



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX KIWA 17.0012X** Page 1 of 4 Certificate history:  
Status: **Current** Issue No: 2 [Issue 1 \(2018-12-14\)](#)  
[Issue 0 \(2017-06-29\)](#)  
Date of Issue: 2020-10-22  
Applicant: **KROHNE S.A.S**  
2 Allée des Ors-BP 98,  
26103,  
Romans  
France  
Equipment: **Radar Level Transmitter, models OPTIWAVE 1400 C, 5400 C, 6400 C, 7400 C, 3500 C, 6500 C and 7500 C and OPTIWAVE-M 7400 C and 7500 C**  
Optional accessory:  
Type of Protection: **d, i, t**  
Marking: Ex ia IIC T6...T\* Ga/Gb  
Ex ia IIIC T85 °C...T\* °C Da/Db  
Ex db ia IIC T6...T\* Ga/Gb  
Ex ia tb IIIC T85 °C...T\* °C Da/Db  
Ex ic IIC T6...T\* Gc  
Ex ic IIIC T85 °C...T\* °C Dc  
T\* and T\* °C are detailed in the equipment model codes in Annex 1

Approved for issue on behalf of the IECEx  
Certification Body:

**Harry de Wild**

Position:

**Certification Officer**

Signature:  
(for printed version)

Date:

22 October 2020

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Certificate issued by:

**Kiwa Nederland B.V. (Unit Kiwa ExVision)**  
**Wilmersdorf 50**  
**7327 AC Apeldoorn**  
**P.O. Box 137**  
**Netherlands**





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Manufacturer: **KROHNE S.A.S**  
2 Allée des Ors-BP 98,  
26103,  
Romans  
**France**

Additional manufacturing locations: **KROHNE Measurement Technology (Shanghai) Co., Ltd.**  
Minshen Road 555 Songjiang Industrial Zone  
Shanghai 201612  
**China**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

#### STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**IEC 60079-26:2014-10** Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  
Edition:3.0

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

#### TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[NL/KIWA/ExTR17.0014/00](#)

[NL/KIWA/ExTR17.0014/02](#)

[NL/KIWA/ExTR17.0014/03](#)

Quality Assessment Reports:

[NL/DEK/QAR12.0030/05](#)

[NL/DEK/QAR12.0071/05](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Radar Level Transmitters OPTIWAVE x400/x500 C series and OPTIWAVE-M 7400 C/7500 C (detailed model codes are given in Annex 1) measure level, volume, distance and reflectivity of liquids or solids within storage or process tanks or in stilling wells. They are 2-wire loop powered transmitters that use FMCW (Frequency-Modulated Continuous Wave) radar technology. The degree of protection of all transmitters is IP66/IP68 in accordance with IEC 60529.

### OPTIWAVE 1400 C

The output signal is an analog 4-20 mA output with HART communication.  
The transmitter is protected by intrinsic safety "i".  
The electronics enclosure is a single compartment made of stainless steel closed by the antenna.  
The transmitter is always delivered with a cable gland and cable (max. 10 m length).  
The ambient temperature range is -20 °C to +70 °C (see also specific conditions of use)

### OPTIWAVE 5400 C, 6400 C, 7400 C, 3500 C, 6500 C, 7500 C

The output signal is either an analog 4-20 mA output with HART communication or a digital fieldbus communication protocol (PROFIBUS PA or FOUNDATION™ fieldbus).  
The electronics insert in the compartment connected to the antenna is in type of protection intrinsic safety "i". The terminal compartment is either in type of protection flameproof enclosures "d" and protection by enclosure "t" or intrinsic safety "i".  
The electronics enclosure can be of aluminium or stainless steel.  
Optionally, the transmitter may be provided with display and adjustment capabilities (HMI option).  
The OPTIWAVE 6400 C transmitter can be used with an existing certified OPTIWAVE 6300 C horn or drop antenna system.  
The OPTIWAVE 7400 C transmitter can be used with an existing certified OPTIWAVE 7300 C horn or drop antenna system.  
The ambient temperature range is -40 °C to +75 °C (see also specific conditions of use).

### OPTIWAVE-M 7400 C, 7500 C

The output signal is an analog 4-20 mA output with HART communication.  
The transmitters are protected by intrinsic safety "i".  
The electronics enclosure can be of aluminium or stainless steel.  
Optionally, the transmitters may be provided with display and adjustment capabilities (HMI option).  
Optionally, the transmitters can be equipped with a separately certified external pressure sensor.  
The OPTIWAVE-M 7400 C transmitter can be used with an existing certified OPTIWAVE 8300 C horn antenna system.  
The ambient temperature range is -40 °C to +75 °C (see also specific conditions of use).

Refer to Annex 2 for electrical data

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

- The flameproof joints are not intended to be repaired;
- Build-up of electrostatic charge on the painted enclosure and external plastic parts shall be avoided by suitable measures;
- Refer to manuals 4005292703 - AD IECEx OPTIWAVE x400, 4007039802 AD IECEx OPTIWAVE-M 7400, 4005809903 AD IECEx OPTIWAVE x500, 4007040002 AD IECEx OPTIWAVE-M 7500 and 4007635101 AD IECEx OPTIWAVE 1400 for detailed information on the relation between the ambient temperature range, process temperature range and the temperature class T\* and the maximum surface temperature T\* °C.



