

**SHEET INDEX**

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**TABLE A**

ORDERING INFORMATION	
MODEL SUFFIX	RACK WIDTH
103-3000-19A	19 "
103-3000-23A	23 "

**ENGINEERING NOTES:**

51. ORDER PSMC MODEL THAT CORRESPONDS TO THE RACK SIZE FROM TABLE A.
52. ORDER OPTIONAL TEMPERATURE SENSORS, CURRENT TRANSDUCERS, AND INLINE PROTECTION DEVICES FROM TABLE B. CONTACT FACTORY FOR DIFFERENT CABLE LENGTHS.
53. THIS PRODUCT IS AVAILABLE IN ANSI GRAY WITH BLACK LETTERING ONLY.
54. TABLE C PROVIDES A REFERENCE FOR THE CIRCUIT BOARD PART NUMBERS INCLUDED IN EACH PSMC EXPANSION MODEL.
55. EACH UNIT SHOULD SHIP WITH QTY 1. OF THE COMMUNICATIONS CABLE AS SPECIFIED IN TABLE D.
55. TABLE E PROVIDES MAIN POWER (EXTERNAL) FUSING REQUIREMENTS FOR EACH OPERATIONAL VOLTAGE. SELECT OPTIONAL FUSE KIT P/N BASED ON PLANT VOLTAGE.

**TABLE D**

COMMUNICATIONS CABLE	
DESCRIPTION	KIT P/N (INCL.)
COMMUNICATIONS CABLE	385-8078-12

**TABLE E**

POWER FUSING REQUIREMENTS		
INPUT VOLTAGE	FUSE	FUSE KIT P/N (OPT.)
+24Vdc	3. 0A	385-2778-04
-48Vdc	2. 0A	385-2778-03

**SHEET INDEX NOTE:**

THE ISSUE OF SHEET 1 REFLECTS THE LATEST ISSUE OF THE DRAWING SET. WHEN THE DRAWING SET IS REVISED ONLY THE ISSUE NUMBERS OF MODIFIED SHEETS ARE CHANGED. THE ISSUE NUMBERS OF UNMODIFIED SHEETS ARE NOT CHANGED.

**TABLE B**

OPTIONAL EQUIPMENT	
DESCRIPTION	PART NUMBER
TEMPERATURE SENSOR ENCAPSULATED IN A 5/16" RG LUG WITH A 30FT. CABLE FOR DIRECT CONNECTION TO PSMC EXP. FOR AMBIENT AND BATTERY TEMPERATURE MONITORING.	385-5627-21
INLINE FUSE, 0. 5A, PROVIDES 2 EACH FUSES WITH BUTT SPLICE LUGS FOR PROTECTION OF PSMC AND WIRING.	385-2778-01
INLINE RESISTORS PROVIDES 2 EACH RESISTORS WITH BUTT SPLICE LUGS FOR PROTECTION OF FEEDER SHUNT LEADS	385-2789-00
CURRENT TRANSDUCER KIT, 200 AMP 8FT. CABLE, 1. 25" DIA., OPEN WINDOW	385-5973-200
CURRENT TRANSDUCER KIT, 400 AMP 8FT. CABLE, 1. 25" DIA., OPEN WINDOW	385-5973-400
CURRENT TRANSDUCER KIT, 600 AMP 8FT. CABLE, 1. 25" DIA., OPEN WINDOW	385-5973-600
CURRENT TRANSDUCER KIT, 200 AMP 8FT. CABLE, 0. 84" DIA., SPLIT CORE	385-5974-200
CURRENT TRANSDUCER KIT, 400 AMP 8FT. CABLE, 0. 84" DIA., SPLIT CORE	385-5974-400
CURRENT TRANSDUCER KIT, 800 AMP 8FT. CABLE, 4. 00"x 1. 57", SPLIT CORE	385-5974-800

**TABLE C**

PCB REFERENCE FOR 103-3000-XXA, +24/-48 VDC		
PCB NAME	PCB REF.	PART NUMBER
CONTROL BOARD	A1	306-2998-00
INTERFACE BOARD	A2	306-2997-00
ANALOG MUX BOARD	A3	306-2996-01

