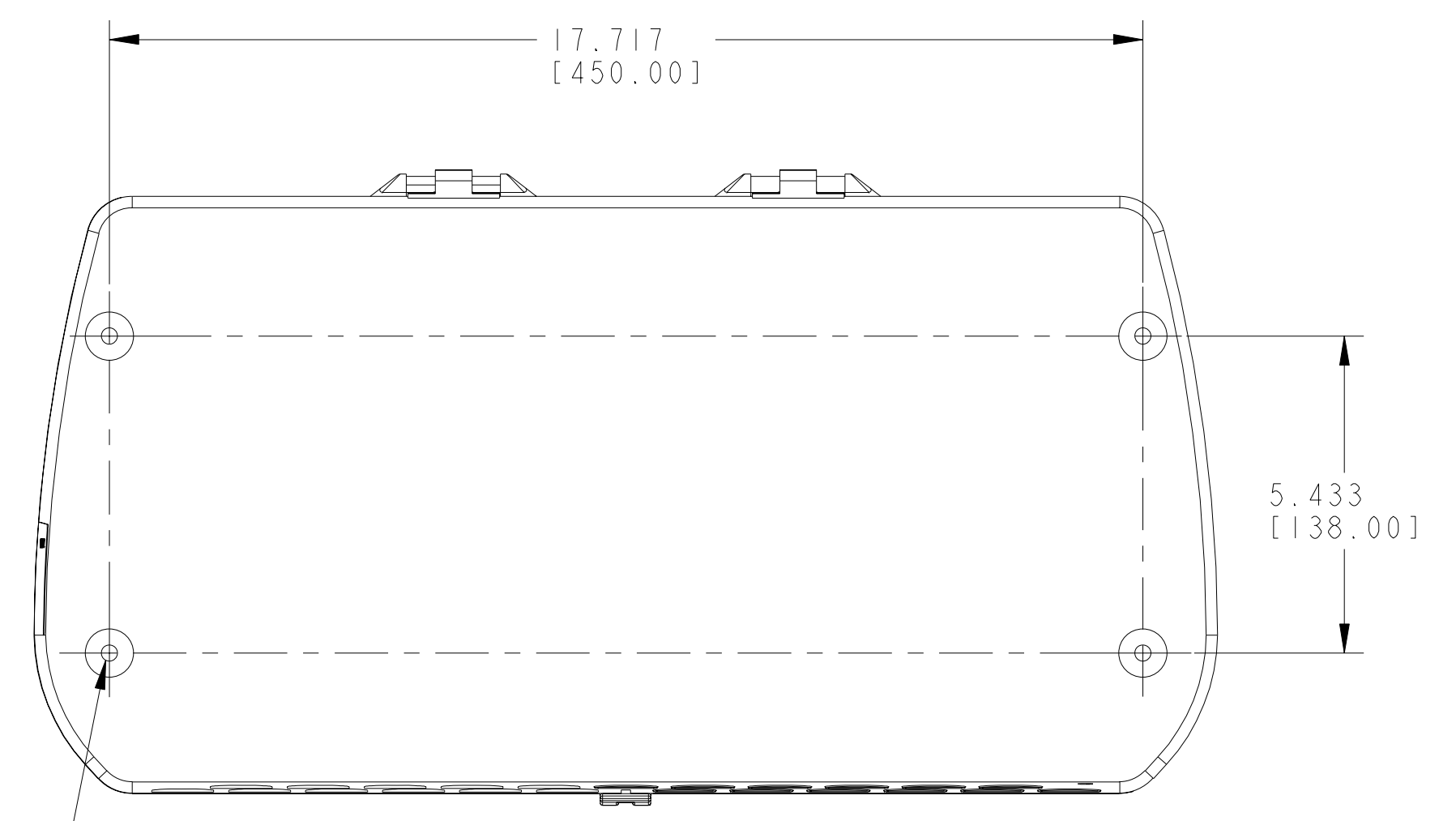
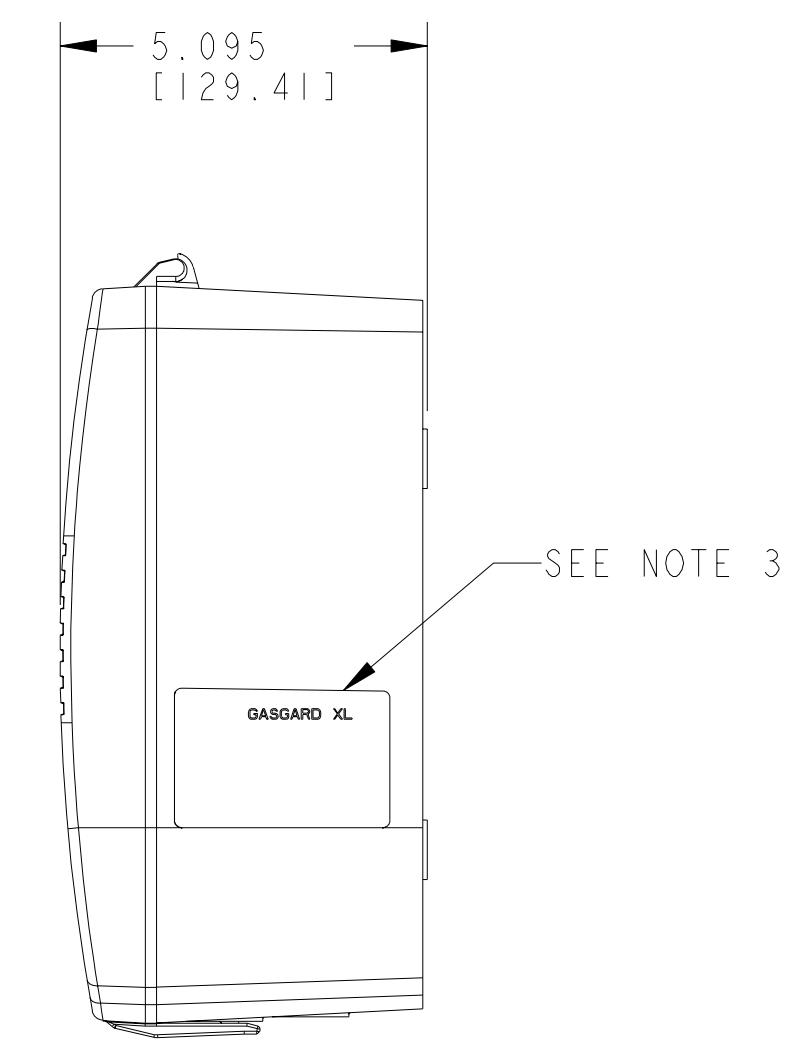
