

Certificate of Compliance

Certificate:	2692515	Master Contract:	200600
Project:	80187255	Date Issued:	2023-11-21
Issued To:	Endress+Hauser Wetzer GmbH Co. KG Obere Wank 1 Nesselwang, Bavaria, 87484 Germany Attention: Michael Pfanzelt		

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



Issued by: Junlong Pan Junlong Pan

PRODUCTS

CLASS - C225804 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

CLASS - C225884 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations - Certified to US Standards

Ex ia IIC T6...T4 Ga Class I Zone 0, AEx ia IIC T6...T4 Ga Class I, Division 1, Groups A, B, C, and D

Product	Temperature sensor assembly, model TM411- aabcddeefgghhiiijjkkllmmnnooppqqrrssttuuvvwwxxyyzz11223344556 6
	Where



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	 aa = approval type = C1, 8C, CE pp = transmitter option = 1A, 2C, 2E, 3A, 3B, 3C, 3D, 3E, 4A, 5A, 6B, 6C qq = terminal head option = A1, A2, D1, P1 R1, R2, R3, R4, R5, R6 zz = second transmitter = NC, ND, NE, NF, NG, NH, NI, NJ, NK, NN, NO
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Temp. code and ambient temperature	See Table 1, 2, 3 below

Product	Temperature sensor assembly, model TM412- aabcddeefgghhiiijjkkllmmnnooppqqrrssttuuvvwwxxyyzz11223344556 6 Where aa = approval type = C1, 8C, CE nn = transmitter option = 1A, 2C, 2E, 3A, 3B, 3C, 3D, 3E, 3F, 3G, 4A, 5A, 6B, 6C o = terminal head option = A, B, C, D, E, F, G, H, J, K, L ww= second transmitter = NC, ND, NE, NF, NG, NH, NI, NJ, NK, NN, NO
	Intrinsically safe when installed per drawing 10000005723
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Enclosure Rating	Type $4X/6P$ when option $o = J$
Temp. code and ambient temperature	See Table 1, 2, 3 below

	Temperature sensor assembly iTHERM, type TM111- or TM112- aabccddefghhiijkkllmmnnooppqqrrssttuuvv
Product	Where aa = approval type = CE hh = transmitter option = 0A, 1A, 2C, 2D*, 2F*, 3A, 3C, 3D, 4A, 5A, 6B, 6C, 7A* ii = terminal head option = A1, A2, A3, D1, E2, E3, H1, H2, H3, H4, P1, R1, R2, R3, R4, R5, R6, F1*, F3*, F5*, F7* ll = second transmitter = GC, GD, GE, GF, GG, GH, GK, GL



	Intrinsically safe when installed per drawing 10000010341 *only applicable for TM112
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Enclosure Rating	Type 4X, IP6x when option ii = A1, A2, D1, H1, H2, H3, H4, F1, F3, F5, F7
Temp. code and ambient temperature	See Table 1, 2, 3 below

Product	Temperature sensor assembly iTHERM, type TM131-aabcddeefgghijkllmmnnooppqqrrssttuuvvwwxxyyzz, type TM151-aabcddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz, type TM152-aabccddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz Where aa = approval type = CE c = H (Dual seal design) ll = transmitter option = 0A, 1A, 2C, 2D, 2E, 2F, 2G, 3A, 3C, 3D, 3D
	 a = transmitter option = 6A, 7A, 2C, 2D, 2L, 21, 2G, 5A, 5C, 5D, 3F, 4A, 4B, 4C, 5A, 5B, 5C, 6B, 6C, 7A mm = terminal head option = A1, A2, A3, D1, E2, E3, F1, F2, F3, F4, F5, F6, F7, F8, H1, H2, H3, H4, H5, H6, P1, R1, R2, R3, R4, R5, R6 pp = second transmitter = GC, GD, GE, GF, GG, GH, GK, GL Intrinsically safe when installed per drawing 10000010341
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Maximum Working Pressure (only for the assembly with Dual seal design)	200 bar
Enclosure Rating	Type 4X, IP6x when option mm = A1, A2, D1, F1, F2, F3, F4, F5, F6, F7, F8, H1, H2, H3, H4, H5, H6
Temp. code and ambient temperature	See Table 1, 2, 3 below

Conditions of Acceptability:

- 1. If the mounting head of the Temperature Sensor is made of Aluminum and mounted in an area where Equipment Protection Level Ga is required, the head must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.
- 2. Circuit of the following temperature sensors and inserts shall be connected to ground (for details, see the instruction manual, provided with the equipment):



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- a. Type TS111, TS211 and TS212 with diameter 3mm or 1/8", single or dual
- b. Type TS111, TS211 and TS212 with diameter 6mm or 1/4" dual
- 3. For thermometers with two mounted head transmitters, the allowed ambient temperature is 12K lower than each head transmitter's certified ambient temperature.
- 4. For thermocouple inserts, the temperature class T6...T1 are equal to the process temperature.
- 5. For the dual seal version of TM131, the process temperature shall not bring the whole assembly of pressure switch/secondary seal and head transmitters beyond a range of ambient temperature between -20°C to +80°C therefore the pressure switch/secondary seal should be installed with a minimum required length of extension neck of 100mm above the process mounting flange.
- 6. The correlation of the ambient and process temperature to maximum surface temperature is described in the following tables:

For assemblies with transmitters:

Table 1			
Туре	Assembled transmitter	Temperature class	Ambient temperature range housing Ta
TM111	TMT84, TMT85, TMT162	T6	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM112	PA/FF,	T5	$-40^{\circ}C \le Ta \le +70^{\circ}C$
TM131 TM151	TMT8x, TMT7x with display, TMT142 HART	T4	$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +85^{\circ}\mathrm{C}$
TM152	TMT71, TMT72, TMT162	T6	$-50^{\circ}C \le Ta \le +55^{\circ}C$
	HART	T5	$-50^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT82	T6	$-50^{\circ}\mathrm{C} \le \mathrm{Ta} \le +58^{\circ}\mathrm{C}(*)$
		T5	$-50^{\circ}C \le Ta \le +75^{\circ}C(*)$
		T4*	$-50^{\circ}\mathrm{C} \le \mathrm{Ta} \le +85^{\circ}\mathrm{C}(*)$
	TMT86	T6	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-52^{\circ}C \le Ta \le +85^{\circ}C$
TM411	TMT84, TMT85, TMT162	T6	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM412	PA/FF,	T5	$-40^{\circ}C \le Ta \le +70^{\circ}C$
	TMT8x, TMT7x with display,	T4	$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +85^{\circ}\mathrm{C}$
	TMT71 TMT72 TMT162	Тб	$50^{\circ}C < T_2 < +55^{\circ}C$
	HART	10 T5	$-50^{\circ}C \le Ta \le +55^{\circ}C$
			$\frac{-50 \text{ C} \ge 18 \ge \pm/0 \text{ C}}{50^{\circ}\text{C} < T_{2} < \pm95^{\circ}\text{C}}$
		14 T4	$-50^{\circ}C \le 1a \le +85^{\circ}C$
	1 W1 1 82	10	$-30^{\circ}C \le 1a \le +38^{\circ}C$



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	T5	$-50^{\circ}C \le Ta \le +75^{\circ}C$
	T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
TMT86	T6	$-52^{\circ}C \le Ta \le +55^{\circ}C$
	T5	$-52^{\circ}C \le Ta \le +70^{\circ}C$
	T4	$-52^{\circ}C \le Ta \le +85^{\circ}C$

Note: * The maximum ambient temperature range(Ta) with dual seal version TM131 should not exceed the range of -20°C to+80°C.

Table 2

Туре	Assembl	Insert	Temperature	Process temperature range	
	ed	diameter	class	Ip	
	transmitt				
	er				-
TM111	TMT8x	3mm (1/8"),	T6	$-50^{\circ}C \le Tp \le +66^{\circ}C$	(64°C)*
TM112	TMT7x	3mm (1/8")	T5	$-50^{\circ}C \le Tp \le +81^{\circ}C$	(79°C)*
TM131	TMT162	dual,	T4	$-50^{\circ}C \le Tp \le +116^{\circ}C$	(114°C)*
TM151	TMT142	6mm (1/4")	T3	$-50^{\circ}C \le Tp \le +181^{\circ}C$	(179°C)*
TM152	TMT18x	dual	T2	$-50^{\circ}C \le Tp \le +276^{\circ}C$	(279°C)*
TM411	(for		T1	$-50^{\circ}C \le Tp \le +426^{\circ}C$	(427°C)*
TM412	TM41x	6mm (1/4")	T6	$-50^{\circ}C \le Tp \le +73^{\circ}C$	(71°C)*
	only)		T5	$-50^{\circ}C \le Tp \le +88^{\circ}C$	(86°C)*
			T4	$-50^{\circ}C \le Tp \le +123^{\circ}C$	(121°C)*
			T3	$-50^{\circ}C \le Tp \le +188^{\circ}C$	(186°C)*
			T2	$-50^{\circ}C \le Tp \le +283^{\circ}C$	(286°C)*
			T1	$-50^{\circ}C \le Tp \le +433^{\circ}C$	(431°C)*

*Maximum process temperature when sensor is supplied with TMT162 Note: The maximum process temperature for the model with dual seal version TM131 should not exceed +400°C.

For assemblies without transmitters:

Table 3		
		Max
		(pro

		Maximum allowed process temperature (sensor) Tp						
		(process)						
			$Pi \leq Pi \leq$					
Insert	Temperature	$Pi \le 50$	Pi ≤100	200	500	Pi≤		
diameter	class	mW	mW	mW	mW	650 mW		
3mm	T6	66°C	55°C	36°C	-17°C	-27°C		
(1/8"),	T5	81°C	70°C	51°C	-2°C	-12°C		
	T4	116°C	105°C	86°C	33°C	23°C		
	T3	181°C	170°C	151°C	98°C	88°C		



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3mm	T2	276°C	265°C	246°C	193°C	183°C
(1/8")						
dual						
or 6mm						
(1/4")						
dual	T1	426°C	415°C	396°C	343°C	333°C
6mm	T6	73°C	68°C	60°C	38°C	28°C
(1/4")	T5	88°C	83°C	75°C	53°C	43°C
	T4	123°C	118°C	110°C	88°C	78°C
	T3	188°C	183°C	175°C	153°C	143°C
	T2	283°C	278°C	270°C	248°C	238°C
	T1	433°C	428°C	420°C	398°C	388°C

		Maximum allowed process			
		temperature (sensor) Tp			
		(process)		Ambient	
		Pi≤	Pi≤	Pi≤	temperature
Insert	Temperature	750	800	1000	(housing),
diameter	class	mW	mW	mW	Ta (ambient)**
3mm					$-40^{\circ}C \le Ta \le$
(1/8"),	T6	-40°C			+66°C
3mm					$-40^{\circ}C \le Ta \le$
(1/8")	T5	-25°C	-33°C		+81°C
dual					$-40^{\circ}C \le Ta$
or 6mm	T4	10°C	2°C	-30°C	≤+116°C
(1/4")					$-40^{\circ}C \le Ta \le$
dual	T3	75°C	62°C	30°C	+130°C
					$-40^{\circ}C \le Ta \le$
	T2	320°C	312°C	280°C	+130°C
					$-40^{\circ}C \leq Ta \leq$
	T1	170°C	162°C	130°C	+130°C
6mm					$-40^{\circ}C \le Ta \le$
(1/4")	T6	21°C	17°C	1°C	+73°C
					$-40^{\circ}C \le Ta \le$
	T5	36°C	32°C	16°C	+88°C
					$-40^{\circ}C \le Ta \le$
	T4	71°C	67°C	51°C	+123°C
					$-40^{\circ}C \le Ta \le$
	T3	136°C	127°C	111°C	+130°C



