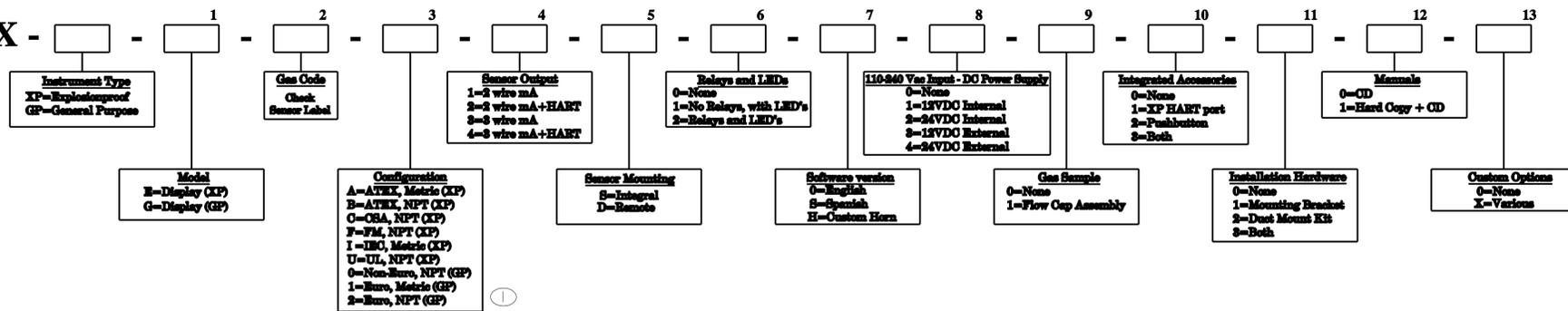
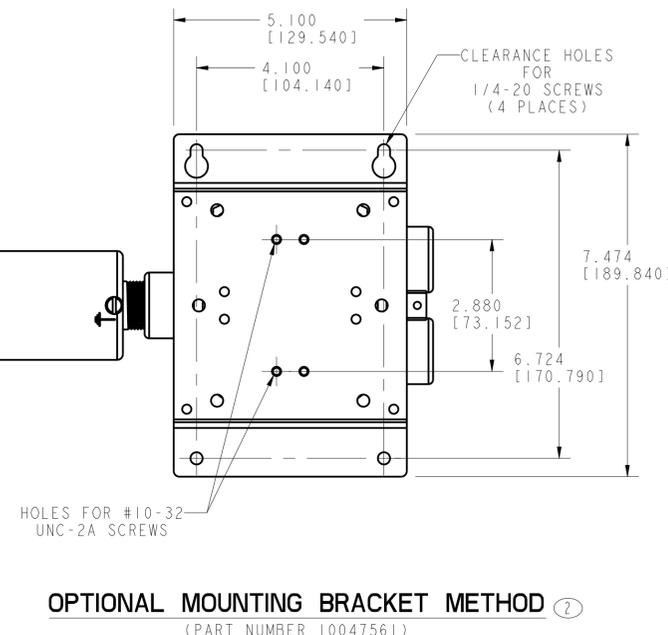
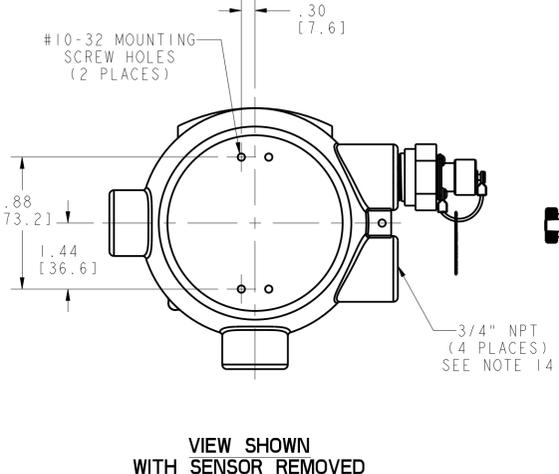
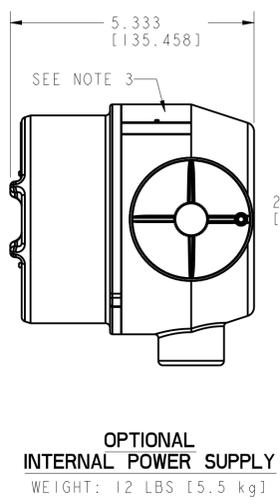
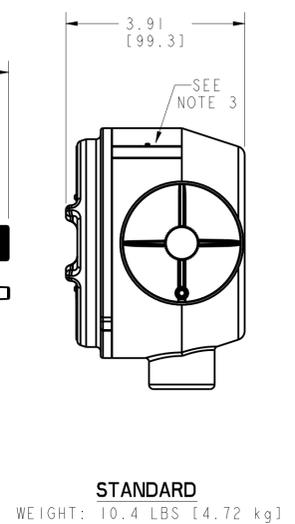
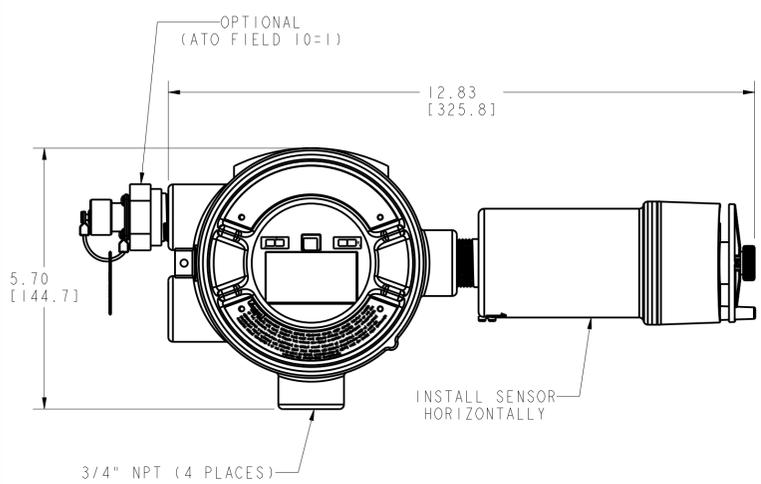