**ISSUES**

ISSUE #	DESCRIPTION	ISS. BY ISS. DATE	APP. BY APP. DATE
1	SEE ECN 16760 Original release of documentation	CJM 03/03/09	MCM 5/13/09

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON:	APPROVALS		DATE
	±	DRAWN CJM	
HOLES	+0. 004 -0. 002	CHECKED MCM	5/13/09
FRACTIONS	±1/32	APPROVED DBW	5/13/09
DECIMALS (XX)	±0. 020	APPROVED	
DECIMALS (XXX)	±0. 010		
ANGLES	±1/2°		

SQUARE CORNERS AND ANGLES ARE 90° UNLESS OTHERWISE SPECIFIED.

MATERIAL:

FINISH:

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**C&D TECHNOLOGIES**  
Power Solutions

PART DRAWING  
SAGEON PSMC I ANALOG EXP.

SIZE	DOC TYPE / NUMBER	ISSUE
<b>B</b>	PN 103-3000-XX	1

SCALE:	SHEET:	FILE NAME:
NONE	A1 OF	PN103-3000-XX_SHT_A1_ISS_1

ENGINEERING NOTES (CONT'D)

56. PSMC EXPANSION MODELS FOR +24 AND -48 VDC DO NOT REQUIRE JUMPERS OR HARDWARE RECONFIGURATION TO UTILIZE EITHER VOLTAGE. THE SPECIFIC OPERATIONAL VOLTAGE IS SOFTWARE SELECTED DURING THE PROGRAMMING OF THE SAGEON PSMC I AT THE TIME OF INSTALLATION.
57. CONNECTION OF THE PSMC EXPANSION MODULE IS ACCOMPLISHED BY THE USE OF THE SUPPLIED RJ-14 (TELEPHONE STYLE) CABLE. CONNECT TO THE SAGEON PSMC I DIGITAL COMMS PORT.
58. THE SAGEON PSMC I IS PROGRAMMED WITH FACTORY DEFAULTS FOR THE MOST BASIC OPERATION. THE USER CAN THEN ADD FEATURES AS REQUIRED. DETAILED DESCRIPTIONS OF EVERY FUNCTION IS BEYOND THE SCOPE OF THESE NOTES; REFER TO THE USER'S MANUAL FOR DETAILED INFORMATION ON OPERATION AND PROGRAMMING OF THE PSMC AND PSMC EXPANSION MODULE. UPON CONNECTION TO THE PSMC I ALL ANALOG EXPANSION CHANNELS WILL BE ENABLED AND CONFIGURED AS SHUNTS BY DEFAULT. TEMPERATURE SENSORS AND CURRENT TRANSDUCERS ARE DISABLED BY DEFAULT. ANY CHANNEL CAN BE DISABLED OR ENABLED IN THE "ENABLE CHANNELS" MENU ON THE SAGEON PSMC I.
59. SEE USER'S MANUAL FOR DEFAULT LISTING OF ALARM TRIGGER THRESHOLDS FOR EACH INPUT.
60. THE PSMC DISPLAY DEFAULT IS BATTERY VOLTAGE, PLANT CURRENT, AND ACTIVE ALARM INDICATION. THE PSMC WILL DEFAULT TO THIS SCREEN WITHIN 5 MINUTES FROM ANY MENU IF NO KEY PRESSES ARE DETECTED.
61. ALL FUNCTIONS FOR STATUS, CHANNEL POLLING, CONFIGURATION, AND TEST ARE ACCOMPLISHED USING THE FOUR FRONT PANEL PUSHBUTTON SWITCHES ON THE SAGEON PSMC I.
62. FRONT PANEL LEDs ARE PROVIDED ON THE PSMC EXPANSION FOR STATUS AND POWER INDICATIONS. STATUS AND POWER SHOULD REMAIN GREEN FOR A GOOD CONNECTION TO THE SAGEON PSMC I.
63. TEST JACKS ON THE PSMC DO NOT PROVIDE ACCESS TO VOLTAGES MEASURED ON THE PSMC EXPANSION BOX. ALL MEASUREMENTS FOR CALIBRATION ARE REQUIRED AT THE SCREW TERMINALS ON THE REAR OF THE UNIT. MEASUREMENTS FOR CALIBRATION SHOULD PREFERABLY BE DONE AT THE TERMINALS OF THE DEVICE UNDER TEST (DUT) FOR TRULY ACCURATE MEASUREMENTS.
64. ALL CONNECTIONS TO THE SAGEON PSMC I AND EXPANSION UTILIZE COMPRESSION STYLE CONTACTS REQUIRING 16 TO 26 GA. (0.5mm<sup>2</sup> TO 0.1mm<sup>2</sup>) WIRING.
65. THE SAGEON PSMC I EXPANSION REQUIRES A SINGLE RACK SPACE FOR MOUNTING AND CAN BE ORDERED FOR 19" OR 23" RACKS.
66. REFER TO SHEET A4 FOR PIN-OUT INFORMATION.

