# **HDA 4100 ATEX Series**

## Absolute Pressure Transducer - Intrinsically Safe with ATEX Approval



#### **Applications**









#### Description

The pressure transmitter HDA 4100 in ATEX version has been specially developed for use in potentially explosive atmospheres and is based on the HDA 4000 series.

As with the industry model, the HDA 4100 in ATEX version has a ceramic measurement cell with thick-film strain gauge for measuring absolute pressure in the low pressure range.

Intended areas of application are, for example, in the oil and gas industry, in mining, on gas turbines or in locations with high levels of dust, e.g. in mills.

#### Special Features

- Accuracy ≤ ±0.5 % BFSL typ.
- Certificates: KEMA 05ATEX1016 X KEMA 05ATEX1021
- Output signal 4 to 20 mA
- Very small temperature error
- · Excellent EMC characteristics
- Excellent long-term characteristics

#### **Approvals**

#### ATEX Approvals

1. I M1 EEx ia

2. II 1G EEx ia IIC T6

3. II 1/2 G EEx ia IIC T6

4. II 3G EEx nA II T4 IP65

5. II 3G EEx nL IIC T4

6. II 2G EEx ia IIC T6

7. II 1D IP6X T80°C 8. II 3D IP6X T80°C



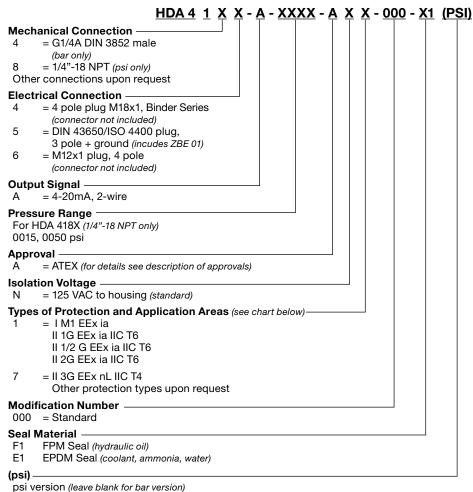
CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area



Ex mark is a specific marking for explosive protection equipment

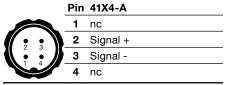
Sensor Specifications			
Measuring ranges - psi	15, 50		
Overload pressure - psi	45, 150		
Burst pressure - psi	70, 250		
Mechanical connection	G1/4A DIN 3852 male (bar ranges only) 1/4"-18 NPT male (psi ranges only) other connections upon request		
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40Nm)		
Parts in contact with media	Sensor: Ceramic Mechanical connection: Stainless steel Seal: FPM or EPDM		
Accuracy (b.F.S.L.) including Linearity, hysteresis, and repeatability	≤ ±0.5% BFSL		
Temperature compensation zero point	$\leq \pm 0.012\%$ FS / °F typ. $\leq \pm 0.017\%$ FS / °F max.		
Temperature compensation over range	$\leq \pm 0.012\%$ FS / °F typ. $\leq \pm 0.017\%$ FS/ °F max.		
Rise time	≤ 2 ms		
Long-term drift	≤ ± 0.3% FS typ. / year		
Life expectancy	10 million load cycles (0 to 100% FS)		
Weight	Approx. 150 g		
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA } [k\Omega]$		
Environmental Condition			
Compensated temperature range	T6/T80: -4° to 140°F		
Operating temperature range	T6/T80: -4° to 140°F		
Ambient temperature	T6/T80: -4° to 140°F		
Media temperature range	T6/T80: 140°F		
Storage temperature range	-40° to 212°F		
CE mark	EN 61000-6-1/2/3/4, EN 60079-0/11/26, IEC 61241-11		
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g		
Environmental protection	IP 65 (DIN 43650 and M18x1 connectors) IP 67 (ZBE 06 molded cable)		
Electrical Specifications			
Supply voltage	12 to 28 VDC		
Residual ripple suppy voltage	≤ 5%		
Max supply current	100 mA		
Max supply power	up to 28V: 1 W		
Max capacitance of transmitter	≤ 12 nF		
Max inductance of transmitter	0 H		
Isolation voltage	125 VAC to housing (standard)		
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard		

