGAMIP MPR/T6*(*),DK****R/T*** -40°C ... +130°C

VEGAMIP MPRIT6*(*),DKA/F***R/T*** -40°C ... +80°C

high temperature version

VEGAMIP MPR/T6*(*).DK****R/T*** -60°C...+250°C

ceramics version

VEGAMIP MPR/T6*(*).DK****R/T*** -170°C...+450°C

At the electronics enclosure (in zone 20, 21 or 22)

VEGAMIP MPR/T6*(*).DK****R/T*** -40°C...+60°C





Project: 2700474 Date Issued: February 13, 2014

Max. surface temperature T

At the sensor (in zone 20 or 21) process temperature + 3 K

At the electronics enclosure (in zone 20, 21 or 22)

VEGAMIP MPR/T6*(*).DK****R/T*** with thermo fuse limited to 102°C

Degrees of protection according to IEC 60529 IP66

Notes:

- 1. The connection between transmitter and receiver is established via a radio link with following parameters: High frequency parameters transmitting-/emitting frequency K-Band: approx.. 24GHz output radiating power (normal operation):

 PEIRP = 0.1W
- 2. A new variant with mechanically and electrically separated evaluation unit is added to the receiver type VEGAMIP MPR61 (*).DK***T***. This variant has got the type designation VEGAMIP MPR62(*).DK****PVT***. Sensor unit and evaluation unit are located in two separate enclosures made of aluminium or stainless steel and are connected via cable (PUR, max. length 25 m). The enclosure of the evaluation unit is fixed on a twistable base.

· Model VEGAMIP T61 DKabcdefg

where

- a = Version / Material: (A, B, C, D, F, J, E or X)
- b = Process fitting // Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.
- c = Seal / Process temperature (1, 2, 3, 4, 8 or 9)
- d = Electronics: (T)
- e = Sensor Housing / Protection: (A or V)
- f = Cable Entry: (M or N)
- g = Additional Equipment: (X, 1, V or M)

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

· Model VEGAMIP R61 DKabcdefg

where

a = Version / Material: (A, B, C, D, F, J, E or X)

b = Process fitting / Material: two digit alphanumeric variable for connections, which represents a TRICLAMP, DN or ASME industry type flange process ratings, and any type of process connections which comply with international standard.

c = Seal / Process temperature (1, 2, 3, 4, 8 or 9)

d = Electronics: (R or T)

e = Sensor Housing / Protection: (A or V)

f = Cable Entry: (M or N)

g = Additional Equipment: (X, 1, V or M)

APPLICABLE REQUIREMENTS

CSA Std. C22.2 No 0 - 10 - General Requirements - Canadian Electrical Code, Part II

C22.2 No 142-M1987 (R 2004) - Process Control Equipment
CSA Std. C22.2 No 94-M91(R 2006) - Special Purpose Enclosures

CSA STD C22.2 No. 25-1966 (R2009) - Enclosures for Use in Class II Groups E, F and G

Hazardous Locations

CSA Std. C22.2 No. 30 M1986 (R 2003) - Explosion-Proof Enclosures for Use in Class Hazardous

Locations

CSA Std C22.2 No. 213-M1987 (R 2004) - Non-Incendive Electrical Equipment for Use in Class I,

Division 2 Hazardous Locations

CSA Std. C22.2 No 60079-0:11 - Electrical apparatus for explosive gas atmospheres – Part 0:

General requirements

CSA Std. C22.2 No 60079-1:11 - Electrical apparatus for explosive gas atmospheres – Part1:

Flameproof Enclosure "d"

CSA Std. CAN/CSA 60079-15:12 - Electrical Apparatus for Explosive Gas Atmospheres – Part





Project: 2700474 Date Issued: February 13, 2014

15: Type of Protection "n"

CSA Std. CAN/CSA 60079-18:12 - Explosive atmospheres □ Part 18: Equipment protection by

encapsulation "m"

CAN/CSA-C22.2 No. 60079-31:12 - Explosive atmospheres - Part 31: Equipment dust ignition

protection by enclosure "t"

UL Std No. 50 (Edition 10) - Enclosures for Electrical Equipment

FM Class 3600 (2011) - Approval Standard for Electrical Equipment for Use in

Hazardous (Classified) Locations - General Requirements

FM Class 3611 (2004) - Approval Standard for Non-Incendive Electrical Equipment

for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2, Hazardous (Classified) Locations.