67. PSMC EXPANSION MEASUREMENTS CAN BE VIEWED BY CONNECTING A PC OR LAPTOP TO THE RS232 SERIAL PORT ON THE REAR OF THE UNIT AND BY USING ANY STANDARD HYPER-TERMINAL PROGRAM, SUCH AS TERA-TERM OR HYPER-TERMINAL. SET THE BAUD RATE TO 38400 BITS/SEC, 8 DATA BITS, NO PARITY, 1 STOP BIT, AND NO FLOW CONTROL. ASCII TERMINAL EMULATION SHOULD BE SET TO ANSI OR VT100.

68. THE SAGEON PSMC I EXPANSION IS CAPABLE OF MEASURING THE FOLLOWING TYPES OF DIFFERENTIAL INPUTS:

SHUNT VOLTAGES: +/-50mV, +/-100mV  
 STRING VOLTAGES: 0-60V

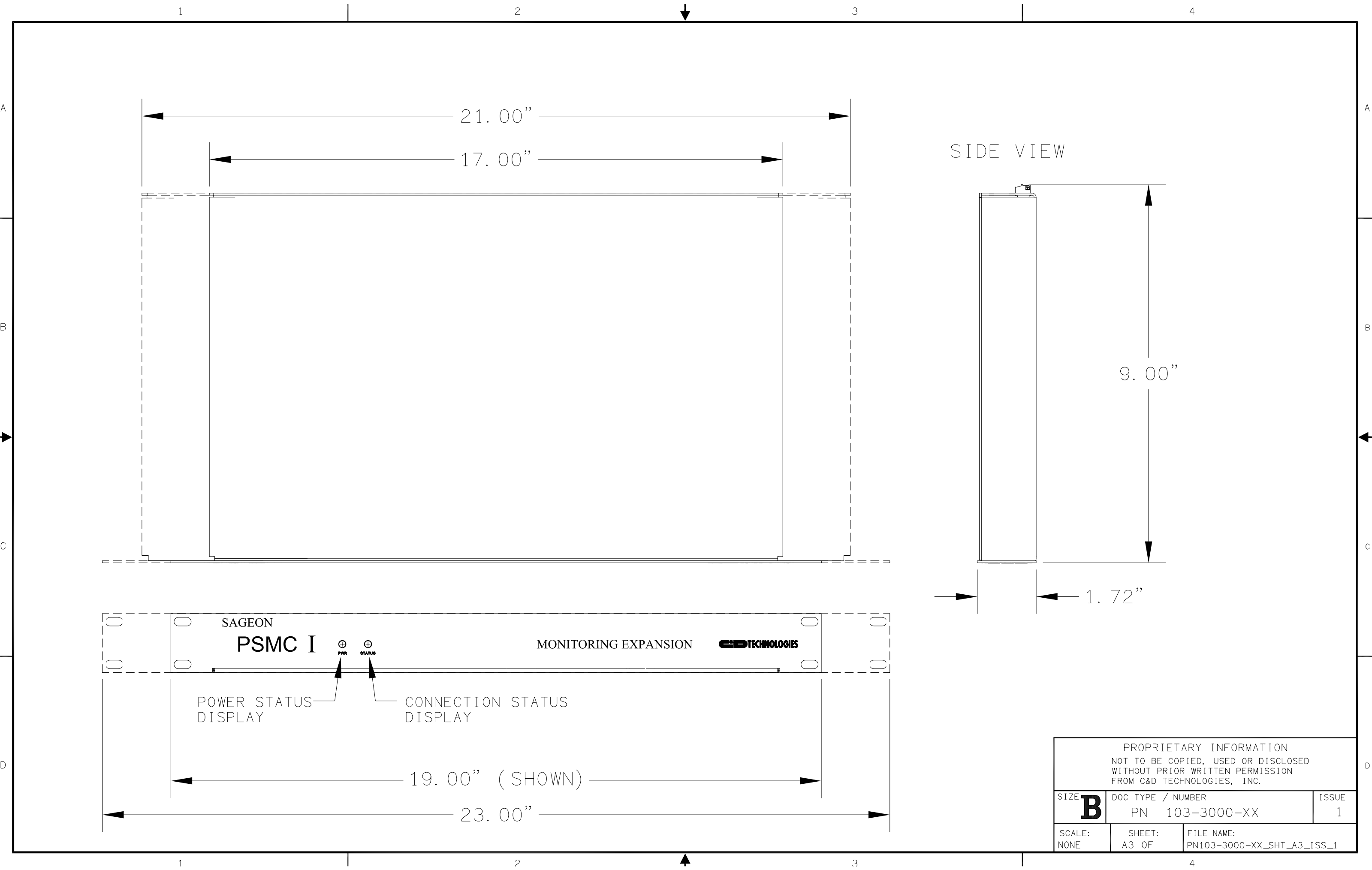
TWO SEPARATE INPUT HEADERS ARE PROVIDED TO MEASURE THE FOLLOWING:

TEMP. SENSORS: 0-4V  
 CURRENT TRANS.: +/-4V

SEE SHEET A1 FOR A LISTING OF TEMPERATURE SENSOR AND CURRENT TRANSDUCER KITS.

69. THE SAGEON PSMC I EXPANSION CAN MEASURE UP TO 18 DIFFERENTIAL INPUTS, 3 TEMPERATURE SENSORS, AND 3 CURRENT TRANSDUCERS IN A 19" RACK, OR 24 DIFFERENTIAL INPUTS, 4 TEMPERATURE SENSORS, AND 4 CURRENT TRANSDUCERS IN A 23" RACK.
70. THE SAGEON PSMC I EXPANSION SHOULD BE LOCATED IN A RACK SPACE +/-2RU FROM THE SAGEON PSMC I.
71. THE SAGEON PSMC I EXPANSION POWER SUPPLY MAY OPERATE FROM PLANT VOLTAGE AND SHOULD FALL WITHIN THE FOLLOWING RANGE:  
 VIN: 20 VOLTS - 60 VOLTS  
 POWER SHOULD BE SUPPLIED TO THE +BATT AND -BATT TERMINALS ON THE REAR OF THE EXPANSION. SEE SHEET A5 FOR WIRING DETAILS. IF PAINT CUTTING WASHERS ARE NOT USED TO MOUNT THE PSMC EXPANSION IN THE RACK, AN ADDITIONAL CONNECTION TO CHASSIS GROUND MUST BE PROVIDED AT THE POWER INPUT TERMINAL BLOCK.
72. THE SAGEON PSMC I AND SAGEON PSMC MONITORING EXPANSION MAKE MEASUREMENT CONNECTIONS TO BATTERY POTENTIALS; BE SURE TO PROTECT INPUT CONNECTIONS WITH FUSES OR CURRENT LIMITING RESISTORS. PROTECTION DEVICES SHOULD BE PLACED AS CLOSE TO THE SENSE POINTS AS POSSIBLE AND STILL BE ACCESSIBLE FOR MAINTENANCE. SEE SHEET A5 FOR TYPICAL CONNECTIONS AND SHEET A1 FOR OPTIONAL PROTECTION KITS THAT CAN BE PURCHASED.

