

QTY. REVISION CODE

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① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① MATRIX REVISION LEVEL (SEE NOTE 1)

⑤ ① ENCLOSURE TYPE: ①

- R - Rack Mount
- P - General Purpose Plastic
- MS - Nema 4X Metal, 5 card
- MD - Nema 4X Metal, 10 card
- XS - XP Single Board
- XD - XP Dual Board
- SS - Nema 4X Stainless Steel, 5 card
- SD - Nema 4X Stainless Steel, 10 card

② No. OF 9020 SENSOR CHANNEL 2-WIRE BOARDS (Dual Channel) *

0-10 (2 Sensor Points per Channel) ie: 5 = 10 points

③ No. OF 9010 SENSOR CHANNEL 2-WIRE BOARDS (Single Channel) *

0 - 10

④ No. OF 9020 SENSOR CHANNEL 3-WIRE BOARDS FOR 3-WIRE SENSORS (Dual Channel)

0 - 10 (2 Sensor Points per Channel) ie 5 = 10 points

⑤ No. OF 9010 SENSOR CHANNEL 3-WIRE BOARDS FOR 3-WIRE SENSORS (Single Channel)

0 - 10

⑥ POWER SUPPLY VOLTAGE:

- 1 - 110 VAC
- 2 - 220 VAC
- 3 - 24VDC

⑦ TLV STEL AND TWA FUNCTIONS:

- 0 - NONE
- 1 - YES

⑧ CUSTOM:

C

- * IF ① = R, ② & ③ & ④ & ⑤ ≤ 10
- * IF ① = P, ② & ③ & ④ & ⑤ ≤ 1
- * IF ① = MS, ② & ③ & ④ & ⑤ ≤ 5
- * IF ① = MD, ② & ③ & ④ & ⑤ ≤ 10
- * IF ① = XS, ② & ③ & ④ & ⑤ ≤ 1
- * IF ① = XD, ② & ③ & ④ & ⑤ ≤ 2
- * IF ① = SS, ② & ③ & ④ & ⑤ ≤ 5
- * IF ① = SD, ② & ③ & ④ & ⑤ ≤ 10