#### **Model Code**



## Pin Connections

Binder	714	M18	
			-



#### **DIN 43650**

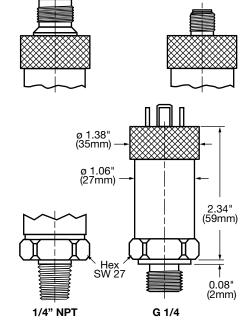
Pin	41X5-A
1	Signal +
2	Signal -
3	nc
4	PE/GND

#### M12x1, 4 pole

	Pin	41X6-A
	1	Signal +
• • •	2	nc
	3	Signal -
	4	nc

M12x1

#### **Dimensions**



#### Application Areas

Application				
Code Type Code	1	1	1	7
Protection class	I M1 EEx ia	II 1G EEx ia IIC T6 II 1/2G EEx ia IIC T6		II 3G EEx nL IIC T4
Certificate number	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1021
Zones /	Group I	Group II	Group II	Group II
Categories	Category M 1 mining	Category 1G, 1/2G Gases	Category 2G Gases	Category 3G Gases
	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: nL Use in: Zone 2
	T <sub>a</sub> : -25° to 60°C	Use in: Zone 0 Retrofit in Zone 0	Use in: Zone 1 & 2 T <sub>a</sub> : -25° to 60°C	T <sub>a</sub> : -25° to 60°C
		T <sub>.</sub> : -25° to 60°C		
Electrical Connection (see model code)	4, 5, 6	4, 5, 6	4, 5, 6	4, 5, 6

# HDA 4300 ATEX Series

## Low Pressure Transducer - Intrinsically Safe with ATEX Approval



#### **Applications**









#### Description

The pressure transmitter HDA 4300 in ATEX version has been specially developed for use in potentially explosive atmospheres and is based on the HDA 4000 series.

As with the industry model, the HDA 4300 in ATEX version has a ceramic measurement cell with thickfilm strain gauge for measuring relative pressure in the low pressure range.

Intended areas of application are, for example, in the oil and gas industry, in mining, on gas turbines or in locations with high levels of dust, e.g. in mills.

#### Special Features

- Accuracy ≤ ±0.5% BFSL
- Certificates: KEMA 05ATEX1016 X KEMA 05ATEX1021
- Output signal 4 to 20 mA
- Very small temperature error
- **Excellent EMC characteristics**
- Excellent long-term characteristics