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A

B

C

D

A

B

C

D

1

2

3

4

1

2

3

4

21.00"

17.00"

SIDE VIEW

9.00"

1.72"

SAGEON

PSMC I

MONITORING EXPANSION

C&D TECHNOLOGIES

POWER STATUS  
DISPLAY

CONNECTION STATUS  
DISPLAY

19.00" (SHOWN)

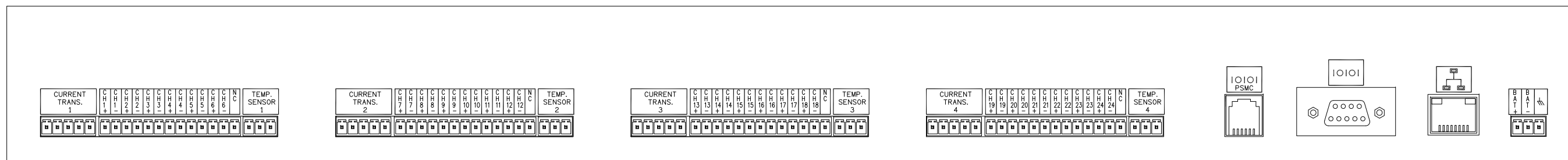
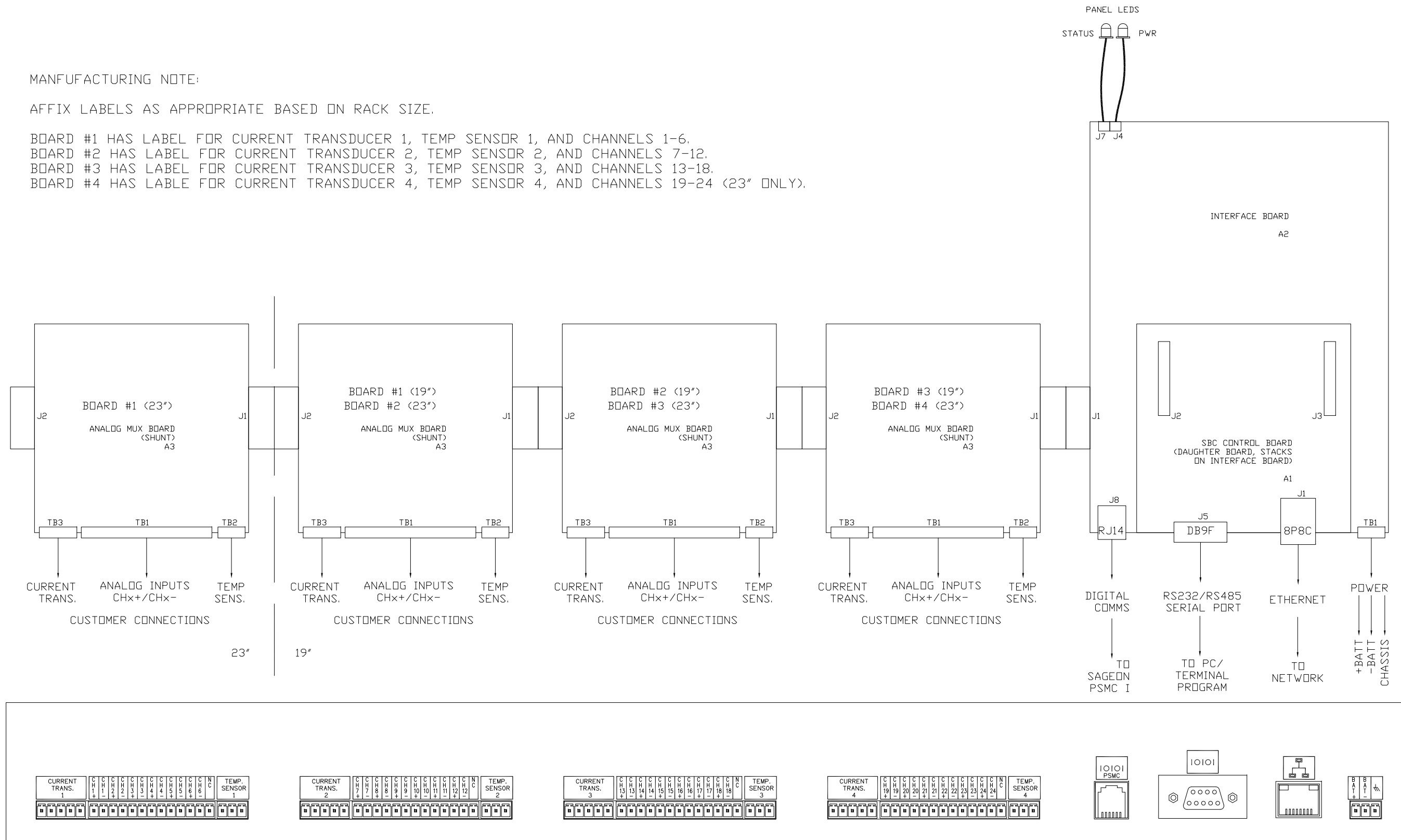
23.00"