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				$-40^{\circ}C \le Ta \le$
T2	231°C	227°C	211°C	+130°C
				$-40^{\circ}C \le Ta \le$
T1	381°C	377°C	361°C	+130°C

** The ambient temperature at the terminal head may be directly influenced by the process temperature, but is also restricted to the allowed range of installed terminal head as follows:

Option 7	Ferminal head	Те	
TM41x	TM1x1	1a	
A, C	A1, D1, H1, H3	-50°C +130°C	
E, G, K, L	A3, E2	-40°C +130°C	
D	P1	-40°C +100°C	

Class II, Division 1, Groups E, F, and G, Class III

	Temperature sensor assembly, model TM411- aabcddeefgghhiiijjkkllmmnnooppqqrrssttuuvvwwxxyyzz11223344556 6
Product	Where aa = approval type = C1, 8C, CE pp = transmitter option = 1A, 2C, 2E, 3A, 3B, 3C, 3D, 3E, 4A, 5A, 6B, 6C qq = terminal head option = A1, A2, D1, R1, R2, R3, R4, R5, R6 zz = second transmitter = NC, ND, NE, NF, NG, NH, NI, NJ, NK, NN, NO Intrinsically safe when installed per drawing 10000005723
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Temp. code and ambient temperature	See Table 4, 5, 6 below

	Temperature sensor assembly, model TM412- aabcddeefgghhiiijjkkllmmnnooppqqrrssttuuvvwwxxyyzz11223344556 6
Product	Where aa = approval type = C1, 8C, CE nn = transmitter option = 1A, 2C, 2E, 3A, 3B, 3C, 3D, 3E, 3F, 3G, 4A, 5A, 6B, 6C o = terminal head option = A, B, C, D, E, F, G, H, J, K, L



	ww= second transmitter = NC, ND, NE, NF, NG, NH, NI, NJ, NK, NN, NO
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Enclosure Rating	Type $4X/6P$ when option $o = J$
Temp. code and ambient temperature	See Table 4, 5, 6 below

Product	Temperature sensor assembly iTHERM, type TM111- or TM112- aabccddefghhiijkkllmmnooppqqrrssttuuvv Where aa = approval option = CE hh = transmitter option = 0A, 1A, 2C, 2D*, 2F*, 3A, 3C, 3D, 4A, 5A, 6B, 6C, 7A* ii = terminal head option = A1, A2, D1, H1, H2, H3, H4, F1*, F3*, F5*, F7* ll = second transmitter = GC, GD, GE, GF, GG, GH, GK, GL Intrinsically safe when installed per drawing 10000010341 * only applicable for TM112
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Enclosure Rating	Type 4X, IP6x when option $ii = A1, A2, D1, H1, H2, H3, H4, F1, F3, F5, F7$
Temp. code and ambient temperature	See Table 4, 5, 6 below

	Temperature sensor assembly iTHERM, type TM131-aabcddeefgghijkllmmnnooppqqrrssttuuvvwwxxyyzz, type TM151-aabcddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz, type TM152-aabccddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz
Product	Where aa = approval type = CE c = H (Dual seal design) ll = transmitter option = 0A, 1A, 2C, 2D, 2E, 2F, 2G, 3A, 3C, 3D, 3F, 4A, 4C, 5A, 5B, 5C, 6B, 6C, 7A mm = terminal head option = A1, A2, D1, F1, F2, F3, F4, F5, F6, F7, F8, H1, H2, H3, H4, H5, H6 pp = second transmitter = GC, GD, GE, GF, GG, GH, GK, GL



	Intrinsically safe when installed per drawing 10000010341
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Maximum Working Pressure (only for the assembly with Dual seal design)	200 bar
Enclosure Rating	Type 4X, IP6x when option mm = A1, A2, D1, F1, F2, F3, F4, F5, F6, F7, F8, H1, H2, H3, H4, H5, H6
Temp. code and ambient temperature	See Table 4, 5, 6 below.

Conditions of Acceptability:

- 1. If the mounting head of the Temperature Sensor is made of Aluminum it must be installed such that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.
- 2. Circuits of versions of the following temperature sensors and inserts shall be connected to ground (for details, the instruction manual provided with the equipment):
 - a. Type TS111, TS212 with diameter 3mm, single or dual
 - b. Type TS111, TS212 with diameter 6mm dual
- 3. For thermometers with two mounted head transmitters, the allowed ambient temperature is 12K lower than each head transmitter's certified ambient temperature.
- 4. For thermocouple inserts, the maximum surface temperature is equal to the process temperature.
- 5. For the dual seal version of TM131, the process temperature shall not bring the whole assembly of pressure switch/secondary seal and head transmitters beyond a range of ambient temperature between -20°C to +80°C therefore the pressure switch/secondary seal should be installed with a minimum required length of extension neck of 100mm above the process mounting flange.
- 6. The correlation of the ambient and process temperature to maximum surface temperature is described in the following tables:

For assemblies with transmitters:

Туре	Assembled transmitter	Maximum surface	Ambient temperature range
		temperature	housing Ta
TM111	TMT84, TMT85, TMT162	85°C	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM112	PA/FF,	100°C	$-40^{\circ}C \le Ta \le +70^{\circ}C$
TM131	TMT8x, TMT7x with display,	135°C	$-40^{\circ}C \le Ta \le +85^{\circ}C$
TM151	TMT142 HART		
TM152	TMT71, TMT72, TMT162	85°C	$-50^{\circ}C \le Ta \le +55^{\circ}C$
	HART	100°C	$-50^{\circ}C \le Ta \le +70^{\circ}C$



