

**Annex 1 to NL/DEK/ExTR13.0083/01**

**Annex 1 to Certificate of Conformity IECEX DEK 13.0079 X**

**Annex 1 to EU-Type Examination Certificate DEKRA 13ATEX0175 X**

### **Description**

The Guided Wave Radar Level Transmitter DR2000 type DR2000Aa...t, and Radar Level Transmitter DR5200 type DR5200Aa...t are used for continuous level measurement of flammable or non-flammable liquids or solid particles, granulates or powders within storage or process tanks or in a stilling well.

The distance between transmitter DR2000 and the surface of the process medium is measured using a probe system (e.g. cable or rod) that guides electromagnetic pulses that are reflected by the surface of the process medium.

The distance between the antenna of transmitter DR5200 and the surface of the process medium is measured using frequency modulated continuous wave radar.

The 2-wire transmitter is loop powered. The output is either a 4 - 20 mA current signal with an overlaid digital communication protocol (HART) or a fixed current with a carrier signal for the fieldbus protocol (PROFIBUS PA or FOUNDATION fieldbus FF).

Either the 4 - 20 mA HART transmitter is completely in type of protection intrinsic safety "i" or the transmitter is provided with the power supply compartment in type of protection flameproof enclosures "d". In the latter version a zener barrier circuit board is located in the terminal compartment.

Optionally, the transmitter may be provided with display and adjustment capabilities (HMI option).

Transmitters DR2000 and DR5200 are also available as remote versions. The length of the cable between transmitter housing and sensor is maximum 100 m.

Optionally, the DR2000 may be equipped with an adaptor for connection to an existing certified DR7100 probe system.

The enclosure provides a degree of protection of at least IP66/IP67 as per IEC 60529.

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**Marking codes**

Compact version DR5200					
II 1/2 G	Ex ia IIC T6...T2 Ga/Gb or	and	II 1/2 D	Ex ia IIIC T90 °C Da/Db or	or
II 2 G	Ex ia IIC T6...T2 Gb or		II 2 D	Ex ia IIIC T90 °C Db or	
II 3 G	Ex ic IIC T6...T2 Gc		II 3 D	Ex ic IIIC T90 °C Dc	
II 1/2 G	Ex db ia IIC T6...T2 Ga/Gb or	and	II 1/2 D	Ex ia tb IIIC T90 °C Da/Db or	
II 2 G	Ex db ia IIC T6...T2 Gb		II 2 D	Ex ia tb IIIC T90 °C Db	
Compact version DR2000					
II 1/2 G	Ex ia IIC T6...T2 Ga/Gb or	and	II 1/2 D	Ex ia IIIC T90 °C Da/Db or	or
II 2 G	Ex ia IIC T6...T2 Gb or		II 2 D	Ex ia IIIC T90 °C Db or	
II 3 G	Ex ic IIC T6...T2 Gc		II 3 D	Ex ic IIIC T90 °C Dc	
II 1/2 G	Ex ia/db IIC T6...T2 Ga/Gb or	and	II 1/2 D	Ex ia/tb IIIC T90 °C Da/Db or	
II 2 G	Ex db ia IIC T6...T2 Gb		II 2 D	Ex ia tb IIIC T90 °C Db	
Remote version transmitter					
II 2 (1) G	Ex ia [ia Ga] IIC T6...T4 Gb or	and	II 2 (1) D	Ex ia [ia Da] IIIC T90 °C Db or	or
II 3 G	Ex ic [ic] IIC T6...T4 Gc		II 3 D	Ex ic [ic] IIIC T90 °C Dc	
II 2 (1) G	Ex db ia [ia Ga] IIC T6...T4 Gb	and	II 2 (1) D	Ex ia tb [ia Da] IIIC T90 °C Db	
Remote version sensor					
II 1/2 G	Ex ia IIC T6...T2 Ga/Gb or	and	II 1/2 D	Ex ia IIIC T90 °C Da/Db or	
II 2 G	Ex ia IIC T6...T2 Gb or		II 2 D	Ex ia IIIC T90 °C Db or	
II 3 G	Ex ic IIC T6...T2 Gc		II 3 D	Ex ic IIIC T90 °C Dc	

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**Type designation**

DR2000

DR2000Aabcdefghijklmnoqrst

**A Type**

DR20000: variation not safety relevant  
DR20004: variation not safety relevant  
DR20009: variation not safety relevant