A - ULTIMAX -



Gas Type	DC Voltage Supply	Max Current Draw
IR	8 VDC	870 mA
	12 VDC	550 mA
	24 VDC	290 mA



DC Voltage Supply	Wire Size	Max Cable Length		Max Load Resistance
		without HART/with HART Feet	Meters	
12 VDC	18 AWG	300	91	250 Ohms
	16 AWG	500	152	250 Ohms
	12 AWG	900	274	250 Ohms
24 VDC	18 AWG	2,000	610	500 Ohms
	16 AWG	3,500	1067	500 Ohms
	12 AWG	5,000	1524	500 Ohms

DC Voltage Supply	Wire Size	Max Cable Length		Max Load Resistance
		Feet	Meters	
12 VDC	16 AWG	400	152	250 Ohms
24 VDC	16 AWG	2,500	762	500 Ohms

CONTROL DRAWINGS REFERENCED ON PRODUCT LABELS CAN BE FOUND AT www.msanorthamerica.com
FIXED GAS DETECTION, GAS SENSORS, ULTIMA X SERIES GAS MONITORS, LITERATURE TAB

- NOTES:**
1. INSTRUMENT HOUSING IS MADE OF 316 STAINLESS STEEL.
 2. DIMENSIONS SHOWN IN INCHES (MILLIMETERS).
 3. CHECK TAG FOR AREA CLASSIFICATION.
- (CONTINUED ON SHEET 2)

