

**THIS IS CONFIDENTIAL AND PROPRIETARY INFORMATION BELONGING TO ABB INC.**

REVISIONS					
REV	ACTION	DRAWN	CHECKED	APPROVED	DATE
AA	L21138	KASTNER	KASTNER	ADAMS	08/10/27


1.0 NOTES:


1.1 IN ORDER TO COMPLY WITH NRTL/C CERTIFICATION FOR CLASS I, DIVISION 2, HAZARDOUS AREA. ALL DEVICES MUST BE INSTALLED ACCORDING TO THIS DRAWING AND THE "NATIONAL ELECTRICAL CODE" NFPA 70 OR THE "CANADIAN ELECTRICAL CODE" C22 PART 1.

 1.2 WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

 1.3 WARNING - EXPLOSION HAZARD - DO NOT USE CONNECTOR UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS.


 1.4 CUSTOMER SUPPLIED EQUIPMENT MUST NOT USE OR GENERATE MORE THAN 250 V WITH RESPECT TO GROUND.


 1.5 CUSTOMER SUPPLIED EQUIPMENT MUST BE CERTIFIED FOR USE IN THE CLASSIFIED HAZARDOUS LOCATION IN WHICH IT IS INSTALLED.


 1.6 CUSTOMER SUPPLIED EQUIPMENT MUST BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND THE "NATIONAL ELECTRICAL CODE" NFPA 70 OR THE "CANADIAN ELECTRICAL CODE" C22 PART 1.

 1.7 WIRING BY FIELD PERSONNEL.


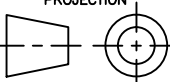
1.8 ALL CONDUIT FITTINGS/CORD CONNECTORS AND ENCLOSURE OPENINGS USED BY CUSTOMER MUST BE RATED AS NEMA/TYPE 3R.

 1.9 THE 6990 MODEL HAS AN OPTIONAL CONFIGURATION CONTAINING TWO ELECTRONIC BOARDS AND THESE RELATED DEVICES (STANDARD OR OPTIONAL) INDICATED FOR THE SINGLE BOARD UNIT.

 1.10 ALL RADIOS MUST BE USED ACCORDING TO MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION IN CLASSIFIED HAZARDOUS LOCATIONS (CLASS I, DIVISION 2, GROUP CD).

 1.11 15VDC MAXIMUM ALLOWED DC SUPPLY VOLTAGE MEASURED AT CHARGER INPUT TERMINAL OF CONTROLLER BOARD.

END PRODUCT APPROVED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES.  
NO CHANGES ALLOWED WITHOUT APPROVAL OF AUTHORIZED PERSON(S)  
IDENTIFIED BY DRAWING 2101982-AI.

ASSEMBLY/QUANTITY	ITEM NO.	PART NUMBER	DESCRIPTION	REF/ZONE DESIG MATERIAL	UNIT MEAS
001					
DO NOT SCALE DRAWING	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		PRODUCT LINE TOTALFLOW®	LEVEL 3	 TOTALFLOW Products
THIRD ANGLE PROJECTION	TOLERANCES ARE: DECIMAL .XX ± -- .XXX ± --		DESIGN D. ADAMS	DATE 08/10/27	
	ANGULAR ± --		DRAWN A. KASTNER	DATE 08/10/27	TITLE CERTIFICATION DRAWING
	BREAK ALL SHARP CORNERS AND EDGES DIMENSIONS APPLY BEFORE FINISH		CHECKED A. KASTNER	DATE 08/10/27	CONTROL DWG, 6895 & 6990 CONTROLLER, DIV 2, C/US
			APPROVED J. BUSHNELL	DATE 08/10/27	C.D.
			SCALE NONE	SIZE B	DOC TYPE CD
			DRAWING NO. 2103796	REV AA	SHEET 1 of 12



1 CERTIFICATION

Y 6895: CLASS I, DIV 2, GRP CD, T3C, T<sub>AMB</sub> = -40° F TO 140° F, TYPE 3R  
 6990: CLASS I, DIV 2, GRP CD, T3C, T<sub>AMB</sub> = -40° F TO 140° F