**a Converter / Version (housing material)**

- 1: Compact (aluminium)
- 2: Compact (stainless steel)
- 3: Sensor (aluminium) with remote Converter (aluminium)
- 4: Sensor (stainless steel) with remote Converter (stainless steel)
- 5: Sensor (stainless steel) with remote Converter (aluminium)

**b Approval**

- 0: Without
- 1: ATEX II 1/2 G Ex ia IIC T6...TX<sup>1)</sup> Ga/Gb + II 1/2 D Ex ia IIIC T90 °C Da/Db
  - 2: ATEX II 1/2 G Ex ia/db IIC T6...TX<sup>1)</sup> Ga/Gb + II 1/2 D Ex ia/tb IIIC T90 °C Da/Db
  - 4: ATEX II 3 G Ex ic IIC T6...TX<sup>1)</sup> Gc + II 3 D Ex ic IIIC T90 °C Dc
  - 6: IECEX Ex ia IIC T6...TX<sup>1)</sup> Ga/Gb + Ex ia IIIC T90 °C Da/Db
  - 7: IECEX Ex ia/db IIC T6...TX<sup>1)</sup> Ga/Gb + Ex ia/tb IIIC T90 °C Da/Db
  - 8: IECEX Ex ic IIC T6...TX<sup>1)</sup> Gc + Ex ic IIIC T90 °C Dc
- <sup>1)</sup>: for the value of TX see thermal data below

**c Other approval (one digit, not safety relevant)**

**d Pressure / Temperature / Sealing**

- 0: Without
- 1: 40 Bar / -40 °C...+150 °C / FKM
  - 2: 40 Bar / -20 °C...+150 °C / Kalrez 6375
  - 3: 40 Bar / -50 °C...+150 °C / EPDM
  - 6: 40 Bar / -40 °C...+300 °C (HT) / FKM
  - 7: 40 Bar / -20 °C...+300 °C (HT) / Kalrez 6375
  - 8: 40 Bar / -50 °C...+250 °C (HT) / EPDM
  - C: 300 Bar (HP) / -40 °C...+150 °C / FKM
  - D: 300 Bar (HP) / -20 °C...+150 °C / Kalrez 6375
  - E: 300 Bar (HP) / -50 °C...+150 °C / EPDM
  - H: 300 Bar (HP) / -40 °C...+300 °C (HT) / FKM
  - K: 300 Bar (HP) / -20 °C...+300 °C (HT) / Kalrez 6375
  - L: 300 Bar (HP) / -50 °C...+250 °C (HT) / EPDM
  - S: 40 Bar/-20°C...+150°C/FKM/FPM (FDA, EC 1935/2004 + EC 2023/2006 and EU 10/2011) \*
  - T: 40 Bar/-20°C...+150°C/Kalrez 6230 (FDA, EC 1935/2004 + EC 2023/2006 and EU 10/2011) \*
  - U: 40 Bar/-45°C...+150°C/EPDM (FDA, EC 1935/2004 + EC 2023/2006 and EU 10/2011) \*
- \* note: the listed standards are not in the scope of this certificate)

**e Material / Probe**

- 0: Without
- 1: 316L / Single rod Ø 8 mm max. 4m
  - 2: 316L / Single rod Ø 8 mm segmented max. 6m
  - 3: 316L / Single cable Ø 2 mm max. 40m (liquid only)
  - 4: 316L / Single cable Ø 4 mm max. 40m (liquid) or 20m (solid)
  - 5: 316L / Single cable Ø 8 mm max. 40m (solid only)

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- 6: 316L / Double rod Ø 8 mm max. 4m
- 7: 316L / Double cable Ø 4 mm max. 40m (liquid only)
- A: 316L / Coax Ø22 mm max. 6m
- B: 316L / Coax Ø22 mm segmented max. 6m
- D: Hastelloy C22 / Single cable Ø 2 mm max. 40m (liquid only)
- E: Hastelloy C22 / Coax Ø 22 mm
- G: FEP / Single cable full coated including counterweight
- K: 316L / No probe (Single - rod Ø 8 mm or cable Ø4mm)
- L: 316L / No probe (Double - rod Ø 8 mm or cable Ø4mm)
- P: PVDF sheath / Single rod Ø 8 mm max. 4m
- T: 316 / Single cable Ø 4 mm for BM 26 ADVANCED max. 6m
- V: 316 / Single cable Ø 4 mm for BM 26 F max. 6m
- X: 316 / Single rod Ø 8 mm Ra < 0.76µm

f Material / Probe end type (one digit, not safety relevant)

g Process connection size (one digit, not safety relevant)

h Process connection pressure class (one digit, not safety relevant)

i Process connection sealing face / sanitary (one digit, not safety relevant)

j Output

- 1: 2 wires - 4...20mA passive HART
- A: Foundation Fieldbus (2 wire)
- B: PROFIBUS PA (2 wire)

k Cable entry / Cable gland (note: cable glands are not in the scope of this certificate)