#### **Approvals**

#### ATEX Approvals

1. I M1 EEx ia

2. II 1G EEx ia IIC T6 3. II 1/2 G EEx ia IIC T6

4. II 3G EEx nA II T4 IP65

5. II 3G EEx nL IIC T4

6. II 2G EEx ia IIC T6

7. II 1D IP6X T80°C 8. II 3D IP6X T80°C



CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

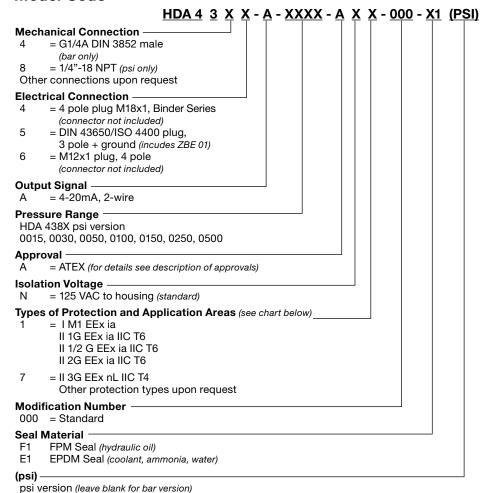


Ex mark is a specific marking for explosive protection equipment

Sensor Specifications			
Measuring ranges - psi	15, 30, 50, 100, 150, 250, 500		
Overload pressure - psi	45, 100, 150, 290, 450, 725, 1500		
Burst pressure - psi	70, 150, 250, 400, 650, 1000, 2500		
Mechanical connection	G1/4A DIN 3852 male (bar ranges only) 1/4"-18 NPT male (psi ranges only) other connections upon request		
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40Nm)		
Parts in contact with media	Sensor: Ceramic Mechanical connection: Stainless steel Seal: FPM or EPDM		
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.5% BFSL		
Temperature compensation zero point	$\leq \pm 0.012\%$ FS / °F typ. $\leq \pm 0.017\%$ FS / °F max.		
Temperature compensation over range	$\leq \pm 0.012\%$ FS / °F typ. $\leq \pm 0.017\%$ FS/ °F max.		
Rise time	≤ 2 ms		
Long-term drift	≤ ± 0.3% FS typ. / year		
Life expectancy	10 million load cycles (0 to 100% FS)		
Weight	Approx. 150 g		
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 mA [kΩ]$		
Environmental Condition			
Compensated temperature range	T6/T80: -4° to 140°F		
Operating temperature range	T6/T80: -4° to 140°F		
Ambient temperature	T6/T80: -4° to 140°F		
Media temperature range	T6/T80: 140°F T4: 185°F		
Storage temperature range	-40° to 212°F		
CE mark	EN 61000-6-1/2/3/4, EN 60079-0/11/26, IEC 61241-11		
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g		
Environmental protection	IP 65 (DIN 43650 and M18x1 connectors) IP 67 (ZBE 06 molded cable)		
Electrical Specifications			
Supply voltage	12 to 28 VDC		
Residual ripple suppy voltage	≤ 5%		
Max supply current	100 mA		
Max supply power	up to 28V: 1 W		
Max capacitance of transmitter	≤ 12 nF		
Max inductance of transmitter	0 H		
Isolation voltage	125 VAC to housing (standard)		
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard		

# Hazardous Environment (HYDA

#### **Model Code**



#### Pin Connections **Binder 714 M18**

Pin	43X4-A
1	nc
2	Signal +
3	Signal -
4	nc

#### **DIN 43650**

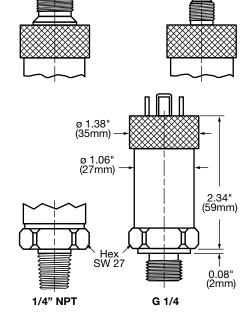
Pin	43X5-A
1	Signal +
2	Signal -
3	nc
4	PE/GND

#### M12x1, 4 pole

	Pin	43X6-A
	1	Signal +
4 3	2	nc
1 2	3	Signal -
	4	nc

M12x1

#### **Dimensions** M1x18



#### **Application Areas**

Code Type Code	1	1	1	7
Protection class	I M1 EEx ia	II 1G EEx ia IIC T6 II 1/2G EEx ia IIC T6		II 3G EEx nL IIC T4
Certificate number	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1021
Zones / Categories	Group I	Group II	Group II	Group II
<b>J</b>	Category M 1 mining	Category 1G, 1/2G Gases	Category 2G Gases	Category 3G Gases
	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: nL Use in: Zone 2
	T <sub>a</sub> : -25° to 60°C	Use in: Zone 0 Retrofit in Zone 0	Use in: Zone 1 & 2 T <sub>a</sub> : -25° to 60°C	T <sub>a</sub> : -25° to 60°C
		T <sub>2</sub> : -25° to 60°C	a	
Electrical Connection (see model code	4, 5, 6	4, 5, 6	4, 5, 6	4, 5, 6

# HDA 4400 ATEX Series

# High Pressure, Medium Accuracy Transducer Intrinsically Safe with ATEX Approval



#### **Applications**









#### Description

The pressure transmitter HDA 4400 in ATEX version has been specially developed for use in potentially explosive atmospheres and is based on the HDA 4000 series.