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MANUFACTURING NOTE:

AFFIX LABELS AS APPROPRIATE BASED ON RACK SIZE.

BOARD #1 HAS LABEL FOR CURRENT TRANSDUCER 1, TEMP SENSOR 1, AND CHANNELS 1-6.  
 BOARD #2 HAS LABEL FOR CURRENT TRANSDUCER 2, TEMP SENSOR 2, AND CHANNELS 7-12.  
 BOARD #3 HAS LABEL FOR CURRENT TRANSDUCER 3, TEMP SENSOR 3, AND CHANNELS 13-18.  
 BOARD #4 HAS LABEL FOR CURRENT TRANSDUCER 4, TEMP SENSOR 4, AND CHANNELS 19-24 (23" ONLY).



REAR VIEW DIAGRAM (23" SHOWN)

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SCALE: N/A	SHEET: A4 OF	FILE NAME: PN103-3000-XX_SHT_A4_ISS_1

FIG 1  
POWERING THE PSMC EXPANSION

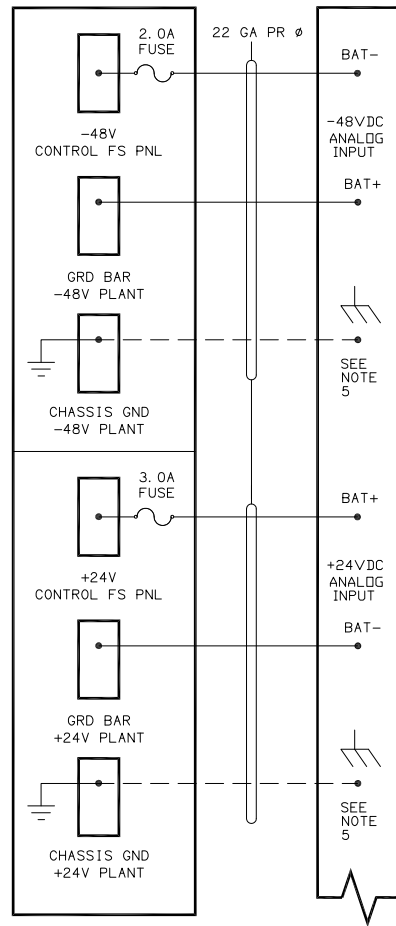


FIG 2  
POWER PLANT VOLTAGE SENSING

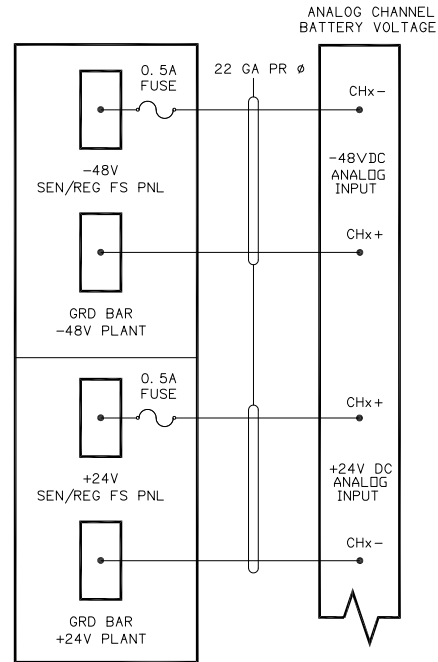


FIG 3  
POWER PLANT LOAD MONITORING  
TYPICAL CONNECTIONS

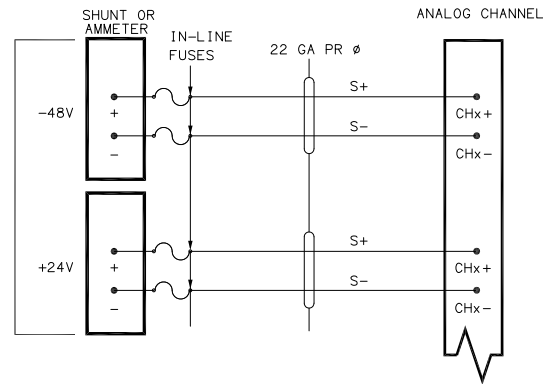


FIG 4  
RECTIFIER OR CONVERTER  
LOAD MONITORING

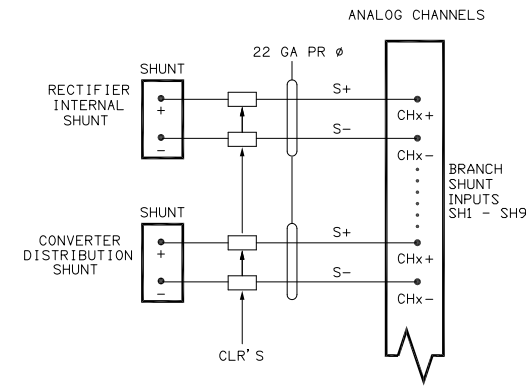