CUSTOMER _____

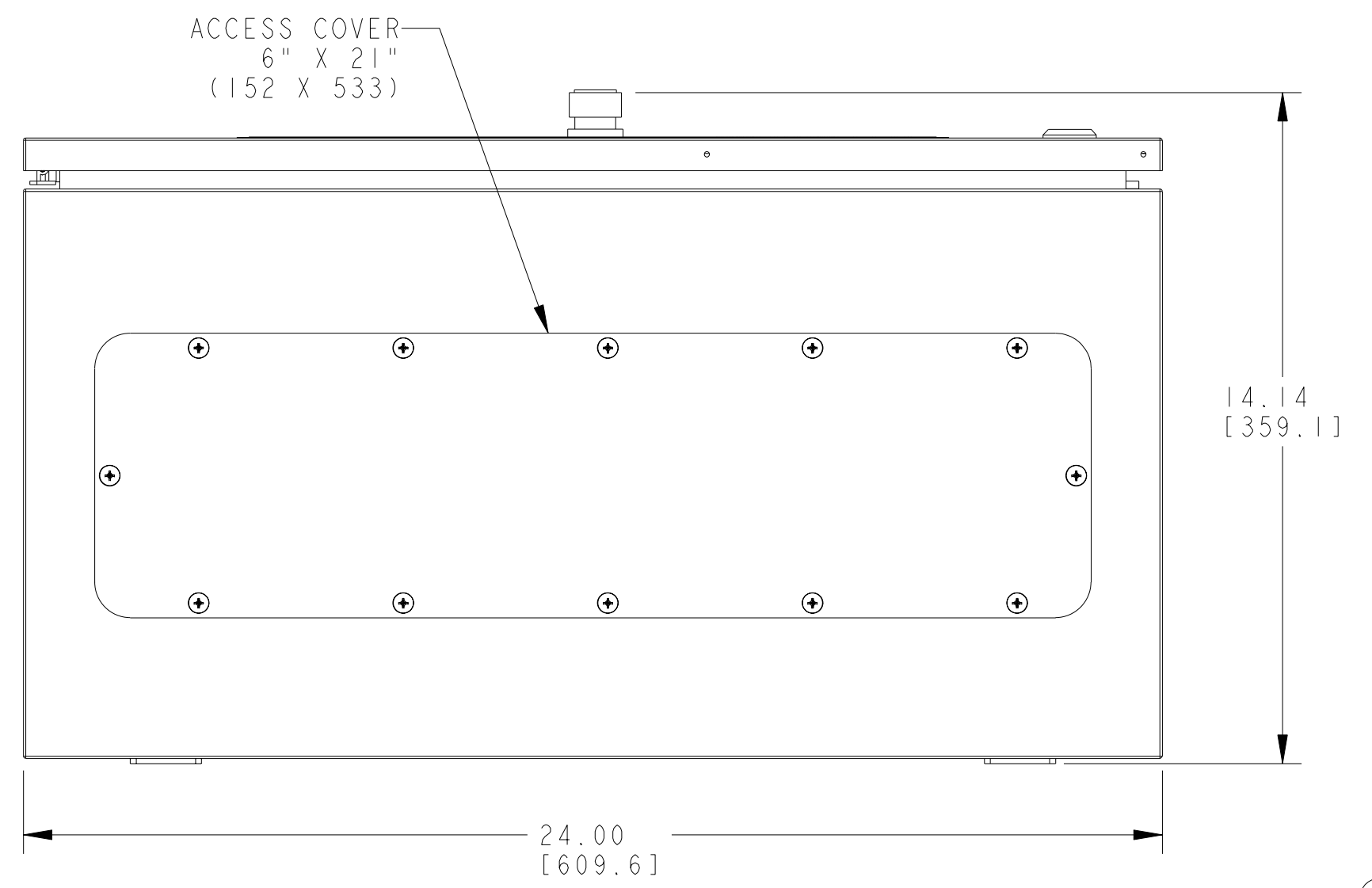
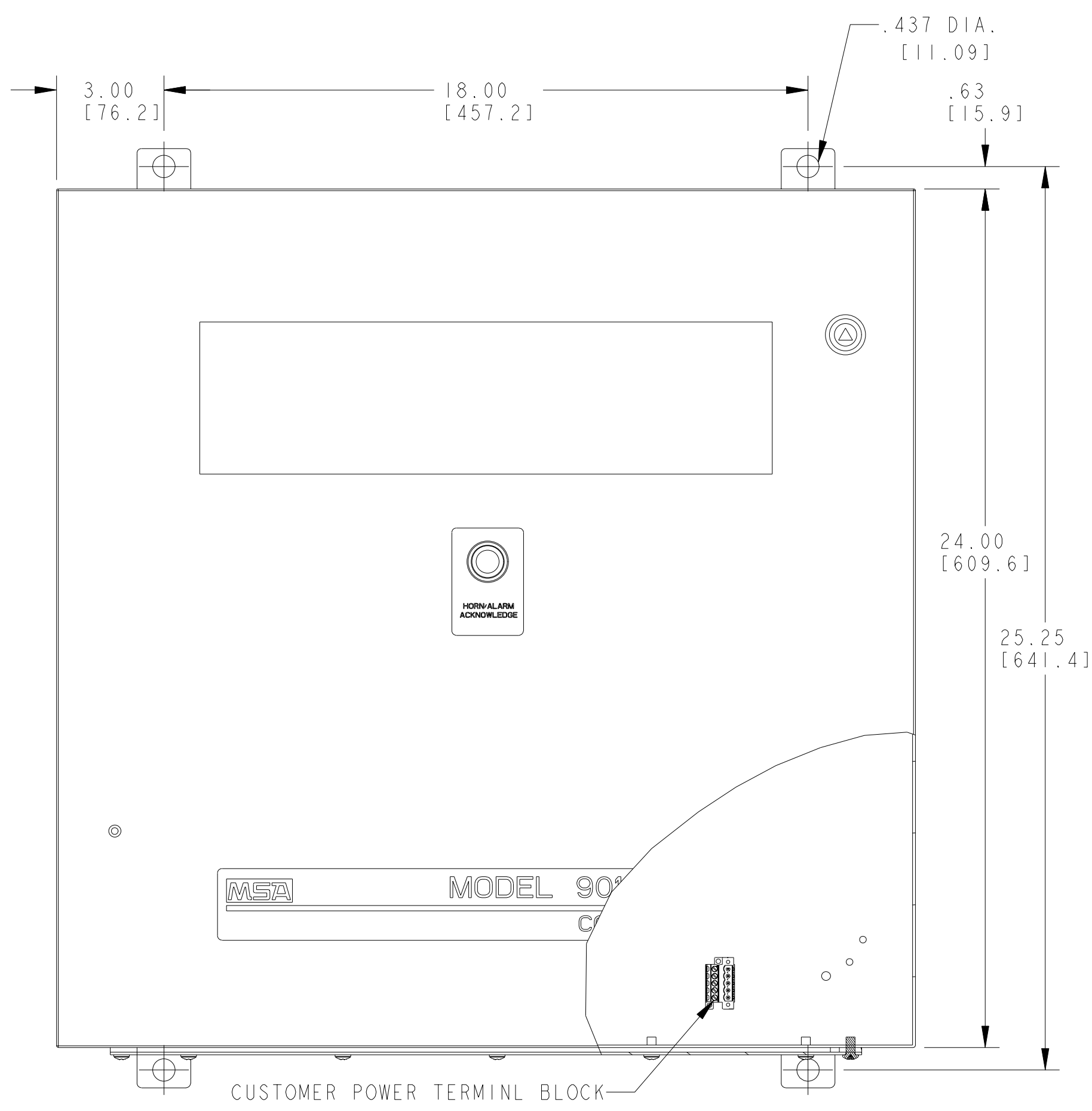
P.O.# _____