As with the industry model, the HDA 4700 in ATEX version has a stainless steel measurement cell with thin-film strain gauge for measuring relative pressure in the high pressure range.

Intended areas of application are, for example, in the oil and gas industry, in mining, on gas turbines or in locations with high levels of dust, e.g. in mills.

#### Special Features

- Accuracy ≤ ±0.5% BFSL
- Certificates: KEMA 05ATEX1016 X KEMA 05ATEX1021
- Output signal 4 to 20 mA
- Very small temperature error
- Excellent EMC characteristics
- Excellent long-term characteristics

#### **Approvals**

#### **ATEX Approvals**

1. I M1 EEx ia

2. II 1G EEx ia IIC T6

3. II 1/2 G EEx ia IIC T6

4. II 3G EEx nA II T4 IP65

5. II 3G EEx nL IIC T4

6. II 2G EEx ia IIC T6

7. II 1D IP6X T80°C 8. II 3D IP6X T80°C



CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

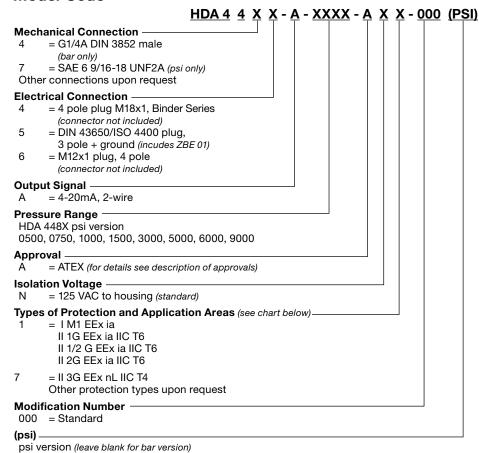


Ex mark is a specific marking for explosive protection equipment

recinical Details	
Sensor Specifications	
Measuring ranges - psi	500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (bar ranges only) SAE 6 9/16-18 UNF2A (psi ranges only) other connections upon request
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Sensor: Stainless steel 1.4542 Mechanical connection: Stainless steel 1.4542, 1.4301, 1.4435, 1.4571, 1.4404, 316L, 304 Seal: FPM (SAE 6, G1/4)
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.5% BFSL
Temperature compensation zero point	$\leq \pm 0.0085\%$ FS / °F typ. $\leq \pm 0.014\%$ FS / °F max.
Temperature compensation over range	$\leq \pm 0.0085\%$ FS / °F typ. $\leq \pm 0.014\%$ FS / °F max.
Rise time	≤ 2 ms
Long-term drift	≤ ±0.3% FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approx. 150 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax}$ = (UB - 10V) / 20 mA [kΩ]
Environmental Condition	Linux
Compensated temperature range	T6/T80: -4° to 140°F T4: -4° to 185°F
Operating temperature range	T6/T80: -4° to 140°F T4: -4° to 185°F
Ambient temperature	T6/T80: -4° to 140°F T4: -4° to 185°F
Media temperature range	T6/T80: 140°F T4: 185°F
Storage temperature range	-40° to 212°F
CE mark	EN 61000-6-1/2/3/4, EN 60079-0/11/26, IEC 61241-11
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g
Environmental protection	IP 65 (DIN 43650 and M18x1 connectors) IP 67 (ZBE 06 molded cable)
Electrical Specifications	
Supply voltage	12 to 28 VDC
Residual ripple suppy voltage	≤ 5%
Max supply current	100 mA
Max supply power	up to 28V: 1 W
Max capacitance of transmitter	≤ 12 nF
Max inductance of transmitter	0 H
Isolation voltage	125 VAC to housing (standard)
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

