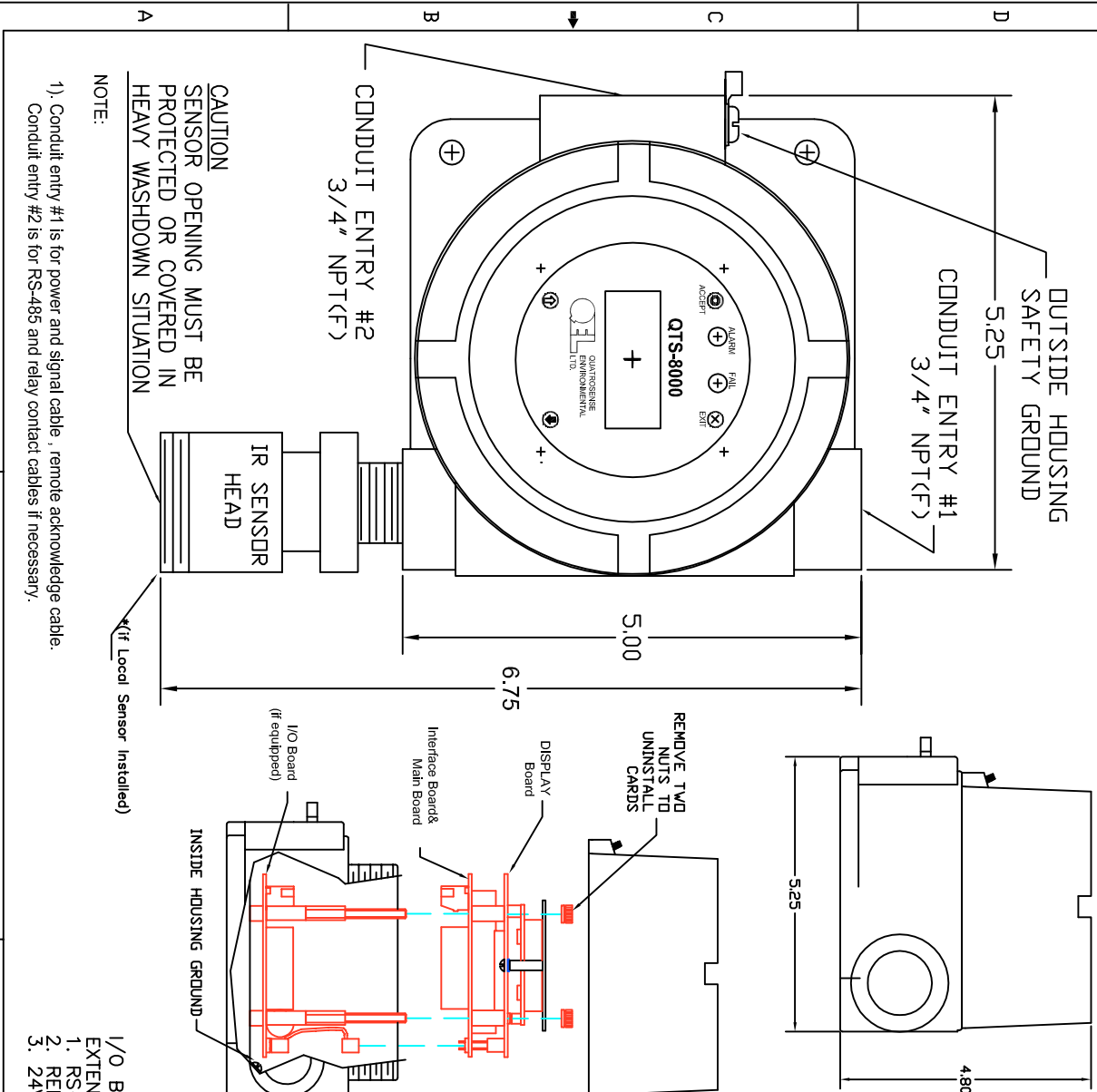


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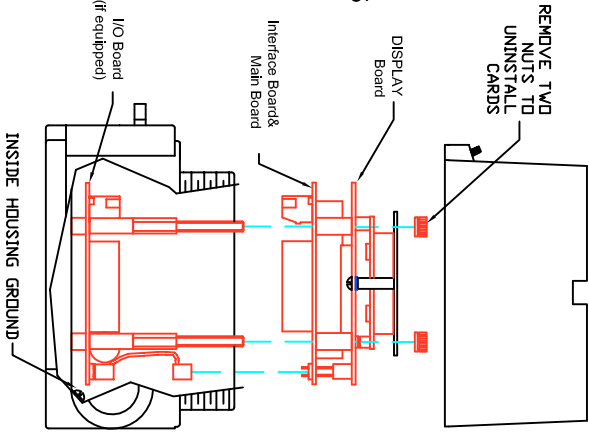


**CAUTION**  
SENSOR OPENING MUST BE PROTECTED OR COVERED IN HEAVY WASHDOWN SITUATION

NOTE:

- 1). Conduit entry #1 is for power and signal cable, remote acknowledge cable.
- Conduit entry #2 is for RS-485 and relay contact cables if necessary.

- I/O BOARD EXTENDED FEATURE OPTION
- 1. RS-485 PORT
  - 2. RELAYS (2)
  - 3. 24VAC/DC POWER



REV		DESCRIPTION		DATE		BY		CHK	
A	643	FIRST RELEASE		2004/09	XY		XY		
B	790	UPDATE GAS TABLE		06-11-29	CLG	F3	F3		

Gas	Mounting	Operating Temperature	
		MIN °C (°F)	MAX °C (°F)
Methane	CH <sub>4</sub>	-40 (-40)	+75 (167)
Ethylene	C <sub>2</sub> H <sub>4</sub>	-40 (-40)	+75 (167)
Methanol	CH <sub>3</sub> OH	-40 (-40)	+75 (167)
Propene	C <sub>3</sub> H <sub>6</sub>	-40 (-40)	+75 (167)
Butane	C <sub>4</sub> H <sub>10</sub>	-40 (-40)	+75 (167)
n-Pentane	C <sub>5</sub> H <sub>12</sub>	-40 (-40)	+75 (167)
Benzene	C <sub>6</sub> H <sub>6</sub>	-40 (-40)	+75 (167)
Acetone	CH <sub>3</sub> COCH <sub>3</sub>	-40 (-40)	+75 (167)
Butanol		-40 (-40)	+75 (167)

\* Note:  
HIGH = 9 to 18" (0.23 to 0.46m) below ceiling.  
MID = 4 to 6 ft. (1.2 to 1.8m) above floor.  
LOW = 9 to 18" (0.23 to 0.46m) above floor.

**Sensor Location:**

Several factors should be considered when selecting locations to install sensors, the following general suggestions should be considered to assure the detection of the target gas. Select the most suitable location for each sensor.

1. Air Currents: If there are fans, winds, or others sources of air movement, gases may tend to rise to collect in certain areas of a facility. The local air currents should be assessed to aid in selecting the sensor location. In outdoor situations considerations such as prevailing winds should be accounted for. Air convection can often be more important in determining gas concentrated areas than factors of Vapor Density.
2. Vapor Density: See table above.
3. Gas Emission Sources: As a rule, at least one sensor should be located in close proximity to each point where a leak is likely to occur, this is particularly important when a liquid having a low volatility is monitored.
4. Environmental Factors: Designed to rugged outdoor use consider the following in selecting locations. Install sensors where they will be protected from wind, dust, snow, water, vibration and shock.