MSA# _____

LOCATION _____

TAG# _____

TOTAL NO. OF UNITS. _____



WIRE SIZE	MAXIMUM CABLE LENGTH IN FEET @ 24 VDC	MAXIMUM LOAD RESISTANCE
22 AWG	7000	600 Ohms

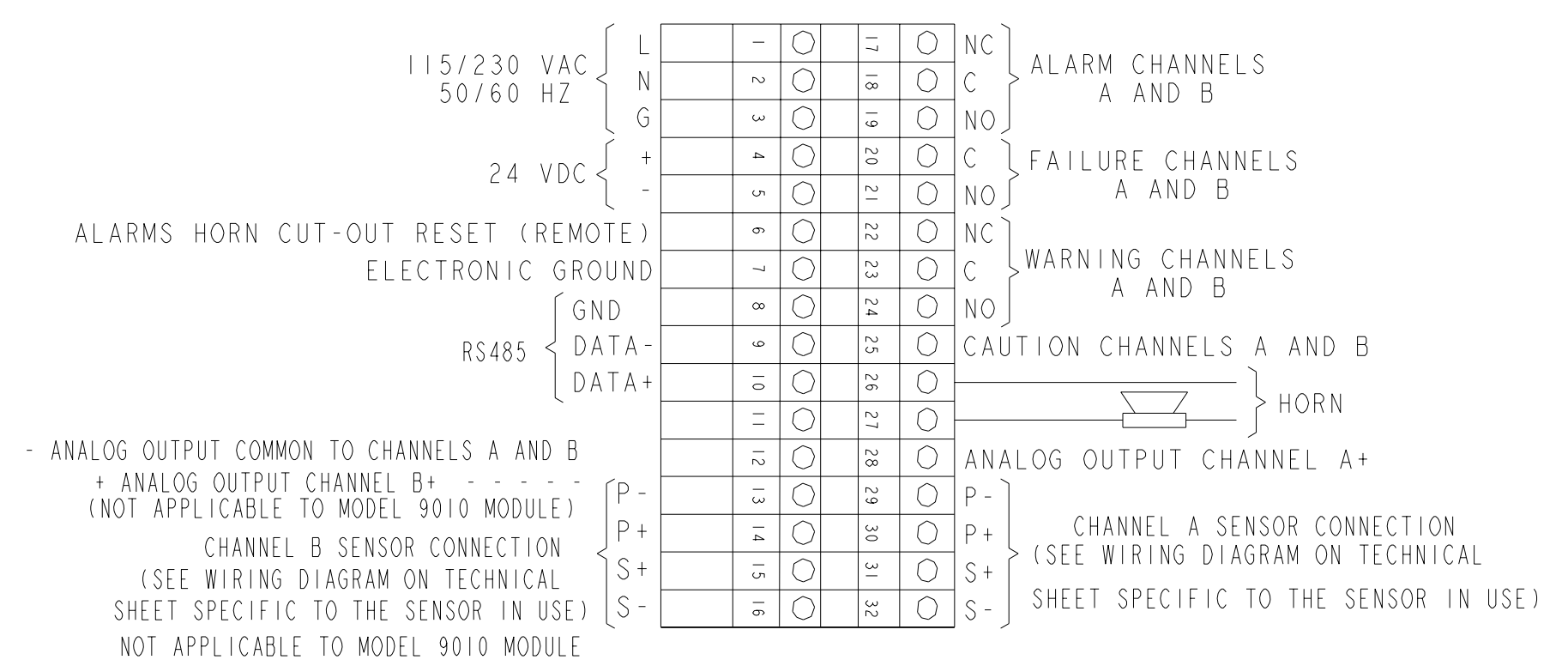
WIRE SIZE	MAXIMUM CABLE LENGTH IN FEET @ 24 VDC	MAXIMUM LOAD RESISTANCE
22 AWG	1000	600 Ohms
18 AWG	2500	
16 AWG	4200	
12 AWG	10000	