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

- Update to the IEC 60079-0 : 2017 edition 7.0.
- Addition of stainless steel enclosure for type of protection flameproof.
- Addition of a full peek antenna and PTFE flange protection for OPTIWAVE 7500.
- Addition of Profibus PA and Fieldbus options.
- Change of minimum input voltage for type of protection flameproof / dust protection by enclosure.
- Addition of model OPTIWAVE 1400 C (not for types of protection Ex db ia and Ex ia tb)

## **Annexes:**

[Annex 1 to CoC IECEx KIWA 17.0012X Issue 2.pdf](#)

[Annex 2 to CoC IECEx KIWA 17.0012X Issue 2.pdf](#)

## Equipment model code

### OPTIWAVE 5400 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDB0' or 'VFDB4' or 'SFDB9':

The complete type designation is as follows: \*FDB\*abcdefghijklmnpqrst

- a Version
  - 0: KROHNE
  - A: KROHNE RAL 3020
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T\* Ga/Gb + Ex ia IIIC T\*°C Da/Db
  - L: IECEx Ex db ia IIC T6...T\* Ga/Gb + Ex ia tb IIIC T\*°C Da/Db
  - M: IECEx Ex ic IIC T6...T\* Gc + Ex ic IIIC T\*°C Dc
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)
- g Output
  - 1: 2 wires / 4...20mA passive HART
  - 6: FOUNDATION™ fieldbus (2 wire)
  - 7: PROFIBUS PA (2 wire)
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - 2: M20x1,5 / 1 x Plastic + plug
  - 3: M20x1.5 / 1 x Nickel-plated brass + plug
  - 4: M20x1.5 / 1 x Stainless Steel + plug
  - 5: M20x1.5 / 1 x M12 (4-pin connector) + plug
  - 6: M20x1.5 / 2 x Plastic
  - 7: M20x1.5 / 2 x Nickel-plated brass
  - 8: M20x1.5 / 2 x Stainless Steel
  - A: M20x1.5 / 2 x M12 (4-pin connector) IP67
  - C: 1/2 NPT nickel-plated brass adaptor / Without
  - D: 1/2 NPT nickel-plated brass adaptor / 1 x Nickel-plated brass + plug
  - E: 1/2 NPT nickel-plated brass adaptor / 1 x Stainless Steel + plug
  - F: 1/2 NPT nickel-plated brass adaptor / 2 x Nickel-plated brass
  - G: 1/2 NPT nickel-plated brass adaptor / 2 x Stainless Steel
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top

- K: Display -Vertical Top / Stainless steel Cover
- L: Display -Vertical Top / Stainless steel Cover + Locking system
- j Operating language (one digit, not safety relevant)
- k Enhanced functions (one digit, not safety relevant)
- l Process conditions / Process seal
  - 1: -1...16 barg (-14.5...232 psig) / -40°C...+130°C (-40°F...+266°F) / FKM, FPM
  - 2: -1...16 barg (-14.5...232 psig) / -50°C...+130°C (-58°F...+266°F) / EPDM
  - 3: -1...16 barg (-14.5...232 psig) / -20°C...+130°C (-4°F...+266°F) / KALREZ® 6375
- m Antennas
  - 1: 316 L / Metallic horn DN40 (1.5") TLPR
  - 2: 316 L / Metallic horn DN50 (2") TLPR
  - 3: 316 L / Metallic horn DN65 (2.5") TLPR
  - 4: 316 L / Metallic horn DN80 (3") LPR
  - 5: 316 L / Metallic horn DN100 (4") LPR
  - 6: 316 L / Metallic horn DN150 (6") LPR
  - 7: 316 L / Metallic horn DN200 (8") LPR
  - A: PP / Drop DN80 (3") LPR
  - B: PP / Drop DN100 (4") LPR
  - C: PP / Drop DN150 (6") LPR
- n Antenna extensions / Flange plate protection
  - 0: Without
  - 1: 316 L / 105 mm (4") for Horn and Drop antennas
  - 2: 316 L / 210 mm (8") for Horn and Drop antennas
  - 3: 316 L / 315 mm (12") for Horn and Drop antennas
  - 4: 316 L / 420 mm (16") for Horn and Drop antennas
  - 5: 316 L / 525 mm (20") for Horn and Drop antennas
  - 6: 316 L / 630 mm (24") for Horn only
  - 7: 316 L / 735 mm (29") for Horn only
  - 8: 316 L / 840 mm (33") for Horn only
  - A: 316 L / 945 mm (37") for Horn only
  - B: 316 L / 1050 mm (41") for Horn only
  - D: Without / With flange protection
  - E: PP / 105 mm (4") for PP Drop with flange plate protection
  - F: PP / 210 mm (8") for PP Drop with flange plate protection
  - G: PP / 315 mm (12") for PP Drop with flange plate protection
  - H: PP / 420 mm (16") for PP Drop with flange plate protection
  - K: PP / 525 mm (20") for PP Drop with flange plate protection
- o Process connection: Size
  - F: DN25 - 1" - 25A
  - G: DN40 - 1-1/2" - 40A
  - H: DN50 - 2" - 50A

L: DN80 - 3" - 80A  
M: DN100 - 4" - 100A  
P: DN150 - 6" - 150A  
R: DN200 - 8" - 200A

p Process connection

1: 150 lbs ASME B 16.5  
2: 300 lbs ASME B 16.5  
7: 15 psig ASME B 16.5  
A: NPT threaded - B1.20.1  
C: PN01 EN 1092-1  
E: PN16 EN 1092-1  
G: PN40 EN 1092-1  
P: GA threaded ISO228  
U: JIS 10K B 2220

q Process connection Sealing Face / Hygienic

0: Without  
1: Standard Type B1 EN 1092-1  
7: Type A EN 1092-1 (flat face)  
A: RF ASME B 16.5 (raised face)  
B: FF ASME B 16.5 (flat face)  
P: RF JIS B2220 (raised face)

r Calibration certificate (one digit, not safety relevant)

s Options

0: Without  
2: Purging system (for metallic Horn antenna only)

t Accessories / TAG plate (one digit, not safety relevant)

Note: T\*= T5 or T4, T\*°C = T85°C...T100°C or T85°C...T130°C.

