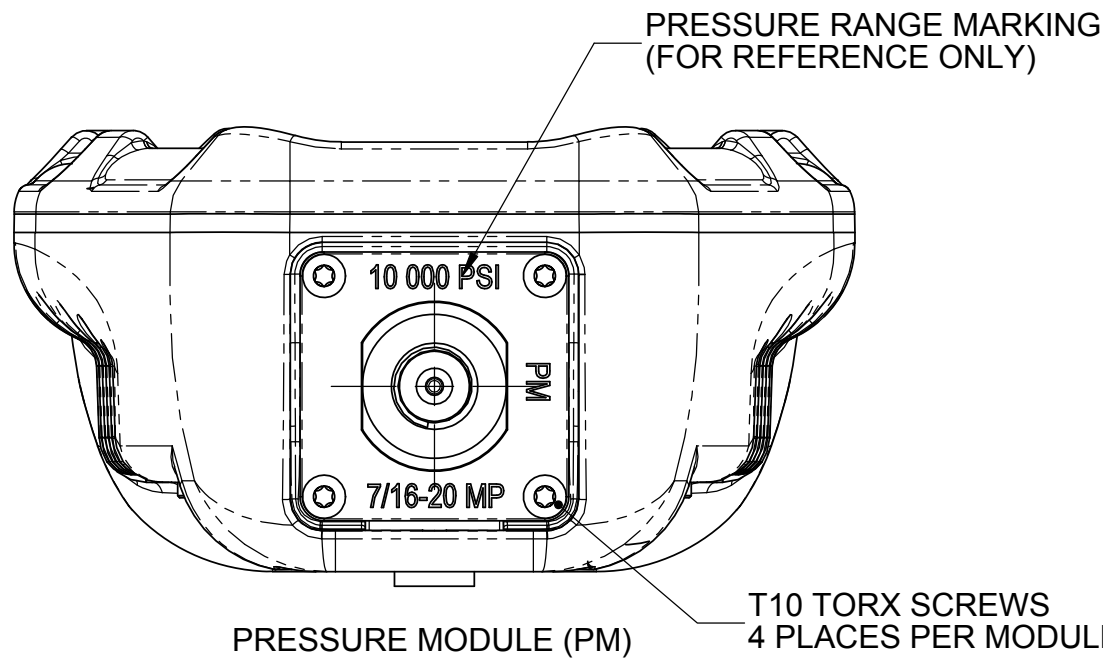
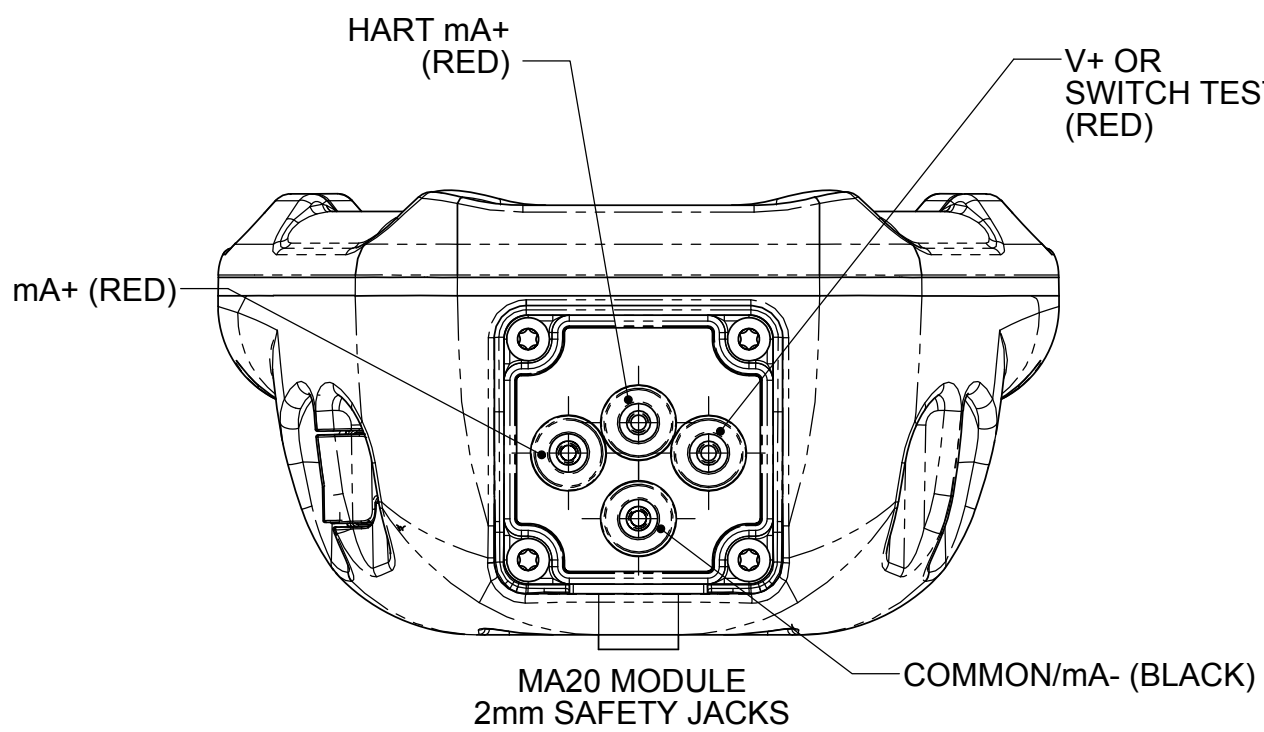
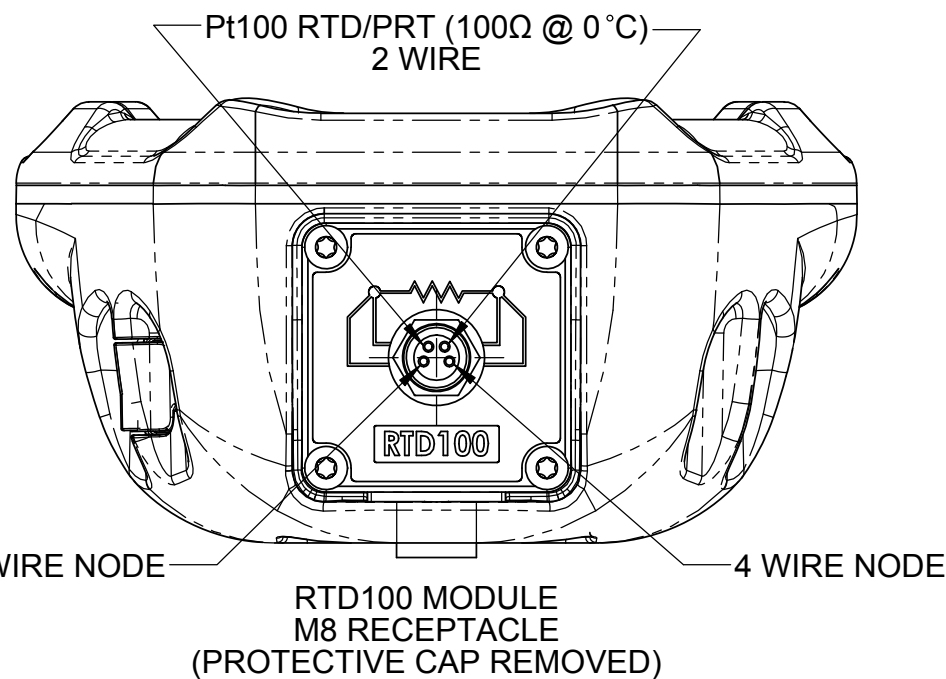


REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/19/2009	ON FILE
B	CLARIFIED SPECIFICATIONS	8/30/10	ON FILE
C	ADDED 15KPSI PM & VACUUM SPEC	12/15/11	ON FILE



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



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 - 100% OF FULL SCALE ±(0.025% OF READING), ±(0.05% OF READING), OR ±(0.1% OF READING)
0 - 30% OF FULL SCALE ±(0.0075% OF FULL SCALE), ±(0.015% OF FULL SCALE), OR ±(0.03% OF FULL SCALE)

VACUUM ACCURACY: FOR 300 PSI, 30 bar, 3 MPa, 30 kg/cm2, AND LOWER PRESSURE MODULES:
±(0.06% OF FULL SCALE) (TYPICAL), WHERE F.S. = -14.5 PSIG, -1.0 bar, -99.9 kPa, -1.02 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 COMPATIBILITY: 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
MAXIMUM ALLOWABLE CURRENT: 55mA
RESOLUTION: 0.001mA OR 0.01%
UNITS: mA, % 4-20
INPUT RESISTANCE: <17.2Ω
VOLTAGE BURDEN @ 20mA: <0.35VDC
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

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	
				3		0.001	0.0001	0.001	0.01	0.01	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
				1		0.001	0.0001	0.01	0.1	0.1	1	0.01	0.0001	0.1	0.00001
0.05% OF RDG	300				10	0.01	0.001	0.01	0.1	0.1	1	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
			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
			100			0.1	0.001	0.1				0.1	0.001	1	0.0001
				10		0.1	0.001	0.1				0.1	0.001	1	0.0001
0.1% OF RDG	1000				100	0.1	0.001	0.1				0.1	0.001	1	0.0001
		100				0.1	0.001	0.1				0.1	0.001	1	0.0001
			300			0.1	0.001	0.1				0.1	0.001	1	0.0001
				30		0.1	0.001	0.1				0.1	0.001	1	0.0001
			1000			1	0.01	0.1				1	0.01	1	0.001
			700			1	0.01	0.1				1	0.01	1	0.001
0.1% OF RDG	15000				1000	1	0.01					1	0.01	1	0.001
		1000				1	0.01					1	0.01	1	0.001
			70			1	0.01					1	0.01	1	0.001
				70		1	0.01					1	0.01	1	0.001
			100			1	0.01					1	0.01	1	0.001
				100		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	% of DP Reading
30	3	300		3	0.0005	0.04	0.014	0.4	0.025%
100	10		1	10	0.0015	0.1	0.04	1.0	0.025%
300	30		3	30	0.005	0.4	0.14	4.0	0.025%
1 000	100		10	100	0.02	1.0	0.4	10.0	0.05%
3 000	300		30	300	0.05	4.0	1.4		0.05%
10 000	700		70	700	0.2	10.0	4.0		0.1%
15 000	1 000		100	1 000	0.3	15.0	6.0		0.1%