- 1: M20x1.5 / Without
- 2: M20x1.5 / Plastic
- 3: M20x1.5 / Brass
- 4: M20x1.5 / Stainless Steel
- A: 1/2 NPT (Nickel-plated brass) / Without
- B: 1/2 NPT (Stainless Steel) / Without

l Housing option / Display

- 1: Horizontal housing / No Display
- 2: Horizontal housing / Display
- 3: Horizontal housing / No display + Weather protection
- 4: Horizontal housing / Display + Weather protection
- A: Vertical housing / No display
- B: Vertical housing / Display top
- C: Vertical housing / Display side
- D: Vertical housing / No display + Weather protection
- E: Vertical housing / Display top + Weather protection
- F: Vertical housing / Display side + Weather protection

m Display language (one digit, not safety relevant)

n Version

- 1: AMETEK DREXELBROOK

o Module option

- 0: Without

p Option for remote version

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- 0: Without
- 6: Signal cable 10m
- 7: Signal cable 25m
- 8: Signal cable 50m
- A: Signal cable 75m
- B: Signal cable 100m

q Adaptors

- 0: Without
- 1: For DR1000 process connection
- 2: For DR1200 process connection
- 3: For DR7100 process connection (devices older than 2009)

r Calibration certificate (one digit, not safety relevant)

s TAG Number (one digit, not safety relevant)

t Other constructions (one digit, not safety relevant)

DR5200

DR5200Aabcdefghijklmnopqrst

A Type

- DR52000: variation not safety relevant
- DR52004: variation not safety relevant
- DR52009: variation not safety relevant

a Converter / Version (housing material)

- 1: Compact (aluminium)
- 2: Compact (stainless steel)
- 3: Sensor (aluminium) with remote Converter (aluminium)
- 4: Sensor (stainless steel) with remote Converter (stainless steel)
- 5: Sensor (stainless steel) with remote Converter (aluminium)

b Approval

- 0: Without
- 1: ATEX II 1/2 G Ex ia IIC T6...TX<sup>1)</sup> Ga/Gb + II 1/2 D Ex ia IIIC T90 °C Da/Db
- 2: ATEX II 1/2 G Ex db ia IIC T6...TX<sup>1)</sup> Ga/Gb + II 1/2 D Ex ia tb IIIC T90 °C Da/Db
- 4: ATEX II 3 G Ex ic IIC T6...TX<sup>1)</sup> Gc + II 3 D Ex ic IIIC T90 °C Dc
- 6: IECEX Ex ia IIC T6...TX<sup>1)</sup> Ga/Gb + Ex ia IIIC T90 °C Da/Db
- 7: IECEX Ex db ia IIC T6...TX<sup>1)</sup> Ga/Gb + Ex ia tb IIIC T90 °C Da/Db
- 8: IECEX Ex ic IIC T6...TX<sup>1)</sup> Gc + Ex ic IIIC T90 °C Dc

<sup>1)</sup> for the value of TX see thermal data below

c Other approval (one digit, not safety relevant)

d Pressure / Temperature / Sealing

- 0: Without
- 1: V96; 40 Bar / -40 °C...+150 °C / FKM, FPM
- 3: V96; 40 Bar / -40 °C...+130 °C / FPM FEP coated
- 5: V96; 40 Bar / -50 °C...+130 °C / EPDM
- 6: V96; 40 Bar / -20 °C...+150 °C / Kalrez 6375
- 7: V96; 40 Bar / -20 °C...+130 °C / Kalrez 6230
- 8: V96; 40 Bar / -20 °C...+130 °C / Silicone FEP coated
- A: V96 LT; 40 Bar / -60 °C...+130 °C / PFA