OPTIWAVE 6400 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDC0' or 'VFDC4' or 'SFDC9'.

The complete type designation is as follows: \*FDC\*abcdefghijklmnpqrst

a Version

0: KROHNE  
A: KROHNE RAL 3020

b Regional Directives (one digit, not safety relevant)

c Ex Approvals

K: IECEx Ex ia IIC T6...T\* Ga/Gb + Ex ia IIIC T\*°C Da/Db  
L: IECEx Ex db ia IIC T6...T\* Ga/Gb + Ex ia tb IIIC T\*°C Da/Db  
M: IECEx Ex ic IIC T6...T\* Gc + Ex ic IIIC T\*°C Dc

d Industry / Safety (one digit, not safety relevant)

- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)
- g Output
  - 1: 2 wires / 4...20mA passive HART
  - 6: FOUNDATION™ fieldbus (2 wire)
  - 7: PROFIBUS PA (2 wire)
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - 2: M20x1,5 / 1 x Plastic + plug
  - 3: M20x1.5 / 1 x Nickel-plated brass + plug
  - 4: M20x1.5 / 1 x Stainless Steel + plug
  - 5: M20x1.5 / 1 x M12 (4-pin connector) + plug
  - 6: M20x1.5 / 2 x Plastic
  - 7: M20x1.5 / 2 x Nickel-plated brass
  - 8: M20x1.5 / 2 x Stainless Steel
  - A: M20x1.5 / 2 x M12 (4-pin connector) IP67
  - C: 1/2 NPT nickel-plated brass adaptor / Without
  - D: 1/2 NPT nickel-plated brass adaptor / 1 x Nickel-plated brass + plug
  - E: 1/2 NPT nickel-plated brass adaptor / 1 x Stainless Steel + plug
  - F: 1/2 NPT nickel-plated brass adaptor / 2 x Nickel-plated brass
  - G: 1/2 NPT nickel-plated brass adaptor / 2 x Stainless Steel
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
  - K: Display -Vertical Top / Stainless steel Cover
  - L: Display -Vertical Top / Stainless steel Cover + Locking system
- j Operating language (one digit, not safety relevant)
- k Enhanced functions (one digit, not safety relevant)
- l Process conditions / Process seal
  - 1: -1...16 barg (-14.5...232 psig) / -40°C...+130°C (-40°F...+266°F) / FKM, FPM
  - 2: -1...16 barg (-14.5...232 psig) / -50°C...+130°C (-58°F...+266°F) / EPDM
  - 3: -1...16 barg (-14.5...232 psig) / -20°C...+130°C (-4°F...+266°F) / KALREZ® 6375
- m Antennas
  - 4: 316 L / Metallic horn DN80 (3") LPR
  - 5: 316 L / Metallic horn DN100 (4") LPR
  - 6: 316 L / Metallic horn DN150 (6") LPR
  - 7: 316 L / Metallic horn DN200 (8") LPR
  - A: PP / Drop DN80 (3") LPR
  - B: PP / Drop DN100 (4") LPR



- C: PP / Drop DN150 (6") LPR
- E: PTFE / Drop DN80 (3") LPR
- F: PTFE / Drop DN100 (4") LPR
- G: PTFE / Drop DN150 (6") LPR
- n Antenna extensions / Flange plate protection
  - 0: Without
  - 1: 316 L / 105 mm (4") for Horn and Drop antennas
  - 2: 316 L / 210 mm (8") for Horn and Drop antennas
  - 3: 316 L / 315 mm (12") for Horn and Drop antennas
  - 4: 316 L / 420 mm (16") for Horn and Drop antennas
  - 5: 316 L / 525 mm (20") for Horn and Drop antennas
  - 6: 316 L / 630 mm (24") for Horn only
  - 7: 316 L / 735 mm (29") for Horn only
  - 8: 316 L / 840 mm (33") for Horn only
  - A: 316 L / 945 mm (37") for Horn only
  - B: 316 L / 1050 mm (41") for Horn only
- o Process connection size
  - F: DN25 - 1" - 25A
  - G: DN40 - 1-1/2" - 40A
  - L: DN80 - 3" - 80A
  - M: DN100 - 4" - 100A
  - P: DN150 - 6" - 150A
  - R: DN200 - 8" - 200A
- p Process connection Pressure class
  - 1: 150 lbs ASME B 16.5
  - 2: 300 lbs ASME B 16.5
  - 7: 15 psig ASME B 16.5
  - A: NPT threaded - B1.20.1
  - C: PN01 EN 1092-1
  - D: PN10 EN 1092-1
  - E: PN16 EN 1092-1
  - G: PN40 EN 1092-1
  - P: GA threaded ISO228
  - U: JIS 10K B 2220
- q Process connection Sealing Face / Hygienic
  - 0: Without
  - 1: Standard Type B1 EN 1092-1
  - 7: Type A EN 1092-1 (flat face)
  - A: RF ASME B 16.5 (raised face)
  - B: FF ASME B 16.5 (flat face)
  - P: RF JIS B2220 (raised face)
- r Calibration certificate (one digit, not safety relevant)

- s Options
  - 0: Without
  - 2: Purging system (for metallic Horn antenna only)
- t Accessories / TAG plate (one digit, not safety relevant)

Note: T\*= T5 or T4, T°C = T85°C...T100°C or T85°C...T130°C.