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		135°C	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT82	85°C	$-50^{\circ}\mathrm{C} \leq \mathrm{Ta} \leq +58^{\circ}\mathrm{C}(*)$
		100°C	$-50^{\circ}C \le Ta \le +75^{\circ}C(*)$
		135°C(*)	$-50^{\circ}C \le Ta \le +85^{\circ}C(*)$
	TMT86	85°C	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		100°C	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		135°C	$-52^{\circ}C \le Ta \le +85^{\circ}C$
TM411	TMT84, TMT85, TMT162	85°C	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM412	PA/FF,	100°C	$-40^{\circ}C \le Ta \le +70^{\circ}C$
	TMT8x, TMT7x with display,	135°C	$-40^{\circ}C \le Ta \le +85^{\circ}C$
	TMT181, TMT182		
	TMT71, TMT72, TMT162	85°C	$-50^{\circ}C \le Ta \le +55^{\circ}C$
	HART	100°C	$-50^{\circ}C \le Ta \le +70^{\circ}C$
		135°C	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT82	85°C	$-50^{\circ}C \le Ta \le +58^{\circ}C$
		100°C	$-50^{\circ}C \le Ta \le +75^{\circ}C$
		135°C	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT86	85°C	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		100°C	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		135°C	$-52^{\circ}C \le Ta \le +85^{\circ}C$

Note: (*) The maximum ambient temperature range(Ta) with dual seal version TM131 should not exceed the range of -20° C to+ 80° C.

Table 5					
Туре	Assembled	Insert	Maximum surface	Process temperature	
	transmitter	diameter	temperature	range Tp	
TM111	TMT8x	3mm (1/8"),	85°C	$-50^{\circ}C \le Tp \le +66^{\circ}C$	(64°C)*
TM112	TMT7x	3mm (1/8")	100°C	$-50^{\circ}C \le Tp \le +81^{\circ}C$	(79°C)*
TM131	TMT162	(dual),	135°C	$-50^{\circ}C \le Tp \le +116^{\circ}C$	(114°C)*
TM151	TMT142	6mm (1/4")	165°C		
TM152	TMT18x	dual	105 C	$-50^{\circ}C \le Tp \le +146^{\circ}C$	(146°C)*
TM411	(for	6mm (1/4")	85°C	$-50^{\circ}C \le Tp \le +71^{\circ}C$	(71°C)*
TM412	TM41x		100°C	$-50^{\circ}C \le Tp \le +86^{\circ}C$	(86°C)*
	only)		135°C	$-50^{\circ}C \le Tp \le +121^{\circ}C$	(121°C)*
			165°C	$-50^{\circ}C \le Tp \le +151^{\circ}C$	(153°C)*

*Maximum process temperature when sensor is supplied with TMT162

For assemblies without transmitters: Table 6



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	Maximu m	Maximum allowed process temperature (sensor) Tp (process)				
_	surface					
Insert	temperat	$P_1 \le 50$	$Pi \leq 100$	$Pi \le 200$	$P_1 \leq$	$P_1 \leq$
diameter	ure	mW	mW	mW	500 mW	650 mW
3mm	85°C	66°C	55°C	36°C	-17°C	-27°C
(1/8"),	100°C	81°C	70°C	51°C	-2°C	-12°C
3mm	135°C	116°C	105°C	86°C	33°C	23°C
(1/8") dual						
or 6mm	165°C	146°C	133°C	105°C	23°C	-18°C
(1/4") dual						
6mm	85°C	73°C	68°C	60°C	38°C	28°C
(1/4")	100°C	88°C	83°C	75°C	53°C	43°C
	135°C	123°C	118°C	110°C	88°C	78°C
	165°C	188°C	183°C	175°C	153°C	143°C

		Maximum allowed process			Ambient temperature
	Maximu	temperature	e (sensor)	Тр	(housing),
	m	(process)			Ta (ambient)**
	surface		Pi≤	Pi≤	
Insert	temperat	$Pi \le 750$	800	1000	
diameter	ure	mW	mW	mW	
3mm	85°C	-40°C			$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +66^{\circ}\mathrm{C}$
(1/8"),	100°C	-25°C	-33°C		$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +81^{\circ}\mathrm{C}$
3mm	135°C	10°C	2°C	-30°C	$-40^{\circ}C \le Ta \le +116^{\circ}C$
(1/8") dual					
or 6mm	165°C				
(1/4") dual		-46°C	-59°C	-114°C	$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +130^{\circ}\mathrm{C}$
6mm	85°C	21°C	17°C	1°C	$-40^{\circ}\mathrm{C} \leq \mathrm{Ta} \leq +73^{\circ}\mathrm{C}$
(1/4")	100°C	36°C	32°C	16°C	$-40^{\circ}\mathrm{C} \leq \mathrm{Ta} \leq +88^{\circ}\mathrm{C}$
	135°C	71 [°] C	67°C	51°C	$-40^{\circ}\mathrm{C} \leq \mathrm{Ta} \leq +123^{\circ}\mathrm{C}$
	165°C	52°C	45°C	16°C	$-40^{\circ}\mathrm{C} \leq \mathrm{Ta} \leq +130^{\circ}\mathrm{C}$

** The ambient temperature at the terminal head may be directly influenced by the process temperature, but is restricted to the range -40° C ... +130°C, besides for types TA30A, TA30D and TA30H with a restricted range -50°C ... +130°C.