# Hazardous Environment (HYD)

#### **Model Code**



### Application Areas

, ipplication	Application Alcas					
Code Type Code	1	1	1	7		
Protection class	I M1 EEx ia	II 1G EEx ia IIC T6 II 1/2G EEx ia IIC T6		II 3G EEx nL IIC T4		
Certificate number	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1021		
Zones /	Group I	Group II	Group II	Group II		
Categories	Category M 1 mining	Category 1G, 1/2G Gases	Category 2G Gases	Category 3G Gases		
	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: nL Use in: Zone 2		
	T <sub>a</sub> : -25° to 60°C	Use in: Zone 0 Retrofit in Zone 0 T: -25° to 60°C	Use in: Zone 1 & 2 T <sub>a</sub> : -25° to 60°C	T <sub>a</sub> : -25° to 60°C		
Electrical Connection (see model code)	4, 5, 6	4 <sup>°</sup> , 5, 6	4, 5, 6	4, 5, 6		

#### Pin Connections **Binder 714 M18**

Pin	44X4-A
1	nc
2	Signal +
3	Signal -
4	nc

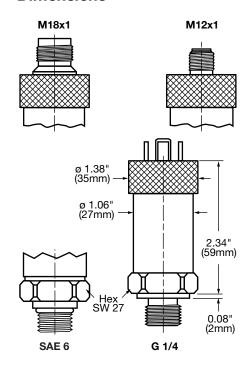
#### **DIN 43650**

Pin	44X5-A
1	Signal +
2	Signal -
3	nc
4	PE

#### M12x1, 4 pole

	Pin	44X0-A
	1	Signal +
• •	2	nc
	3	Signal -
	4	nc

#### **Dimensions**



# HDA 4700 ATEX Series

# High Pressure Transducer with High Accuracy Intrinsically Safe with ATEX Approval



#### **Applications**









#### Description

The pressure transmitter HDA 4700 in ATEX version has been specially developed for use in potentially explosive atmospheres and is based on the HDA 4000 series.

As with the industry model, the HDA 4700 in ATEX version has a stainless steel measurement cell with thin-film strain gauge for measuring relative pressure in the high pressure range.

Intended areas of application are, for example, in the oil and gas industry, in mining, on gas turbines or in locations with high levels of dust, e.g. in mills.

#### Special Features

- Accuracy ≤ ±0.25% BFSL
- Certificates: KEMA 05ATEX1016 X KEMA 05ATEX1021
- Output signal 4 to 20 mA
- Very small temperature error
- Excellent EMC characteristics
- Excellent long-term characteristics

#### **Approvals**

#### **ATEX Approvals**

1. I M1 EEx ia

2. II 1G EEx ia IIC T6

3. II 1/2 G EEx ia IIC T6

4. II 3G EEx nA II T4 IP65

5. II 3G EEx nL IIC T4

6. II 2G EEx ia IIC T6

7. II 1D IP6X T80°C 8. II 3D IP6X T80°C



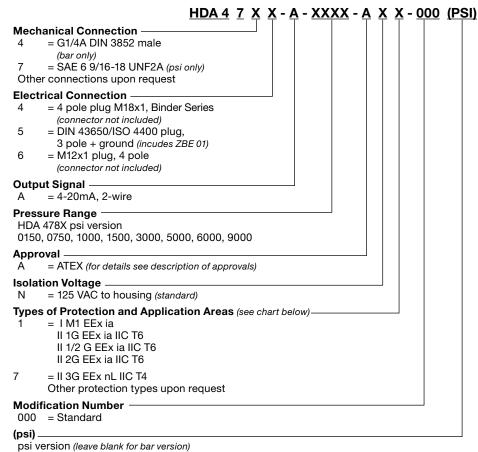
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Ex mark is a specific marking for explosive protection equipment