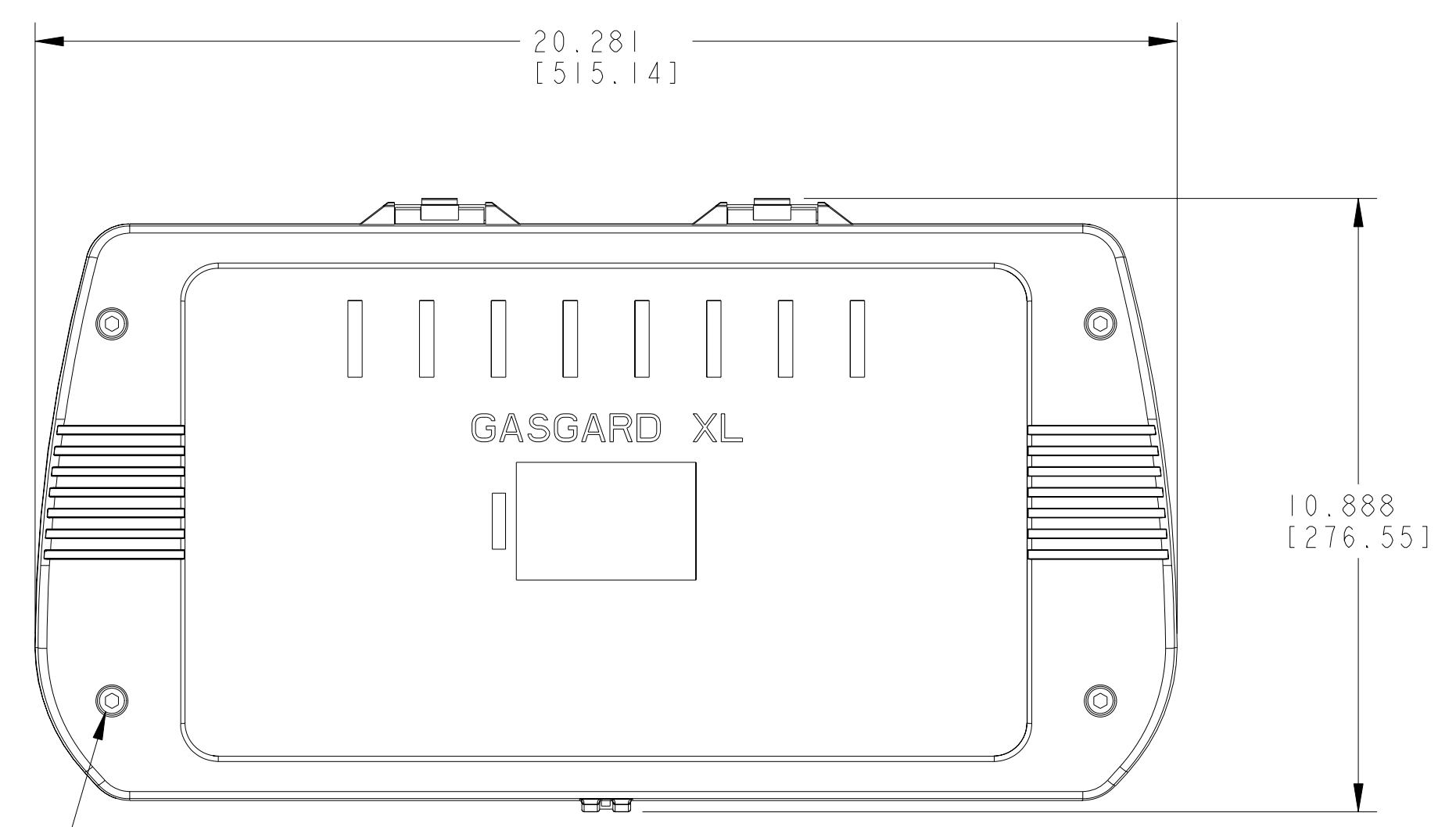
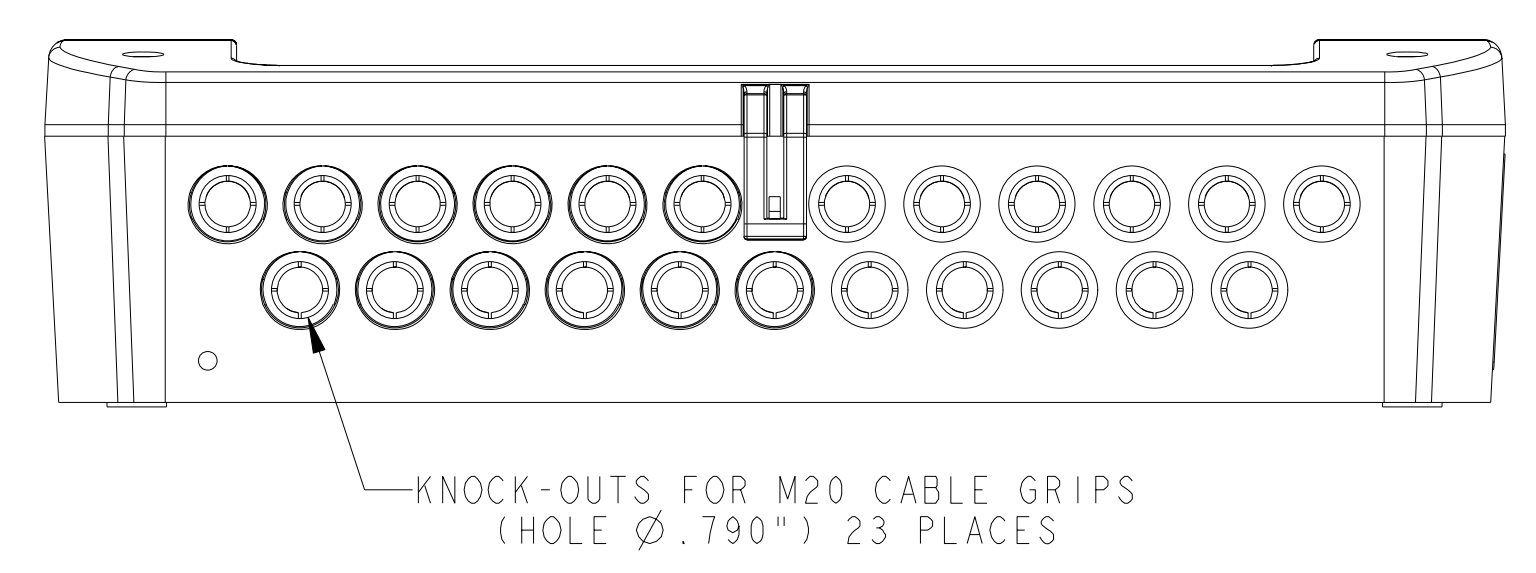