2 ENCL ASSY W/DISPLAY & PCCU CONNECTOR

- 2.1 6895 ENCLOSURE
  - 2.1.1 2103414-XXX (HOFFMAN) 853JF02 AL ALY WITH DOOR 2102160-XXX
- 2.2 6990 ENCLOSURE
  - 2.2.1 2102435-XXX RACK MOUNT ASSEMBLY

3 ELECTRONIC BOARD OPTIONS

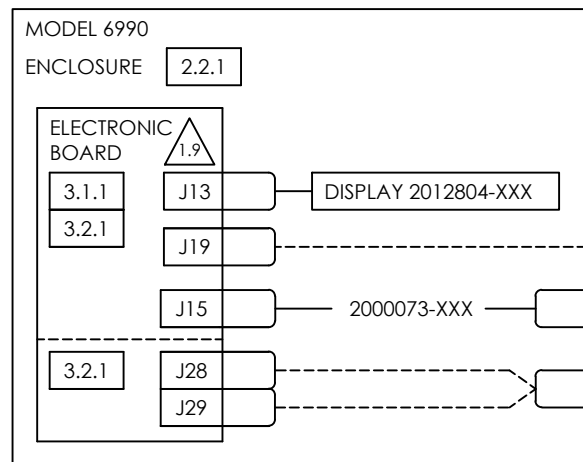
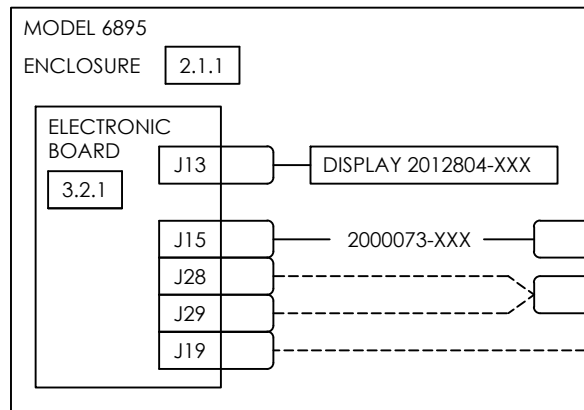
- 3.1 RTU 195 PCBA
  - 3.1.1 2100355-002/-003 RTU195 PCBA
- 3.2 XRC-G4 PCBA ASSY
  - 3.2.1 2103022-002 XRC-G4 MOTHER BD W/2102427-001 EC2410 PROCESSOR CARD

43 KEYPAD OPTION

- 43.1 2100498-002 PROGRAMMED KEYPAD ASSEMBLY

90 MAN MACHINE INTERFACE OPTION

- 90.1 USB TYPE A CONN (1802999-001) W/CAP (1803005-001)
- 90.2 USB TYPE B CONN (1803001-001) W/CAP (1803005-001)
- 90.3 ETHERNET, CAT 5E CONN (1803071-001) W/CAP (1803005-001)



HAZARDOUS AREA  
 CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA  
 CLASS I, DIV 1, GROUPS C, D  
 CLASS I, DIV 2, GROUPS C, D  
 CLASS I, ZONE 1, II B  
 CLASS I, ZONE 2, II B  
 OR  
 NON-HAZARDOUS AREA

5 BATTERY OPTION

5.1 BATTERIES

- 5.1.1 — WITHOUT BATTERY
- 5.1.2 — 12V, 8.0 AH CYCLONE (2015113-003)
- 5.1.3 — 12V, 26.0 AH GENESIS (2015052-001)
- 5.1.4 — 12V, 45.0 AH DOUGLAS (2012909-002)
- 5.1.5 — 12V, 42.0 AH GENESIS G12V42AH10EP (2015052-004)
- 5.1.6 — 12V, 17.0 AH GENESIS G12V17AH10EP (2015052-003)
- 5.1.7 — 12V, 13.0 AH GENESIS (2015052-002)
- 5.1.8 — 12V, 26.0 AH POWER-SONIC PS12260-(NB,F) (2015052-005)
- 5.1.9 — 12V, 12.0 AH POWER-SONIC PS12120 (2015052-006)
- 5.1.10 — 12V, 18.0 AH POWER-SONIC PS12180 (2015052-007)