Sensor Specifications			
Measuring Ranges - psi	150, 500, 750, 1000, 1500, 3000, 6000, 9000		
Overload Pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 14500		
Burst Pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000		
Mechanical connection	G1/4A DIN 3852 male (bar ranges only) SAE 6 9/16-18 UNF2A (psi ranges only) other connections upon request		
Tightening torque	15 lb-ft (20 Nm)		
Parts in contact with media	Sensor: Stainless steel 1.4542 Mechanical connection: Stainless steel 1.4542, 1.4301, 1.4435, 1.4571, 1.4404, 316L, 304 Seal: FPM (SAE 6, G1/4)		
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.25% BFSL		
Temperature compensation zero point	$\leq$ ±0.0045% FS / °F typ. $\leq$ ±0.0085% FS / °F max.		
Temperature compensation over range	$\leq \pm 0.0045\%$ FS / °F typ. $\leq \pm 0.0085\%$ FS / °F max.		
Rise time	≤ 2 ms		
Long-term drift	≤ ±0.1% FS typ. / year		
Life expectancy	10 million load cycles (0 to 100% FS)		
Weight	Approx. 150 g		
Output signal	4 to 20 mA, 2 wire, R <sub>Lmax</sub> = (UB - 10V) / 20 mA [kΩ]		
Environmental Condition	Liliax		
Compensated temperature range	T6/T80: -4° to 140°F		
Operating temperature range	T6/T80: -4° to 140°F T4: -4° to 185°F		
Ambient temperature	T6/T80: -4° to 140°F T4: -4° to 185°F		
Media temperature range	T6/T80: 140°F T4: 185°F		
Storage temperature range	-40° to 212°F		
CE mark	EN 61000-6-1/2/3/4, EN 60079-0/11/26, IEC 61241-11		
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g		
Environmental protection	IP 65 (DIN 43650 and M18x1 connectors) IP 67 (ZBE 06 molded cable)		
Electrical Specifications			
Supply voltage	12 to 28 VDC		
Residual ripple suppy voltage	≤ 5%		
Max supply current	100 mA		
Max supply power	up to 28V: 1 W		
Max capacitance of transmitter	≤ 12 nF		
Max inductance of transmitter	0 H		
Isolation voltage	125 VAC to housing (standard)		
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard		

#### **Model Code**



#### Pin Connections **Binder 714 M18**

Pin	47X4-A
1	nc
2	Signal +
3	Signal -
4	nc

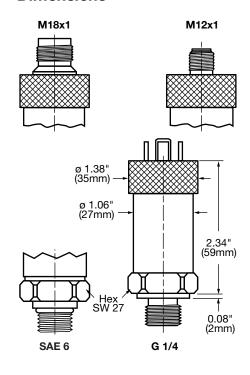
#### **DIN 43650**

Pin	47X5-A
1	Signal +
2	Signal -
3	nc
4	PE

#### M12x1, 4 pole

	PIN	4/X6-A
	1	Signal +
• •	2	nc
	3	Signal -
	4	nc

#### **Dimensions**



#### **Application Areas**

	1717000	,		
Code Type Code	1	1	1	7
Protection class	I M1 EEx ia	II 1G EEx ia IIC T6 II 1/2G EEx ia IIC T6	II 2G EEx ia IIC T6	II 3G EEx nL IIC T4
Certificate number	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1016X	KEMA 05ATEX1021
Zones /	Group I	Group II	Group II	Group II
Categories	Category M 1 mining	Category 1G, 1/2G Gases	Category 2G Gases	Category 3G Gases
	Protection type:	Protection type: intrinsically safe ia with barrier	Protection type: intrinsically safe ia with barrier	Protection type: nL Use in: Zone 2
-	T <sub>a</sub> : -25° to 60°C	Use in: Zone 0 Retrofit in Zone 0	Use in: Zone 1 & 2 T <sub>a</sub> : -25° to 60°C	T <sub>a</sub> : -25° to 60°C
Electrical Connection (see model code)	4, 5, 6	T: -25° to 60°C 4, 5, 6	4, 5, 6	4, 5, 6