REVISIONS	
①	10-22-2008 <b>INITIAL RELEASE</b> FlameGard was SharpEye on SHEET 4 NOTE 11 and VIEW GJT JD
<b>OCT 29 2008</b>	



M8 BOLTS (4 PLACES)  
USE METRIC ALLEN WRENCH #6 TO REMOVE



**NOTE:**

- DIMENSIONS SHOWN IN INCHES [MILLIMETERS].
- INSTRUMENT HOUSING IS MADE OF ABS PLASTIC.
- CHECK TAG FOR AREA CLASSIFICATION.
- - - - INDICATES FIELD CONNECTIONS BY OTHERS.

(CONTINUED ON SHEET 2)

**CUSTOMER** \_\_\_\_\_

**P.O. NO.** \_\_\_\_\_

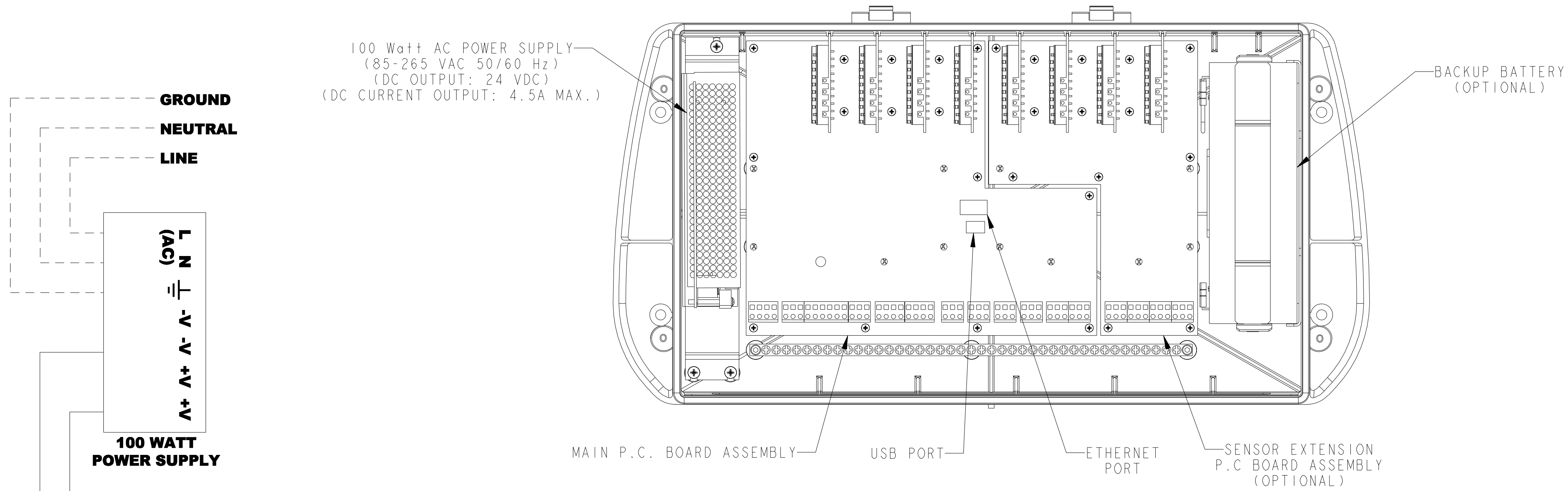
**MSA NO.** \_\_\_\_\_

**LOCATION** \_\_\_\_\_

**TAG NO.** \_\_\_\_\_

**TOTAL NO. OF UNITS** \_\_\_\_\_

AUTHORIZED COUNTRY	<b>MSA</b>	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		APPROVAL AGENCY CODE: YES   NTOSH ATTR. DOC.:	
	CODE SYMBOLS	JOB NO. 30009741 PH0703	DATE 10-2-2008	<b>INSTALLATION OUTLINE, GASGARD XL</b>
	CRITICAL $\Delta$	DRAWN BY GT	CHECKED BY J. DiLEO	
	MAJOR A $\Delta$ MINOR (NO MARK)	PROJ. ENGR. S. TURNER	QUALITY ASSURANCE J. DANNHARDT	
	MAJOR B $\Delta$	MANUFACTURING A. POLOCHAK		
	100% INSPECTION $\Delta$	TOLERANCES UNLESS OTHERWISE SPECIFIED		CADD REF: SK3015-1021
	FRACTIONAL $\pm 1/64$	2 PL DEC. $\pm 0.01$		SCALE: 1:000
	3 PL DEC. $\pm 0.005$	ANGULAR $\pm 1$ deg.		<b>SK3015-1021</b>
	SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES	<b>D.</b>		



**MAIN P.C. BOARD ASSEMBLY**

Main		Battery		Sensor 1		Sensor 2		Sensor 3		Sensor 4		Reset	Acknowledge	RS485		Alarm1			Alarm2			Horn1			Horn2			Fault													
+24V	GND	+24V	GND	+24V/K	IN/O	GND/D	+24V/K	IN/O	GND/D	+24V/K	IN/O	GND/D	+24V	IN	+24V	IN	VDD	A	B	GND	NO	COM	NC	NO	COM	NC	NO	COM	NC	NO	COM	NC	NO	COM	NC						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

**SENSOR EXTENSION P.C. BOARD ASSEMBLY**

Sensor 5		Sensor 6		Sensor 7		Sensor 8					
+24V/K	IN/O	GND/D	+24V/K	IN/O	GND/D	+24V/K	IN/O	GND/D			
43	44	45	46	47	48	49	50	51	52	53	54

FERRITE FILTER

(GND) GROUND  
(IN) 4-20mA  
(+24V) +24 VDC

(TYPICAL)  
FOR ALL SENSORS  
SEE SHEET 4

NORMALLY CLOSED  
COMMON  
NORMALLY OPEN

(TYPICAL)  
ALARM AND HORN RELAYS  
(SEE NOTE 7)

(GND) GROUND OR COMMON

(B) DATA (T-/R-)

(A) DATA (T+/R+)

(VDD) (+) (POWER)

NORMALLY CLOSED  
COMMON  
NORMALLY OPEN  
NORMALLY OPEN  
COMMON  
NORMALLY CLOSED

(SEE NOTE 8)

NOTE: (CONTINUED FROM SHEET 1)

- BATTERY IS SHIPPED DISCONNECTED. CONNECT DURING INSTALLATION OF THE GASGARD XL. UNIT MUST BE CONFIGURED FOR BATTERY BACKUP THROUGH THE PC SOFTWARE. (SEE MANUAL FOR DETAILS)
  - CUSTOMER INSTALLED (NO) NORMALLY OPEN PUSH BUTTON SWITCH.
  - RELAY IS (SPDT) SINGLE POLE DOUBLE THROW.  
CONTACT RATING: 5A@240VAC RESISTIVE or 5A@30VDC RESISTIVE
  - RELAY IS (DPDT) DOUBLE POLE DOUBLE THROW.  
CONTACT RATING: 5A@240VAC RESISTIVE or 5A@30VDC RESISTIVE
- (CONTINUED ON SHEET 3)