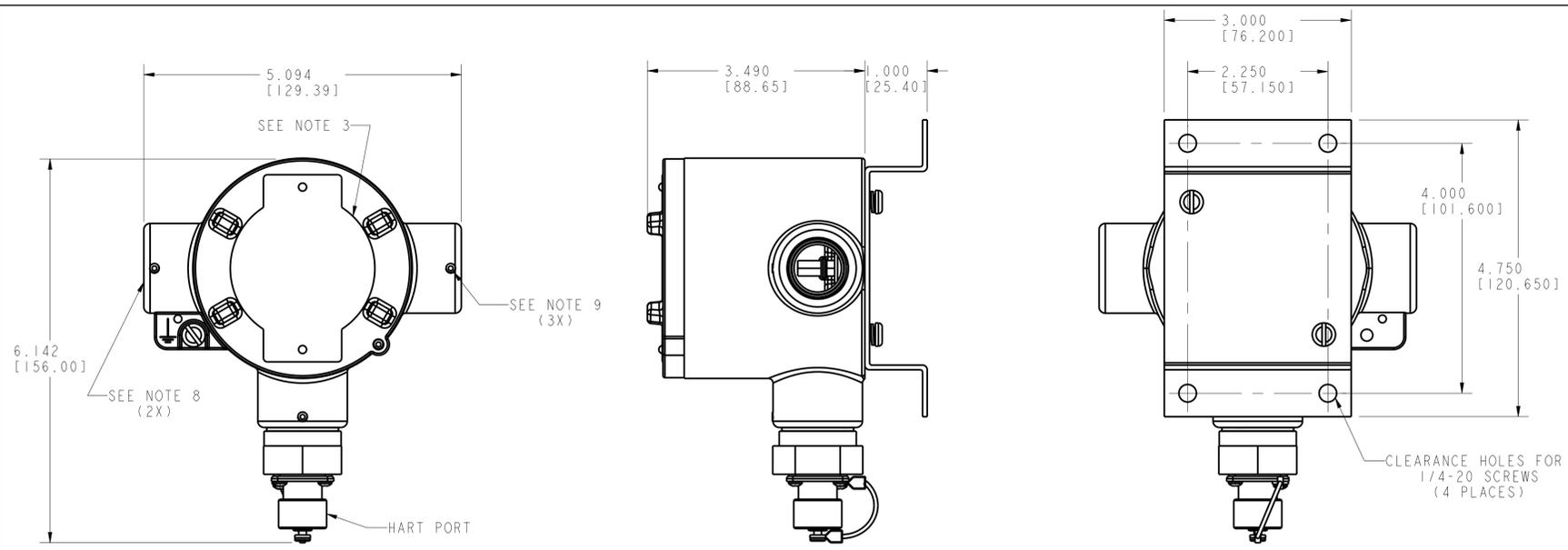
CUSTOMER _____
P.O. NO. _____
MSA NO. _____
LOCATION _____
TAG NO. _____
TOTAL NO. OF UNITS _____

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. SCHUTZVERMERK NACH DIN 34 BEACHTEN. MSA AUER GmbH.	DO NOT SCALE DWG.
	MSA STANDARD SHOP PRACTICES APPLY	JOB NO. 30009701 PH0718	APPROVAL AGENCY CODE: YES NIOSH ATTR. DOC.:	
	CODE SYMBOLS	DRAWN BY DATE GJT 5-12-2008		
	CRITICAL Δ	CHECKED BY S. TURNER 6-20-08		
	MAJOR A Δ (NO MARK)	PROJ. ENGR. C. LEHECKA 6-18-08		
	MAJOR B Δ	QUALITY ASSURANCE J. DANNHARDT 6-18-08		
	100% INSPECTION Δ	MANUFACTURING A. POLOCHAK 6-18-08	CADD REF: SK3015-1026	SCALE: 0.500
	TOLERANCES UNLESS OTHERWISE SPECIFIED	DOCUMENT NO.		
	FRACTIONAL ± 1/64	D	SK3015-1026	SHEET 1 OF 3
	2 PL DEC. ± 0.01			
	3 PL DEC. ± 0.005			
	ANGULAR ± 1 deg.			
	SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES			

REVISIONS	
JUN 24 2008	10-29-2008 DELETED "D2" AND ADDED "IEC" TO ATO ECO-70000002331A GJT CL
OCT 29 2008	11-1-2010 UPDATED MOUNTING BRACKET TO ACCOMODATED PRIMAX IR ECO-70000003147A GJT MB
NOV 09 2010	1-4-2013 4 CONDUCTOR WIRE WAS 5 ECO#70000003865A LRB CS
FEB 07 2013	