### OPTIWAVE 7400 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDE0' or 'VFDE4' or 'SFDE9'.

The complete type designation is as follows: \*FDE\*abcdefghijklmnpqrst

- a Version
  - 0: KROHNE
  - A: KROHNE RAL 3020
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T3 Ga/Gb + Ex ia IIIC T°C Da/Db
  - L: IECEx Ex db ia IIC T6...T3 Ga/Gb + Ex ia tb IIIC T°C Da/Db
  - M: IECEx Ex ic IIC T6...T3 Gc + Ex ic IIIC T°C Dc
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)
- g Output
  - 1: 2 wires / 4...20mA passive HART
  - 6: FOUNDATION™ fieldbus (2 wire)
  - 7: PROFIBUS PA (2 wire)
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - 2: M20x1,5 / 1 x Plastic + plug
  - 3: M20x1.5 / 1 x Nickel-plated brass + plug
  - 4: M20x1.5 / 1 x Stainless Steel + plug
  - 5: M20x1.5 / 1 x M12 (4-pin connector) + plug
  - 6: M20x1.5 / 2 x Plastic
  - 7: M20x1.5 / 2 x Nickel-plated brass
  - 8: M20x1.5 / 2 x Stainless Steel
  - A: M20x1.5 / 2 x M12 (4-pin connector) IP67
  - C: 1/2 NPT nickel-plated brass adaptor / Without
  - D: 1/2 NPT nickel-plated brass adaptor / 1 x Nickel-plated brass + plug
  - E: 1/2 NPT nickel-plated brass adaptor / 1 x Stainless Steel + plug

- F: 1/2 NPT nickel-plated brass adaptor / 2 x Nickel-plated brass
- G: 1/2 NPT nickel-plated brass adaptor / 2 x Stainless Steel
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
  - K: Display -Vertical Top / Stainless steel Cover
  - L: Display -Vertical Top / Stainless steel Cover + Locking system
- j Operating language (one digit, not safety relevant)
- k Enhanced functions (one digit, not safety relevant)
- l Process conditions / Process seal
  - 1: -1...40 barg (-14.5...580 psig) / -40°C...+200°C (-40°F...+392°F) / FKM, FPM
  - 2: -1...40 barg (-14.5...580 psig) / -50°C...+150°C (-58°F...+302°F) / EPDM
  - 3: -1...40 barg (-14.5...580 psig) / -20°C...+200°C (-4°F...+392°F) / KALREZ® 6375
  - 5: -1...40 barg (-14.5...580 psig) / -30°C...+200°C (-22°F...+392°F) / FKM, FPM + Metaglas®
  - 6: -1...40 barg (-14.5...580 psig) / -30°C...+150°C (-22°F...+302°F) / EPDM + Metaglas®
  - 7: -1...40 barg (-14.5...580 psig) / -20°C...+200°C (-4°F...+392°F) / KALREZ® 6375 + Metaglas®
  - A: -1...100 barg (-14.5...1450 psig) / -40°C...+200°C (-40°F...+392°F) / FKM, FPM
  - B: -1...100 barg (-14.5...1450 psig) / -50°C...+150°C (-58°F...+302°F) / EPDM
  - C: -1...100 barg (-14.5...1450 psig) / -20°C...+200°C (-4°F...+392°F) / KALREZ® 6375
  - E: -1...100 barg (-14.5...1450 psig) / -30°C...+200°C (-22°F...+392°F) / FKM, FPM + Metaglas®
  - F: -1...100 barg (-14.5...1450 psig) / -30°C...+150°C (-22°F...+302°F) / EPDM + Metaglas®
  - G: -1...100 barg (-14.5...1450 psig) / -20°C...+200°C (-4°F...+392°F) / KALREZ® 6375 + Metaglas®
- m Antennas
  - 0: Without
  - 1: 316 L / Metallic horn DN40 (1.5") TLPR
  - 2: 316 L / Metallic horn DN50 (2") TLPR
  - 3: 316 L / Metallic horn DN65 (2.5") TLPR
  - 4: 316 L / Metallic horn DN80 (3") LPR
  - 5: 316 L / Metallic horn DN100 (4") LPR
  - 6: 316 L / Metallic horn DN150 (6") LPR
  - 7: 316 L / Metallic horn DN200 (8") LPR
  - E: PTFE / Drop DN80 (3") LPR
  - F: PTFE / Drop DN100 (4") LPR
  - G: PTFE / Drop DN150 (6") LPR
  - K: PEEK / Drop DN80 (3") LPR
  - L: PEEK / Drop DN100 (4") LPR
  - M: PEEK / Drop DN150 (6") LPR
  - Y: PEEK / Hygienic antenna
- n Antenna extensions / Flange plate protection
  - 0: Without
  - 1: 316 L / 105 mm (4") for Horn and Drop antennas



- 2: 316 L / 210 mm (8") for Horn and Drop antennas
- 3: 316 L / 315 mm (12") for Horn and Drop antennas
- 4: 316 L / 420 mm (16") for Horn and Drop antennas
- 5: 316 L / 525 mm (20") for Horn and Drop antennas
- 6: 316 L / 630 mm (24") for Horn only
- 7: 316 L / 735 mm (29") for Horn only
- 8: 316 L / 840 mm (33") for Horn only
- A: 316 L / 945 mm (37") for Horn only
- B: 316 L / 1050 mm (41") for Horn only
- D: Without / With flange protection
- M: PTFE / 105 mm (4") for PTFE Drop with flange plate protection
- N: PTFE / 210 mm (8") for PTFE Drop with flange plate protection
- P: PTFE / 315 mm (12") for PTFE Drop with flange plate protection
- S: PEEK / 105 mm (4") for PEEK Drop with flange plate protection
- T: PEEK / 210 mm (8") for PEEK Drop with flange plate protection
- U: PEEK / 315 mm (12") for PEEK Drop with flange plate protection

