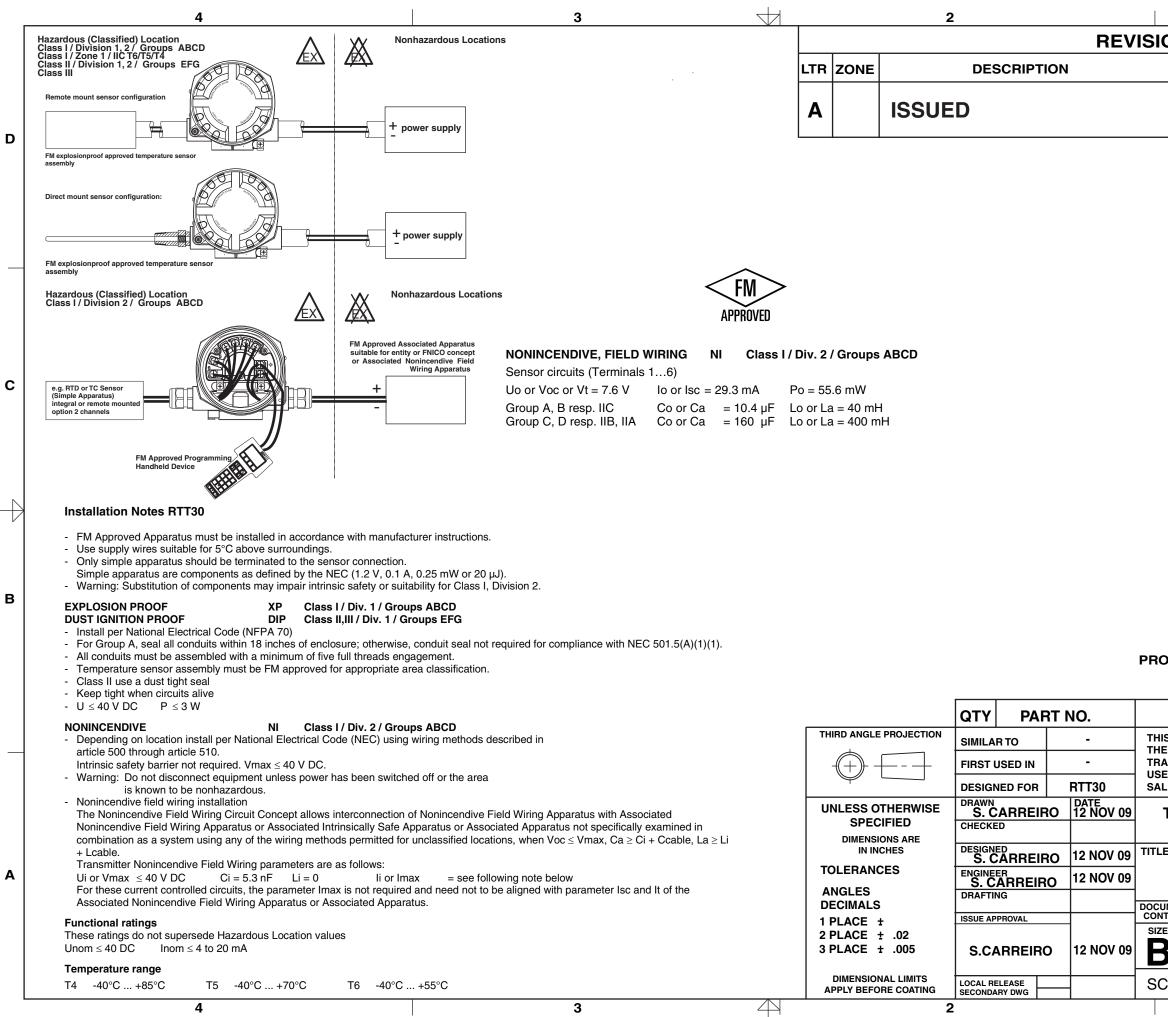


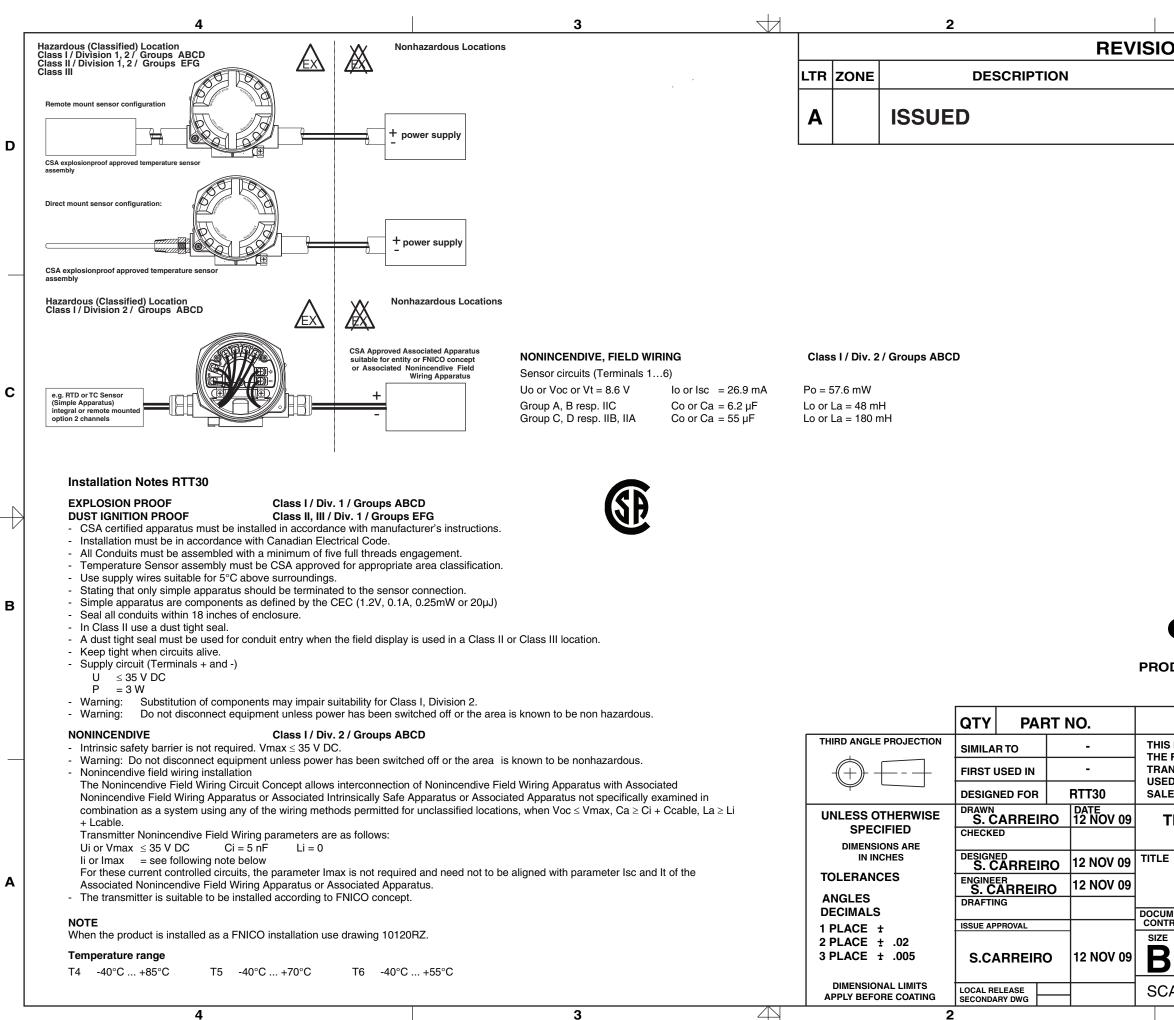
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		~~~~~	SSA certified Associated apparatus or arrier resp. Associated Nonincendive iield Wiring		Α		ISSUED	)			
כ	Any CSA certified Termination with R=9010Ω C=02.2μF U(Vmax) 17.5 V 24 V Ii (Imax) 500mA 250mA Pi (Pmax) 5.5 W 1.2 W Ci ≤ 5nF Li ≤ 10 μH		ield Wiring witable for FISCO concept → →								
_	$\begin{array}{c} Corr Corr Car Corr Car Car$										
	Group D       resp. IIA       1000 µF       380 mH         Installation Notes RTT30       -       CSA Approved Apparatus must be installed in accordance with manufacturer instr         -       Use supply wires suitable for 5°C above surroundings.       -       Only simple apparatus should be terminated to the sensor connection. Simple apparatus are components as defined by the NEC (1.2 V, 0.1 A, 0.25 mW         -       Warning: Substitution of components may impair intrinsic safety or suitability for C         RTT30 is suitable for the connection to a Profibus PA / Foundation Fieldbus system a         Temperature range	r 20 μJ). ass I, Division		P							
