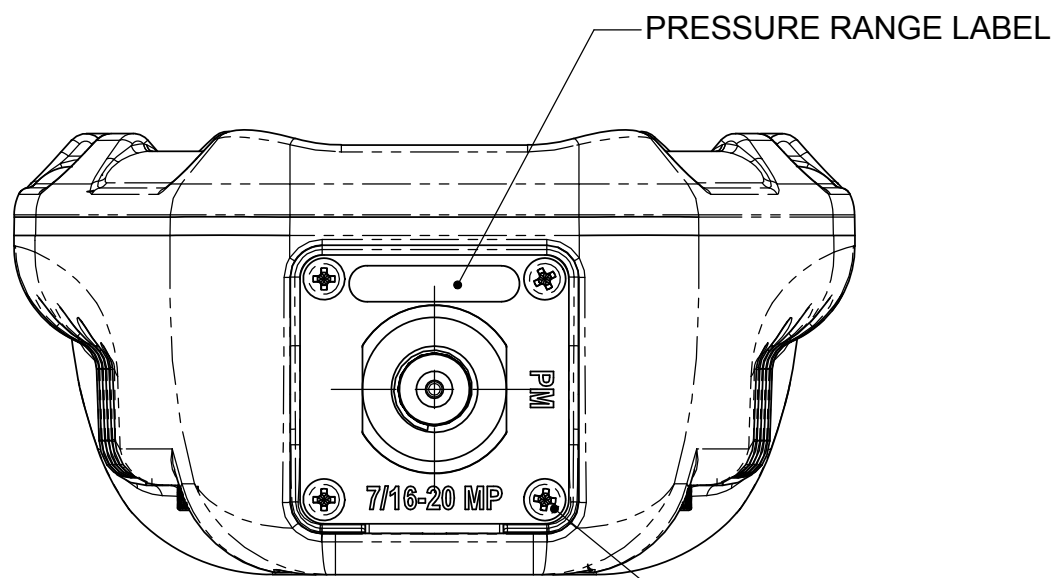
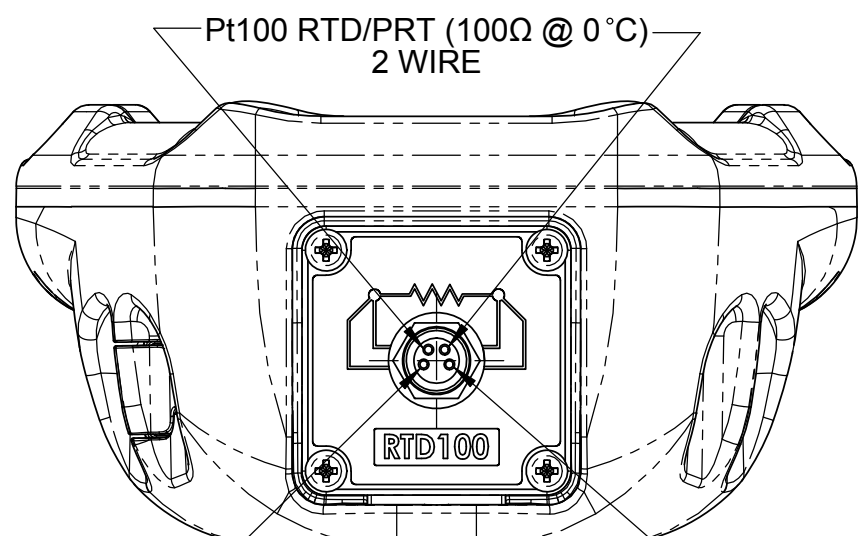


REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/19/2009	ON FILE
B	CLARIFIED SPECIFICATIONS	8/30/10	ON FILE
C	ADDED 15KPSI PM & VACUUM SPEC	12/15/11	ON FILE
D	ADDED MA20+	4/4/2012	ON FILE
E	UPDATED % OF READING	12/8/2015	ON FILE