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- B: LP; 2 Bar / -20°C...+130 °C / Kalrez 6375 (non Ex)
- D: V96 HT; 40 Bar / -40 °C...+200 °C / FKM FPM
- F: V96 HT; 40 Bar / -40 °C...+200 °C / FPM FEP coated
- K: V96 HT; 40 Bar / -20 °C...+250 °C / Kalrez 6375
- L: V96 HT; 40 Bar / -20 °C...+250 °C / Kalrez 6230
- M: V96 HT; 40 Bar / -20 °C...+200 °C / Silicone FEP coated
- N: V96 HT; 40 Bar / -20 °C...+150 °C / PFA
- R: Wave Horn; 16 Bar / -20 °C...+100 °C / PP
- T: Wave horn; 40 Bar / -50 °C...+150 °C / PTFE
- V: PTFE WS zone 0; 16 Bar / -40 °C...+150 °C / PTFE
- W: PTFE WS with plate; 16 Bar / -40 °C...+150 °C / PTFE
- X: PTFE WS without plate; 3 Bar / -20 °C...+150 °C / Kalrez 6375
- Y: PP WS without plate; 3 Bar / -40 °C...+100 °C / FPM

**e Material/Antenna**

- 0: Without
- 1: 316 L / Metallic horn (sheet metal) DN80 (3")
- 2: 316 L / Metallic horn (sheet metal) DN100 (4")
- 3: 316 L / Metallic horn (sheet metal) DN150 (6")
- 4: 316 L / Metallic horn (sheet metal) DN200 (8")
- 5: 316 L / Metallic horn (machined) DN65 (2.5")
- B: PP without plate / Wave-Stick L=270 mm
- C: PTFE with plate / Wave-Stick L = 384 mm
- D: PTFE without plate / Wave-Stick L=270 mm
- E: PTFE SW with plate for Stilling well / L=60 mm
- G: PP / Wave Horn L=317mm
- H: PTFE / Wave Horn L=300mm
- L: 316 L / Metallic wave guide ≤ 1 m (3.28 ft)
- M: 316 L / Metallic wave guide ≤ 1.5 m (4.92 ft)
- N: 316 L / Metallic wave guide ≤ 2 m (6.56 ft)
- P: 316 L / Metallic wave guide ≤ 2.5 m (8.2 ft)
- R: 316 L / Metallic wave guide ≤ 3 m (9.84 ft)
- S: 316 L / Metallic wave guide ≤ 3.5 m (11.48 ft)
- T: 316 L / Metallic wave guide ≤ 4 m (13.12 ft)
- U: 316 L / Metallic wave guide ≤ 4.5 m (14.76 ft)
- V: 316 L / Metallic wave guide ≤ 5 m (16.4 ft)
- W: 316 L / Metallic wave guide ≤ 5.5 m (18.04 ft)
- X: 316 L / Metallic wave guide ≤ 6 m (19.68 ft)

**f Material / Antenna extension**

- 0: Without
- 1: PP / 100 mm (4") for Wave-Stick only
- 2: PP / 300 mm (8") for Wave-Stick only
- 3: PP / 500 mm (20") for Wave-Stick only
- 4: PP / 700 mm (28") for Wave-Stick only
- 6: PTFE / 100 mm (4")
- 7: PTFE / 200 mm (8")
- 8: PTFE / 300 mm (12")
- A: PTFE / 400 mm (16") for Wave-Stick only
- B: PTFE / 500 mm (20") for Wave-Stick only
- C: PTFE / 600 mm (24") for Wave-Stick only
- E: 316 L / 100 mm (4")
- F: 316 L / 200 mm (8")
- G: 316 L / 300 mm (12")
- H: 316 L / 400 mm (16")
- K: 316 L / 500 mm (20")

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- L: 316 L / 600 mm (24")
- M: 316 L / 700 mm (28")
- N: 316 L / 800 mm (32")
- P: 316 L / 900 mm (36")
- R: 316 L / 1000 mm (40")
- S: 316 L / 1300 mm (52")
- T: 316 L / 1600 mm (64")
- U: 316 L / 2000 mm (80")
- W: 316 L / S-bend extension
- X: 316 L / L-bend extension (right angle)

g Process connection size (one digit, not safety relevant)

h Process connection pressure class (one digit, not safety relevant)

i Process connection sealing face / sanitary (one digit, not safety relevant)

j Output

- 1: 2 wires - 4...20mA passive HART
- A: Foundation Fieldbus (2 wire)
- B: PROFIBUS PA (2 wire)