	T4 -40°C +85°C T5 -40°C +70°C T6 -40°C + <b>isco-concept</b> the FISCO Concept allows interconnection of intrinsically safe apparatus to associated he criteria for interconnection is that the voltage (Ui or Vmax), the current (Ii or Imax) afe, considering faults, must be equal or greater than the voltage (Uo or Voc or Vt), th ssociated apparatus, considering faults and applicable factors. In addition, the maxin armination) connected to the fieldbus must be less than or equal to 5 nF and 10 µH re ne each segment only one active device, normally the associated apparatus is allowed he voltage Uo (or Voc or Vt) of the associated apparatus has to be limited to the rang they are not allowed to provide energy to the system, except to a leakage current of ieparately powered equipment needs a galvanic isolation to assure that the intrinsicall the cable used to interconnect the devices has to meet the following values: oop resistance R': 15 150 $\Omega$ /km, inductance L': 0.4 1 mH/km capacitance C': 10° C' = C' line/line + 0.5 C' line/screen, if both lines are floating or C' = C' line/line + C' line/screen, if the screen is connected to one line ength of spur cable: 30 m length of trunk cable: 1 km length of splice: 1 m at each end of the trunk cable an approved infallible line termination with the following R = 90 100 $\Omega$ C = 0 2.2 $\mu$ F. The of the allowed terminations might already be integrated in the associated apparatus the number of passive devices connected to the bus segment is not limited due to I.S. able and all spur cables), the inductance and capacitance of the cable will not impair to the number of passive devices connected to the bus segment is not limited due to I.S. able and all spur cables), the inductance and capacitance of the cable will not impair to the number of passive devices connected to the bus segment is not limited due to I.S. able and all spur cables), the inductance and capacitance of the cable will not impair to the state of the cable will not imp	apparatus no nd the power current (lo oi um unprotect pectively. o provide the of 14V to 24' f 50 μA for ea safe fieldbus 0 200 nF/ki parameters is s.	(Pi or Pmax) which intrinsically safe apparatus can rece Isc or It) and the power (Po or Pmax) levels which can ad capacitance (Ci) and inductance (Li) of each apparat necessary energy for the fieldbus system. If d.c. All other equipment connected to the bus cable has the connected device. circuit remains passive.	be delivered by the us (other than the as to be passive, meaning							PROD
-	NTRINSICALLY SAFE         Class I / Div. 1 / Groups AE           CSA certified associated apparatus must meet the following requirements:         Uo or Voc or Vt $\leq$ Ui (Vmax) and lo or Isc or It $\leq$ Ii (Imax) and Po or Pmax $\leq$ Pi (Pr							ату	PART	NO.	