o Process connection size

- 0: Without
- G: DN40 - 1-1/2" - 40A
- H: DN50 - 2" - 50A
- L: DN80 - 3" - 80A
- M: DN100 - 4" - 100A
- P: DN150 - 6" - 150A
- R: DN200 - 8" - 200A

p Process connection Pressure class

- 0: Without
- 1: 150 lbs ASME B 16.5
- 2: 300 lbs ASME B 16.5
- 3: 600 lbs ASME B 16.5
- 4: 900 lbs ASME B 16.5
- 5: 1500 lbs ASME B 16.5
- 7: 15 psig ASME B 16.5
- A: NPT threaded - B1.20.1
- C: PN01 EN 1092-1
- E: PN16 EN 1092-1
- G: PN40 EN 1092-1
- H: PN63 EN 1092-1
- K: PN100 EN 1092-1
- P: GA threaded ISO228
- U: JIS 10K B 2220

q Process connection Sealing Face / Hygienic

- 0: Without
  - 1: Standard Type B1 EN 1092-1
  - 2: Standard Type B2 EN 1092-1 (Roughness acc. to customer requirement)
  - 3: Type C EN 1092-1 (tongue)
  - 4: Type D EN 1092-1 (groove)
  - 5: Type E EN 1092-1 (male)
  - 6: Type F EN 1092-1 (female)
  - 7: Type A EN 1092-1 (flat face)
  - A: RF ASME B 16.5 (raised face)
  - B: FF ASME B 16.5 (flat face)
  - M: RJ ASME B 16.5 (ring joint)
  - P: RF JIS B2220 (raised face)
  - S: Triclamp ISO 2852
  - T: DIN 11851
  - U: SMS 1145
  - V: Varivent® Type N
  - W: Neumo Biocontrol®
  - X: DIN 11864-1 Form A
- r Calibration certificate (one digit, not safety relevant)
- s Options
- 0: Without
  - 1: Heating / Cooling (for metallic Horn antenna only)
  - 2: Purging system (for metallic Horn antenna only)
  - 3: Heating / Cooling + purging system (for metallic Horn antenna only)
- t Accessories / TAG plate (one digit, not safety relevant)

Note: T\*°C = T85°C...T150°C or T85°C...T200°C

#### OPTIWAVE-M 7400 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDH0' or 'VFDH4' or 'SFDH9':

The complete type designation is as follows: \*FDH\*abcdefghijklmnpqrst

- a Version
  - 0: KROHNE
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T3 Ga/Gb
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)

- g Output
  - 1: 2 wires / 4...20mA passive HART
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - L: M25x1.5 / Brass - M20x1,5 / Brass
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
- j Operating language (one digit, not safety relevant)
- k Additional sensor
  - 0: Without
  - 4: Pressure transmitter Ex G 1/2 M
- l Process conditions / Process seal
  - 1: -1...40 barg (-14.5...580 psig) / -40°C...+200°C (-40°F...+392°F) / FKM, FPM
  - 3: -1...40 barg (-14.5...580 psig) / -20°C...+200°C (-4°F...+392°F) / KALREZ® 6375
- m Antennas
  - 0: Without
  - 4: 316 L / Metallic horn DN80 (3") LPR
  - 5: 316 L / Metallic horn DN100 (4") LPR
  - A: PP / Drop DN80 (3") LPR
  - B: PP / Drop DN100 (4") LPR
  - E: PTFE / Drop DN80 (3") LPR
  - F: PTFE / Drop DN100 (4") LPR
- n Antenna extensions
  - 0: Without
  - 1: 316 L / 105 mm (4") for Horn and Drop antennas
  - 2: 316 L / 210 mm (8") for Horn and Drop antennas
- o Process connection size
  - 0: Without
  - M: DN100 - 4" - 100A
  - N: DN125 - 5" - 125A
  - P: DN150 - 6" - 150A
- p Process connection Pressure class
  - 0: Without
  - E: PN16 EN 1092-1
- q Process connection Sealing Face / Hygienic
  - 0: Without
  - 1: Standard Type B1 EN 1092-1
- r Calibration certificate (one digit, not safety relevant)
- s Options (one digit, not safety relevant)
  - 0: Without

- 2: Purging system (for metallic Horn antenna only)
- t Accessories / TAG plate (one digit, not safety relevant)

#### OPTIWAVE 1400 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDG0' or 'VFDG4' or 'SFDG9':  
The complete type designation is as follows: \*FDG\*abcdef

- a Version
  - 0: KROHNE
  - A: KROHNE RAL 3020
  - K: KROHNE (Liquid-Extended Range)
  - L: KROHNE (Solid)
- b Ex Approvals
  - K: IECEx Ex ia IIC T6...T5 Ga/Gb + Ex ia IIIC T85°C...T100°C Da/Db
  - M: IECEx Ex ic IIC T6...T5 Gc + Ex ic IIIC T85°C...T100°C Dc
- c Output
  - 0: 2 wires / 4...20mA passive HART
  - 4: 2 wires / 4...20mA passive HART + WHG
- d Antennas, rear connection
  - 0: Antenna (Ø 100 mm) / PP / G 1 A
  - 1: Antenna (Ø 100 mm) / PP / 1 NPT
- e Options (one digit, not safety relevant)
- f Fixing / material (one digit, not safety relevant)

#### OPTIWAVE 3500 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDA0' or 'VFDA4' or 'SFDA9'.  
The complete type designation is as follows: \*FDA\*abcdefghijklmnpqrst

- a Version
  - 0: KROHNE
  - A: KROHNE RAL 3020
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T3 Ga/Gb + Ex ia IIIC T85°C...T150°C Da/Db
  - L: IECEx Ex db ia IIC T6...T3 Ga/Gb + Ex ia tb IIIC T85°C...T150°C Da/Db
  - M: IECEx Ex ic IIC T6...T3 Gc + Ex ic IIIC T85°C...T150°C Dc
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)