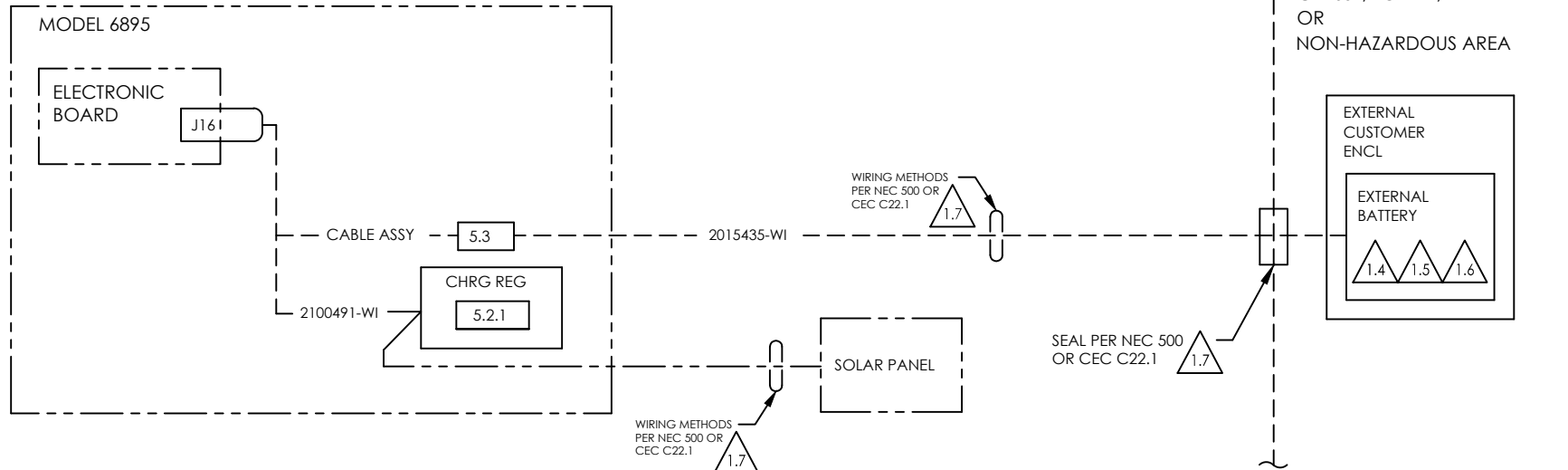
- 5.1.11 — 12V, 40.0 AH POWER-SONIC PS12400 (2015052-008)
- 5.1.12 — 12V, 7.0 AH POWER-SONIC PS12070 (2015052-009)
- 5.1.13 — 12V, 70 AH GENESIS G12V70AH10EP (2015052-010)
- 5.1.14 — 12V, 70 AH GENESIS, 2X
- 5.1.15 — 12V, 26.0 AH GENESIS, 2X
- 5.1.16 — 12V, 42.0 AH GENESIS, 2X
- 5.1.17 — 12V, 26.0 AH, INTERSTATE, DCM0026 (2103487-001)

5.2 CHARGER REGULATOR

- 5.2.1 — SCI ASC #12/8-A CHARGER REGULATOR (1489000-001)

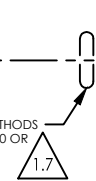
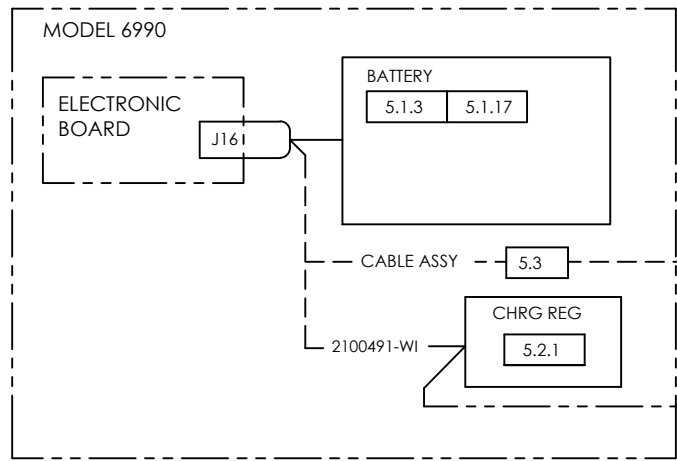
5.3 CABLE ASSY, EXTERNAL BATTERY 2015433-001 OR EQUIVALENT