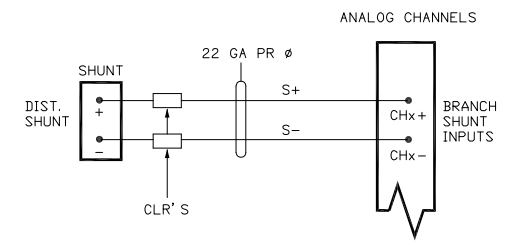


FIG 5  
DISTRIBUTION LOAD  
MONITORING WITH SHUNT



NOTES:

1. LEGEND:

- GA = AWG (AMERICAN WIRE GAUGE)
- PR = PLENUM RATED
- ∅ = MULTI-CONDUCTOR JACKETED CABLE.
- CLR = CURRENT LIMITING RESISTOR
- CHx = GENERIC CHANNEL NUMBER; DIFFERENTIAL INPUT TO PSMC EXPANSION.

2. SEE PAGE A1 FOR KIT PART NUMBERS FOR CLR'S AND IN-LINE FUSES.

3. SHIELD IS TERMINATED ONE SIDE ONLY ON CURRENT TRANSDUCER CABLE.

4. TEMPERATURE SENSOR CABLE IS 3 CONDUCTOR DISCRETE HOOKUP WIRE; 36-40 TURNS/FT.

5. CONNECT CHASSIS TERMINAL TO CHASSIS GROUND IF PAINT CUTTING WASHERS ARE NOT USED TO MOUNT THE PSMC EXPANSION UNIT IN THE RACK.

FIG 6  
AMBIENT & BATTERY TEMPERATURE  
MONITORING

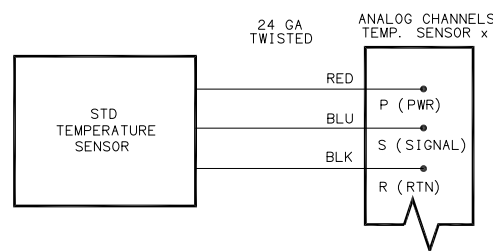
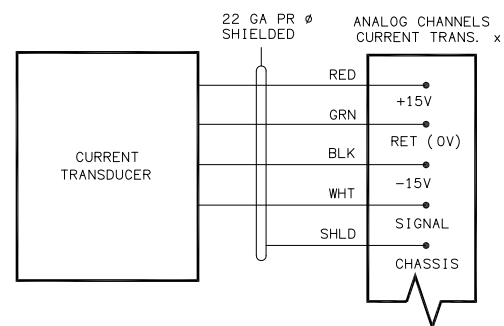


FIG 7  
CURRENT TRANSDUCER MONITORING



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WIRING DETAIL  
SAGEON PSMC I ANALOG EXP.

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