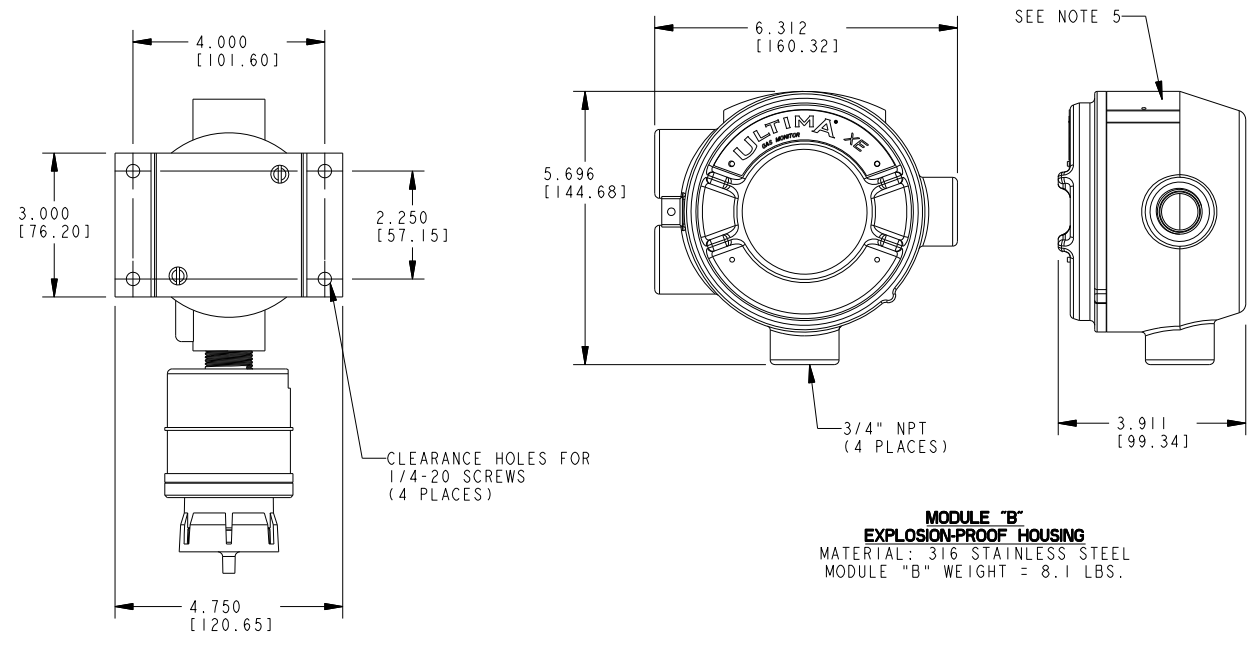
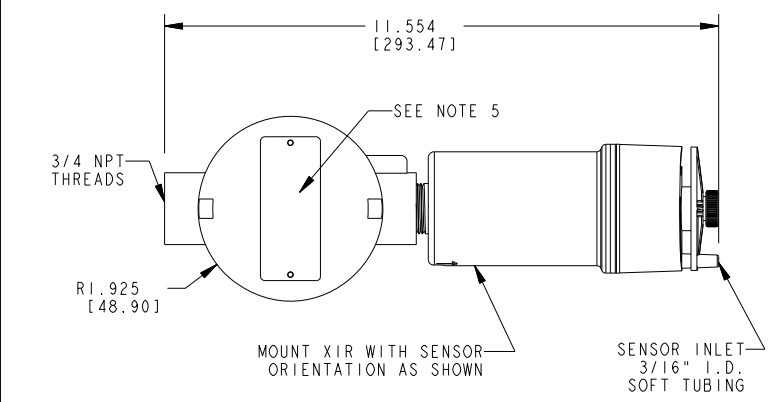