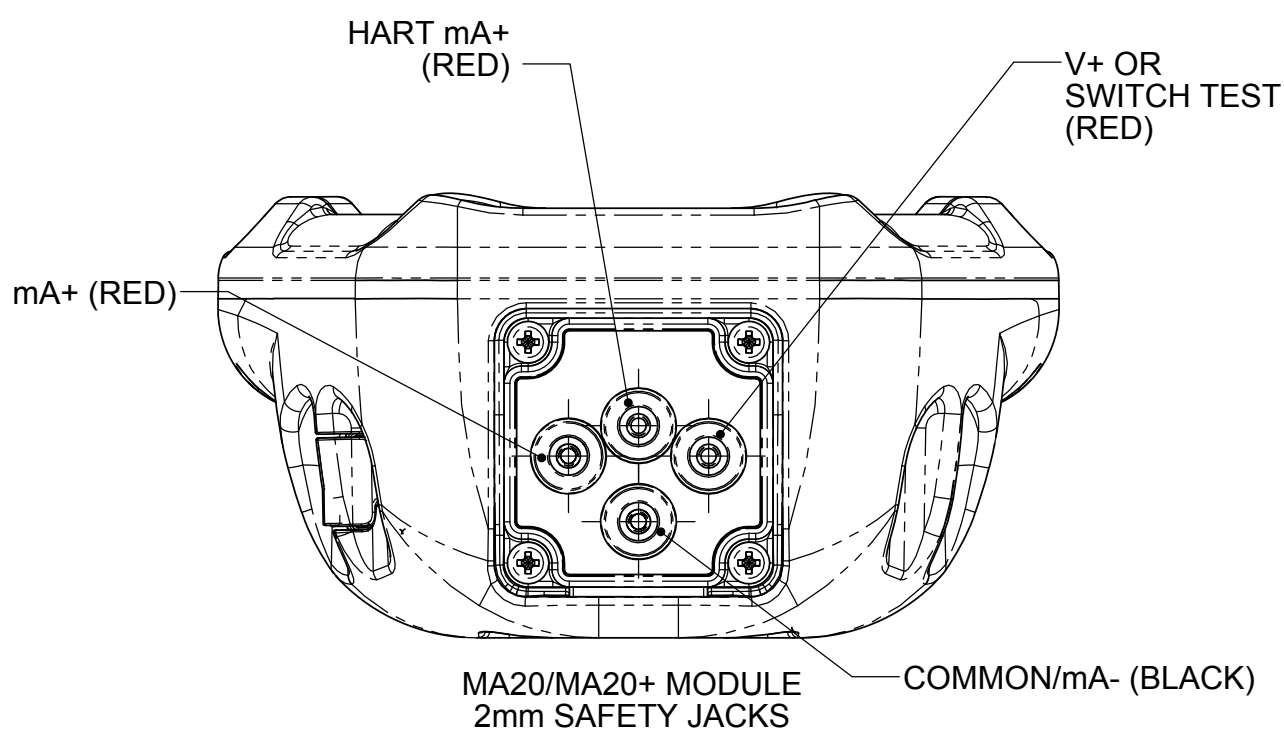


PRESSURE RANGE LABEL  
M3 PHILLIPS CAPTIVE SCREWS  
4 PLACES PER MODULE

CRYSTAL CPF SYSTEM:  
MEDIUM PRESSURE FEMALE (MPF)  
(1/4" MEDIUM PRESSURE TUBE SYSTEM  
WITH 7/16"-20 INTERNAL THREADS)



Pt100 RTD/PRT (100Ω @ 0°C)  
2 WIRE  
3 WIRE NODE  
4 WIRE NODE  
RTD100 MODULE  
M8 RECEPTACLE  
(PROTECTIVE CAP REMOVED)



HART mA+ (RED)  
V+ OR SWITCH TEST (RED)  
mA+ (RED)  
COMMON/ma- (BLACK)  
MA20/MA20+ MODULE  
2mm SAFETY JACKS

**SPECIFICATIONS**

**CHASSIS:** ENCLOSURE: POLYESTER/POLYCARBONATE BLEND, POLYESTER LABELS, AND COATED KEYS OVER MEMBRANE SWITCH PANEL. PROPRIETARY POLYPROPYLENE BLEND PROTECTIVE BOOT.

