



# DO NOT SCALE DRAWING

**TOLERANCES (UNLESS NOTED)**

DECIMALS = ±inch/mm

.X = ±.1 / 2.54

.XX = ±.01 / 0.25


.XXX = ±.005 / 0.125

HOLEES = ±.003 / 0.080

ANGLES = ±1/2°

DRAWN	C. Whan	5/10
CHECKED	V. Garcia	5/10
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SCALE	NONE	



CATEGORY	CONTROL DRAWING
TITLE	<b>Field Installation Diagram: TCM [DIN] Intrinsically Safe System</b>

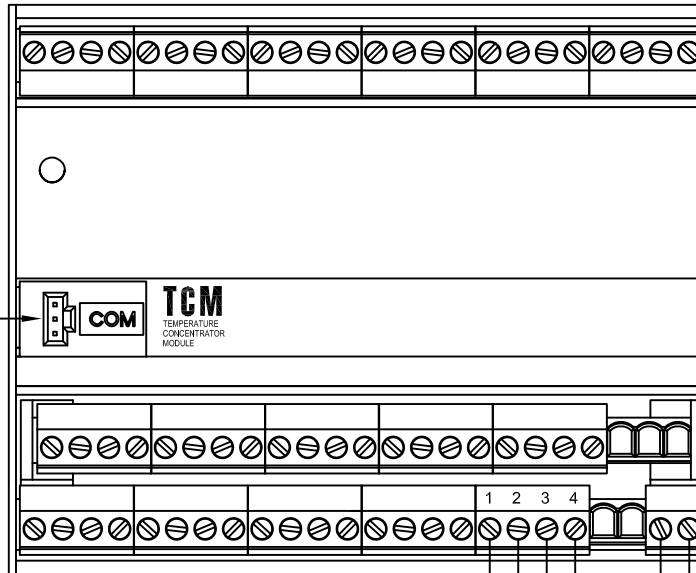
DRAWING NUMBER	100-100-74			REVISION	C
REVISED BY	ECO 16966	DATE	5/13	BY	CW
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APPROVAL					
					

## Hazardous Area / Explosive Atmosphere

Entity Parameters	
Power/Loop (+PS & -PS)	$U_i$ or $V_{max} = 30$ VDC $I_i$ or $I_{max} = 110$ mA $P_i$ or $P_{max} = 0.825$ W $C_i = 0$ nF $L_i = 0$ μH
RTD, T/C, mV, Ω (1, 2, 3, 4)	$C_a$ or $C_o = 396$ μF $L_a$ or $L_o = 9.4$ μH $V_{oc}$ or $V_t = 4.0$ VDC $I_{sc}$ or $I_t = 254.14$ mA $P_o = 0.71738$ W

(6) **Caution:**  
The 'COM' Port **Must Not** Be Used In Hazardous 'Classified' Locations

Area Classification		"T" Rating
Intrinsically Safe	Class I, Div. 1, Groups A-D Class I, Zone 0, AEx ia IIC	T4 @ 85°C
	 II 1 G Ex ia IIC T4 Ex ia IIC Ga	
Non-Incendive	Class I, Div. 2, Groups A-D	
Non-Sparking [Limited Energy]	 II 3 G Ex nA IIC Ex nA [nL] IIC Gc	
Operating Temperature Range: <b>-40°C ≤ Tamb. ≤ +85°C</b>		

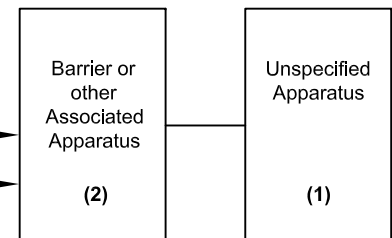


RTD or T/C Sensor (Simple Apparatus) Typical 16 Places (7)

-PS (3)  
+PS

## Non-Hazardous Area

Entity Parameters	
Associated Apparatus	$C_a$ or $C_o ≥ C_i + C_{cable}$ $L_a$ or $L_o ≥ L_i + L_{cable}$ $U_i$ or $V_{max} ≥ V_{oc}$ or $V_t$ $I_i$ or $I_{max} ≥ I_{sc}$ or $I_t$ $P_i ≥ P_o$



Ground/Earth Path Resistance Must Not Exceed 1 Ω (Barrier must be Agency approved)

### Notes:

- Unspecified Apparatus must not be supplied from, or contain under normal or abnormal conditions, a source voltage in excess of 250 VRMS or 250 VDC.
- The Barrier or other Associated Apparatus **must** be agency-approved (FM/SIRA/TUV, etc..) per the "**specific**" installation area for Intrinsically Safe connections (Zones 0/1, Class I / Div. 1). The output voltage (**Voc, Vt or Vo**) **must not** exceed **30 VDC** and the output current (**Isc, It or Io**) **must not** exceed **110 mA**. Also, it **must** be installed per the manufacturer's guidelines. A *Shunt Zener Barrier* is **NOT** required for *Non-Incendive* (or *Class I, Division 2* or *Type N*) installations.
- The combined Capacitance and Inductance of the inter-connecting cables and the PC Programmable Transmitter **must not** exceed the values indicated on the Associated Apparatus.
- For US applications, installation **must** be in accordance to "**ANSI/ISA-RP12.06.01**" (Installation of I.S. Systems for Hazardous 'Classified' Locations) and the National Electric Code '**ANSI/NFPA 70**'. For Canadian applications, adhere to the 'Canadian Electric Code C22.1' most current publication on I.S. installation guidelines. For ATEX and IECEx applications, adhere to '**60079-14**' or any equivalent IEC-based, most current publication on I.S. installation guidelines.
- Warning:** Substitution of components may impair the Intrinsic Safety of the units and/or the Non-incendive circuit. **DO NOT** open or service the unit when either energized or if an explosive gas/dust atmosphere is present. Disconnect power before servicing. Also read, understand and adhere to the manufacturer's installation and operating procedures.
- The maximum power parameters of the COM port are:  $U_i$  or  $V_{max} = 3.0$  VDC,  $I_i$  or  $I_{max} = 300$  μA,  $P_i$  or  $P_{max} = 240$  μW.
- Sensor outputs must be installed as separate Intrinsically Safe circuits OR the combined total of all the sensor outputs cannot exceed the sensor entity parameters of  $U_o = 4V$ ,  $I_o = 254.14mA$ ,  $P_o = 717.38mW$ ,  $C_a = 396μF$ ,  $L_a = 9.4μH$ .

### Certified Product

This is a controlled 'Related' or 'Schedule' drawing. No modifications are permitted without the notification and final approval of the Certification Engineer (related dwgs.) or the Certifying Agency (schedule dwgs.)