**MODULE "A" (REMOTE XE SENSOR)
EXPLOSION-PROOF HOUSING**
MATERIAL: CAST ALUMINUM
MODULE "A" WEIGHT = 4.4 LBS.

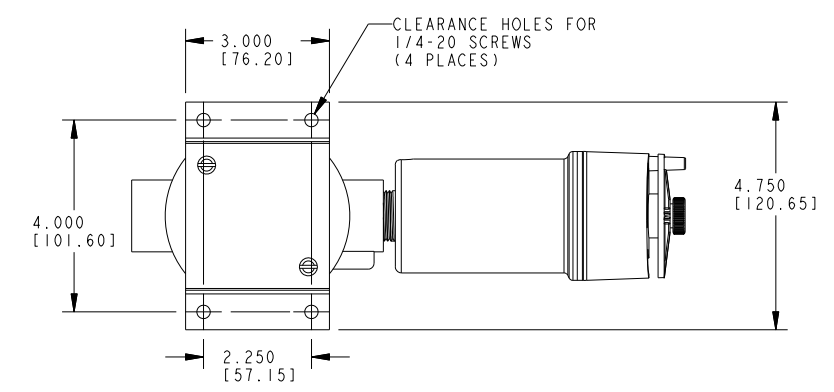


**MODULE "B"
EXPLOSION-PROOF HOUSING**
MATERIAL: 316 STAINLESS STEEL
MODULE "B" WEIGHT = 8.1 LBS.

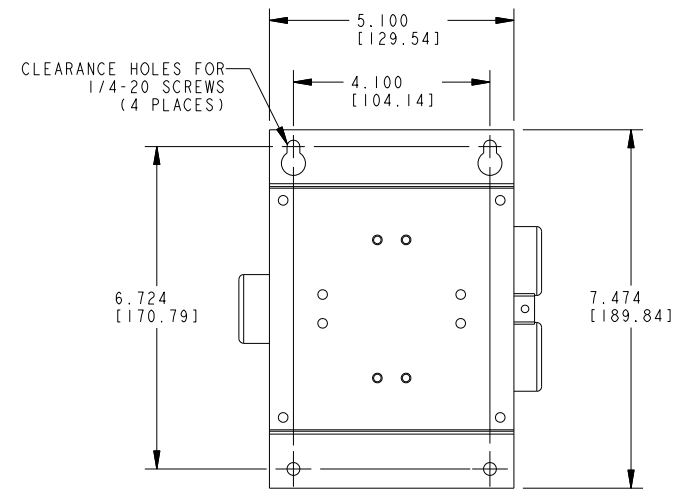
**MODULE "A" (REMOTE XE SENSOR)
MOUNTING STRAP METHOD
(OPTIONAL)
SEE NOTE 4**



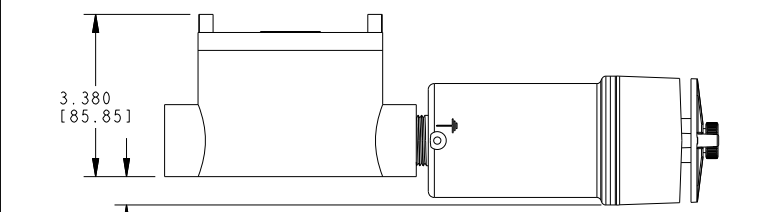
MOUNT XIR WITH SENSOR
ORIENTATION AS SHOWN



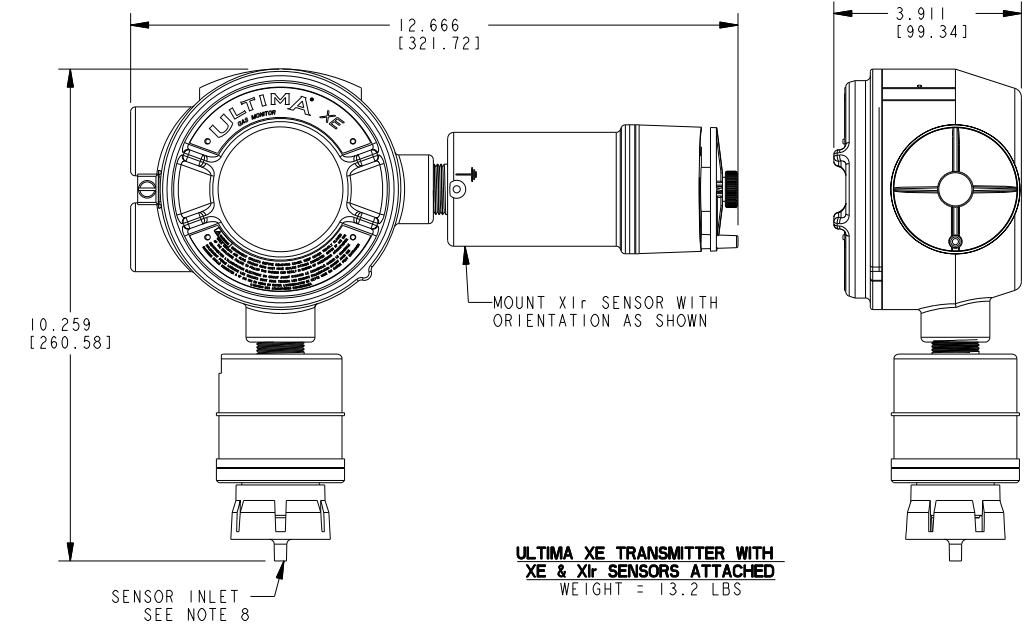
**MODULE "A" (REMOTE Xir SENSOR)
MOUNTING STRAP METHOD
(OPTIONAL)**