CLASS - C225803 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non Incendive Systems - For Hazardous Locations



Master Contract: 200600 Date Issued:

CLASS - C225883 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems-For Hazardous Locations-Certified to U.S. Standards

Ex ia [ia Ga] IIC T6...T4 Gb: Class I, Zone 1, AEx ia [ia Ga] IIC T6...T4 Gb: Class I, Division 2, Groups A, B, C, and D:

Product	Temperature sensor assembly, model TM411- aabcddeefgghhiiijjkkllmmnnooppqqrrssttuuvvwwxxyyzz112233445566 Where aa = approval type = CE pp = transmitter option = 2C, 3E, 6B, 6C qq = terminal head option = A2, R2, R4 zz = second transmitter =NJ, NK, NN, NO
	intrinsically safe when instaned per drawing 10000003723
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Temp. code and ambient temperature	Refer to Table 7 & 8 below

	Temperature sensor assembly, model TM412- aabcddeefgghhiiijjkkllmmnnooppqqrrssttuuvvwwxxyyzz112233445566
Product	Where aa = approval type = CE nn = transmitter option = 2C, 3E, 6B, 6C o = terminal head option = B, F, H ww= second transmitter = NJ, NK, NN, NO
	Intrinsically safe when installed per drawing 10000005723
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Temp. code and ambient temperature	Refer to Table 7 & 8 below

	Temperature sensor assembly iTHERM, type TM111- or TM112- aabccddefghhiijkkllmmnnooppqqrrssttuuvv
Product	Where aa = approval type = CE hh = transmitter option = 2C, 2D*, 2F*, 3A, 6B, 6C, 7A*



	 ii = terminal head option = A2, E3, H2, H4, R2, R4, F1*, F3*, F5*, F7* ll = second transmitter = GC, GD, GK, GL
	Intrinsically safe when installed per drawing 10000010341 *only applicable for TM112
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Enclosure Rating	Type 4X, IP6x when option $ii = A2, H2, H4, F1, F3, F5, F7$
Temp. code and ambient temperature	Refer to Table 7 & 8 below

	Temperature sensor assembly iTHERM, type TM131-aabcddeefgghijkllmmnnooppqqrrssttuuvvwwxxyyzz, type TM151-aabcddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz, type TM152-aabccddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz
Product	Where aa = approval type = CE c = H (Dual seal design) ll = transmitter option = 2C, 3A, 6B, 6C mm = terminal head option = A2, E3, H2, H4, H5, H6, R2, R4 pp = second transmitter = GC, GD, GK, GL Intrinsically safe when installed per drawing 10000010341
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Maximum Working Pressure (only for the assembly with Dual seal design)	200 bar
Enclosure Rating	Type 4X, IP6x when option $mm = A2, H2, H4, H5, H6$
Temp. code and ambient temperature	Refer to Table 7 & 8 below

Conditions of Acceptability:

- 1. If the mounting head of the Temperature Sensor is made of Aluminum it must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.
- 2. From the safety point of view, the circuit of versions of the following temperature sensors and inserts shall be connected to ground (for details, the instruction manual, provided with the equipment, shall be observed):



Master Contract: 200600 Date Issued:

- a. Type TS111, TS212 with diameter 3mm, single or dual
- b. Type TS111, TS212 with diameter 6mm dual
- 3. For thermocouple inserts, the temperature class T6...T1 are equal to the process temperature.
- 4. For thermometers with two mounted head transmitters, the allowed ambient temperature is 12K lower than each head transmitter's certified ambient temperature.
- 5. For the dual seal version of TM131, the process temperature shall not bring the whole assembly of pressure switch/secondary seal and head transmitters beyond a range of ambient temperature between 20°C to +80°C therefore the pressure switch/secondary seal should be installed with a minimum required length of extension neck of 100mm above the process mounting flange.
- 6. The correlation of the ambient and process temperature to maximum surface temperature is described in the following tables:

For assemblies with transmitters:

Table 7			
Туре	Assembled transmitter	Temperature	Ambient temperature range
		class	housing Ta
TM111	TMT7x, TMT86 with	T6	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM112	display	T5	$-40^{\circ}C \le Ta \le +70^{\circ}C$
TM131		T4	$-40^{\circ}C \le Ta \le +85^{\circ}C$
TM151	TMT71, TMT72	T6	$-50^{\circ}C \le Ta \le +55^{\circ}C$
TM152		T5	$-50^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT86	T6	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-52^{\circ}C \le Ta \le +85^{\circ}C$
TM411	TMT7x, TMT86 with	T6	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM412	display	T5	$-40^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-40^{\circ}C \le Ta \le +85^{\circ}C$
	TMT71, TMT72,	T6	$-50^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-50^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT86	T6	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-52^{\circ}C \le Ta \le +85^{\circ}C$

Table 8

Туре	Assembled	Insert	Temperature	Process temperature range
	transmitter	diameter	class	Тр



Master Contract: 200600 Date Issued:

TM111	TMT7x,	3mm	T6	-50°C < Tp < +66°C
TM112	TMT86	(1/8"),	T5	$-50^{\circ}C \le Tp \le +81^{\circ}C$
TM131		3mm	T4	$-50^{\circ}C \le Tp \le +116^{\circ}C$
TM151		(1/8")	Т3	$-50^{\circ}C \le Tp \le +181^{\circ}C$
TM152		(dual),	T2	$-50^{\circ}C \le Tp \le +276^{\circ}C$
TM411		6mm		$-50^{\circ}C \le Tp \le +426^{\circ}C$
TM412		(1/4")	T1	1
		dual		
		6mm	T6	$-50^{\circ}C \le Tp \le +73^{\circ}C$
		(1/4")	T5	$-50^{\circ}C \le Tp \le +88^{\circ}C$
			T4	$-50^{\circ}C \le Tp \le +123^{\circ}C$
			T3	$-50^{\circ}C \le Tp \le +188^{\circ}C$
			T2	$-50^{\circ}C \le Tp \le +283^{\circ}C$
			T1	$-50^{\circ}C \le Tp \le +433^{\circ}C$