k Cable entry/Cable gland

- 1: M20x1.5 / Without
- 2: M20x1.5 / Plastic
- 3: M20x1.5 / Nickel-plated brass
- 4: M20x1.5 / Stainless Steel
- A: 1/2 NPT (Nickel-plated brass) / Without
- B: 1/2 NPT (Stainless Steel) / Without

l Housing option / Display

- 0: Without
- 1: Horizontal housing / No Display
- 2: Horizontal housing / Display
- 3: Horizontal housing / No display + Weather protection
- 4: Horizontal housing / Display + Weather protection
- A: Vertical housing / No display
- B: Vertical housing / Display top
- C: Vertical housing / Display side
- D: Vertical housing / No display + Weather protection
- E: Vertical housing / Display top + Weather protection
- F: Vertical housing / Display side + Weather protection

m Display language (one digit, not safety relevant)

n Version

- 1: AMETEK DREXELBROOK

o Module Option

- 0: Without

p Option for remote version

- 0: Without
- 6: Signal cable 10m
- 7: Signal cable 25m
- 8: Signal cable 50m

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- A: Signal cable 75m
- B: Signal cable 100m

- q Adaptor
  - 0: Without

r Calibration certificate (one digit, not safety relevant)

s Drawing / TAG Number (one digit, not safety relevant)

t Other constructions

- 0: Without
- 1: NACE MR 0175/MR 0103
- 3: Heating / Cooling (metallic Horn only)
- 5: Purging with liquid (metallic Horn only)
- 6: Purging with liquid + Heating / Cooling (metallic Horn only)
- A: Purging with gas (metallic Horn only)
- B: Purging with gas + Heating / Cooling (metallic Horn only)



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**Thermal data**

The temperature class depending on the ambient temperature, the flange temperature and the type of probe / antenna used, is listed in the following tables:

Compact version of the DR2000

Equipment Protection Level	Max. ambient temperature			Max. flange temp.	Temp. class
	2 mm probe	2 mm probe and HT extension	All other probes		
Ga/Gb	52 °C	54 °C	53 °C	60 °C	T6
	70 °C	70 °C	70 °C	60 °C	T5
	80 °C	80 °C	80 °C	60 °C	T4
Gb and Gc	52 °C	54 °C	53 °C	60 °C	T6
	42 °C	51 °C	45 °C	85 °C	
	67 °C	69 °C	68 °C	75 °C	T5
	57 °C	66 °C	60 °C	100 °C	
	77 °C	79 °C	78 °C	85 °C	T4
	67 °C	76 °C	70 °C	110 °C	
	57 °C	73 °C	62 °C	135 °C	
	51 °C	71 °C	57 °C	150 °C	T3
	Not allowed	68 °C	Not allowed	180 °C <sup>1)</sup>	
	Not allowed	65 °C	Not allowed	200 °C <sup>1)</sup>	
	Not allowed	60 °C	Not allowed	250 °C <sup>1)</sup>	T2
	Not allowed	54 °C	Not allowed	300 °C <sup>1)</sup>	

Equipment Protection Level	Min. ambient temperature			Min. flange temp.	Temp. class
	2 mm probe	2 mm probe and HT extension	All other probes		
Ga/Gb	-40 °C	-40 °C	-40 °C	-20 °C	T6-T2
Gb and Gc	-40 °C	-40 °C	-40 °C	-40 °C <sup>1)</sup>	T6-T2
	-36 °C	-39 °C	-37 °C	-50 °C <sup>1)</sup>	

<sup>1)</sup> Permitted gasket temperature ranges must be observed (see instructions)

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Remote version of the DR2000

Equipment Protection Level	Max. ambient temperature			Max. flange temp.	Temp. class
	2 mm probe	2 mm probe and HT extension	All other probes		
Ga/Gb	49 °C	51 °C	49 °C	60 °C	T6
	70 °C	70 °C	70 °C	60 °C	T5
	80 °C	80 °C	80 °C	60 °C	T4
Gb and Gc	49 °C	51 °C	49 °C	60 °C	T6
	39 °C	48 °C	43 °C	85 °C	
	64 °C	66 °C	64 °C	75 °C	T5
	54 °C	65 °C	58 °C	100 °C	
	77 °C	79 °C	78 °C	85 °C	T4
	64 °C	75 °C	68 °C	110 °C	
	51 °C	71 °C	59 °C	135 °C	
	43 °C	69 °C	54 °C	150 °C	T3
	Not allowed	65 °C	Not allowed	180 °C <sup>1)</sup>	
	Not allowed	62 °C	Not allowed	200 °C <sup>1)</sup>	
	Not allowed	54 °C	Not allowed	250 °C <sup>1)</sup>	T2
	Not allowed	47 °C	Not allowed	300 °C <sup>1)</sup>	