5 BATTERY OPTION



SCALE	SIZE	DOC TYPE	DRAWING NO.	REV	SHEET
NONE	B	CD	2103796	AA	4 OF 4

5

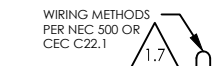
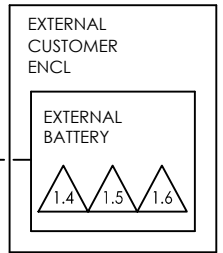


HAZARDOUS AREA  
CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA  
CLASS I, DIV 1, GROUPS C, D  
CLASS I, DIV 2, GROUPS C, D  
CLASS I, ZONE 1, II B  
CLASS I, ZONE 2, II B  
OR  
NON-HAZARDOUS AREA

SEAL PER NEC 500  
OR CEC C22.1

1.7



2015435-WI

SCALE	SIZE	DOC TYPE	DRAWING NO.	REV	SHEET
NONE	B	CD	2103796	AA	5 of 5

6 CHARGING SOURCE OPTION

6.1 WITHOUT CHARGING SOURCE

6.2 SOLAR PANELS

6.2.1 SOLAR PANEL, 12V, 30W (SOLAREX VLX-32) 135 FT MAX CABLE LENGTH

6.2.2 SOLAR PANEL, 12V, 30W (BP SOLAR SX-30U OR SX-330J) 135 FT MAX CABLE LENGTH

6.3 PWR SPLY, AC IN/DC OUT

6.3.1 AC PWR SPLY (PHOENIX QUINT), 100-240V IN, 12 V OUT, 1801966-001

6.4 PWR SPLY, DC IN/DC OUT

6.4.1 DC CHARGER ADAPTER, 24VDC IN, 2101373-002 W/ASSY 2101286-001

WIRING INTERCONNECT

2100494-WI
2100494-WI

HAZARDOUS AREA  
CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA  
CLASS I, DIV 1, GROUPS C, D  
CLASS I, DIV 2, GROUPS C, D  
CLASS I, ZONE 1, II B  
CLASS I, ZONE 2, II B  
OR  
NON-HAZARDOUS AREA

6 CHARGING SOURCE OPTION

MODEL 6895

ELECTRONIC BOARD

J17

WI

WIRING METHODS  
PER NEC 500 OR  
CEC C22.1



CHARGING SOURCE

6.2.1 6.2.2

WIRING METHODS  
PER NEC 500 OR  
CEC C22.1

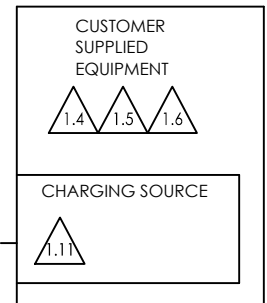


CHARGING SOURCE

1.11 6.3.1

WI

WIRING METHODS  
PER NEC 500 OR  
CEC C22.1



SEAL PER NEC 500  
OR CEC C22.1



6

MODEL 6990

ELECTRONIC BOARD

J17

WI

WIRING METHODS PER NEC 500 OR CEC C22.1 1.7

CHARGING SOURCE 6.2.1 6.2.2

CHARGING SOURCE 6.3.1

WI

WIRING METHODS PER NEC 500 OR CEC C22.1 1.7

WIRING METHODS PER NEC 500 OR CEC C22.1 1.7

CHARGING SOURCE 1.1.1 6.4.1

WI

HAZARDOUS AREA CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA CLASS I, DIV 1, GROUPS C, D CLASS I, DIV 2, GROUPS C, D CLASS I, ZONE 1, II B CLASS I, ZONE 2, II B OR NON-HAZARDOUS AREA