BACKUP BATTERY  
(SEE NOTE 5)

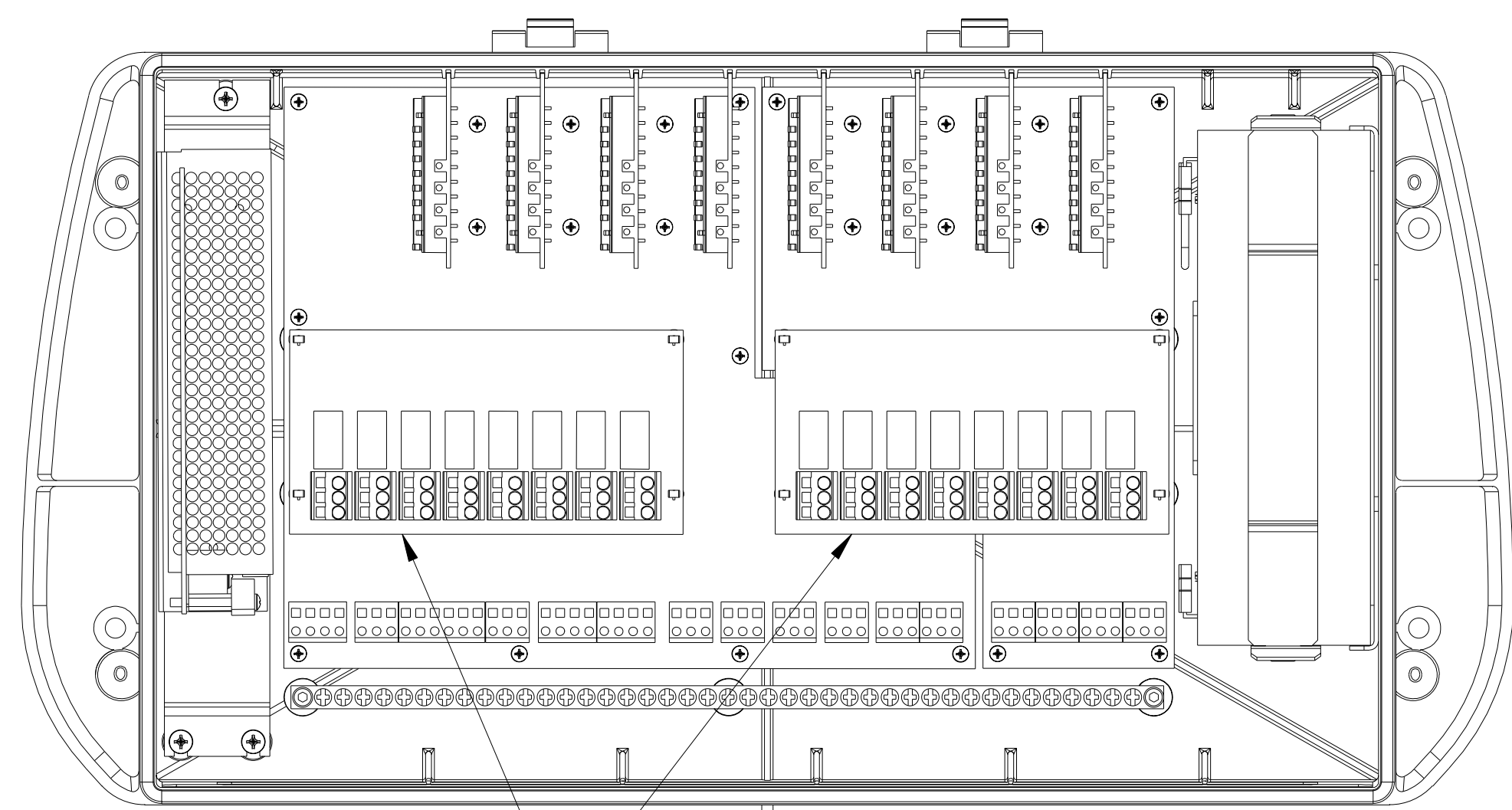
RED  
BLACK

THESE TWO WIRES  
SUPPLIED WITH BATTERY  
AND  
INSTALLED BY CUSTOMER

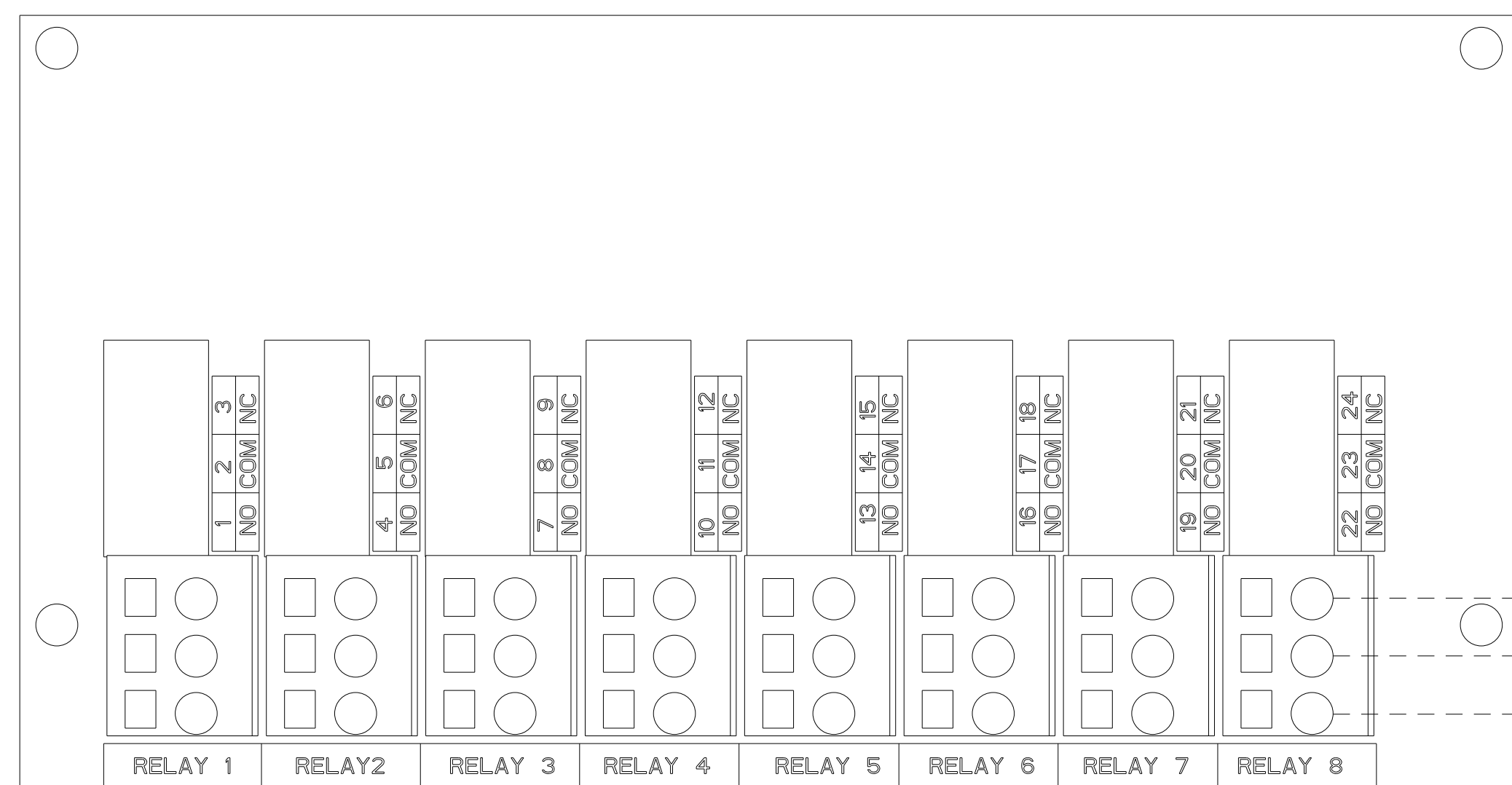
(SEE NOTE 6)