Equipment Protection Level	Min. ambient temperature			Min. flange temp.	Temp. class
	2 mm probe	2 mm probe and HT extension	All other probes		
Ga/Gb	-40 °C	-40 °C	-40 °C	-20 °C	T6-T2
Gb and Gc	-40 °C	-40 °C	-40 °C	-40 °C <sup>1)</sup>	T6-T2
	-35 °C	-39 °C	-36 °C	-50 °C <sup>1)</sup>	

<sup>1)</sup> Permitted gasket temperature ranges must be observed (see instructions)

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Compact version of the DR5200

Equipment Protection Level	Max. ambient temperature				Max. flange temp.	Temp. class
	Wave horn PP	Wave horn PTFE & Wavestick	Metalic horn without HT extension	Metalic horn with HT extension		
Ga/Gb	46 °C	46 °C	46 °C	46 °C	45 °C	T6
	41 °C	42 °C	41 °C	44 °C	55 °C	T5
	38 °C	40 °C	39 °C	43 °C	60 °C	T4
Gb and Gc	46 °C	46 °C	46 °C	46 °C	45 °C	T6
	41 °C	42 °C	41 °C	44 °C	55 °C	
	38 °C	40 °C	39 °C	43 °C	60 °C	
	53 °C	55 °C	54 °C	58 °C	75 °C	T5
	40 °C	44 °C	43 °C	54 °C	100 °C	
	77 °C	77 °C	77 °C	79 °C	85 °C	T4
	69 °C	71 °C	70 °C	76 °C	100 °C	
	Not allowed	57 °C	54 °C	71 °C	135 °C <sup>1)</sup>	
	Not allowed	50 °C	48 °C	68 °C	150 °C <sup>1)</sup>	T3
	Not allowed	Not allowed	Not allowed	64 °C	180 °C <sup>1)</sup>	
	Not allowed	Not allowed	Not allowed	61 °C	200 °C <sup>1)</sup>	
	Not allowed	Not allowed	Not allowed	53 °C	250 °C <sup>1)</sup>	T2

Equipment Protection Level	Min. ambient temperature				Min. flange temp.	Temp. class
	Wave horn PP & Wavestick	Wave horn PTFE	Metalic horn without HT extension	Metalic horn with HT extension		
Ga/Gb	-40 °C	-40 °C	-40 °C	-40 °C	-20 °C	T6-T2
Gb and Gc	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C <sup>1)</sup>	T6-T2
	Not allowed	-36 °C	-35 °C	-38 °C	-50 °C <sup>1)</sup>	
	Not allowed	Not allowed	Not allowed	-37 °C	-60 °C <sup>1)</sup>	

<sup>1)</sup> Permitted gasket temperature ranges must be observed (see instructions)

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Remote version of the DR5200

Equipment Protection Level	Max. ambient temperature				Max. flange temp.	Temp. class
	Wave horn PP	Wave horn PTFE & Wavestick	Metalic horn without HT extension	Metalic horn with HT extension		
Ga/Gb	46 °C	46 °C	46 °C	46 °C	45 °C	T6
	41 °C	41 °C	41 °C	44 °C	55 °C	T5
	39 °C	39 °C	39 °C	43 °C	60 °C	T4
Gb and Gc	46 °C	46 °C	46 °C	46 °C	45 °C	T6
	41 °C	41 °C	41 °C	44 °C	55 °C	
	39 °C	39 °C	39 °C	43 °C	60 °C	
	54 °C	54 °C	54 °C	59 °C	75 °C	T5
	43 °C	43 °C	41 °C	55 °C	100 °C	
	77 °C	77 °C	77 °C	79 °C	85 °C	T4
	70 °C	71 °C	70 °C	77 °C	100 °C	
	Not allowed	55 °C	53 °C	72 °C	135 °C <sup>1)</sup>	
	Not allowed	48 °C	45 °C	66 °C	150 °C <sup>1)</sup>	T3
	Not allowed	Not allowed	Not allowed	63 °C	180 °C <sup>1)</sup>	
	Not allowed	Not allowed	Not allowed	57 °C	200 °C <sup>1)</sup>	
Not allowed	Not allowed	Not allowed	53 °C	250 °C <sup>1)</sup>	T2	