CUSTOMER SUPPLIED EQUIPMENT 1.4 1.5 1.6

CHARGING SOURCE 1.1.1

SEAL PER NEC 500 OR CEC C22.1 1.7

9

REMOTE COMM 1

- 9.1 WITHOUT MODULE
- 9.2 RS485 COMM MODULE 2015193-XXX
- 9.3 RS232 COMM MODULE 2015192-XXX


MODEL 6895, 6990

ELECTRONIC BOARD 1.9

XA1

REMOTE COMM 1 9.2 9.3

12	COMMUNICATION MTG KIT
12.1	WITHOUT OPTION
12.2	COMM MTG KIT, FREEWAVE, 6895

13	COMMUNICATION OPTION 
13.1	W/O COMMUNICATION OPTION
13.2	MDS9810 RADIO, 2018279-AI (1801788-001) -----
13.3	MDS4710 RADIO, 2100013-AI (1801784-001) -----
13.4	MDS9710 RADIO, 2100009-AI (1801786-001) -----
13.5	AIRLINK CDPD, RAVEN II (1800488-001) -----
13.6	AIRLINK CDPD, RAVEN II, OEM PLUS (PCBA) (1800489-001) -----
13.7	FREEWAVE RADIO, FGR09 CSU (1800615-001) -----
13.8	FREEWAVE RADIO, FGRI0-M (1801686-001) -----
13.9	FREEWAVE RADIO, FGRI0-S (1801687-001) -----
13.10	MDS9710B RADIO, (1801787-001) -----
13.11	MDS4710B RADIO, (1801785-001) -----
13.12	MDS TRANSNET RADIO, EL805-0052, PLASTIC ENCL (1800702-001) -----
13.13	MDS TRANSNET RADIO, EL805-0055, DIE CAST ENCL (1800701-001) -----
13.14	MDS INET RADIO, INET 900 -----
13.15	ABB WIRELESS HOST PCBA (2102009) W/AEROCOMM MODULE AC4490-200 -----
13.16	FREEWAVE RADIO, FGR 2 -----

WIRING INTERCONNECT
2100527-WI
2100534-WI
2100534-WI
2100534-WI
2017365-WI
2100537-WI
2100527-WI



12 13

MODEL 6895

ELECTRONIC BOARD

J6 P6

- | WI |       | COMMUNICATION OPTION               |      |
|----|-------|------------------------------------|------|
| WI | 13.2  | MDS9810 RADIO                      | 1.10 |
| WI | 13.3  | MDS4710 RADIO                      |      |
| WI | 13.4  | MDS9710 RADIO                      |      |
| WI | 13.5  | AIRLINK RAVEN II                   |      |
| WI | 13.6  | AIRLINK RAVEN II OEM               |      |
| WI | 13.7  | FREEWAVE FGR09 CSU                 |      |
| WI | 13.8  | FREEWAVE FGRI0-M                   |      |
| WI | 13.9  | FREEWAVE FGRI0-S                   |      |
| WI | 13.10 | MDS9710B RADIO                     |      |
| WI | 13.11 | MDS4710B RADIO                     |      |
| WI | 13.12 | TRANSNET EL805-0052 PLASTIC        |      |
| WI | 13.13 | TRANSNET EL805-0055 DIE CAST       |      |
| WI | 13.14 | MDS INET900 RADIO                  |      |
| WI | 13.15 | WIRELESS HOST 2102009-001 W/MODULE |      |
| WI | 13.16 | FREEWAVE FGR 2                     |      |

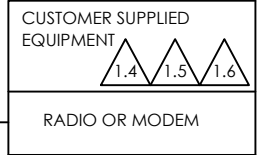
HAZARDOUS AREA  
CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA  
CLASS I, DIV 1, GROUPS C, D  
CLASS I, DIV 2, GROUPS C, D  
CLASS I, ZONE 1, II B  
CLASS I, ZONE 2, II B  
OR  
NON-HAZARDOUS AREA

WIRING METHODS  
PER NEC 500 OR  
CEC C22.1

ANTENNA  
(PER RADIO MANUFACTURER)

SEAL PER NEC 501-5  
OR CEC C22.1 J18-154



20 REMOTE COMM 2 OPTION

- |      |                                 |
|------|---------------------------------|
| 20.1 | WITHOUT OPTION                  |
| 20.2 | COMM MODULE, RS485, 2015193-XXX |
| 20.3 | COMM MODULE, RS232, 2015192-XXX |