**MODULE "B"
MOUNTING STRAP METHOD
(OPTIONAL)
SEE NOTE 6**



**MODULE "A" (REMOTE Xir SENSOR)
EXPLOSION-PROOF HOUSING**
MATERIAL: CAST ALUMINUM
MODULE "A" WEIGHT = 4.9 LBS.



**ULTIMA XE TRANSMITTER WITH
XE & Xir SENSORS ATTACHED**
WEIGHT = 13.2 LBS

PARTS LIST			
ITEM NO.	MATERIAL MASTER NO.	QTY. REQD.	DESCRIPTION

REVISIONS	
NOV 16 2004	12-18-2007
1	A. ADDED NOTE 2 TO SHEET 2
2	B. ADDED NOTES 3 THRU 7 AND NOTATION TO SHEET 4
3	ECO#7000001760A
	LRB KDH
DEC 20 2007	5-12-2009
4	A. 8.5 WAS 6.5W & 7.5 WAS 5.5W
5	B. 7.5 WAS 8W & 6.5 WAS 7W
6	ECO#7000002475A
	LRB JS
MAY 12 2009	1-12-2010
7	ADDED TABLE 5 TO SHT. 3
8	ECO#7000002819A
	LRB CZL
JAN 12 2010	

- NOTE:
1. DIMENSIONS SHOWN IN INCHES (MILLIMETERS).
 2. CALIBRATION TUBING IS SUPPLIED IN CALIBRATION KIT.
 3. CALIBRATION TUBING IS SUPPLIED IN CALIBRATION KIT.
 4. P/N 10047562 IS REMOTE OPTIONAL MOUNTING STRAP.
 5. CHECK THIS TAG FOR HAZARDOUS RATING.
 6. P/N 10047561 IS INSTRUMENT OPTIONAL MOUNTING STRAP.
 7. CHECK SENSOR LABEL FOR GAS TYPE, RANGE, AND ATO ORDERING NUMBER.
 8. SENSOR INLET MUST FACE DOWN.

