



## Appendix

(13)

(14)

EU-Type Examination Certificate no. SEV 20 ATEX 0387 X

(15) **Description of product**

**Rating:**

Type of protection ia:

For MA10: 4..20 mA (HART):

$U_i \leq 30$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1$  W,  $C_i \leq 10$  nF,  $L_i = 0$

For MA11: Profibus PA, Foundation Fieldbus:

FISCO:  $U_i \leq 17,5$  V DC,  $I_i \leq 380$  mA,  $P_i \leq 5,32$  W,  $C_i \leq 5$  nF,  $L_i = 0$

Entity:  $U_i \leq 24$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1,2$  W,  $C_i \leq 5$  nF,  $L_i = 0$

For MA12: Ethernet APL:

2-WISE:  $U_i \leq 17,5$  V DC,  $I_i \leq 380$  mA,  $P_i \leq 5,32$  W,  $C_i \leq 5$  nF,  $L_i = 0$

Entity:  $U_i \leq 17,5$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1,2$  W,  $C_i \leq 5$  nF,  $L_i = 0$

For MA13: 4..20 mA HART + 4..20 mA:

Channel 1, 4..20 mA HART:  $U_i \leq 30$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1$  W,  $C_i \leq 10$  nF,  $L_i = 0$

Channel 2, 4..20 mA:  $U_i \leq 30$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1$  W,  $C_i \leq 10$  nF,  $L_i = 0$

For MA14: 4..20 mA HART + switch:

Channel 1, 4..20 mA HART:  $U_i \leq 30$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1$  W,  $C_i \leq 10$  nF,  $L_i = 0$

Channel 2, switch output:  $U_i \leq 30$  V DC,  $I_i \leq 300$  mA,  $P_i \leq 1$  W,  $C_i \leq 10$  nF,  $L_i = 0$

Classification of installation and use:

Fixed

Ingress protection:

IP66 / IP67 / IP68

Rated ambient temperature range (°C):

Refer to temperature classification below.



**Cerabar PMP63B (sensor SP14B)**

Process connection type		Enclosure type and electronic insert			
Compact, flanges		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14	c) plastic enclosure; MA10, MA11, MA12	e) 1-chamber stainless steel plate enclosure HY07-xxB; MA10, MA11, MA12
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	MA10, MA11 ambient Ta min: -50°C <sup>1)</sup> MA12 ambient Tamin : -40°C		Ambient Tamin: -20°C	Ambient Tamin: -40 °C
		Ambient temperature Ta max (°C)			
T6	80	50	50	40	Not suitable
	70	55	55	50	40
	60	60	60	60	60
T4	125	40	40	Not suitable	Not suitable
	100	50	50	Not suitable	Not suitable
	80	60	60	50	Not suitable
	60	65	65	60	55

<sup>1)</sup> the lower ambient and process temperature decreases to -50 °C (order code option 580 = "JL"), when suitable sealings relevant for the dust tightness of the enclosure as listed in IECEx NL/DEK/ExTR23.0022 are used.

**Cerabar PMC51B, PMC71B (sensor SP13B)**

Process connection type		Enclosure type and electronic insert			
Compact, flanges		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14	c) plastic enclosure; MA10, MA11, MA12	e) 1-chamber stainless steel plate enclosure HY07-xxB; MA10, MA11, MA12
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	Ambient Ta min: -40°C		Ambient Tamin: -20°C	Ambient Tamin: -40 °C
		Ambient temperature Ta max (°C)			
T6	80	55	55	Not suitable	50
	40	60	60	40	60
T4	125	45	45	Not suitable	Not suitable
	100	55	50	Not suitable	45
	80	60	60	40	55
	60	60	60	45	60

Process connection type		Enclosure type and electronic insert			
High temperature		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14	c) plastic enclosure; MA10, MA11, MA12	e) 1-chamber stainless steel plate enclosure HY07-xxB; MA10, MA11, MA12
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	Ambient Ta min: -40°C		Ambient Tamin: -20°C	Ambient Tamin: -40 °C
		Ambient temperature Ta max			
T6	80	55	45	Not suitable	50
T6	60	60	45	40	60
T3...T1	150	45	40	Not suitable	Not suitable
T4	125	55	50	Not suitable	40
T4	100	55	50	40	50

<sup>1)</sup> Minimum process temperature T<sub>pmin</sub> is limited to -40°C due to functional reasons







Process connection type		Enclosure type and electronic insert	
Temperature decoupled		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Max. surface temperature 1) EPL Da and EPL Db part	Process temperature Tp max (°C)	MA10, MA11, MA12 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T150°C	150	50	45
	125	55	50
	100	60	50

1) the surface temperature only depends on the applied process temperature. The influence of self-heating to the process side is < 2K and negligible. Functional limitations depend on the process connection and are provided by the manufacturer documentation.

2) Minimum process temperature T<sub>pmin</sub> is limited to -40°C due to functional reasons

**Deltabar PMD55B, PMD75B (sensor SP12B)**

Process connection type		Enclosure type and electronic insert	
Compact		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Max. surface temperature 1) EPL Da and EPL Db part	Process temperature 2) Tp max (°C)	MA10, MA11, MA12 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T100°C	60	65	60
	85	60	55
	100	60	55

**Deltabar PMD78B, PMD63B (sensor SP12B)**

Process connection type		Enclosure type and electronic insert	
Temperature decoupled, capillary remote		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Max. surface temperature 1) EPL Da and EPL Db part	Process temperature 2) Tp max (°C)	MA10, MA11, MA12 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T100°C	130	70	70
	190	70	70
	290	70	70
	400	70	70

1) the surface temperature only depends on the applied process temperature. The self-heating is < 2K and negligible. Functional limitations depend on the process connection and are provided by the manufacturer documentation. The marked surface temperature considers all direct heat influences from process heat and self-heating at the apparatus housing. Surface temperatures at process side, e.g. at high temperature process connections at FMD78B/PMD63B maybe higher and must be considered by the user. T marking is based on the process temperature of the compact designs.