**ENCLOSURE RATING:** IP67 (1m IMMERSION FOR 30 MIN) PER IEC 60529

**WEIGHT:** 1.5 LBS [680g] FOR TYPICAL CONFIGURATION (ONE PM, RTD100 MODULE, 4AA BATTERY MODULE AND PROTECTIVE BOOT )

**OPERATING AND COMPENSATED TEMPERATURE RANGE:** -20°C TO +50°C (4°F TO 122°F).

**STORAGE TEMPERATURE RANGE:** -40°C TO +75°C (-40°F TO 167°F).

**CERTIFICATIONS:** [RATINGS SUBJECT TO BATTERY TYPE USED - SEE POWER MODULE SPECIFICATIONS]  
ATEX: II 1G Ex ia IIB T4 Ga  
IECEX SCHEME: II 1G Ex ia IIB T4 Ga

**PRESSURE MODULE (PM):** **PRESSURE ACCURACY:** 30 - 110% OF FULL SCALE ±(0.025% OF READING) OR ±(0.05% OF READING)  
0 - 30% OF FULL SCALE ±(0.0075% OF FULL SCALE) OR ±(0.015% OF FULL SCALE)

**VACUUM ACCURACY:** FOR 300 PSI, 30 bar, 3 MPa, 30 kg/cm2, AND LOWER PRESSURE MODULES:  
±(0.06% OF FULL SCALE), WHERE F.S. = -14.5 PSIG, -1.0 bar, -100.0 kPa, -1.0 kg/cm2

**PRESSURE RANGE:** SEE PRESSURES AND RESOLUTIONS CHART

**PRESSURE CONNECTION:** CRYSTAL CPF SYSTEM: MEDIUM PRESSURE FEMALE (MPF) (1/4" MEDIUM PRESSURE TUBE SYSTEM WITH 7/16"-20 INTERNAL THREADS)

**PRESSURE PORT MEDIA COMPATABILITY:** LIQUID AND GASES COMPATIBLE WITH 316L SS SENSOR.

**RTD100 MODULE:** **ACCURACY:** ± (0.015% OF READING + 0.02Ω)  
**RANGE:** 0-400 OHMS  
**RESOLUTION:** 0.01 Ω

**MA20 MODULE:** **CURRENT (mA) INPUT:**  
**ACCURACY:** ±(0.015% OF READING + 0.002mA)  
**RANGE:** 0-25 mA (mA20)  
0-55 mA (mA20+)  
**MAXIMUM ALLOWABLE CURRENT:** 55mA  
**RESOLUTION:** 0.001mA OR 0.01%  
**UNITS:** mA, % 4-20, % 10-50  
**INPUT RESISTANCE:** <17.2Ω  
**VOLTAGE BURDEN @ 20mA:** < 0.35V  
**VOLTAGE BURDEN @ 50mA:** < 0.86V  
**HART RESISTANCE:** 250Ω

**VOLTAGE (VDC) INPUT:**  
**ACCURACY:** ±(0.015% OF READING + 0.002VDC)  
**RANGE:** 0-28VDC  
**MAXIMUM ALLOWABLE VOLTAGE:** 30VDC  
**RESOLUTION:** 0.001VDC  
**UNITS:** VDC

**SWITCH TEST:**  
**SWITCH TYPE:** DRY CONTACT  
**CLOSED STATE RESISTANCE:** < 10Ω  
**OPEN STATE RESISTANCE:** > 10MΩ

**POWER MODULE:** **4AA:** FOUR AA (1.5V) ALKALINE BATTERIES. REFER TO APPROVED BATTERY TABLE.  
USE OF ANY OTHER BATTERY VOIDS INTRINSIC SAFETY RATINGS

SPECIFICATIONS INCLUDE ALL EFFECTS OF LINEARITY, HYSTERESIS, REPEATABILITY, TEMPERATURE, AND STABILITY FOR ONE YEAR. SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