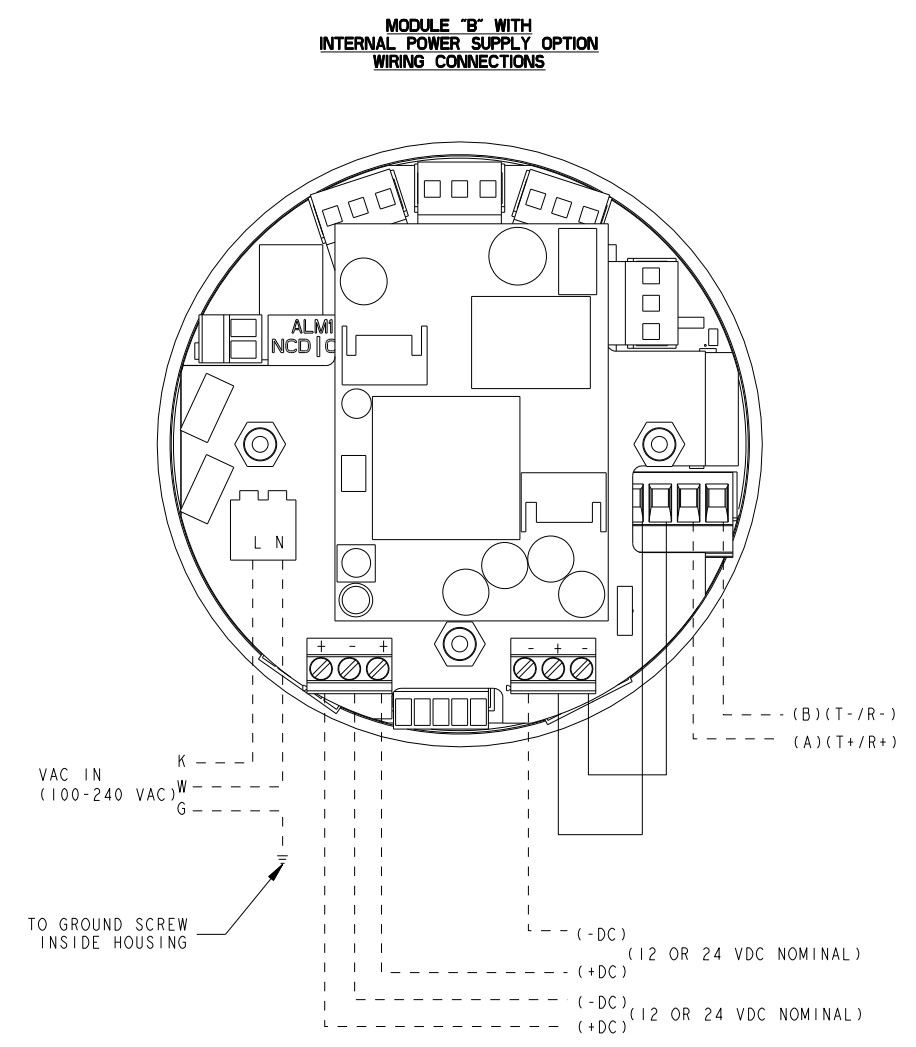
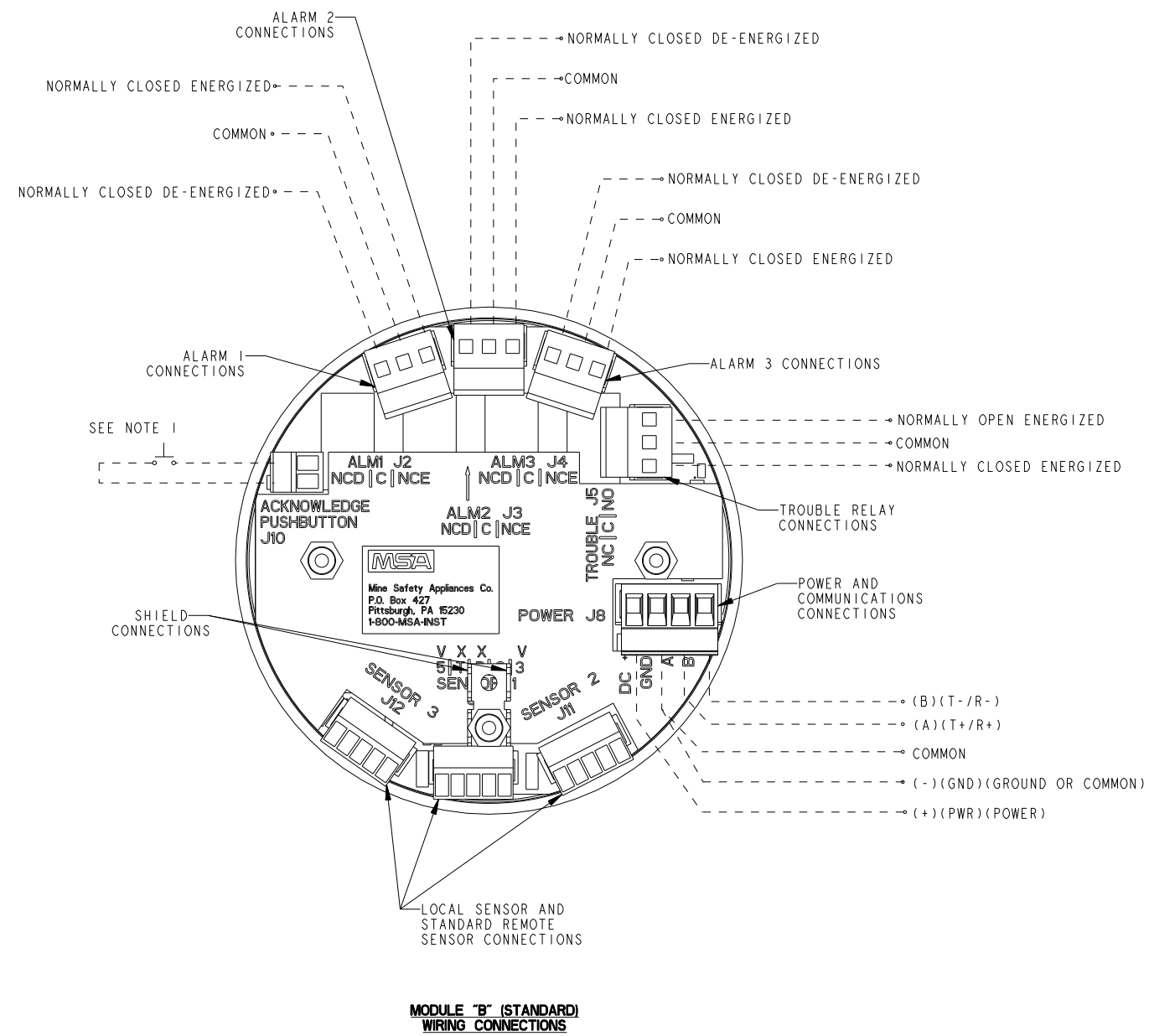
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	MSA STANDARD SHOP PRACTICES APPLY	JOB NO. 30006240 PH0718	APPROVAL AGENCY CODE: YES NIOSH ATTR. DOC.: .	
	CODE SYMBOLS	DRAWN BY BP	DATE 10-22-2004	INSTALLATION OUTLINE, MODBUS, ULTIMA XE
	CRITICAL Δ	CHECKED BY D. BRUCE	11-12-2004	
	MAJOR A Δ	PROJ. ENGR. S. TURNER	11-12-2004	
	MAJOR B Δ	QUALITY ASSURANCE J. DANNHARDT	11-12-2004	
	100% INSPECTION Δ	MANUFACTURING D. ALWARD	11-15-2004	CADD REF: 10000021203
	TOLERANCES UNLESS OTHERWISE SPECIFIED			SCALE: 1:000
	FRACTIONAL ± 1/64			SHEET
	2 PL DEC. ± 0.01			1 OF 4
	3 PL DEC. ± 0.005			
	ANGULAR ± 1 deg.			
	SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES			
		DOCUMENT NO. D SK 10000021203		