- - - -	The maximum non-hazardous area voltage must not exceed 250 V. The installation must be in accordance with the Canadian Electrical Code. Be aware of multiple earthing of screen. The screen must be connected in accordan The polarity for connecting PA+ (1) and PA- (2) is of no importance due to an interna		an Electrical Code.					SIMILAR T FIRST USI	ED IN	-	THIS E THE F TRAN
1 - -	IONINCENDIVE         Class I / Div. 2 / Groups AB           Intrinsic safety barrier not required. Vmax ≤ 35 V DC.           Warning: Do not disconnect equipment unless power has been switched off or the a           Nonincendive field wiring installation           The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive	ea is known to		Apparatus or Associated	U	SPEC	THERWISE IFIED CONS ARE	CHECKED	RREIRO	RTT30 DATE 12 NOV 09	SALE
•	Intrinsically Safe Apparatus or Associated Apparatus not specifically examined in co Voc $\leq$ Vmax, Ca $\geq$ Ci + Ccable, La $\geq$ Li + Lcable. Transmitter Nonincendive Field Wiring parameters are as follows: Ui or Vmax $\leq$ 35 For these current controlled circuits, the parameter Imax is not required and need no Associated Apparatus.	nbination as a / DC Ci ≤ 5 ເ	system using any of the wiring methods permitted for $\tau$ F $\ \mbox{Li} \le 10 \ \mu\mbox{F}$	inclassified locations, when	A	IN IN OLERANC NGLES	CHES C		RREIRO RREIRO	12 NOV 09 12 NOV 09	TITLE
-	Warning: Explosion Hazard- Do not disconnect equipment unless power has been s The transmitter is suitable to be installed according the FNICO concept.	vitched off or t	ne area is known to be non hazardous		1	ECIMALS	.02	SSUE APPRO		12 NOV 09	

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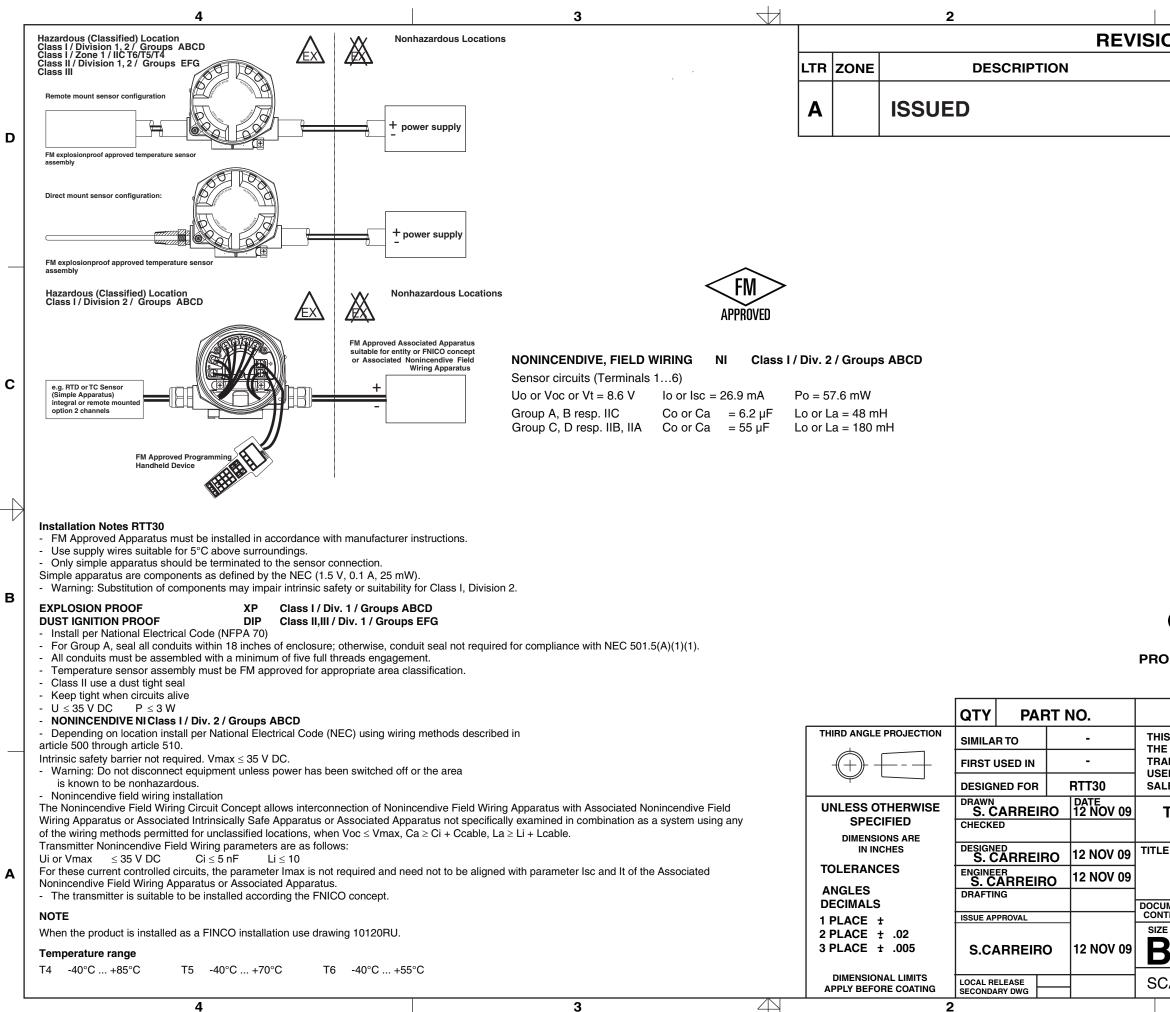


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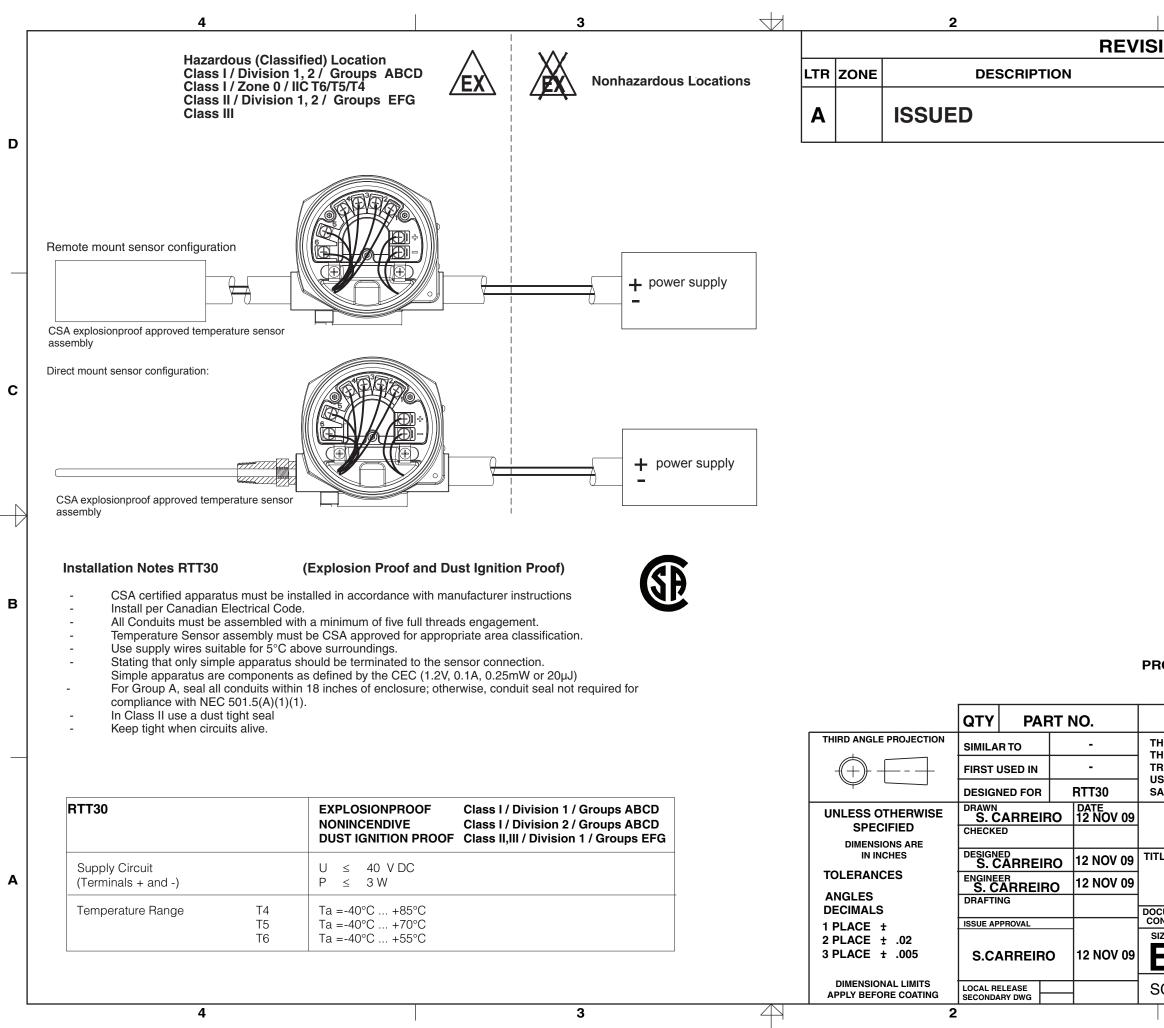
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c	Installation Notes RTT30      Installation Notes RTT30      FM Approved Apparatus must be installed in accordance with manufacturer installed in scordance with manufacturer installed in score installed in the sensor connection. Simple apparatus are components as defined by the NEC (1.5 V, 0.1 A, 25 mW - Warning: Substitution of components may impair intrinsic safety or suitability for RTT30 is suitable for the connection to a Profibus PA/ Foundation Fieldbus system Temperature range	V). or Class I, Division 2. m according to the Entity- or FISCO-concept.							