WIRE SIZE	MAXIMUM CABLE LENGTH IN FEET @ 24 VDC	MAXIMUM LOAD RESISTANCE
22 AWG	12000	600 Ohms

SENSOR TYPE	POWER SUPPLY VOLTAGE	WIRE SIZE	MAXIMUM CABLE LENGTH (IN FEET)	MAXIMUM LOAD RESISTANCE (mA OUTPUT ONLY)
CATALYTIC COMBUSTIBLE	12 VDC	16 AWG	900	300 Ohms
CATALYTIC COMBUSTIBLE	24 VDC		3000	600 Ohms
TOXIC OR OXYGEN	12 VDC		2500	300 Ohms
TOXIC OR OXYGEN	24 VDC		8000	600 Ohms

POWER SUPPLY	24 VOLTS	
CONFIGURATION	NO RELAYS	RELAYS INSTALLED
18 AWG CABLE (6.6 OHMS/1000 FT.)	2000 FT.	1500 FT.
16 AWG CABLE (4.2 OHMS/1000 FT.)	3500 FT.	2500 FT.
14 AWG CABLE (2.6 OHMS/1000 FT.)	5000 FT.	4000 FT.
MAXIMUM LOAD ON 4-20 mA SIGNAL	600 OHMS	

- NOTES:
- DIMENSIONS SHOWN IN INCHES AND [MILLIMETERS].
 - FROM LEFT TO RIGHT CARD SLOT No. 1 MUST ALWAYS CONTAIN A CONTROL MODULE.
- ④ WEIGHT: MD - APPROX. WEIGHT 102 LBS. (46.2 KG.)
SD - APPROX. WEIGHT 104 LBS. (47.3 KG.)
- MATERIAL: MD - 14 GA. STEEL POLYESTER POWDER COAT FINISH.
SD - 316 STAINLESS STEEL