Class I, Division 2, Groups A, B, C, and D:

Product	Temperature sensor assembly, model TM411- abcdefghijklmnopqrstuvwxyzaaabac Where aa = approval type = CN pp = transmitter option = 1A, 2A, 2B, 2E, 2H, 2I, 3A, 3B, 3C, 3D, 4A, 5A, 6B, 6C qq = terminal head option = A1, A2, D1, P1 R1, R2, R3, R4 zz = second transmitter = NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NN, NO Non-incendive when installed per drawing 10000005723
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Temp. code and ambient temperature	See Table 9, 10, & 11 below.

	Temperature sensor assembly, model TM412- abcdefghijklmnopqrstuvwxyzaa
Product	Where aa = approval type = CN nn = transmitter option = 1A, 2A, 2B, 2E, 2H, 2I, 3A, 3B, 3C, 3D, 3F, 3G, 4A, 5A, 6B, 6C



	 o = terminal head option = A, B, C, D, E, F, G, H, J, K, L zz = second transmitter = NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NN, NO Non-incendive when installed per drawing 10000005723
Electrical Rating	8-30Vdc, 4-20mA, PA/FF output
Enclosure Rating	Type $4X/6P$ when option $o = J$
Temp. code and ambient temperature	See Table 9, 10, & 11 below.

Product	Temperature sensor assembly iTHERM, type TM111- or TM112- aabccddefghhiijkkllmmnnooppqqrrssttuuvv Where aa = approval type = CE hh = transmitter option = 0A, 1A, 2C, 2D*, 2F*, 3A, 3C, 3D, 4A, 5A, 6B, 6C, 7A* ii = terminal head option = A1, A2, A3, D1, E2, E3, H1, H2, H3, H4, P1, R1, R2, R3, R4, R5, R6, F1*, F3*, F5*, F7* ll = second transmitter = GC, GD, GE, GF, GG, GH, GK, GL Intrinsically safe when installed per drawing 10000010341 * only applicable for TM112	
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output	
Enclosure Rating	Type 4X, IP6x when option $ii = A1, A2, D1, H1, H2, H3, H4, F1, F3, F5, F7$	
Temp. code and ambient temperature	See Table 9, 10, & 11 below.	

	Temperature sensor assembly iTHERM, type TM131-aabcddeefgghijkllmmnnooppqqrrssttuuvvwwxxyyzz, type TM151-aabcddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz, type TM152-aabccddeeefgghijkllmmnooppqqrrssttuuvvwwxxyyzz
Product	Where aa = approval type = CE c = H (Dual seal design) ll = transmitter option = 0A, 1A, 2D, 2E, 2F, 2G, 3C, 3D, 3F, 4A, 4C, 5A, 5B, 5C, 6B, 6C mm = terminal head option = A1, A2, A3, D1, E2, E3, F1, F2, F3, F4, F5, F6, F7, F8, H1, H2, H3, H4, H5, H6, P1, R1, R2, R3, R4 pp = second transmitter = GC, GD, GE, GF, GG, GH, GK, GL



	Intrinsically safe when installed per drawing 10000010341
Electrical Rating	9-30Vdc, 4-20mA, PA/FF output
Maximum Working Pressure (only for the assembly with Dual seal design)	200 bar
Enclosure Rating	Type 4X, IP6x when option mm = A1, A2, D1, F1, F2, F3, F4, F5, F6, F7, F8, H1, H2, H3, H4, H5, H6
Temp. code and ambient temperature	See Table 9, 10, & 11 below.

Conditions of Acceptability:

- 1. If the mounting head of the Temperature Sensor is made of Aluminum it must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.
- 2. From the safety point of view, the circuit of versions of the following temperature sensors and inserts shall be connected to ground (for details, the instruction manual, provided with the equipment, shall be observed):
 - a. Type TS111, TS212 with diameter 3mm, single or dual
 - b. Type TS111, TS212 with diameter 6mm dual
- 3. For thermocouple inserts, the temperature class T6...T1 are equal to the process temperature.
- 4. For thermometers with two mounted head transmitters, the allowed ambient temperature is 12K lower than each head transmitter's certified ambient temperature.
- 5. For the dual seal version of TM131, the process temperature shall not bring the whole assembly of pressure switch/secondary seal and head transmitters beyond a range of ambient temperature between 20°C to +80°C therefore the pressure switch/secondary seal should be installed with a minimum required length of extension neck of 100mm above the process mounting flange.
- 6. The correlation of the ambient and process temperature to maximum surface temperature is described in the following tables:

For assemblies with transmitters:

i.	Tuble 7			
	Туре	Assembled transmitter	Temperature	Ambient temperature range
			class	housing Ta
	TM111	TMT84, TMT85, TMT162	T6	$-40^{\circ}C \le Ta \le +55^{\circ}C$
	TM112	PA/FF,	T5	$-40^{\circ}C \le Ta \le +70^{\circ}C$