- 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)
- g Output
  - 1: 2 wires / 4...20mA passive HART
  - 6: FOUNDATION™ fieldbus (2 wire)
  - 7: PROFIBUS PA (2 wire)
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - 2: M20x1,5 / 1 x Plastic + plug
  - 3: M20x1.5 / 1 x Nickel-plated brass + plug
  - 4: M20x1.5 / 1 x Stainless Steel + plug
  - 5: M20x1.5 / 1 x M12 (4-pin connector) + plug
  - 6: M20x1.5 / 2 x Plastic
  - 7: M20x1.5 / 2 x Nickel-plated brass
  - 8: M20x1.5 / 2 x Stainless Steel
  - A: M20x1.5 / 2 x M12 (4-pin connector) IP67
  - C: 1/2 NPT nickel-plated brass adaptor / Without
  - D: 1/2 NPT nickel-plated brass adaptor / 1 x Nickel-plated brass + plug
  - E: 1/2 NPT nickel-plated brass adaptor / 1 x Stainless Steel + plug
  - F: 1/2 NPT nickel-plated brass adaptor / 2 x Nickel-plated brass
  - G: 1/2 NPT nickel-plated brass adaptor / 2 x Stainless Steel
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
  - K: Display -Vertical Top / Stainless steel Cover
  - L: Display -Vertical Top / Stainless steel Cover + Locking system
- j Display- documentation language (one digit, not safety relevant)
- k Enhanced functions (one digit, not safety relevant)
- l Process conditions / Process seal
  - 1: -1...10 barg (-14.5...145 psig) / -40°C...+150°C (-40°F...+302°F) / PEEK
  - 2: -1...25 barg (-14.5...362 psig) / -40°C...+150°C (-40°F...+302°F) / PEEK
- m Antennas
  - 2: PEEK / Lens DN25 (1") TLPR
  - 3: PEEK / Lens DN40 (1.5") LPR
- n Antenna extensions
  - 0: Without
- o Process connection size
  - G: DN40 - 1-1/2" - 40A
  - H: DN50 - 2" - 50A
- p Process connection Pressure class
  - D: PN10 EN 1092-1
  - F: PN25 EN 1092-1



- q Process connection Sealing Face / Hygienic
  - S: Triclamp ISO 2852
  - T: DIN 11851
  - U: SMS 1145
  - V: Varivent® Type N
  - W: Neumo Biocontrol®
  - X: DIN 11864-1 Form A
- r Calibration certificate (one digit, not safety relevant)
- s Options (one digit, not safety relevant)
- t Accessories / TAG plate (one digit, not safety relevant)

#### OPTIWAVE 6500 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDD0' or 'VFDD4' or 'SFDD9'.

The complete type designation is as follows: \*FDD\*abcdefghijklmnpqrst

- a Version
  - 0: KROHNE
  - A: KROHNE RAL 3020
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T3 Ga/Gb + Ex ia IIIC T\*°C Da/Db
  - L: IECEx Ex db ia IIC T6...T3 Ga/Gb + Ex ia tb IIIC T\*°C Da/Db
  - M: IECEx Ex ic IIC T6...T3 Gc + Ex ic IIIC T\*°C Dc
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)
- g Output
  - 1: 2 wires / 4...20mA passive HART
  - 6: FOUNDATION™ fieldbus (2 wire)
  - 7: PROFIBUS PA (2 wire)
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - 2: M20x1,5 / 1 x Plastic + plug
  - 3: M20x1.5 / 1 x Nickel-plated brass + plug
  - 4: M20x1.5 / 1 x Stainless Steel + plug
  - 5: M20x1.5 / 1 x M12 (4-pin connector) + plug
  - 6: M20x1.5 / 2 x Plastic
  - 7: M20x1.5 / 2 x Nickel-plated brass



- 8: M20x1.5 / 2 x Stainless Steel
- A: M20x1.5 / 2 x M12 (4-pin connector) IP67
- C: 1/2 NPT nickel-plated brass adaptor / Without
- D: 1/2 NPT nickel-plated brass adaptor / 1 x Nickel-plated brass + plug
- E: 1/2 NPT nickel-plated brass adaptor / 1 x Stainless Steel + plug
- F: 1/2 NPT nickel-plated brass adaptor / 2 x Nickel-plated brass
- G: 1/2 NPT nickel-plated brass adaptor / 2 x Stainless Steel
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
  - K: Display -Vertical Top / Stainless steel Cover
  - L: Display -Vertical Top / Stainless steel Cover + Locking system
- j Display- documentation language (one digit, not safety relevant)
- k Enhanced functions (one digit, not safety relevant)
- l Process conditions / Process seal
  - 1: -1...40 barg (-14.5...580 psig) / -40°C...+150°C (-40°F...+302°F) / FKM, FPM
  - 2: -1...40 barg (-14.5...580 psig) / -50°C...+150°C (-58°F...+302°F) / EPDM
  - 4: -1...40 barg (-14.5...580 psig) / -40°C...+200°C (-40°F...+392°F) / FKM, FPM
  - A: -1...40 barg (-14.5...580 psig) / -50°C...+150°C (-58°F...+302°F) / PTFE
  - B: -1...40 barg (-14.5...580 psig) / -50°C...+200°C (-58°F...+392°F) / PTFE
- m Antennas
  - 3: PEEK / Lens DN40 (1.5") LPR
  - 4: PEEK / Lens DN70 (2.75") LPR
  - A: PTFE / Lens DN40 (1.5") LPR
  - B: PTFE / Lens DN70 (2.75") LPR
- n Antenna extensions/ Flange plate or thread protection
  - 0: Without / Without
  - 1: With antenna extension 112 mm (4.4") in 316 L / Without flange plate protection (lens DN40 only)
  - A: Without antenna extension / With PEEK flange plate protection
  - B: Without antenna extension / With PEEK thread protection (lens DN40 only)
  - C: Without antenna extension / With PTFE flange plate protection
- o Process connection size
 