APPROVED BATTERY TABLE		
APPROVED BATTERY	Ta=	MARKING
RAYOVAC MAXPLUS 815	-20°C TO +50°C	Ex ia IIB T4 Ga
DURACELL MN1500	-20°C TO +45°C	
ENERGIZER E91, EN91	-20°C TO +50°C	Ex ia IIB T3 Ga
DURACELL MN1500		

PRESSURES AND RESOLUTIONS																
	AVAILABLE PRESSURE MODULES					AVAILABLE UNITS AND DISPLAYED RESOLUTION										
	PSI	bar	kPa	MPa	kg/cm2	PSI	kg/cm2	in Hg	in H2O	mmHg	mmH2O	kPa	bar	mbar	MPa	
0.025% OF RDG	30					0.001	0.0001	0.001	0.01	0.01	1	0.01	0.0001	0.1		
		3				0.001	0.0001	0.001	0.01	0.01	1	0.01	0.0001	0.1		
			300									0.01	0.0001	0.1		
				1								0.01	0.0001	0.1	0.00001	
					10		0.001	0.0001	0.01	0.1	0.1	1	0.01	0.0001	0.1	0.00001
						30	0.01	0.001	0.01	0.1	0.1	1	0.1	0.001	1	0.0001
0.05% OF RDG				3								0.1	0.001	1	0.0001	
					30	0.01	0.001	0.01	0.1	0.1	1	0.1	0.001	1	0.0001	
						0.1	0.001	0.1				0.1	0.001	1	0.0001	
				10								0.1	0.001	1	0.0001	
					100	0.1	0.001	0.1				0.1	0.001	1	0.0001	
						0.1	0.01	0.1				1	0.01	1	0.001	
				30								1	0.01	1	0.001	
					300	0.1	0.01	0.1				1	0.01	1	0.001	
						1	0.01					1	0.01	1	0.001	
				10000			1	0.01				1	0.01	1	0.001	
					700		1	0.01				1	0.01	1	0.001	
						70						1	0.01	1	0.001	
				700		1	0.01				1	0.01	1	0.001		
					1000	1	0.01				1	0.01	1	0.001		

DIFFERENTIAL PRESSURE MEASUREMENT UNCERTAINTIES								
FULL SCALE OF BOTH SENSORS								
The greater of (±)								
PSI	bar	kPa	MPa	kg/cm2	PSI	mbar	inH2O	mmH2O
30	3	300		3	0.0005	0.04	0.014	0.4
100	10		1	10	0.0015	0.1	0.04	1.0
300	30		3	30	0.005	0.4	0.14	4.0
1 000	100		10	100	0.02	1.0	0.4	10.0
3 000	300		30	300	0.05	4.0	1.4	
10 000	700		70	700	0.2	10.0	4.0	
15 000	1 000		100	1 000	0.3	15.0	6.0	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	
FRACTIONS	DECIMALS ANGLES
XXX ± .005	
.XXXX ± .001	