Table 9



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TM131	TMT8x, TMT7x with display,	T4	$-40^{\circ}C \le Ta \le +85^{\circ}C$
TM151	TMT142 HART		
TM152 TMT71, TMT72, TMT10	TMT71, TMT72, TMT162 HART	T6	$-50^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-50^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT82	T6	$-50^{\circ}\mathrm{C} \le \mathrm{Ta} \le +58^{\circ}\mathrm{C}(*)$
		T5	$-50^{\circ}C \le Ta \le +75^{\circ}C(*)$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C(*)$
	TMT86	T6	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-52^{\circ}C \le Ta \le +85^{\circ}C$
TM411	TMT84, TMT85, TMT162	T6	$-40^{\circ}C \le Ta \le +55^{\circ}C$
TM412	PA/FF,	T5	$-40^{\circ}C \le Ta \le +70^{\circ}C$
	TMT8x, TMT7x with display,	T4	$-40^{\circ}C \le Ta \le +85^{\circ}C$
	TMT181, TMT182		
	TMT71, TMT72, TMT162 HART	T6	$-50^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-50^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT82	T6	$-50^{\circ}C \le Ta \le +58^{\circ}C$
		T5	$-50^{\circ}C \le Ta \le +75^{\circ}C$
		T4	$-50^{\circ}C \le Ta \le +85^{\circ}C$
	TMT180	T6	$-40^{\circ}C \le Ta \le +50^{\circ}C$
		T5	$-40^{\circ}C \le Ta \le +65^{\circ}C$
		T4	$-40^{\circ}C \le Ta \le +85^{\circ}C$
	TMT31	T6	$-40^{\circ}C \le Ta \le +35^{\circ}C$
		T5	$-40^{\circ}C \le Ta \le +50^{\circ}C$
		T4	$-40^{\circ}C \le Ta \le +85^{\circ}C$
	TMT86	T6	$-52^{\circ}C \le Ta \le +55^{\circ}C$
		T5	$-52^{\circ}C \le Ta \le +70^{\circ}C$
		T4	$-52^{\circ}C \le Ta \le +85^{\circ}C$

Note: (*) The maximum ambient temperature range(Ta) with dual seal version TM131 should not exceed the range of -20°C to+80°C.

Table 10

Туре	Assembled	Insert	Temperature	Process temperature range Tp
	transmitter	diameter	class	
TM111	TMT8x	3mm	T6	$-50^{\circ}C \le Tp \le +66^{\circ}C$ (64°C)*
TM131	TMT7x	(1/8"),	T5	$-50^{\circ}C \le Tp \le +81^{\circ}C$ (79°C)*



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-					
TM411	TMT162	3mm (1/8")	Τ4	$-50^{\circ}C \le Tp \le$	
TM412	TMT142	(dual),	14	+116°C	(114°C)*
	TMT31(for	6mm (1/4")	T 2	$-50^{\circ}C \le Tp \le$	
	TM41x	dual	13	+181°C	(179°C)*
	only)		T	$-50^{\circ}C \le Tp \le$	
	TMT18x		12	+276°C	(279°C)*
	(for		TT 1	$-50^{\circ}C \le Tp \le$	
	TM41x		11	+426°C	(427°C)*
	only)	6mm (1/4")	T6	$-50^{\circ}C \le Tp \le +73^{\circ}C$	(71°C)*
			T5	$-50^{\circ}C \le Tp \le +88^{\circ}C$	(86°C)*
			T4	$-50^{\circ}C \le Tp \le$	
			14	+123°C	(121°C)*
			T 2	$-50^{\circ}C \le Tp \le$	
			15	+188°C	(186°C)*
			тэ	$-50^{\circ}C \le Tp \le$	
			12	+283°C	(286°C)*
			TT1	$-50^{\circ}C \le Tp \le$	(12100)*
			11	+433°C	(431°C)*

*Maximum process temperature when sensor is supplied with TMT162

Note: The maximum process temperature for the model with dual seal version TM131 should not exceed +400°C.

For assemblies without transmitters: **Table 11**

		Maximun	Maximum allowed process temperature (sensor) Tp (process)			
Insert	Temperature	$Pi \le 50$	Pi ≤100	Pi≤	Pi ≤	
diameter	class	mW	mW	200 mW	500 mW	$Pi \le 650 \text{ mW}$
3mm (1/8"),	T6	66°C	55°C	36°C	-17°C	-27°C
3mm (1/8")	T5	81°C	70°C	51°C	-2°C	-12°C
dual	T4	116°C	105°C	86°C	33°C	23°C
or 6mm	T3	181°C	170°C	151°C	98°C	88°C
(1/4") dual	T2	276°C	265°C	246°C	193°C	183°C
	T1	426°C	415°C	396°C	343°C	333°C
6mm (1/4")	T6	73°C	68°C	60°C	38°C	28°C
	T5	88°C	83°C	75°C	53°C	43°C
	T4	123°C	118°C	110°C	88°C	78°C
	T3	188°C	183°C	175°C	153°C	143°C
	T2	283°C	278°C	270°C	248°C	238°C
	T1	433°C	428°C	420°C	398°C	388°C

Insert

Temperature | Maximum allowed process

Ambient temperature



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diameter	class	temperature (sensor) Tp (process)		Тр	(housing), Ta (ambient)**
		Pi≤	Pi≤	Pi≤	
		750	800	1000	
		mW	mW	mW	
3mm (1/8"),	T6	-40°C			$-40^{\circ}C \le Ta \le +66^{\circ}C$
3mm (1/8")	T5	-25°C	-33°C		$-40^{\circ}C \le Ta \le +81^{\circ}C$
dual	T4	10°C	2°C	-30°C	$-40^{\circ}C \le Ta \le +116^{\circ}C$
or 6mm	T3	75°C	62°C	30°C	$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +130^{\circ}\mathrm{C}$
(1/4") dual	T2	320°C	312°C	280°C	$-40^{\circ}\mathrm{C} \le \mathrm{Ta} \le +130^{\circ}\mathrm{C}$
	T1	170°C	162°C	130°C	$-40^{\circ}\mathrm{C} \leq \mathrm{Ta} \leq +130^{\circ}\mathrm{C}$
6mm (1/4")	T6	21°C	17°C	1°C	$-40^{\circ}C \le Ta \le +73^{\circ}C$
	T5	36°C	32°C	16°C	$-40^{\circ}C \le Ta \le +88^{\circ}C$
	T4	71°C	67°C	51°C	$-40^{\circ}C \le Ta \le +123^{\circ}C$
	T3	136°C	127°C	111°C	$-40^{\circ}C \le Ta \le +130^{\circ}C$
	T2	231°C	227°C	211°C	$-40^{\circ}C \le Ta \le +130^{\circ}C$
	T1	381°C	377°C	361°C	$-40^{\circ}C \le Ta \le +130^{\circ}C$

