QTY. | REVISION CODE | A – 9000 – ⓪ – ① – ② – ③ – ④ – ⑤ – ⑥ – ⑦ – ⑧

⓪ MATRIX REVISION LEVEL

-

③① ① ENCLOSURE TYPE:

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
Z - No Enclosure (Replacement Modules Only)

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:

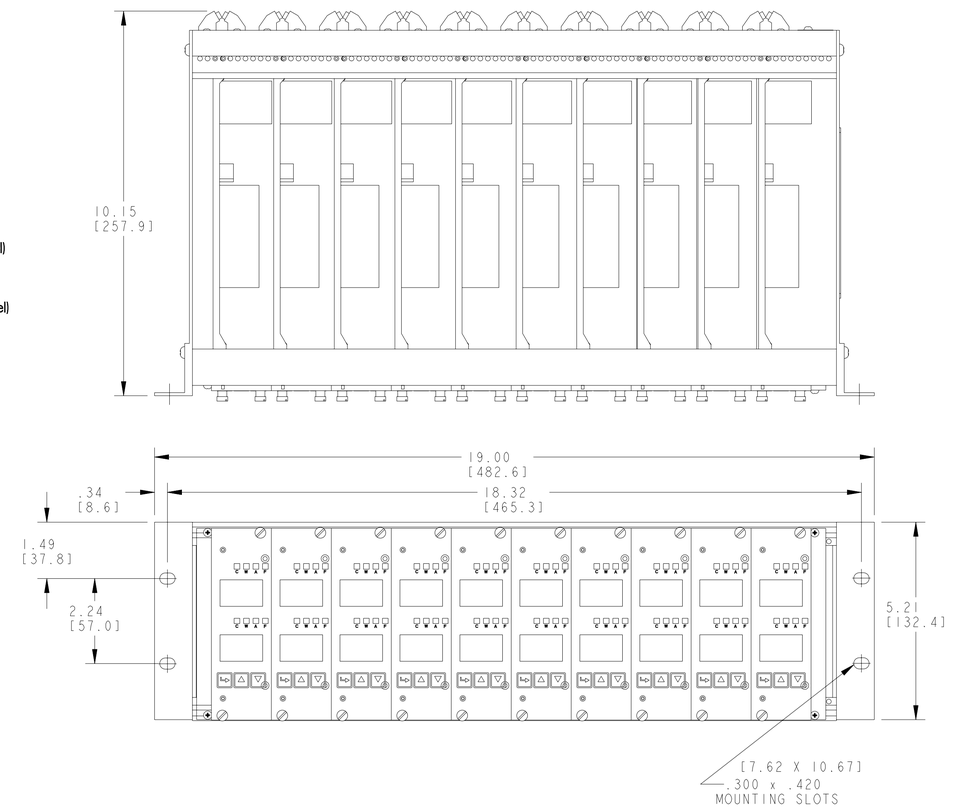
0 = NONE
1 = YES

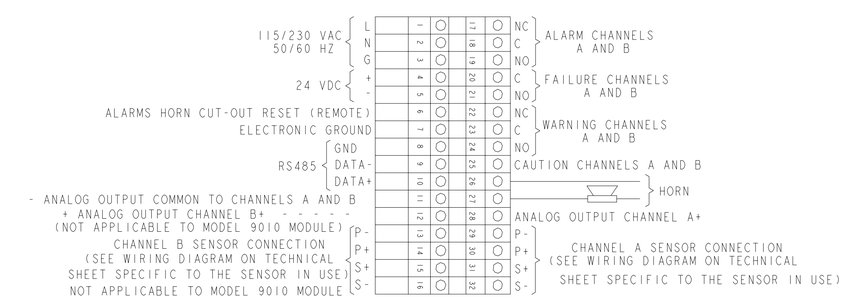
⑧ CUSTOM:

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

⑤





TYPICAL REAR TERMINAL BOARD WIRING

ULTIMA XE CABLE LENGTH AND WIRE SIZE (TOXIC GAS OR OXYGEN) SENSOR, 4-20 mA SIGNAL OUTPUT (TWO WIRE SENSOR)

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

ULTIMA XE CABLE LENGTH AND WIRE SIZE (COMBUSTIBLE GAS) SENSOR, 4-20 mA SIGNAL OUTPUT (THREE WIRE SENSOR)

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	

ULTIMA XE CABLE LENGTH AND WIRE SIZE (POWER SUPPLY 24 VDC) (TOXIC GAS OR OXYGEN) SENSOR, 4-20 mA SIGNAL OUTPUT (THREE WIRE SENSOR)

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

ULTIMA XE POWER CABLE DISTANCES WITH INTERNAL RELAYS (4-20 mA MODEL)

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

ULTIMA XIR MAXIMUM CABLE LENGTH AND 4-20 mA SIGNAL LOAD

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	

CUSTOMER _____
P.O.# _____
MSA# _____
LOCATION _____
TAG# _____
TOTAL NO. OF UNITS _____

NOTES:
1. DIMENSIONS SHOWN IN INCHES AND [MILLIMETERS].

WEIGHT: APPROX. WEIGHT 23 LBS. (10.4 KG.)

MATERIAL: ALUMINUM EXTRUSION

REVISIONS

1	7-21-2005	~~INITIAL RELEASE~~ REVISED MATRIX CODE 1 ALL OPTIONS, ADDED OPTIONS SS & SD — BJP — WLB
2	8-18-2006	~~INITIAL RELEASE~~ REMOVED "TYPICAL SENSOR CONFIGURATIONS" TABLE — GJT — WLB
3	8-28-2006	~~INITIAL RELEASE~~ REVISED MATRIX CODE 1, OPTION P: General Purpose Plastic WAS Nema 4X Plastic — GJT — WLB
4	9-28-2006	~~INITIAL RELEASE~~ A. REVISED MATRIX CODE 1, ADDED OPTION Z B. REVISED MATRIX CODE 7, ADDED OPTIONS 1 & 2 — WJE — WLB
5	11-2-2006	INITIAL RELEASE REVISED IF STATEMENTS TO ADD OPTIONS SS & SD AND ADD MATRIX CODES 4 & 5 — WJE — WLB

DEC 05 2006

AUTHORIZED COUNTRY

MSA STANDARD SHOP PRACTICES APPLY

MINE SAFETY APPLIANCES CO. PITTSBURGH, PA 15230, USA

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DO NOT SCALE DWG.

CODE SYMBOLS
CRITICAL △
MAJOR A ⚠ MINOR (NO MARK)
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. 30006520PH0705 | APPROVAL AGENCY CODE: NO | NIOSH ATTR. DOC.: .

DRAWN BY	DATE
GT	1-14-05
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

INSTALLATION OUTLINE, MODEL 9010/9020 RACK MOUNT

CADD REF: SK3015-1001 | SCALE: 0.500

D. | SK3015-1001 | SHEET 1 OF 1