(SEE NOTE 6)

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	MSA STANDARD SHOP PRACTICES APPLY		APPROVAL AGENCY CODE: YES/NTOSH ATTR. DOC.:	
CODE SYMBOLS	JOB NO. 30009741 PH0703	DATE 10-2-2008	<b>INSTALLATION OUTLINE, GASGARD XL</b>	
CRITICAL $\Delta$	DRAWN BY GT	CHECKED BY J. DiLEO		
MAJOR A $\Delta$	MINOR (NO MARK)	PROJ. ENGR. S. TURNER		
MAJOR B $\Delta$	100% INSPECTION $\Delta$	QUALITY ASSURANCE J. DANNHARDT		
TOLERANCES UNLESS OTHERWISE SPECIFIED	FRACTIONAL $\pm 1/64$	2 PL DEC. $\pm 0.01$	3 PL DEC. $\pm 0.005$	ANGULAR $\pm 1$ deg.
SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES		A. POLOCHAK 10-28-08	CADD REF: SK3015-1021	SCALE: 1:000
	D.	SK3015-1021		SHEET 2 OF 4



CHANNEL RELAY  
 P.C. BOARD ASSEMBLIES  
 (OPTIONAL)



**NORMALLY CLOSED**  
**COMMON**  
**NORMALLY OPEN**

TYPICAL WIRING FOR RELAYS 1-8 (SEE NOTE 9)

NOTE: (CONTINUED FROM SHEET 2)

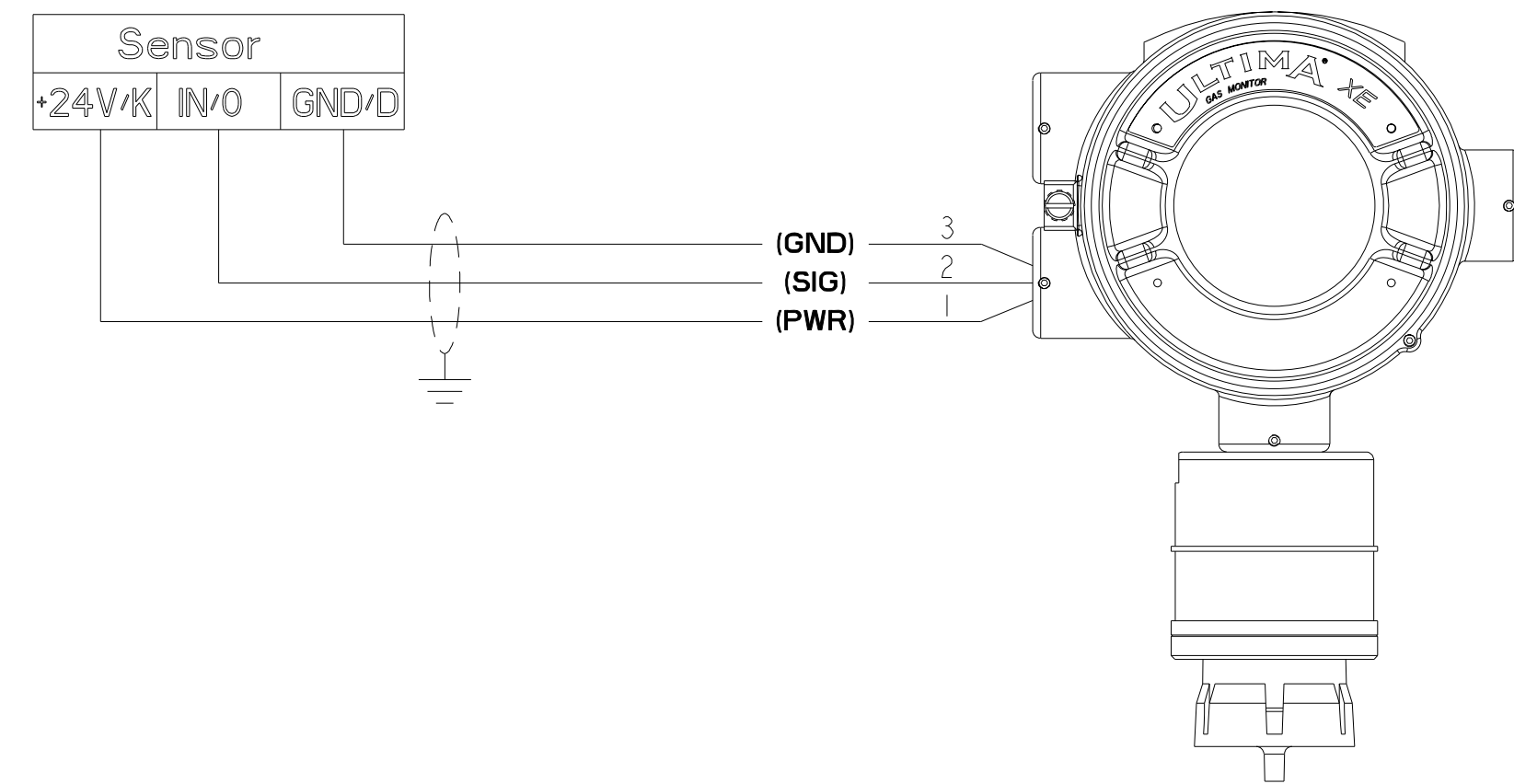
9. RELAYS ARE (SPDT) SINGLE POLE DOUBLE THROW.  
 CONTACT RATING: 5A@240VAC RESISTIVE or 5A@30VDC RESISTIVE

(CONTINUED ON SHEET 4)