MODEL 6895, 6990

ELECTRONIC BOARD

1.9

XA2

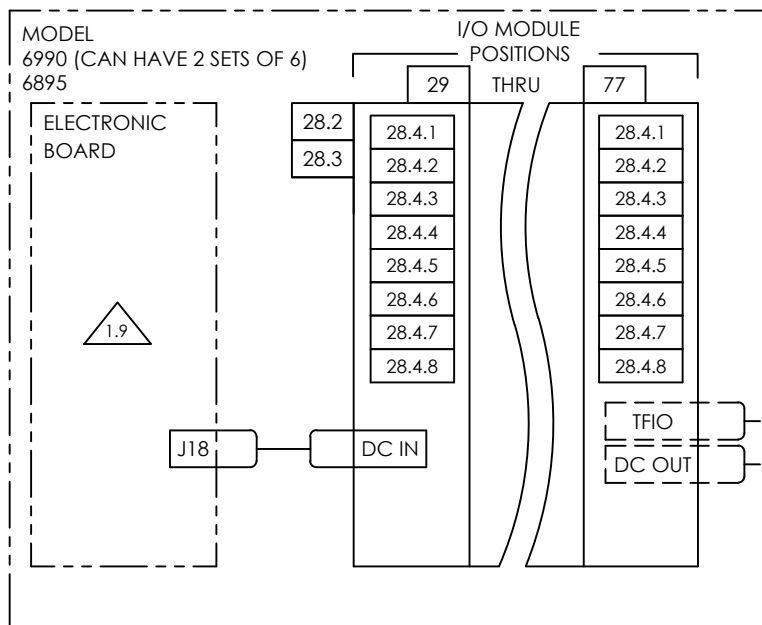
REMOTE COMM 2

20.2 20.3

28 I/O MODULE KIT

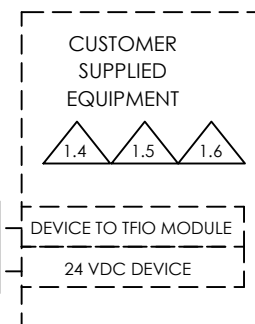
- 28.1 W/O OPTION
- 28.2 I/O MODULE MTG KIT (MAXIMUM 6 MODULES, ANY COMBINATION)
- 28.3 I/O MODULE MTG KIT (MAXIMUM 12 MODULES, ANY COMBINATION)
- 28.4 TFIO I/O MODULES
  - 28.4.1 2100543-003, 8/COMBO DIGITAL
  - 28.4.2 2100415-003, 4/AO (4-20mA)
  - 28.4.3 2100421-003, COMM INTERFACE
  - 28.4.4 2100418-003, 8/AI (TYPE II)
  - 28.4.5 2100412-003, VALVE CONTROL INTERFACE
  - 28.4.6 2101018-003, 4/100 OHM RTD
  - 28.4.7 2100869-003, 4 THERMOCOUPLE
  - 28.4.8 1803024-001, PHOENIX MINI-PS-12-24 DC/24 DC/1

29 THRU 34 I/O MODULE POSITIONS 1 THRU 6 (FOR 6990) (POSSIBLE 2X)  
 29 THRU 42 I/O MODULE POSITIONS 1 THRU 22 (FOR 6895)  
 & 70 THRU 77



HAZARDOUS AREA  
 CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA  
 CLASS I, DIV 1, GROUPS C, D  
 CLASS I, DIV 2, GROUPS C, D  
 CLASS I, ZONE 1, II B  
 CLASS I, ZONE 2, II B  
 OR  
 NON-HAZARDOUS AREA