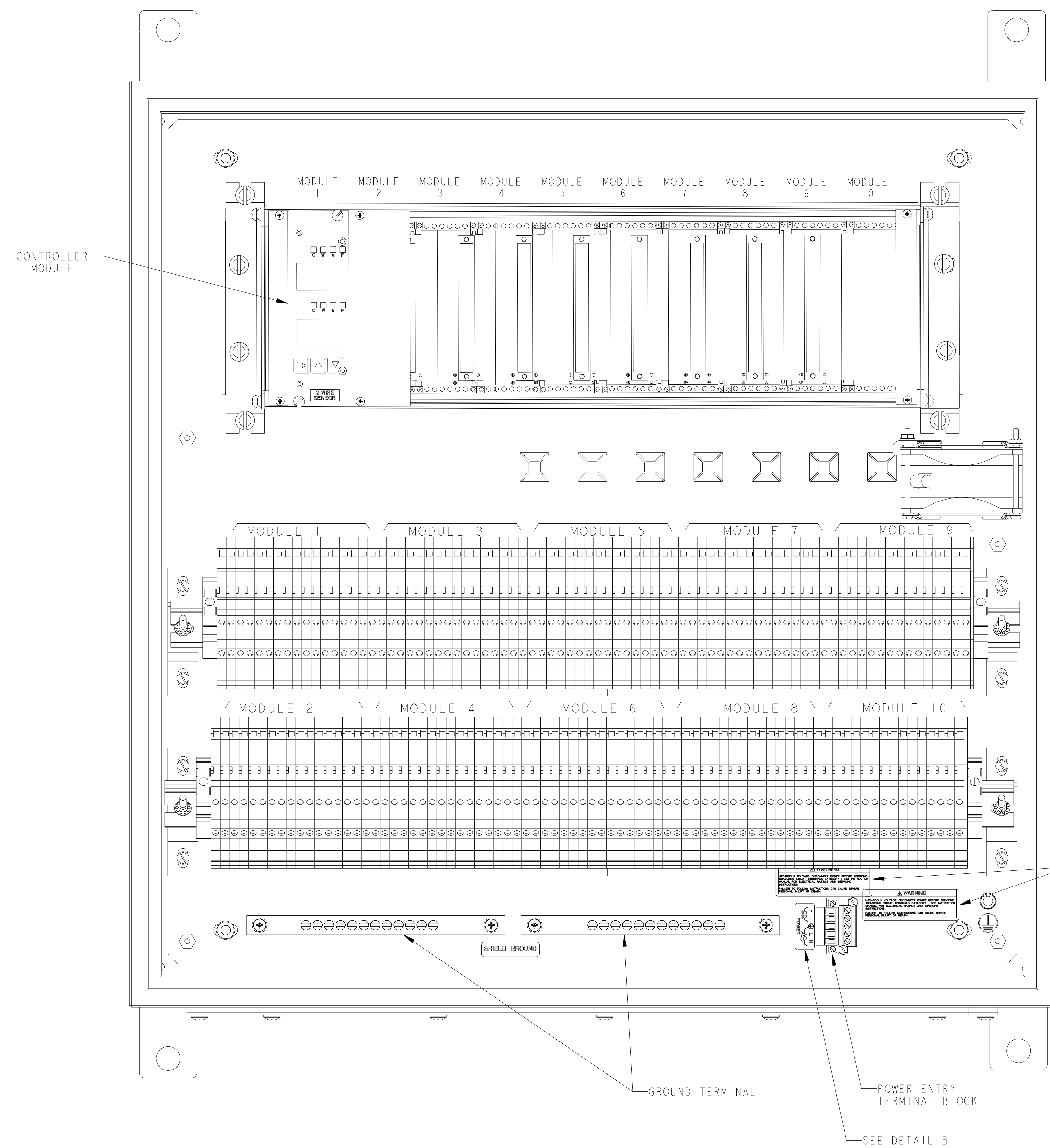
TYPICAL MODULE WIRING

REVISIONS	
①	7-22-2005 INITIAL RELEASE REVISED MATRIX CODE 1, ADDED OPTIONS SS AND SD, REMOVED ITEM # REFERENCE GJT WLB
②	8-3-2005 INITIAL RELEASE ADDED BREAK-OUT VIEW TO SHOW CUSTOMER PWR TERMINAL BLOCK LCR WLB
③	8-18-2006 INITIAL RELEASE REMOVED "TYPICAL SENSOR CONFIGURATIONS" TABLE GJT WLB
④	8-22-2006 INITIAL RELEASE ADDED NOTE 2 GJT WLB
⑤	8-28-2006 INITIAL RELEASE REVISED MATRIX CODE 1, OPTION P: General Purpose Plastic WAS Nema 4X Plastic GJT WLB
⑥	9-28-2006 INITIAL RELEASE A. REVISED MATRIX CODE 1, ADDED OPTION Z B. REVISED MATRIX CODE 7, ADDED OPTIONS 1 & 2 WJE WLB
⑦	11-2-2006 INITIAL RELEASE REVISED IF STATEMENTS TO ADD OPTIONS SS & SD AND ADD MATRIX CODES 4 & 5 WJE WLB
DEC 05 2006	
⑧	4-30-2008 ADDED SHEET 2 ECO#70000001963A LRB JMF
MAY 01 2008	
⑨	11-18-2008 A. REMOVED "OPTION Z" FROM MATRIX CODE 1 B. ADDED "SD" VALUES TO WEIGHT & MATERIAL NOTES C. ADDED "SD NEMA 4X ST. STL. ENCLOSURE" TO DRAWING TITLE ECO-70000002315A GJT JS
NOV 20 2008	