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	MSA STANDARD SHOP PRACTICES APPLY		JOB NO. 30009741 PH0703	APPROVAL AGENCY CODE: YES   NTOSH ATTR. DOC.:
	CODE SYMBOLS	DRAWN BY	DATE	
	CRITICAL $\Delta$	GT	10-2-2008	
	MAJOR A $\Delta$	CHECKED BY	PROJ. ENGR.	
	MAJOR B $\Delta$	J. DiLEO	10-28-08	
	100% INSPECTION $\Delta$	S. TURNER	10-28-08	
	TOLERANCES UNLESS OTHERWISE SPECIFIED	J. DANNHARDT	10-28-08	
	FRACTIONAL $\pm 1/64$	MANUFACTURING		
	2 PL DEC. $\pm 0.01$	A. POLOCHAK	10-28-08	
	3 PL DEC. $\pm 0.005$	CADD REF: SK3015-1021	SCALE: 1:000	
	ANGULAR $\pm 1 \text{ deg.}$	<b>D.</b>	<b>SK3015-1021</b>	
	SEE MSA STANDARD SHOP PRACTICES FOR DRILLED HOLE TOLERANCES		SHEET 3 OF 4	

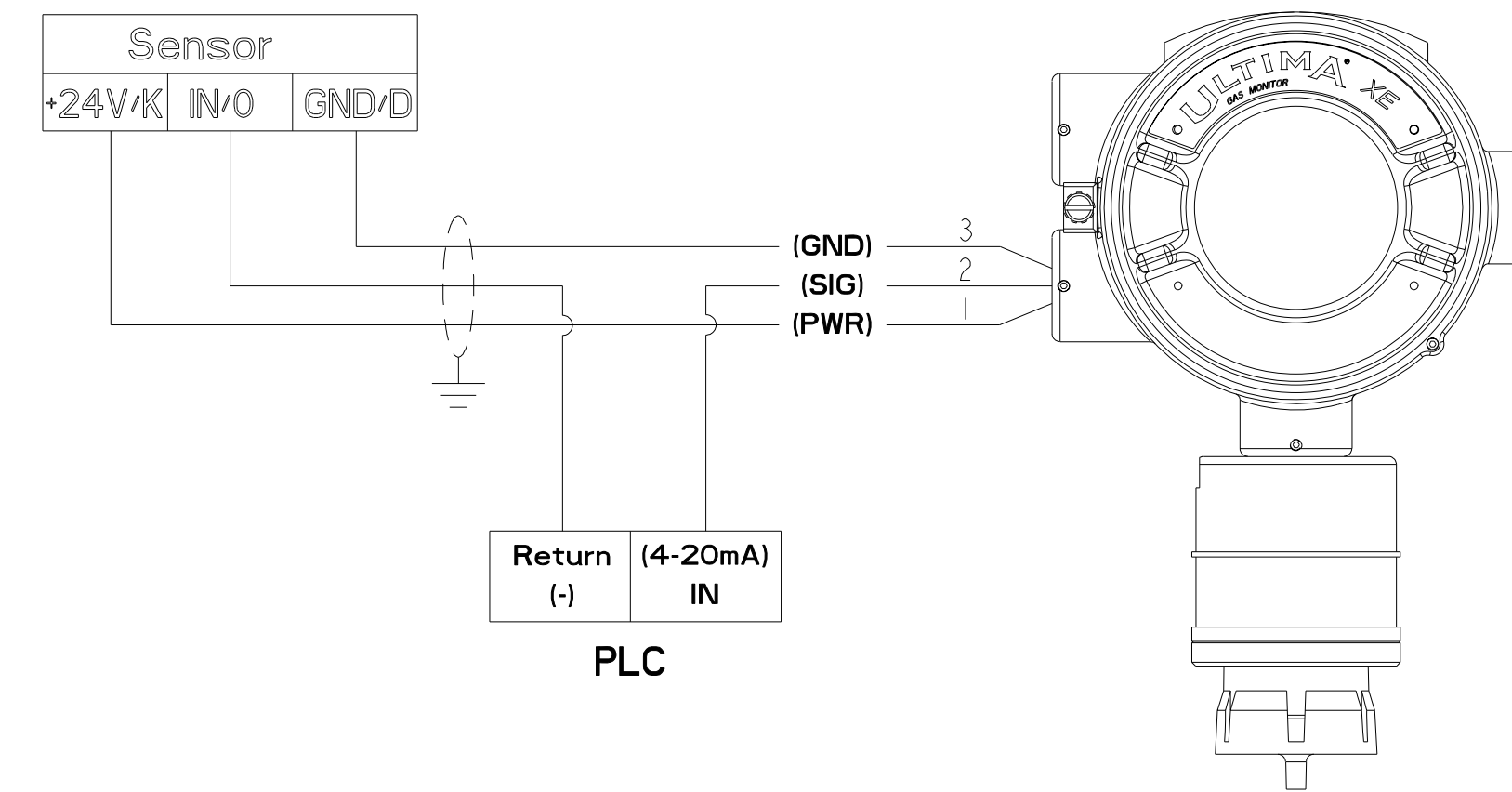
**INSTALLATION OUTLINE,  
 GASGARD XL**

GASGARD XL MAIN P.C. CONNECTIONS



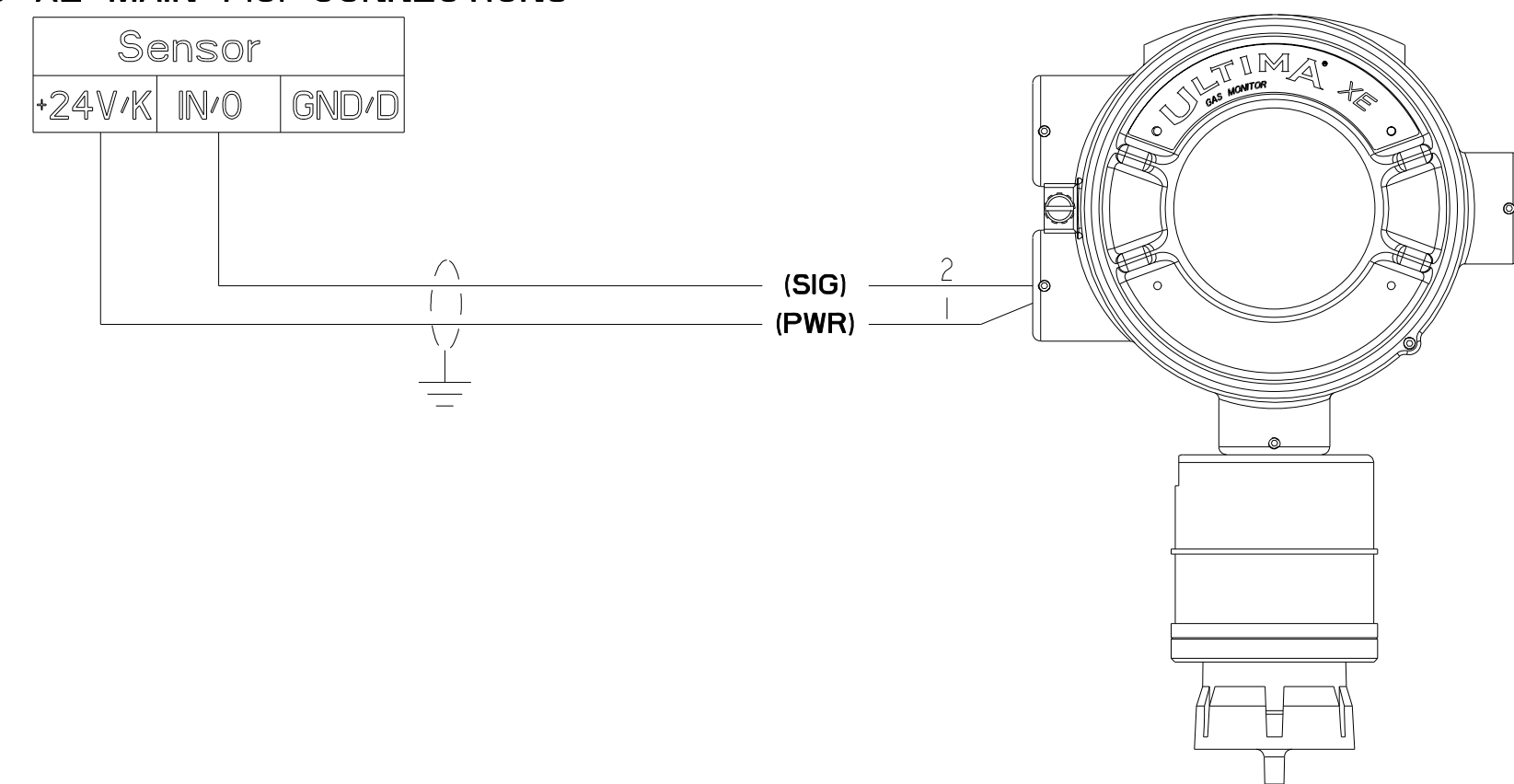
**ULTIMA XE or XIR (3 WIRE)**  
 (SEE NOTE 10)

GASGARD XL MAIN P.C. CONNECTIONS



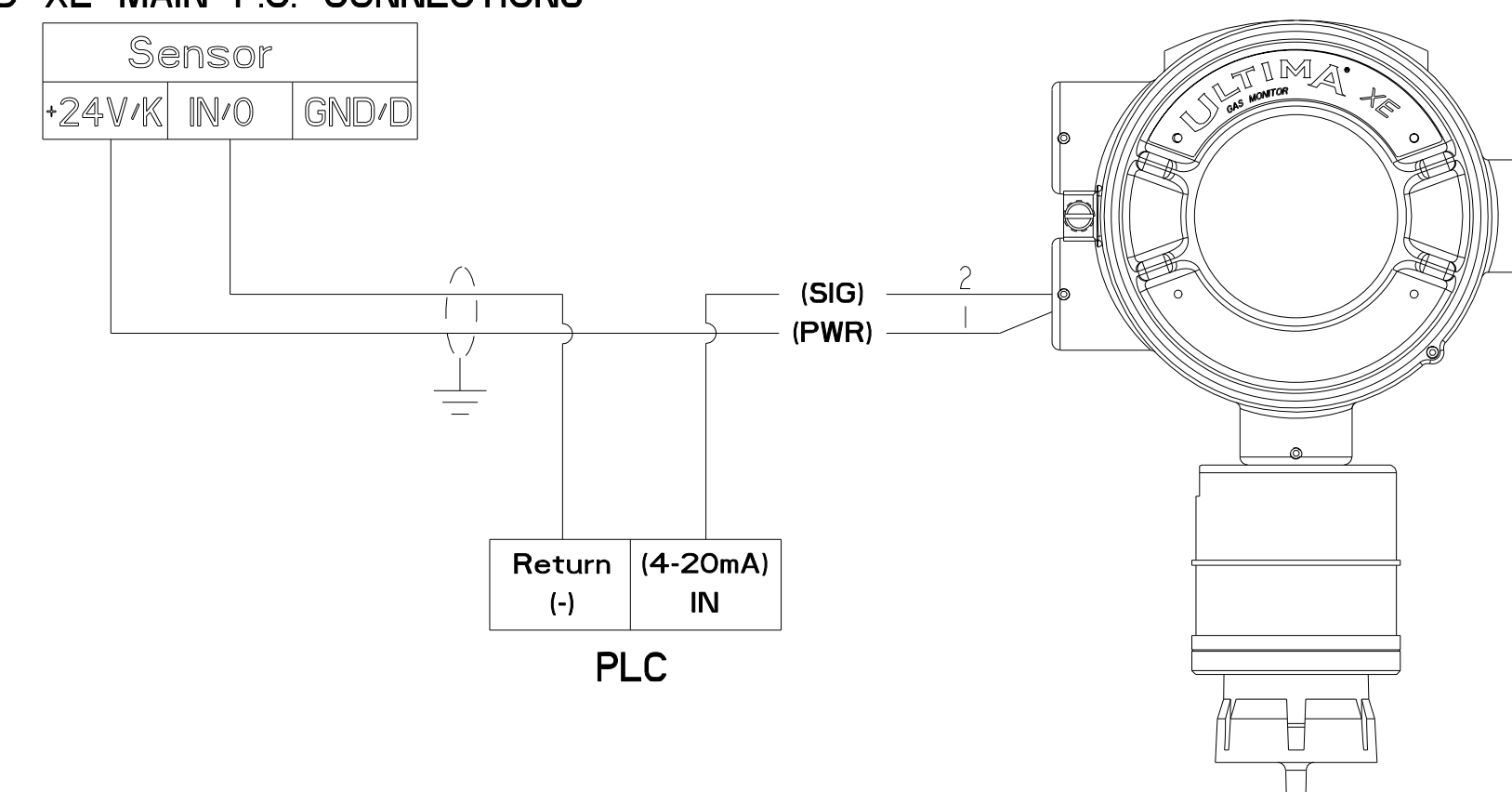
**CONNECTIONS TO PLC (3 WIRE)**  
 (SEE NOTE 13)