G:	DN40	-	1-1/2"	-	40A
H:	DN50	-	2"	-	50A
L:	DN80	-	3"	-	80A
M:	DN100	-	4"	-	100A
P:	DN150	-	6"	-	150A
R:	DN200	-	8"	-	200A
- p Process connection Pressure class
  - 1: 150 lbs ASME B 16.5
  - 2: 300 lbs ASME B 16.5

- 7: 15 psig ASME B 16.5
- A: NPT threaded - B1.20.1
- C: PN01 EN 1092-1
- D: PN10 EN 1092-1
- E: PN16 EN 1092-1
- G: PN40 EN 1092-1
- P: GA threaded ISO228
- U: JIS 10K B 2220
- q Process connection Sealing Face / Hygienic
  - 0: Without
  - 1: Standard Type B1 EN 1092-1
  - 7: Type A EN 1092-1 (flat face)
  - A: RF ASME B 16.5 (raised face)
  - B: FF ASME B 16.5 (flat face)
  - P: RF JIS B2220 (raised face)
- r Calibration certificate (one digit, not safety relevant)
- s Options
  - 0: Without
  - 2: Purging system
- t Accessories / TAG plate (one digit, not safety relevant)

Note: T°C = T85°C...T150°C or T85°C...T200°C

#### OPTIWAVE 7500 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VFDF0' or 'VFDF4' or 'SFDF9'.

The complete type designation is as follows: \*FDF\*abcdefghijklmnoqrst

- a Version
  - 0: KROHNE
  - A: KROHNE RAL 3020
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T3 Ga/Gb + Ex ia IIIC T°C Da/Db
  - L: IECEx Ex db ia IIC T6...T3 Ga/Gb + Ex ia tb IIIC T°C Da/Db
  - M: IECEx Ex ic IIC T6...T3 Gc + Ex ic IIIC T°C Dc
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)

- g Output
  - 1: 2 wires / 4...20mA passive HART
  - 6: FOUNDATION™ fieldbus (2 wire)
  - 7: PROFIBUS PA (2 wire)
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - 2: M20x1,5 / 1 x Plastic + plug
  - 3: M20x1.5 / 1 x Nickel-plated brass + plug
  - 4: M20x1.5 / 1 x Stainless Steel + plug
  - 5: M20x1.5 / 1 x M12 (4-pin connector) + plug
  - 6: M20x1.5 / 2 x Plastic
  - 7: M20x1.5 / 2 x Nickel-plated brass
  - 8: M20x1.5 / 2 x Stainless Steel
  - A: M20x1.5 / 2 x M12 (4-pin connector) IP67
  - C: 1/2 NPT nickel-plated brass adaptor / Without
  - D: 1/2 NPT nickel-plated brass adaptor / 1 x Nickel-plated brass + plug
  - E: 1/2 NPT nickel-plated brass adaptor / 1 x Stainless Steel + plug
  - F: 1/2 NPT nickel-plated brass adaptor / 2 x Nickel-plated brass
  - G: 1/2 NPT nickel-plated brass adaptor / 2 x Stainless Steel
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
  - K: Display -Vertical Top / Stainless steel Cover
  - L: Display -Vertical Top / Stainless steel Cover + Locking system
- j Display- documentation language (one digit, not safety relevant)
- k Enhanced functions (one digit, not safety relevant)
- l Process conditions / Process seal
  - 1: -1...40 barg (-14.5...580 psig) / -40°C...+150°C (-40°F...+302°F) / FKM, FPM
  - 2: -1...40 barg (-14.5...580 psig) / -50°C...+150°C (-58°F...+302°F) / EPDM
  - 3: -1...40 barg (-14.5...580 psig) / -20°C...+150°C (-4°F...+302°F) / KALREZ® 6375
  - 4: -1...40 barg (-14.5...580 psig) / -50°C...+150°C (-58°F...+302°F) / PEEK
  - 5: -1...40 barg (-14.5...580 psig) / -40°C...+200°C (-40°F...+392°F) / FKM, FPM
  - 6: -1...40 barg (-14.5...580 psig) / -20°C...+200°C (-4°F...+392°F) / KALREZ® 6375
  - 7: -1...40 barg (-14.5...580 psig) / -50°C...+200°C (-58°F...+392°F) / PEEK
  - A: -1...40 barg (-14.5...580 psig) / -50°C...+150°C (-58°F...+302°F) / PTFE
  - B: -1...40 barg (-14.5...580 psig) / -50°C...+200°C (-58°F...+392°F) / PTFE
- m Antennas
  - 1: PEEK / Lens DN20 (3/4") TLPR
  - 2: PEEK / Lens DN25 (1") TLPR
  - 3: PEEK / Lens DN40 (1.5") LPR
  - 4: PEEK / Lens DN70 (2.75") LPR

- A: PTFE / Lens DN40 (1.5") LPR
- B: PTFE / Lens DN70 (2.75") LPR
- n Antenna extensions/ Flange plate or thread protection
  - 0: Without / Without
  - 1: With antenna extension 112 mm (4.4") in 316 L / Without flange plate protection (lens DN40 only)
  - A: Without antenna extension / With PEEK flange plate protection (lens DN40 and DN70 only)
  - B: Without antenna extension / With PEEK thread protection (lens DN40 only)
  - C: Without antenna extension / With PTFE flange plate protection (lens DN40 and DN70 only)
- o Process connection size
 