** The ambient temperature at the terminal head may be directly influenced by the process temperature, but is also restricted to the allowed range of installed terminal head as follows:

Option 7	Ferminal head	Та	
TM41x	TM1x1	1a	
A, C	A1, D1, H1, H3	-50°C +130°C	
E, G, K, L	A3, E2	-40°C +130°C	
D	P1	-40°C +100°C	

APPLICABLE REQUIREMENTS

CSA C22.2 No. 94.2-15 Second Edition	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
CAN/CSA C22.2 No. 60079-0:19	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-11:14 Sixth Edition	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CSA C22.2 No. 213-17	Non-incendive Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) Locations
ANSI/UL 50E-15 Second Edition	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/UL 61010-1 Third Edition	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements
ANSI/UL 60079-0-2020	Explosive atmospheres –



Seventh Edition	Part 0: Equipment – General requirements
ANSI/UL 60079-11:13	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"
ANSI/UL 121201-2017	Non-incendive Electrical Equipment for Use in Class I and II, Division 2,
Ninth Edition	and Class III Hazardous (Classified) Locations
ANSI/UL 122701:2017	Requirements for Process Sealing Between Electrical Systems and
	Flammable or Combustible Process Fluids
CAN/CSA C22.2 No.60079-40:20	Explosive atmospheres – Part 40: Requirements for Process Sealing
	Between Flammable Process Fluids and Electrical Systems

The following standards were applied to models TM411 & TM412 only:

ANSI/UL 913-2018	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class
Eighth Edition	I, II, III, Division 1, Hazardous (Classified) Locations

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings are provided:

- Manufacturer's name: "Endress+Hauser Wetzer GmbH Co. KG", or CSA Master Contract Number "200600", adjacent to the CSA Mark in lieu of manufacturer's name.
- Model designation: As specified in the PRODUCTS section, above.
- Electrical ratings: As specified in the PRODUCTS section, above.
- Ambient temperature rating: As specified in the PRODUCTS section, above.
- Manufacturing date, or serial number, traceable to year and month of manufacture.
- Enclosure ratings: As specified in the PRODUCTS section, above.
- The CSA Mark, with or without the "C" and "US" indicators, as shown on the Certificate of Compliance.
- The designation "CSA 14CA2692515X".
- Hazardous Location designation: As specified in the PRODUCTS section, above. The word "Class" may be abbreviated "CL", the word "Division" may be abbreviated "DIV", and the word "Groups" may be abbreviated "GRP" or "GP".
- Method of Protection markings (Ex markings): As specified in the PRODUCTS section, above. The word "Class" may be abbreviated "CL", the word "Zone" may be abbreviated "ZN".
- Temperature code: As specified in the PRODUCTS section, above.



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- The words "DUAL SEAL" (for dual seal version of TM131 sensor).
- Rated maximum working pressure, as specified in the PRODUCTS section, above.
- Rated process temperature range, as specified in the PRODUCTS section, above.
- Reference to Installation Instructions.
- The following warnings, or suitable equivalent, on the Installation Instructions:
 - For Intrinsically Safe Models:
 - "Warning: Substitution of components may impair intrinsic safety."
 - *"Avertissement : La substitution de composants peut compromettre la sécurité intrinsèque."*
 - For Nonincendive Models:
 - o "Warning: Substitution of components may impair suitability for Class I, Division 2."
 - *"Avertissement : La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Class I, Division 2"*
 - For Canada: "INTRINSICALLY SAFE" and "SECURITE INTRINSEQUE", or "IS" or "I.S." or the symbol "Ex ia".

Notes:

Products certified under Class C225803, C225883 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca





Supplement to Certificate of Compliance

Certificate:

Master Contract: 200600

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80187255	2023-11-21	Update to cCSAus report # 2692515 for intrinsically safe and non-incendive Thermometers iTHERM Type TM41x and TM1x1 series for addition of head transmitter type TMT31 from CSA Report 80107564 Edition 1 and TMT86 from CSA Report 70187832 Edition 6, addition of thermometer type TM112, TM151 and TM152 and new construction of thermowell based on the acceptance of IECEx Test Report DE/EPS/ExTR18.0076/04, and update to CAN/CSA C22.2 No. 60079-0:19/ ANSI/UL 60079-0-2020 Seventh Edition.
80059317	2023-02-13	Update to cCSAus report 2692515 for intrinsically safe temperature sensor assemblies for the addition of a new model with a dual seal option.
80076522	2021-06-28	Update to cCSAus report # 2692515 (last complete report 70195912) for intrinsically safe Temperature sensor assembly TM Series for addition of CSA certified transmitter TMT 142 HART7 into the temperature assembly TM131.
70195912	2019-10-04	Variation to the CofC 2692515. Addition of additional models TM111-*** and TM131-***, certifying all models according the CAN/CSA-C22.2 No. 60079-15:12 and an additional service line for the US approval.
2692515	2014-02-27	Original certification of the TM411 and TM412 Temperature Sensor Assemblies for Class I, Div. 1 and Div. 2, Gr. A, B, C and D, Class II, Div. 1, Gr. E, F and G and Ex ia IIC T6T4 Ga based on various IECEx reports.