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

LIFECYCLE STATE	REVISION
Production	3

PARTS LIST			
ITEM NO.	MATERIAL MASTER NO.	QTY. REQD.	DESCRIPTION

REVISIONS
NOV 16 2004
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MAY 12 2009
REV. 3
JAN 12 2010



NOTE:
 1. NORMALLY OPEN PUSH BUTTON SWITCH (OPTIONAL).
 2. CONNECT POWER SUPPLY GROUND TO COMMUNICATIONS COMMON (SEE PAGE 4).

TABLE I
 TRANSMITTER POWER CONSUMPTION (7-30VDC SUPPLY)

CONFIGURATION			MAX POWER	MAX POWER
CATALYTIC	X1R	ECHEM	WITH RELAYS	WITHOUT RELAYS
0	0	3	2.5W	1.5W
0	2	1	9.5W	8.5W
0	1	2	7W	6W
1	0	2	6W	5W
1	1	1	8.5W	7.5W
2	0	1	7.5W	6.5W
3	0	0	10W	9W

(2A)
 (2B)

COLOR CODE			
BLACK = K	GREEN = G	BROWN = N	BLUE = B
RED = R	VIOLET = V	ORANGE = O	GRAY = A
YELLOW = Y	WHITE = W	PINK = P	TAN = T

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MSA STANDARD SHOP PRACTICES APPLY	JOB NO. 30006240 PH0718	APPROVAL AGENCY CODE: YES NIOSH ATTR. DOC.: .	REVISION 3
CRITICAL Δ	DRAWN BY BP DATE 10-22-2004	INSTALLATION OUTLINE, MODBUS, ULTIMA XE	
MAJOR A Δ (NO MARK)	CHECKED BY D. BRUCE DATE 11-12-2004		
MAJOR B Δ	PROJ. ENGR. S. TURNER DATE 11-12-2004		
100% INSPECTION Δ	QUALITY ASSURANCE J. DANNHARDT DATE 11-12-2004		
TOLERANCES UNLESS OTHERWISE SPECIFIED	MANUFACTURING D. ALWARD DATE 11-15-2004	CADD REF: 10000021203	SCALE: 1:000
FRACTIONAL ± 1/64	DOCUMENT NO. D SK 10000021203	SHEET 2 OF 4	
2 PL DEC. ± 0.01			
3 PL DEC. ± 0.005			
ANGULAR ± 1 deg.			
SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES			