GASGARD XL MAIN P.C. CONNECTIONS



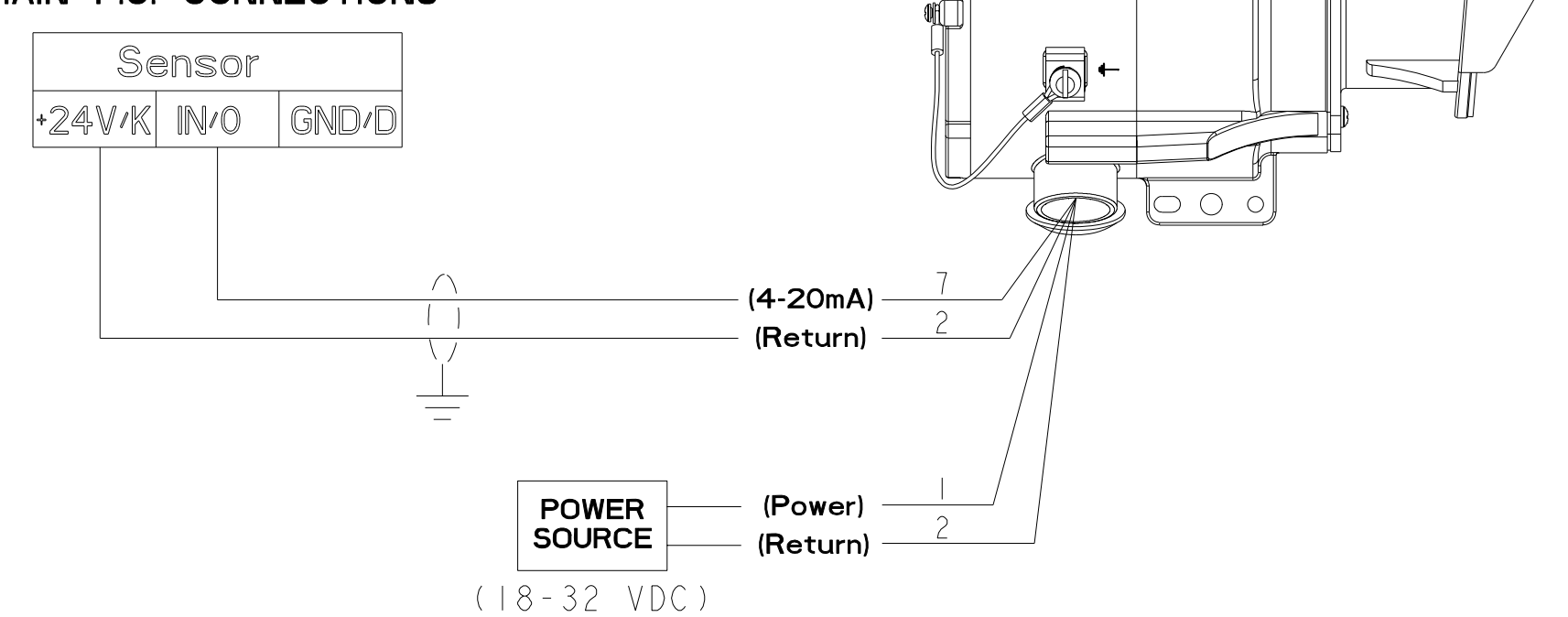
**ULTIMA XE (2 WIRE)**  
 (SEE NOTE 10)

GASGARD XL MAIN P.C. CONNECTIONS



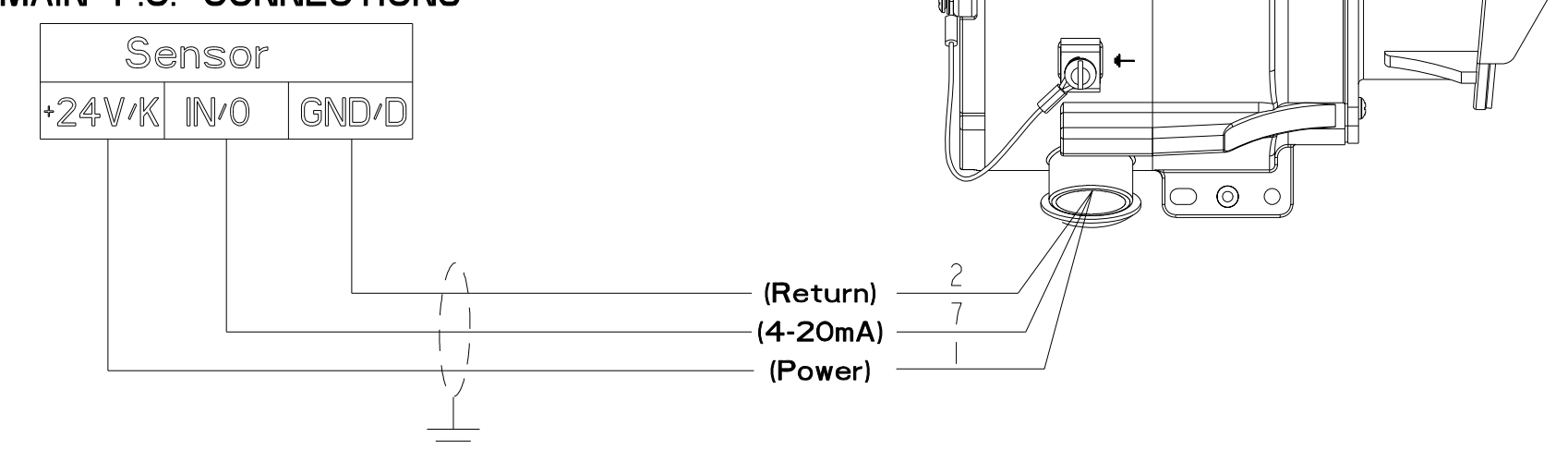
**CONNECTIONS TO PLC (2 WIRE)**  
 (SEE NOTE 13)

GASGARD XL MAIN P.C. CONNECTIONS



**SafEye**  
 (SEE NOTE 12)

GASGARD XL MAIN P.C. CONNECTIONS



**FlameGard** Ⓛ  
 (SEE NOTE 11)

NOTE: (CONTINUED FROM SHEET 3)

- 10. SEE ULTIMA X MANUAL and INSTALLATION OUTLINE DRAWINGS FOR MORE DETAILS.
- 11. SEE FlameGard MANUAL FOR MORE DETAILS.
- 12. SEE SafEye MANUAL FOR MORE DETAILS.
- 13. MAX. LOOP RESISTANCE WITH PLC and GASGARD XL NOT TO EXCEED 600 Ohms. THE PLC 4-20mA INPUT MUST BE ISOLATED FROM GROUND.

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	CODE SYMBOLS	JOB NO. 30009741 PH0703	DATE 10-2-2008	<b>INSTALLATION OUTLINE, GASGARD XL</b>
	CRITICAL ⚠	DRAWN BY GT	CHECKED BY J. DiLEO	
	MAJOR A ⚠	PROJ. ENGR. S. TURNER	QUALITY ASSURANCE J. DANNHARDT	
	MAJOR B ⚠	MANUFACTURING A. POLOCHAK		
	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			
		D.	SK3015-1021	SHEET 4 OF 4

**INSTALLATION OUTLINE,  
GASGARD XL**

CADD REF: SK3015-1021 SCALE: 1:000

**SK3015-1021**