Equipment Protection Level	Min. ambient temperature				Min. flange temp.	Temp. class
	Wave horn PP & Wavestick	Wave horn PTFE	Metalic horn without HT extension	Metalic horn with HT extension		
Ga/Gb	-40 °C	-40 °C	-40 °C	-40 °C	-20 °C	T6-T2
Gb and Gc	-40 °C	-40 °C	-40 °C	-40 °C	-40 °C <sup>1)</sup>	T6-T2
	Not allowed	-36 °C	-35 °C	-39 °C	-50 °C <sup>1)</sup>	
	Not allowed	Not allowed	Not allowed	-37 °C	-60 °C <sup>1)</sup>	

<sup>1)</sup> Permitted gasket temperature ranges must be observed (see instructions)

The maximum surface temperature “T” of the electronics enclosure is 90 °C. For detailed temperature data refer to the instruction manual.

**Annex 1 to NL/DEK/ExTR13.0083/01**  
**Annex 1 to Certificate of Conformity IECEX DEK 13.0079 X**  
**Annex 1 to EU-Type Examination Certificate DEKRA 13ATEX0175 X**

**Electrical data**

Apparatus in type of protection intrinsic safety "ia" with 4-20 mA-HART output

Supply and output circuit (terminals output 1, + and -):  
 in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:  
 $U_i = 30 \text{ V}$ ;  $I_i = 300 \text{ mA}$ ;  $P_i = 1 \text{ W}$ ;  $C_i = 16 \text{ nF}$ ;  $L_i = 27 \mu\text{H}$ .

Apparatus in type of protection intrinsic safety "ia" and flameproof enclosure "d" or dust ignition protection by enclosure "t" with field wiring in type of protection "ia", with PROFIBUS PA or FIELDBUS foundation FF interface

Fieldbus circuit (terminals output 1, + and -):  
 in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:  
 $U_i = 24 \text{ V}$ ;  $I_i = 300 \text{ mA}$ ;  $P_i = 1.2 \text{ W}$ ;  $C_i = 1 \text{ nF}$ ;  $L_i = 2 \mu\text{H}$ .

Fieldbus circuit (terminals output 1, + and -):  
 in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit or a circuit in accordance with FISCO, with the following maximum values:  
 $U_i = 17.5 \text{ V}$ ;  $I_i = 380 \text{ mA}$ ;  $P_i = 5.32 \text{ W}$ ;  $C_i = 1 \text{ nF}$ ;  $L_i = 2 \mu\text{H}$ .

Apparatus in type of protection intrinsic safety "ic" with 4-20 mA-HART output

Supply and output circuit (terminals output 1, + and -):  
 in type of protection intrinsic safety Ex ic IIC and Ex ic IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:  
 $U_i = 30 \text{ V}$ ;  $I_i = 300 \text{ mA}$ ;  $P_i = 1 \text{ W}$ ;  $C_i = 16 \text{ nF}$ ;  $L_i = 27 \mu\text{H}$ .

Apparatus in type of protection intrinsic safety "ic" with PROFIBUS PA or FIELDBUS foundation FF interface

Fieldbus circuit (terminals output 1, + and -):  
 in type of protection intrinsic safety Ex ic IIC and Ex ic IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:  
 $U_i = 32 \text{ V}$ ;  $C_i = 1 \text{ nF}$ ;  $L_i = 2 \mu\text{H}$ .

Fieldbus circuit (terminals output 1, + and -):  
 in type of protection intrinsic safety Ex ic IIC and Ex ic IIIC, only for connection to a certified intrinsically safe circuit or a circuit in accordance with FISCO, with the following maximum values:  
 $U_i = 17.5 \text{ V}$ ;  $C_i = 1 \text{ nF}$ ;  $L_i = 2 \mu\text{H}$ .

Apparatus with terminal compartment in type of protection flameproof enclosures "d" and dust ignition protection by enclosure "t" with 4-20 mA-HART output

Power supply .....	max. 36 Vdc
Output .....	4 - 20 mA
Intrinsically safe circuits .....	$U_m = 250 \text{ V}$