LIFECYCLE STATE Production	REVISION 3
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REVISIONS	
JUN 24 2008	REV. 1
OCT 29 2008	REV. 2
NOV 09 2010	REV. 3
FEB 07 2013	

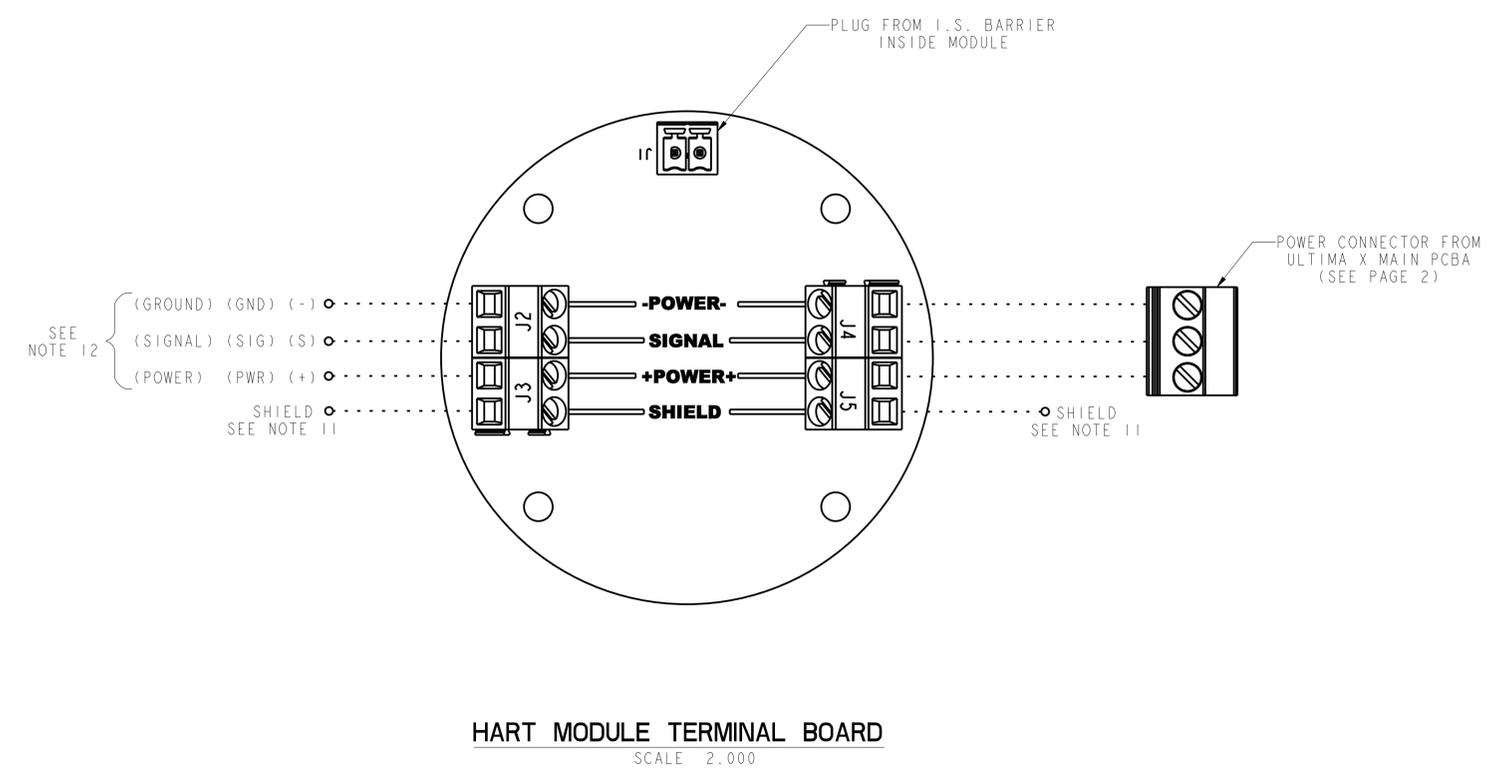
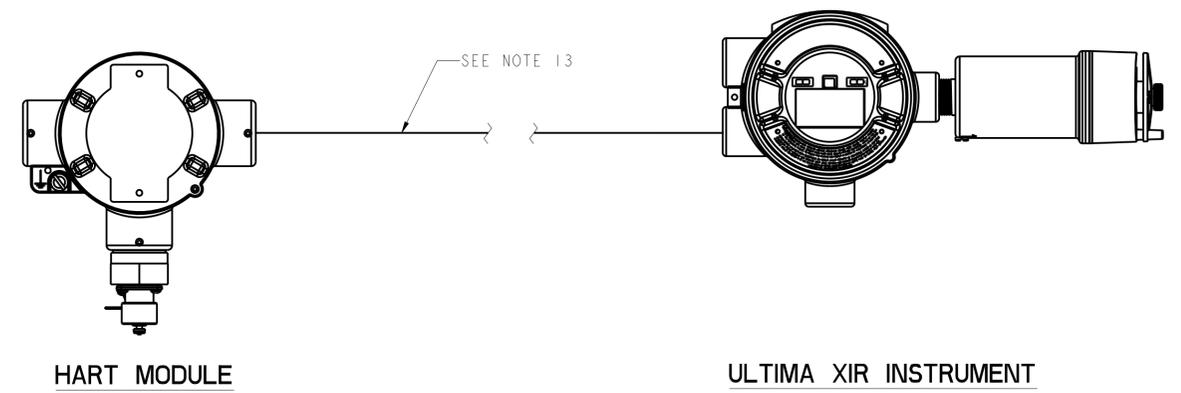