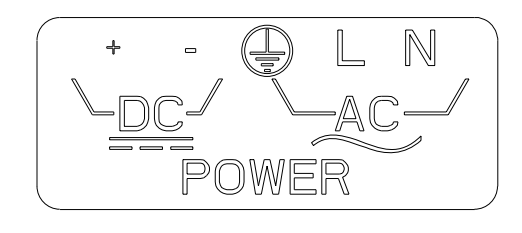
AUTHORIZED COUNTRY	MSA MINE SAFETY APPLIANCES CO. PITTSBURGH, PA 15230, USA	THIS DRAWING IS THE PROPERTY OF MSA AND IS MADE AVAILABLE TO YOU IN CONFIDENCE AND SUBJECT TO THE FOLLOWING: NO PERMISSION IS GRANTED TO PUBLISH, USE, REPRODUCE, TRANSMIT OR DISCLOSE THIS DRAWING, OR ANY INFORMATION CONTAINED THEREIN TO OTHERS WITHOUT THE PRIOR WRITTEN CONSENT OF MSA EXCEPT FOR THE MANUFACTURE OF ARTICLES FOR MSA. SCHÜTZVERMERK NACH DIN 34 BEACHTEN. MSA AUER GmbH.	DO NOT SCALE DWG.
MSA STANDARD SHOP PRACTICES APPLY	CODE SYMBOLS	JOB NO. 30006520 PH0705	APPROVAL AGENCY CODE: NO INTOSH ATTR. DOC.:
	CRITICAL Δ	DRAWN BY GT	DATE 1-24-05
	MAJOR A Δ	CHECKED BY W. BARBISH	11-9-06
	MAJOR B Δ	PROJ. ENGR. W. BARBISH	11-9-06
	100% INSPECTION Δ	QUALITY ASSURANCE J. DANNHARDT	11-29-06
	TOLERANCES UNLESS OTHERWISE SPECIFIED	MANUFACTURING H. TRACHSEL	12-5-06
	FRACTIONAL ± 1/64		
	2 PL DEC. ± 0.01		
	3 PL DEC. ± 0.005		
	ANGULAR ± 1 deg.		
	SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES		
		INSTALLATION OUTLINE, MD, NEMA 4X METAL ENCLOSURE and SD, NEMA 4X ST.STL. ENCLOSURE, MODEL 9010/9020	
		CADD REF: SK3015-1006	SCALE: 0.312
		D. SK3015-1006	
		SHEET 1 OF 2	