N	T4 $-40^{\circ}$ C $+85^{\circ}$ CT5 $-40^{\circ}$ C $+70^{\circ}$ CT6 $-40^{\circ}$ CNONINCENDIVE, FIELD WIRINGNIClass I / Div. 2 / GroSensor circuits (Terminals 16)Uo or Voc or Vt = 8.6 VIo or Isc= 26.9 mAPo = 57.6 mVUo or Voc or Vt = 8.6 VIo or Isc= 26.9 mAPo = 57.6 mVGroup A, B resp. IICCo or Ca= 6.2 $\mu$ FLo or La = 48Group C, D resp. IIB, IIACo or Ca= 55 $\mu$ FLo or La = 18	w B mH							
B	<b>FISCO-Concept</b> The FISCO Concept allows interconnection of intrinsically safe apparatus to associated appar not specifically examined in such combination. The criteria for interconnection is that the voltage (Ui or Vmax), the current (Ii or Imax) and the safe, considering faults, must be equal or greater than the voltage (Uo or Voc or Vt), the curre associated apparatus, considering faults and applicable factors. In addition, the maximum un connected to the fieldbus must be less than or equal to 5 nF and 10 µH respectively. In each segment only one active device, normally the associated apparatus, is allowed to pro- The voltage Uo (or Voc or Vt) of the associeted apparatus has to be limited to the range of 1 they are not allowed to provide energy to the system, except to a leakage current of 50 µA for Separately powered equipment needs a galvanic isolation to assure that the intrinsically safe The cable used to interconnect the devices has to meet the following values: loop resistance R': 15 150 $\Omega$ /km, inductance L': 0.4 1 mH/km capacitance C': 80 2 C' = C' line/line + 0.5 C' line/screen, if both lines are floating or C' = C' line/line + C' line/screen, if both lines are floating or C' = C' line/line + C' line/screen, if both lines are floating or	the power (Pi or Pmax) which intrinsically safe apparatus can receive and rema rrent (Io or Isc or It) and the power (Po or Pmax) levels which can be delivered in inprotected capacitance (Ci) and inductance (Li) of each apparatus (other than rovide the necessary energy for the fieldbus system. 14V to 24V d.c. All other equipment connected to the bus cable has to be passi for each connected device. The fieldbus circuit remains passive. 200 nF/km	by the the termination)						PROE