FM Class 3615 (2006) - Approval Standard for Explosion proof Electrical

Equipment - General Requirements

FM Class 3616 (2011) - Approval Standard for Dust-Ignition proof Electrical

Equipment General Requirements

FM Class 3810 (2005) - Approval Standard for Electrical for Measurement,

Control and Laboratory Use

ANSI/IEC 60529 Ed. 4.0) – 2004 - Degrees of protection provided by enclosures (IP Code)

ANSI/ISA-60079-0 (12.00.01) – 2009 - Explosive Atmospheres - Part 0: Equipment-General

Requirements

ANSI/ISA-60079-15 (12.12.02) - 2009 - Electrical Apparatus for Use in Class I, Zone 2 Hazardous

(Classified) Locations: Type of Protection "n"

ANSI/ISA-60079-1 (12.22.01) – 2009 - Explosive Atmospheres - Part 1: Equipment Protection

by Flameproof Enclosures "d"

ANSI/ISA 60079-18 (12.23.01)-2012 - Explosive atmospheres – Part 18: Equipment

DQD 507 Rev. 2012-05-22





Project: 2700474 Date Issued: February 13, 2014

protection by encapsulation "m"

ANSI/UL 60079-31:2009 - Explosive atmospheres - Part 31: Equipment dust ignition

protection by enclosure "t"

ANSI/NEMA- 250 – 2003 - Enclosures for Electrical Equipment

MARKINGS

(1) Submitter's name, trademark, or the CSA file number (adjacent the CSA Mark).

- (2) Catalogue / Model designation.
- Complete electrical rating (amps, hertz, and volts).
- (4) Date code / Serial number traceable to month and year of manufacture.
- (5) Hazardous Location designations.
- (6) Optional markings: Class I, Zone 1/2, IIC, T6/T4-T1 (as applicable)
- (7) Temperature code with derating for process temperature (may appear in Instruction Manual or in Safety Manual provided with the Instruction Manual.
- (8) Maximum ambient 60°C at the electronics; At the electronics enclosure (in zone 20, 21 or 22)

VEGAMIP MPR/T6*(*).DK****R/T*** with thermo fuse limited to 102°C

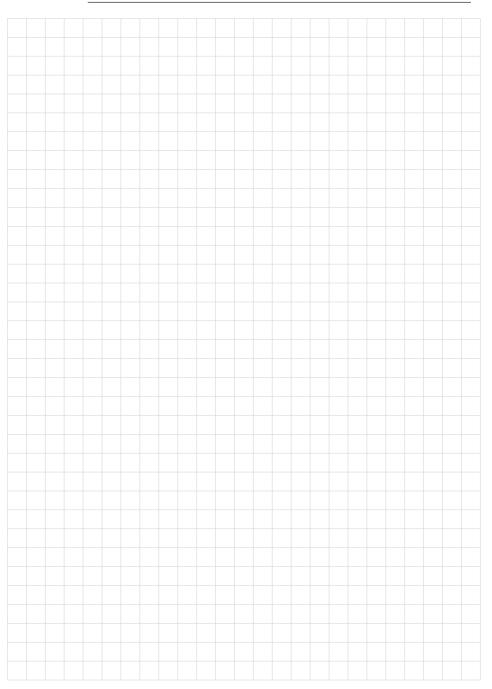
- (9) The CSA Mark wit "C" and "US" indicators
- (10) CSA Certificate Number 13.2591439X
- (11) The following cautions:

WARNING - DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT

WARNING - EXPLOSION HAZARD - AVOID ELECTROSTAIC CHARGE

DQD 507 Rev. 2012-05-22





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

© VEGA Grieshaber KG, Schiltach/Germany 2014

46629-EN-140402

VEGA Grieshaber KG Am Hohenstein 113 77761 Schiltach Germany Phone +49 7836 50-0 Fax +49 7836 50-201 E-mail: info.de@vega.com www.vega.com