REVISIONS
REV. 8
MAY 01 2008
REV. 9
NOV 20 2008

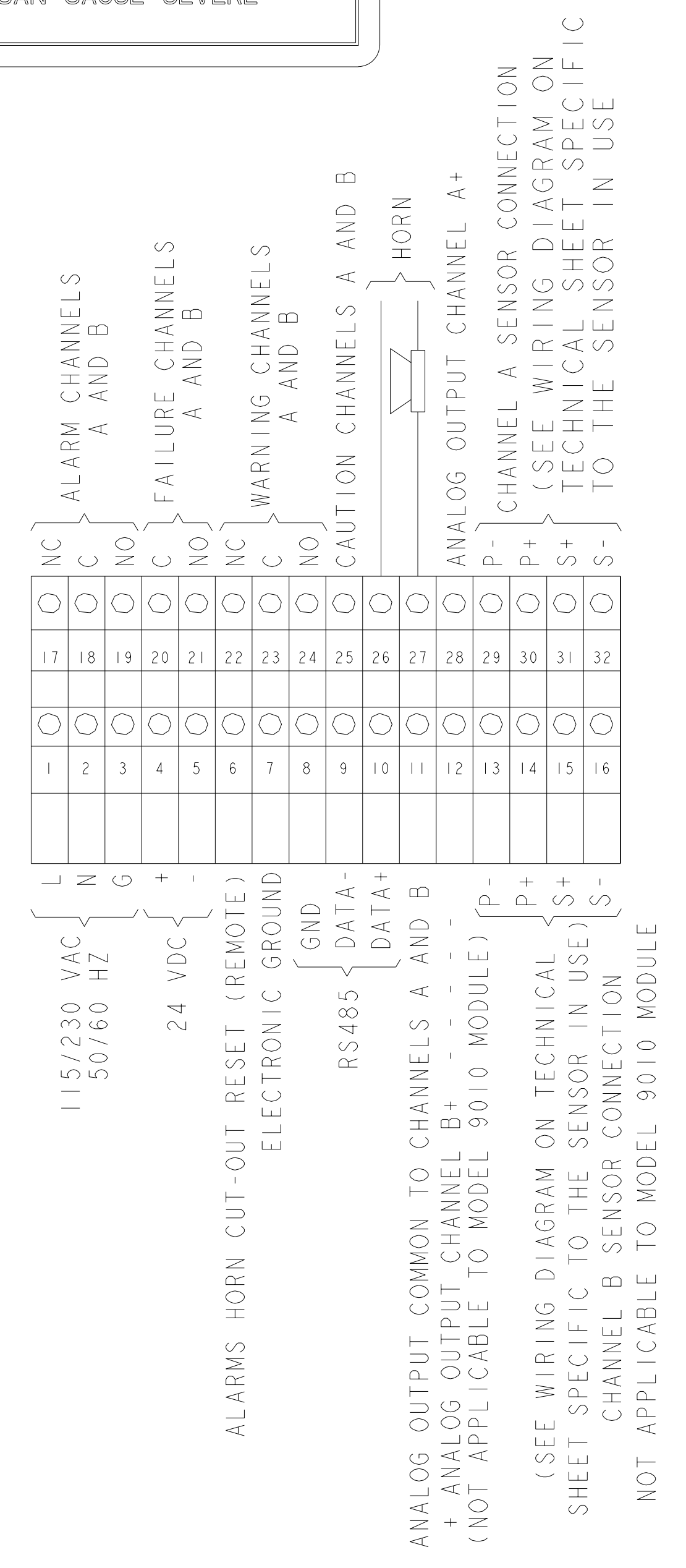
⚠ WARNING
HAZARDOUS VOLTAGE: DISCONNECT POWER BEFORE SERVICING. MEASURING CIRCUIT TERMINALS CATEGORY I. SEE INSTRUCTION MANUAL FOR ELECTRICAL RATINGS AND SERVICING INSTRUCTIONS.
FAILURE TO FOLLOW INSTRUCTIONS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.



DETAIL A



DETAIL B



TYPICAL MODULE WIRING

**MD NEMA 4X METAL ENCLOSURE AND SD NEMA 4X STAINLESS STEEL ENCLOSURE
MODEL 9010/9020**

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MSA STANDARD SHOP PRACTICES APPLY	CODE SYMBOLS CRITICAL ⚠ MAJOR A ⚠ MAJOR B ⚠ 100% INSPECTION ⚠ TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL ± 1/64 2 PL DEC. ± 0.01 3 PL DEC. ± 0.005 ANGULAR ± 1 deg. SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES	JOB NO. 30006520 PH0705 DRAWN BY GT DATE 1-24-05 CHECKED BY W. BARBISH 11-9-06 PROJ. ENGR. W. BARBISH 11-9-06 QUALITY ASSURANCE J. DANNHARDT 11-29-06 MANUFACTURING H. TRACHSEL 12-5-06	APPROVAL AGENCY CODE: NO INTOSH ATTR. DOC.: INSTALLATION OUTLINE, MD, NEMA 4X METAL ENCLOSURE and SD, NEMA 4X ST.STL. ENCLOSURE, MODEL 9010/9020
			CADD REF: SK3015-1006 SCALE: 1:000 D. SK3015-1006 SHEET 2 OF 2