PARTS LIST			
ITEM NO.	MATERIAL MASTER NO.	QTY. REQD.	DESCRIPTION

REVISIONS	
NOV 16 2004	REV. 1
DEC 20 2007	REV. 2
MAY 12 2009	REV. 3
JUL 12 2010	

**MODULE "B" (SIGNAL BOOST OPTION)
WIRING CONNECTIONS**

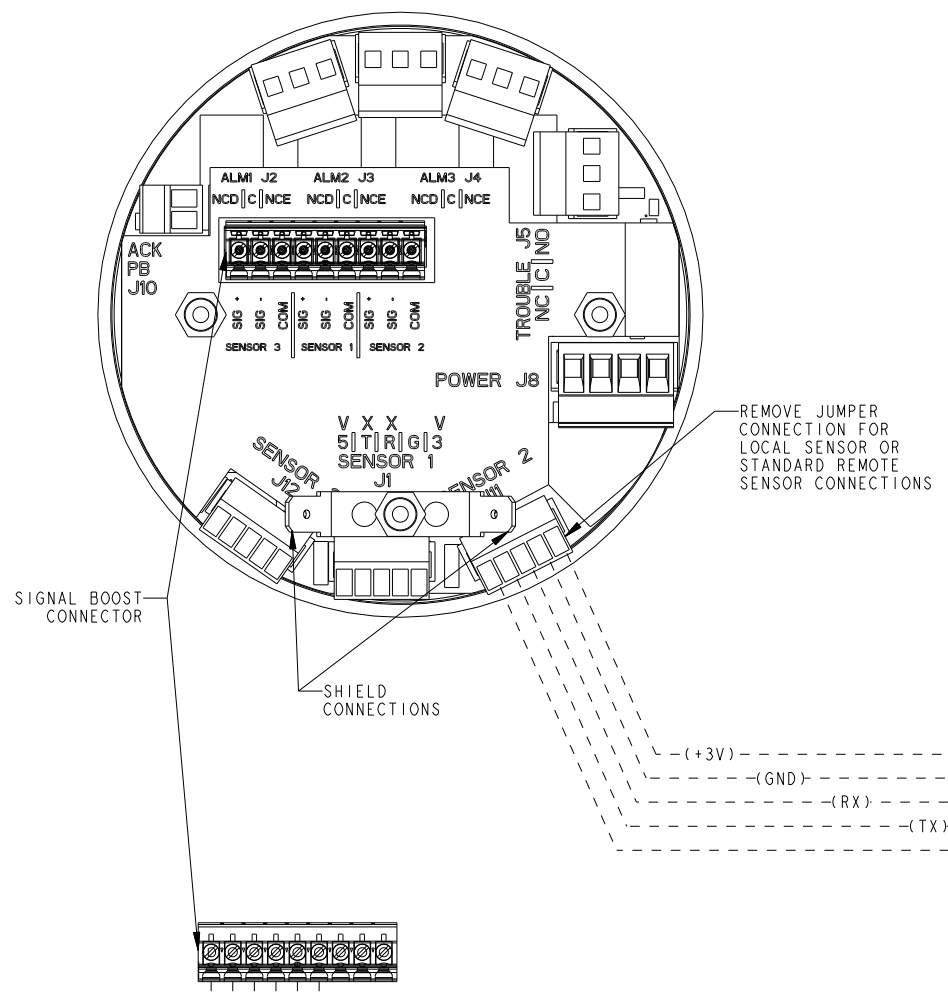


TABLE 2
REMOTE SENSOR POWER CONSUMPTION
(AC OR DC VERSION)

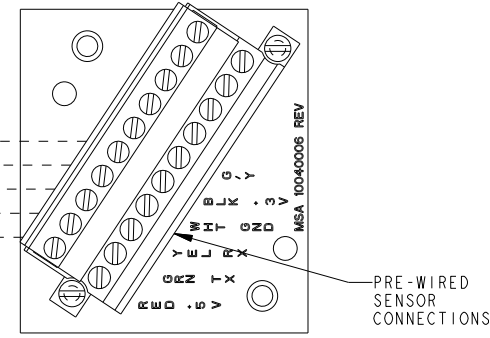
SENSOR TYPE	MAXIMUM POWER CONSUMPTION
CATALYTIC	4.5 WATTS
Xir	5 WATTS
E-CHEM	1.5 WATTS

TABLE 4
TRANSMITTER POWER CONSUMPTION

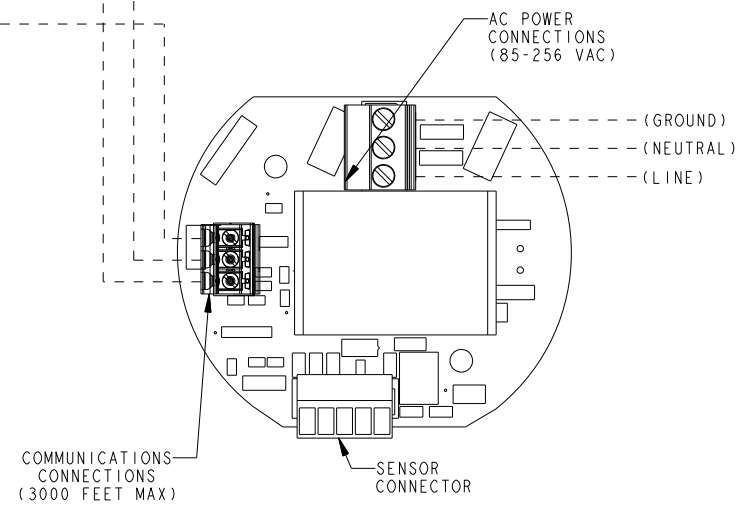
TRANSMITTER WITHOUT RELAYS	0.5 WATTS
TRANSMITTER WITH RELAYS	1.5 WATTS

TABLE 5
REMOTE MODULE WIRING AND PLACEMENT

GAS TYPE	MINIMUM WIRE SIZE	MAXIMUM DISTANCE	NO. SHIELDED, CONDUCTOR WIRE
OXYGEN OR TOXIC	20 AWG	100 FT.	5
COMBUSTIBLE	18 AWG	50 FT.	5
	16 AWG	100 FT.	
XIR	16 AWG	50 FT.	4
	12 AWG	100 FT.	