Area Classification	Other Fields	Control Drawing See CD or www.MSAnet.com
Div. 2	Gas Codes: 13, 14, 31-33, 38-39	SK3098-1108
Div. 2	Gas Codes: All other gases except 13, 14, 31-33, 38-39, 51-53, 58-59	SK3098-1072
Div. 1	HART port or HART Module included	SK3098-1057
Div. 1	No XP HART port	No control drawing required

HART MODULE
MATERIAL: CAST 316 STAINLESS STEEL

HART MODULE
WITH OPTIONAL MOUNTING BRACKET SHOWN
(P/N 10047562)

HART MODULE ONLY INCLUDED UNDER CERTAIN ATO CONFIGURATIONS



(CONTINUED FROM SHEET 2)

- NOTES:**
- MODULE PART NUMBER 10090128 HAS 3/4-14 NPT THREADED ENTRIES, MODULE PART NUMBER 10090127 HAS M25 X 1.5 THREADED ENTRIES.
 - M4 SET SCREWS ONLY ON MODULES WITH M25 THREADED ENTRIES.
 - TIE CABLE SHIELD TO ULTIMA X MAIN P.C BOARD ASSEMBLY OR POWER SOURCE SHIELD, NOT BOTH.
 - TWO WIRE UNITS: ONLY USE POWER AND SIGNAL CONNECTIONS
 - SEE CABLE LENGTH TABLES ON SHEET 1.
 - CERTIFIED STOPPING PLUGS OR CERTIFIED ENTRIES SHALL BE INSTALLED AT ALL THREADED ENTRIES AT INSTALLATION.

LIFECYCLE STATE	REVISION
Production	3

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MSA STANDARD SHOP PRACTICES APPLY		JOB NO. 30009701 PH0718	APPROVAL AGENCY CODE: YES/NIOSH ATTR. DOC.:	
CRITICAL	MAJOR A	MAJOR B	100% INSPECTION	
MINOR (NO MARK)				
TOLERANCES UNLESS OTHERWISE SPECIFIED		FRACATIONAL ± 1/64	2 PL DEC. ± 0.01	3 PL DEC. ± 0.005
ANGULAR ± 1 deg.		SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES		
D.		C. LEHECKA 6-18-08		J. DANNHARDT 6-18-08
A. POLOCHAK 6-18-08		CADD REF: SK3015-1026		SCALE: 1:000
SK3015-1026				SHEET 3 OF 3

**INSTALLATION OUTLINE,
ULTIMA XE WITH XIR SENSOR**