WIRING METHODS  
 PER NEC 500 OR  
 CEC C22.1

SEAL PER NEC 500  
 OR CEC C22.1

100 APPROVED OPTIONAL EQUIPMENT

100.1 ANTENNA SURGE PROTECTOR

100.1.1 POLY PHASER CORP: IS-50NX-C2-ME

100.1.2 ALTELICON: AL-NFNFB

100.2 TERMINAL BLOCK

100.2.1 FUSED TERMINAL, 6.3A, PHOENIX UK5-HESI (1800693-001)  
WITH 6.3A CERAMIC 5 X 20mm FUSE (1803062-001)




100.2.2 TERMINATION STRIP

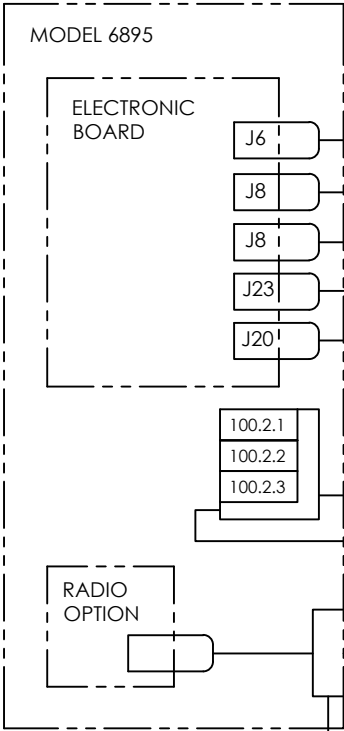
100.2.3 POWER DISTRIBUTION BLOCK (1800518-001)

HAZARDOUS AREA  
CLASS I, DIV 2, GROUPS C, D


HAZARDOUS AREA  
CLASS I, DIV 1, GROUPS C, D  
CLASS I, DIV 2, GROUPS C, D  
CLASS I, ZONE 1, II B  
CLASS I, ZONE 2, II B  
OR  
NON-HAZARDOUS AREA

WIRING METHODS PER  
NEC 500 OR CEC C22.1 

CUSTOMER SUPPLIED EQUIPMENT			
RS232/RS485 DEVICE			
DIGITAL OUTPUT DEVICE			
DIGITAL INPUT DEVICE			
ANALOG OUTPUT DEVICE			
12VDC POWERED DEVICE			
DCV POWERED DEVICE			
DCV POWER SOURCE			






WIRING METHODS PER  
NEC 500 OR CEC C22.1 

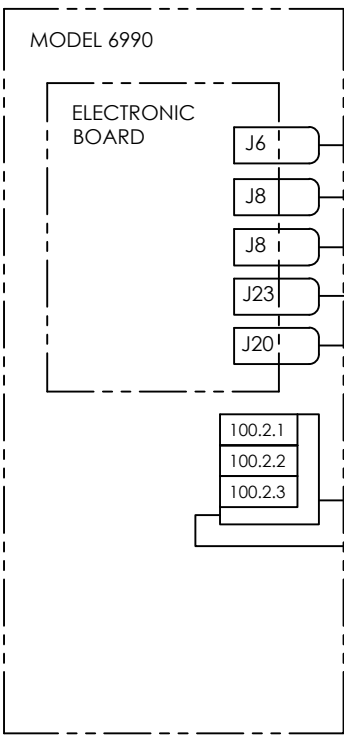
SEAL PER NEC 500  
OR CEC C22.1 

HAZARDOUS AREA  
CLASS I, DIV 2, GROUPS C, D

HAZARDOUS AREA  
CLASS I, DIV 1, GROUPS C, D  
CLASS I, DIV 2, GROUPS C, D  
CLASS I, ZONE 1, II B  
CLASS I, ZONE 2, II B  
OR  
NON-HAZARDOUS AREA

WIRING METHODS PER  
NEC 500 OR CEC C22.1 

CUSTOMER SUPPLIED EQUIPMENT	  
RS232/RS485 DEVICE	
DIGITAL OUTPUT DEVICE	
DIGITAL INPUT DEVICE	
ANALOG OUTPUT DEVICE	
12VDC POWERED DEVICE	
DCV POWERED DEVICE	
DCV POWER SOURCE	



SERIAL COMMUNICATIONS 1 & 2  
DIGITAL INPUT  
DIGITAL OUTPUT  
ANALOG INPUT  
AUXILLIARY POWER

100.2.1  
100.2.2  
100.2.3

SEAL PER NEC 500  
OR CEC C22.1 