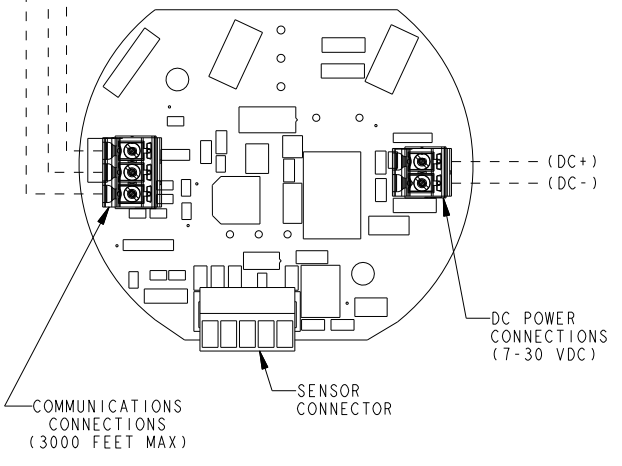


**MODULE "A" (STANDARD REMOTE)
WIRING CONNECTIONS (100 FEET MAX)
SEE NOTE 2**



**MODULE "A" (SIGNAL BOOST REMOTE)
WIRING CONNECTIONS (AC VERSION)
SEE TABLE 2
SEE NOTE 3**

**MODULE "A" (SIGNAL BOOST REMOTE)
WIRING CONNECTIONS (DC VERSION)
SEE TABLE 2
SEE NOTE 3**



- NOTE:
- - - - - INDICATES FIELD CONNECTIONS BY OTHERS.
 - MAXIMUM TRANSMITTER-SENSOR DISTANCE IS 100 FT WITHOUT THE SIGNAL BOOST OPTION.
 - USE OF THIS OPTION REQUIRES THE SENSOR TO BE POWERED LOCALLY.

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CRITICAL Δ	CODE SYMBOLS	DRAWN BY BP	DATE 10-22-2004	<p style="text-align: center;">INSTALLATION OUTLINE, MODBUS, ULTIMA XE</p>
MAJOR A Δ	MINOR (NO MARK)	CHECKED BY D. BRUCE	DATE 11-12-2004	
MAJOR B Δ		PROJ. ENGR. S. TURNER	DATE 11-12-2004	
100% INSPECTION Δ		QUALITY ASSURANCE J. DANNHARDT	DATE 11-12-2004	
TOLERANCES UNLESS OTHERWISE SPECIFIED		MANUFACTURING D. ALWARD	DATE 11-15-2004	
FRACTIONAL ± 1/64		CADD REF: 10000021203	SCALE: 1:000	
2 PL DEC. ± 0.01		DOCUMENT NO. D SK 10000021203		SHEET 3 OF 4
3 PL DEC. ± 0.005				
ANGULAR ± 1 deg.				
SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES				

PARTS LIST			
ITEM NO.	MATERIAL MASTER NO.	QTY. REQD.	DESCRIPTION

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NOV 16 2004
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REV. 3
JAN 12 2010