**CRYSTAL** (805) 595-5477  
engineering corporation www.crystalengineering.net

**VISION, PRESSURE RECORDER**

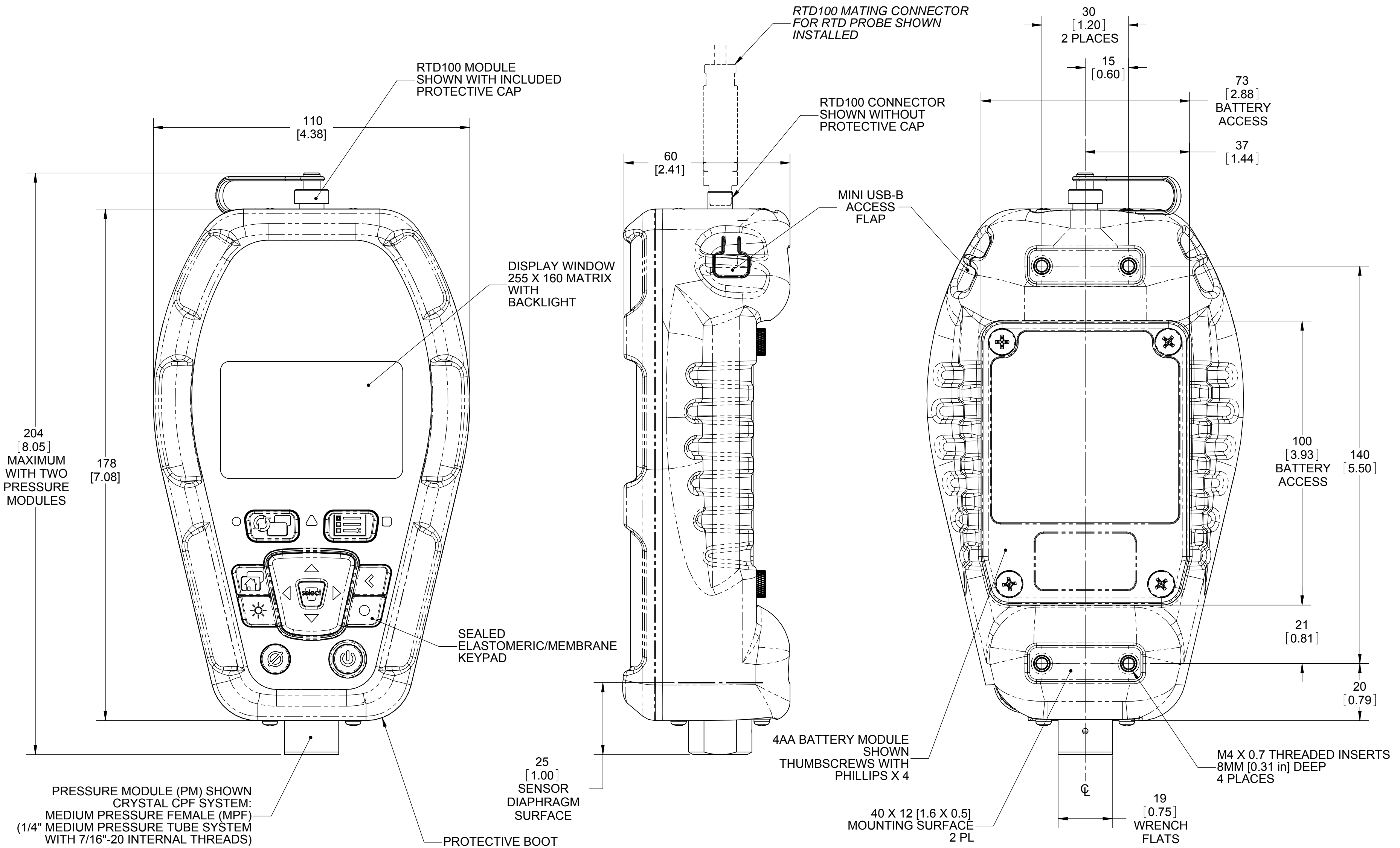
APPROVALS	DATE
DRAWN M.J.Cain	8/19/09
CHECKED D.Porter	8/30/10
MFG. ENGR. T.Leger	8/30/10
Q.A. D.Porter	8/30/10

SCALE: 1:2 **C** DRAWING NO. 4121 REV E

DO NOT SCALE DRAWING SHEET 1 OF 2

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
-	See Sheet 1	-	-



ALL DIMENSIONS ARE IN MILLIMETERS [INCHES]  
REFER TO SHEET 1 FOR SPECIFICATIONS

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TOLERANCES ARE:  
FRACTIONS DECIMALS ANGLES  
XXX ± .005  
.XXXX ± .001

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**VISION, PRESSURE RECORDER**

APPROVALS	DATE	SCALE: 1:2	SIZE <b>C</b>	DRAWING NO. <b>4121</b>	REV <b>E</b>
DRAWN M.J.Cain	8/19/09				
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