E:	DN20	-	3/4"	-	15A
F:	DN25	-	1"	-	25A
G:	DN40	-	1-1/2"	-	40A
H:	DN50	-	2"	-	50A
L:	DN80	-	3"	-	80A
M:	DN100	-	4"	-	100A
P:	DN150	-	6"	-	150A
R:	DN200	-	8"	-	200A
- p Process connection Pressure class
  - 1: 150 lbs ASME B 16.5
  - 2: 300 lbs ASME B 16.5
  - 7: 15 psig ASME B 16.5
  - A: NPT threaded - B1.20.1
  - C: PN01 EN 1092-1
  - D: PN10 EN 1092-1
  - E: PN16 EN 1092-1
  - G: PN40 EN 1092-1
  - P: GA threaded ISO228
  - U: JIS 10K B 2220
- q Process connection Sealing Face / Hygienic
  - 0: Without
  - 1: Standard Type B1 EN 1092-1
  - 7: Type A EN 1092-1 (flat face)
  - A: RF ASME B 16.5 (raised face)
  - B: FF ASME B 16.5 (flat face)
  - P: RF JIS B2220 (raised face)
- r Calibration certificate (one digit, not safety relevant)
- s Options
  - 0: Without
  - 2: Purging system
- t Accessories / TAG plate (one digit, not safety relevant)

Note: T°C = T85°C...T150°C or T85°C...T200°C

OPTIWAVE-M 7500 C

The type designation of the instrument which is printed onto the nameplate of the equipment starts always with the characters 'VF DL0' or 'VF DL4' or 'SF DL9'.

The complete type designation is as follows: \*FDL\*abcdefghijklmnoqrst

- a Version
  - 0: KROHNE
- b Regional Directives (one digit, not safety relevant)
- c Ex Approvals
  - K: IECEx Ex ia IIC T6...T3 Ga/Gb
- d Industry / Safety (one digit, not safety relevant)
- e Construction (one digit, not safety relevant)
- f Converter version (Housing material / IP class)
  - 2: C / Compact version (Aluminium housing - IP66/IP68 0.1 barg)
  - 3: C / Compact version (Stainless steel housing - IP66/IP68 0.1 barg)
- g Output
  - 1: 2 wires / 4...20mA passive HART
- h Cable entry / Cable gland
  - 1: M20x1,5 / Without
  - L: M25x1.5 / Brass - M20x1,5 / Brass
- i Display
  - 0: Without (No display, blind cover)
  - 4: Display -Vertical Top
- j Display- documentation language (one digit, not safety relevant)
- k Additional sensor
  - 0: Without
  - 4: Pressure transmitter Ex G 1/2 M
- l Process conditions / Process seal
  - 1: -1...40 barg (-14.5...580 psig) / -40°C...+120°C (-40°F...+248°F) / FKM, FPM
  - 3: -1...40 barg (-14.5...580 psig) / -20°C...+120°C (-4°F...+248°F) / KALREZ® 6375
- m Antennas
  - 3: PEEK / Lens DN40 (3") LPR
  - 4: PEEK / Lens DN70 (4") LPR
- n Antenna extensions
  - 0: Without
- o Process connection size
  - M: DN100 - 4" - 100A
  - N: DN125 - 5" - 125A
  - P: DN150 - 6" - 150A
- p Process connection Pressure class



- E: PN16      EN 1092-1
- q    Process connection Sealing Face / Hygienic
  - 0:    Without
  - 1:    Standard Type B1 EN 1092-1
- r    Calibration certificate (one digit, not safety relevant)
- s    Options
  - 0:    Without
  - 2:    Purging system
- t    Accessories / TAG plate (one digit, not safety relevant)

### Electrical Data

Apparatus in type of protection intrinsic safety "ia" and "ic"

OPTIWAVE model	Output option	Only for connection to a certified intrinsically safe circuit with the following maximum values at +/- terminals				
		U <sub>i</sub> (V)	I <sub>i</sub> (mA)	P <sub>i</sub> (W)	C <sub>i</sub> (nF)	L <sub>i</sub> (μH)
5400 C, 6400 C, 7400 C, 3500 C, 6500 C, 7500 C, -M 7400 C, -M 7500 C	4-20 mA/HART	30	130 *)	1 *)	10	0
1400 C		30	130 *)	1 *)	12	6
5400 C, 6400 C, 7400 C, 3500 C, 6500 C, 7500 C	PROFIBUS PA or FOUNDATION™ fieldbus	24	380 *)	5.32 *)	5	10

\*) This parameter is not relevant for type of protection "ic"

Apparatus in type of protection flameproof enclosures "d" and dust ignition protection by enclosure "t"

OPTIWAVE model	Output option	Maximum parameters at +/- terminals		
		U <sub>N</sub> (V dc)	I <sub>N</sub> (mA)	U <sub>M</sub> (V ac/dc)
5400 C, 6400 C, 7400 C, 3500 C, 6500 C, 7500 C	4-20 mA/HART	36	22	250

Apparatus in type of protection flameproof enclosures "d" and dust ignition protection by enclosure "t" with field wiring in type of protection "ia"

OPTIWAVE model	Output option	Only for connection to a certified intrinsically safe circuit with the following maximum values at +/- terminals				
		U <sub>i</sub> (V)	I <sub>i</sub> (mA)	P <sub>i</sub> (W)	C <sub>i</sub> (nF)	L <sub>i</sub> (μH)
5400 C, 6400 C, 7400 C, 3500 C, 6500 C, 7500 C	PROFIBUS PA or FOUNDATION™ fieldbus	24	380	5.32	5	10