2) the lower ambient and process temperature decreases to -50°C (order code option 580 = "JL"), when suitable sealing's relevant for the dust tightness of the enclosure as listed in IECEx NL/KIWA/ExTR19.0026/xx are used.

T<sub>pmin</sub> : Minimum process temperature same as Ta min; process connection with temperature decoupling is suitable for lower temperatures; Ta values must be fulfilled for device enclosure and sensor element



### Temperature classification for increased safety

#### Cerabar PMP51B, PMP63B, PMP71B (sensor SP11B)

Process connection type		Enclosure type and electronic insert	
Compact, flanges		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup>	MA10, MA11 ambient Ta min: -40°C	
	Tp max (°C)	Ambient temperature Ta max (°C)	
T6	80	55	50
	60	65	50
T4	125	50	45
	100	55	50
	80	65	55

Process connection type		Enclosure type and electronic insert	
High temperature		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup>	MA10, MA11 ambient Ta min: -40°C	
	Tp max (°C)	Ambient temperature Ta max (°C)	
T6	80	65	60
T4	130	65	55
T3	190	60	55
T2	290	60	50
T1	300	60	50
T1	400	55	45

Process connection type		Enclosure type and electronic insert	
Temperature decoupled, capillary remote		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup>	MA10, MA11 ambient Ta min: -40°C	
	Tp max (°C)	Ambient temperature Ta max (°C)	
T6	80	65	65
T4	130	65	65
T3	190	65	65
T2	290	65	65
T1	400	65	65

<sup>1)</sup> T<sub>pmax</sub>: process connection with temperature decoupling are suitable for higher process temperatures; Ta values must be fulfilled for device enclosure and sensor element.

T<sub>pmin</sub> : Minimum process temperature same as Ta min; process connection with temperature decoupling is suitable for lower temperatures; Ta values must be fulfilled for device enclosure and sensor element



**Cerabar PMC51B, PMC71B (sensor SP13B)**

Process connection type		Enclosure type and electronic insert	
Compact, flanges		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	MA10, MA11 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T6	80	55	45
T4	125	50	40
	100	55	50
	80	60	50
Process connection type		Enclosure type and electronic insert	
High temperature		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	MA10, MA11 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T6	80	60	45
T4	125	55	50
T3	150	50	40

**Deltabar PMD55B, PMD75B (sensor SP12B)**

Process connection type		Enclosure type and electronic insert	
Compact, flanges		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	MA10, MA11 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T6	80	55	50
T4	100	60	50
	85	60	55

**Deltabar PMD78B, PMD63B (sensor SP12B)**

Process connection type		Enclosure type and electronic insert	
High temperature, capillary remote		a) Al and casted SS enclosure; MA10, MA11, MA12	b) 2-chamber Al and casted SS enclosure; MA13, MA14
Temperature class	Process temperature <sup>1)</sup> Tp max (°C)	MA10, MA11 ambient Ta min: -40°C	
		Ambient temperature Ta max (°C)	
T6	80	65	65
T4	130	65	65
T3	190	65	65
T2	290	65	65
T1	300	65	65
T1	400	65	65

<sup>1)</sup> the lower ambient and process temperature decreases to -50°C (order code option 580 = "JL"), when suitable sealing's relevant for the tightness of the enclosure as listed in IECEx NL/KIWA/ExTR19.0026/xx are used.

For PMD78B, PMD63B high process temperatures are possible. The suitability is depending on the temperature decoupling of the process connection and the used fill oil. Versions with temperature isolator reduces the temperature influence from process side, while the heat conduction at capillary connections is negligible (selection at model code option i=95).

The lower temperature is limited to -40°C due to functional reasons.



**Marking:**

The following marking strings are possible for all types and in combination with each other.

⊕ II 1G Ex ia IIC T6...T1 Ga

⊕ II 2G Ex ia IIC T6...T1 Gb

⊕ II 1/2G Ex ia IIC T6...T1 Ga/Gb

Types: PMC51B, PMP51B, PMD55B, PMP63B, PMD63B, PMD75B, PMD78B, PMC71B, PMP71B

⊕ II 1/2D Ex ia IIIC T<sub>200</sub> xxx °C Da/Db (for temperature see table below)

Type: PMC51B, PMP51B, PMD55B, PMP63B, PMD63B, PMD75B, PMD78B, PMC71B, PMP71B

⊕ II 2D Ex ia IIIC T<sub>L</sub> xxx °C Db (for temperature see table below)

PMP51B, PMP63B, PMP71B	125 °C
PMC51B, PMC71B compact	135 °C
PMC51B, PMC71B high temp.	150 °C
PMD55B, PMD63B, PMD75B, PMD78B	100 °C

For types with MA11 module and FISCO the following text is added to the marking:  
FISCO field device

For types with MA12 module and 2-WISE the following text is added to the marking:  
2-WISE  
2-WISE power load

**(16) Specific conditions of use**

1. For EPL Ga enclosures made of aluminium must be installed protected from impact and friction.
2. To avoid electrostatic charging: Do not rub surfaces with dry cloth.

**(17) Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
None	

**(18) Drawings and Documents**

See test report "Manufacturer's Documents"