	At each end of the trunk cable an approved infallible line termination with the following paran $R = 90 \dots 100 \Omega$ C = 0 2.2 $\mu$ F. One of the allowed terminations might already be integrated in the associated apparatus.	neters is suitable:			[	QTY F		10	
	The number of passive devices connected to the bus segment is not limited due to I.S.reaso cable and all spur cables), the inductance and capacitance of the cable will not impair the int		length of trunk	THIRD ANGLE	PROJECTION	SIMILAR TO		-	THIS (
	INTRINSICALLY SAFE     IS     Class I / Div. 1 / Groups ABCD       - FM Approved associated apparatus must meet the following requirements: Uo or Voc or Vt ≤ Ui (Vmax) and Io or Isc or It ≤ Ii (Imax) and Po or Pmax ≤ Pi (Pmax)       - The maximum non-hazardous area voltage must not exceed 250 V.       The installation must be in exceed appare with the National Electrical Code NERA 70 and AD					FIRST USED I DESIGNED FO	DR I	- RTT30	THE F TRAN USED SALE
	<ul> <li>The installation must be in accordance with the National Electrical Code NFPA 70 and AN</li> <li>Be aware of multiple earthing of screen. The screen must be connected in accordance wit</li> <li>The polarity for connecting PA+ (1) and PA- (2) is of no importance due to an internal red</li> </ul>	ith National Electrical Code.		SPEC	THERWISE	S. CARR CHECKED	EIRO	12 NOV 09	Tł
	NONINCENDIVE NI Class I / Div. 2 / Groups ABCD - Depending on location install per National Electrical Code (NEC) using wiring methods de	escribed in article 500 through article 510.			ONS ARE CHES	DESIGNED S. CARR	EIRO	12 NOV 09	TITLE
Α	Intrinsic safety barrier not required. Vmax ≤ 35 V DC. - Warning: Do not disconnect equipment unless power has been switched off or the area is				CES	ENGINEER S. CARRI		12 NOV 09	
	<ul> <li>Nonincendive field wiring installation</li> <li>The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Fi Intrinsically Safe Apparatus or Associated Apparatus not specifically examined in combina</li> </ul>			DECIMALS	ł	DRAFTING			
	Voc $\leq$ Vmax, Ca $\geq$ Ci + Ccable, La $\geq$ Li + Lcable. Transmitter Nonincendive Field Wiring parameters are as follows: Ui or Vmax $\leq$ 35 V DC For these current controlled circuits, the parameter Imax is not required and need not to b Associated Apparatus.	C Ci $\leq$ 5 nF Li $\leq$ 10 $\mu$ F be aligned with parameter Isc and It of the Associated Nonincendive Field Wirir		1 PLACE 2 PLACE 3 PLACE	± .02	S.CARRE		12 NOV 09	SIZE B