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

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

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

VISION, PRESSURE RECORDER

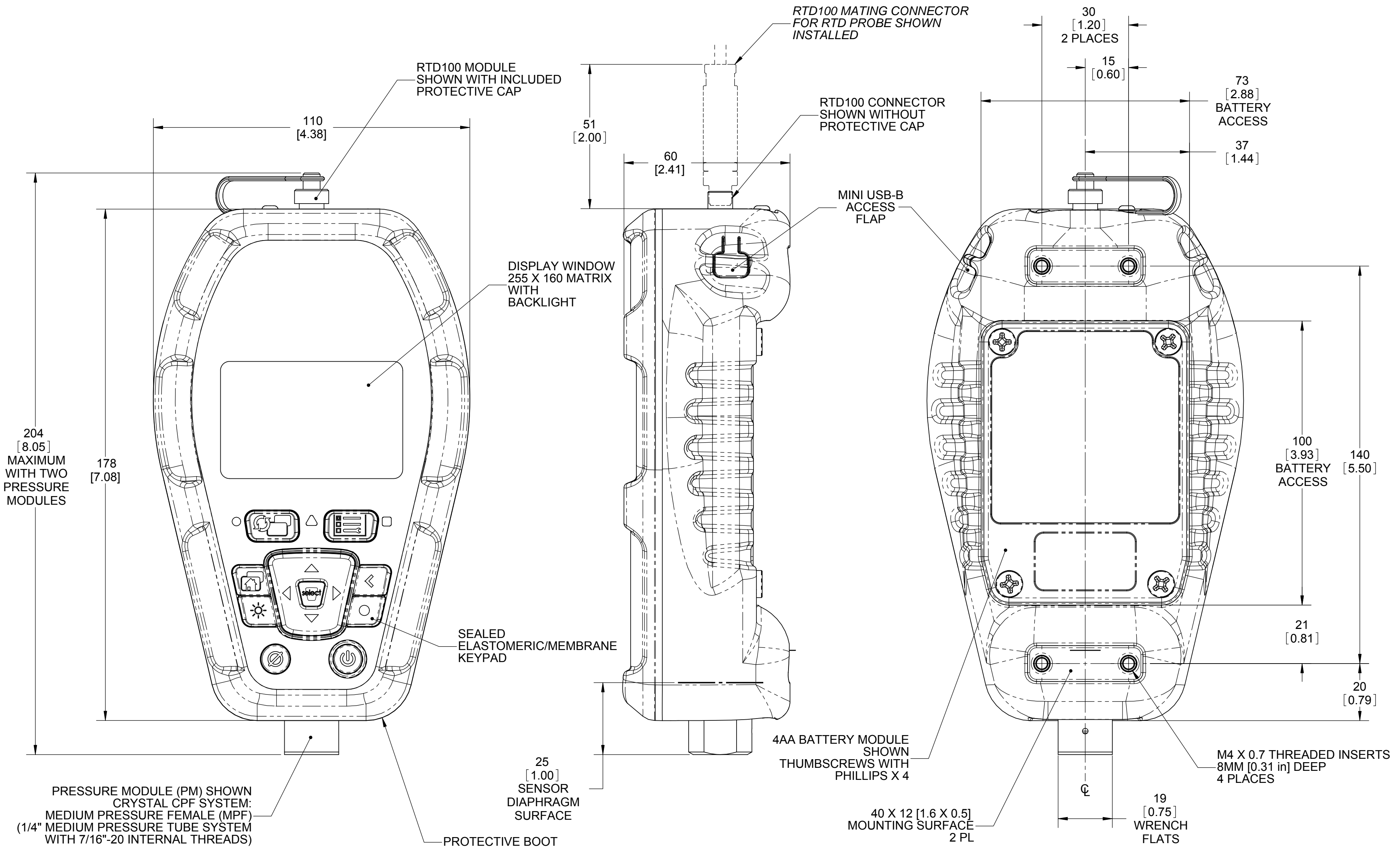
SCALE: 1:2

SIZE **C** DRAWING NO. **4121** REV **C**

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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FRACTIONS DECIMALS ANGLES
XXX ± .005
.XXXX ± .001

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VISION, PRESSURE RECORDER

APPROVALS	DATE	SCALE: 1:2	SIZE C	DRAWING NO. 4121	REV C
DRAWN M.J.Cain	8/19/09				
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MFG. ENGR. T.Leger	8/30/10				
Q.A. D.Porter	8/30/10	DO NOT SCALE DRAWING	SHEET 2 OF 2		