TYPICAL ModBUS NETWORK TOPOGRAPHY

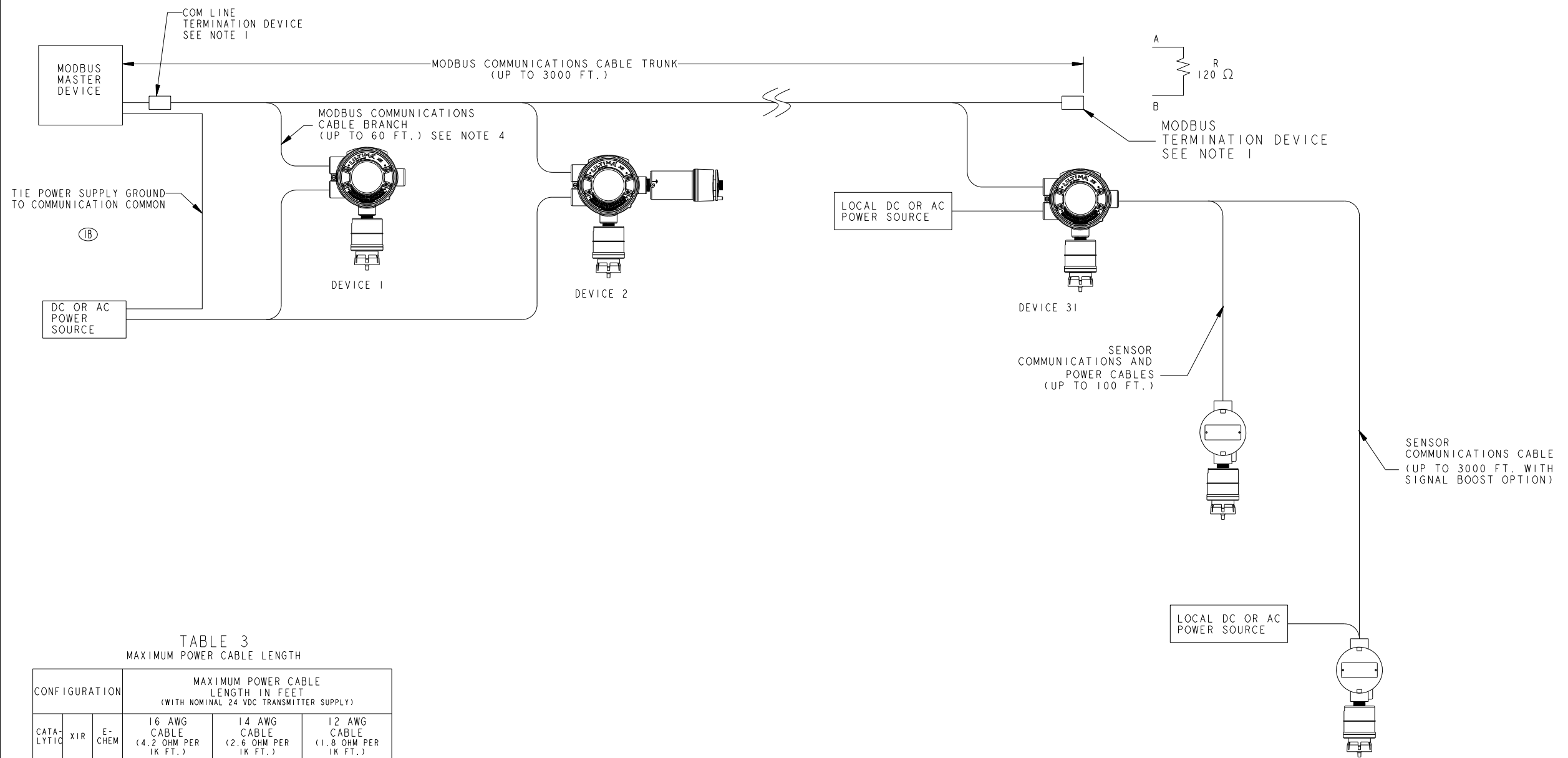


TABLE 3
MAXIMUM POWER CABLE LENGTH

CONFIGURATION	MAXIMUM POWER CABLE LENGTH IN FEET (WITH NOMINAL 24 VDC TRANSMITTER SUPPLY)								
	CATA-LYTIC	XIR	E-CHEM	16 AWG CABLE (4.2 OHM PER 1K FT.)		14 AWG CABLE (2.6 OHM PER 1K FT.)		12 AWG CABLE (1.8 OHM PER 1K FT.)	
				NO RELAYS	RELAYS OPTION	NO RELAYS	RELAYS OPTIONS	NO RELAYS	RELAYS OPTION
0	0	3	4500	3500	7200	5500	10000	7500	
0	2	1	2000	1500	2750	2500	4000	3500	
0	1	2	3000	2250	4500	3500	6250	5000	
1	0	2	3500	2750	5500	4250	7500	6000	
1	1	1	2000	1500	2750	2500	4000	3500	
2	0	1	2500	1750	3500	3000	5000	4000	
3	0	0	2000	1500	2750	2500	3750	3500	

- NOTE:
1. LINE TERMINATION DEVICE MUST MATCH COM LINE (TYPICALLY 120 OHMS).
 2. TYPICAL RS485 COMMUNICATIONS WIRING SCHEME IS 3 WIRE CABLE, 22AWG, LABELED (A) T+/R+, (B) T-/R- AND (C) COMMON.
 3. POWER SUPPLY GROUND MUST BE TIED TO COMMUNICATIONS COMMON.
 4. BRANCHES TO 60FT. ARE ALLOWED BUT WILL REDUCE THE OVERALL TRUNK LENGTH AND INCREASE NOISE. BRANCHES GREATER THAN 1FT. ARE NOT RECOMMENDED.
 5. ALWAYS USE TWISTED PAIRS FOR POWER AND COMMUNICATIONS.
 6. USE SHIELDED WIRE IN HIGH NOISE AREA. (EARTH GROUND ONE END OF SHIELD.)
 7. FOR CE MARKED INSTALLATIONS, SHIELDED WIRE MUST BE USED.

LIFECYCLE STATE	REVISION
Production	3

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MAJOR A Δ	MAJOR B Δ	100% INSPECTION Δ	CHECKED BY D. BRUCE	DATE 11-12-2004
TOLERANCES UNLESS OTHERWISE SPECIFIED	FRACTIONAL $\pm 1/64$	2 PL DEC. ± 0.01	3 PL DEC. ± 0.005	ANGULAR ± 1 deg.
SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES	PROJ. ENGR. S. TURNER		DATE 11-12-2004	QUALITY ASSURANCE J. DANNHARDT
		DATE 11-12-2004	MANUFACTURING D. ALWARD	DATE 11-15-2004
			CADD REF: 10000021203	SCALE: 1:000
			DOCUMENT NO. D SK 10000021203	SHEET 4 OF 4

**INSTALLATION OUTLINE,
MODBUS, ULTIMA XE**