	<ul> <li>Warning: Explosion Hazard- Do not disconnect equipment unless power has been switched</li> <li>The transmitter is suitable to be installed according the FNICO concept.</li> </ul>	ed off or the area is known to be non hazardous			NAL LIMITS DRE COATING	LOCAL RELEASE SECONDARY DWG			SCA

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Hazardous (Classified) Location Class I / Division 1 / Groups ABCD Class I / Zone 0 / Ex ia IIC			/ISIONS	REVISED BY	DATE
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e.g. RTD or TC Sensor (Simple Apparatus) integral or remote mounted option 2 channels					
CSA Approved Programming Handheld Device					
Temperature range       Image: Comparison of the state o					
INTRINSICALLY SAFE       Class I / Div. 1 / Groups ABCD         NONINCENDIVE, FIELD WIRING       Class I / Div. 2 / Groups ABCD					
Sensor circuits (Terminals 16)Uo or Voc or Vt = 7.6 VIo or Isc = 29.3 mAPo = 55.6 mWGroup A, B resp. IICCo or Ca = 10.4 $\mu$ FLo or La = 40 mHGroup Cresp. IIBCo or Ca = 160 $\mu$ FLo or La = 150 mHGroup Dresp. IIACo or Ca = 1000 $\mu$ FLo or La = 300 mH					
<ul> <li>Installation Notes RTT30</li> <li>CSA approved apparatus must be installed in accordance with manufacturer's instructions.</li> <li>Use supply wires suitable for 5°C above surroundings.</li> <li>Stating that only simple apparatus should be terminated to the sensor connection. Simple apparatus is defined as a device that will neither generate nor store more than 1.2V, 0.1A, 0.25mW</li> </ul>					
or 20µJ. Examples are Thermocouples or RTDs.         INTRINSICALLY SAFE       Class I / Div. 1 / Groups ABCD         - Installation should be in accordance with Canadian Electrical Code (CEC).       - CSA Approved Associated Apparatus must meet the following parameters:         Uo $\leq$ Ui       Io $\leq$ Ii       Po $\leq$ Pi       Ca $\geq$ Ci + Ccable       La $\geq$ Li + Lcable         Transmitter entity parameters are as follows:       Ui or Vmax $\leq$ 30 V DC       Ci = 5.3 nF         Ii or Imax $\leq$ 300 mA       Li = 0         Pi $\leq$ 1000 mW         - Voc + Voc of Handheld device < Vmax, Isc + Isc of Handheld device < Imax,			CAUT ALL CHANGES R PRODUCT SAFETY ENGIN S. CARREIRO 12 N	EQUIRE EER APPROVAL.	
Po + Po of Handheld device < Pi, Ca > Ci + Ccable + Ci of Handheld device, La > Li + Lcable + Li of Handheld device, when Programming Handheld device is used.		QTY PART NO.	DESCRIP	TION	ITEM
<ul> <li>Warning: Substitution of compents may impair intrinsic safety.</li> <li>NONINCENDIVE Class I / Div. 2 / Groups ABCD</li> <li>Intrinsic safety barrier not required. Vmax ≤ 40 V DC.</li> <li>Warning: Do not disconnect equipment unless power has been switched off or the area is known to be nonhazardous.</li> </ul>		SIMILAR TO - FIRST USED IN - DESIGNED FOR RTT30	THIS DRAWING AND SPECIFICATIO THE FOXBORO COMPANY AND MU TRANSFERRED TO ANY THIRD PAF USED IN CONNECTION WITH THE M SALE OF ITEMS WITHOUT WRITTE	IST NOT BE LOANED OR ( RTY OR REPRODUCED, CO MANUFACTURE, PURCHAS	OTHERWISE OPIED, OR ASE, OR
<ul> <li>Nonincendive field wiring installation</li> <li>The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Field Wiring</li> <li>Apparatus with Associated Nonincendive Field Wiring Apparatus or Associated Intrinsically Safe Apparatus</li> <li>or Associated Apparatus not specifically examined in combination as a system using any of the wiring</li> </ul>	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE	DRAWN S. CARREIRO 12 NOV 09 CHECKED	THE FOXBORO COMI FOXBORO, MA, U.S.A		ORO [®]
methods permitted for unclassified locations, when $Voc \le Vmax$ , $Ca \ge Ci + Ccable$ , $La \ge Li + Lcable$ Transmitter Nonincendive Field Wiring parameters are as follows: Ui or $Vmax \le 40 V DC$ Ci = 5.3 nF Li = 0 li or Imax = see following note below For these current controlled circuit, the parameter Imax is not required and need not to be aligned with	IN INCHES TOLERANCES ANGLES	DESIGNED S. CARREIRO         12 NOV 09           ENGINEER S. CARREIRO         12 NOV 09           DRAFTING         12 NOV 09	CSA INTRINSICAL SA	ROL DRAWING, AFETY, NONINCE	ENDIVE
parameter Isc and It of the Associated Nonincendive Field Wiring Apparatus or Associated Apparatus Functional ratings These ratings do not supersede Hazardous Location values Unom ≤ 40 V DC Inom ≤ 4 to 20 mA	DECIMALS 1 PLACE ± 2 PLACE ± .02 3 PLACE ± .005	ISSUE APPROVAL S.CARREIRO 12 NOV 09	B 23439	DWG. NO.	20R1
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