**QIR-8000 TRANSMITTER ENCLOSURE**

**QUATROSENSE ENVIRONMENTAL LTD**  
RICHMOND, BRITAINIA, CANADA

**QIR-8000**  
**INSTALLATION DRAWING**

DESIGN	Xiangyong	2004/09
CHK	XY	2004/09
DESIGN	Xiangyong	2004/09
APP'VD		
QA		
APPLICATION		
INDUSTRIAL		
DIMENSIONS ARE IN INCHES		
TYPE	B	SIZE
DWG NO	82050-064-000	REV
DATE	06-11-29	BY
SCALE	1:1	FILENAME
SHEET	1	OF

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REVISIONS				
REV	ECO	DESCRIPTION	DATE	BRN
ALL		SEE SHEET 1		CRK

**SPECIFICATIONS**

**INPUT POWER**  
 24VDC nominal, range: 18 to 30VDC  
 24VAC nominal, range: 15 to 24VAC if I/O Board equipped.  
 AC Supply Non-Grounded (Floating)

**FUSE**  
 1.0 Amp socketed pico fuse.

**SENSORS**  
 Infrared Combustible Sensor

**SIGNALS**  
 4-20 mA current signal, Max. load without HART multidrop connection:  
 700 Ohms at 24V; 500 Ohms at 20V

(optional: 0-10 VDC voltage signal, 1K Ohms output impedance, 5000 Ohms Min. load resistor).

**ENCLOSURE**  
 Explosion proof, CL I, Div. 1, Group B, C, D.  
**CALIBRATION**  
 Initial internal adjustments/setting depending on sensor and range, Non-Intrusive calibration with magnetic tool, the cover need not be removed.  
 Calibration recommendation: 90 days Max.

**HUMIDITY**  
 Sensor: 15 to 95% RH, non-condensing.  
 Transmitter: 0 to 99% non-condensing.  
**PRESSURE**  
 Atmospheric ±10%  
**KEYPAD**  
 4 Magnetic sensors

**LED INDICATOR**  
 3 LED indicators for warning, alarm and fail status.

**WIRES**

AWG 14 - 24 (Ø0.54 - Ø1.6mm)  
 RS-485 communication: 120 ohm, balanced, twisted pair (e.g. Belden 9841 or equivalent)

**PAINTING**  
 When painting in the area, turn off the transmitter and seal sensor opening with masking tape.

**DISPLAY**  
 2 x 8 Alphanumeric LCD with backlight.

**REMOTE RESET/ACKNOWLEDGE**  
 For reset latched relay and LED indicator.  
 Termination supplied for receipt of remote signal (24 VDC/VAC)

If I/O BOARD EQUIPPED:

- DATA COMMUNICATION
  - HART protocol (Pending)
  - MODBUS protocol
  - OPT022
- RELAY
  - 2 SPDT RELAY, 115VAC, 30VDC, 1AMP
  - 24VAC/DC POWER INPUT

**\*NOTE:**

- 1). AC input power, Relays and RS-485 can only be available with I/O Board extended feature option.
- 2). Wiring is needed only if the option is chosen.
- 3). 4-20 mA and 0-10 V signals cannot be used at the same time.

BRN XIANGYANG		2004/09		QUATROSENSE ENVIRONMENTAL LTD	
CRK				RICHMOND, ONTARIO, CANADA	
DESIGN XIANGYANG		2004/09		INSTALLATION DRAWING	
APP'D				QIR-8000	
QA				INDUSTRIAL	
APPLICATION				SIZE	
INDUSTRIAL				TYPE	
DIMENSIONS ARE IN INCHES		B		DWG NO	
DIMENSIONS IN PARENTHESES		ID		82050-064-000	
SIZE IN MILLIMETERS AND		SCALE		REV	
SHE IN FOR REFERENCE ONLY		SCALE		B	
		FILENAME		SHEET 2 OF 7	

**QIR-8000 SPECIFICATION**

**INSTALLATION DRAWING**

4

3

2

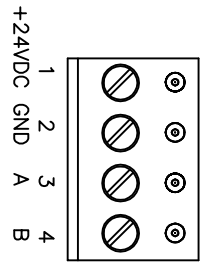
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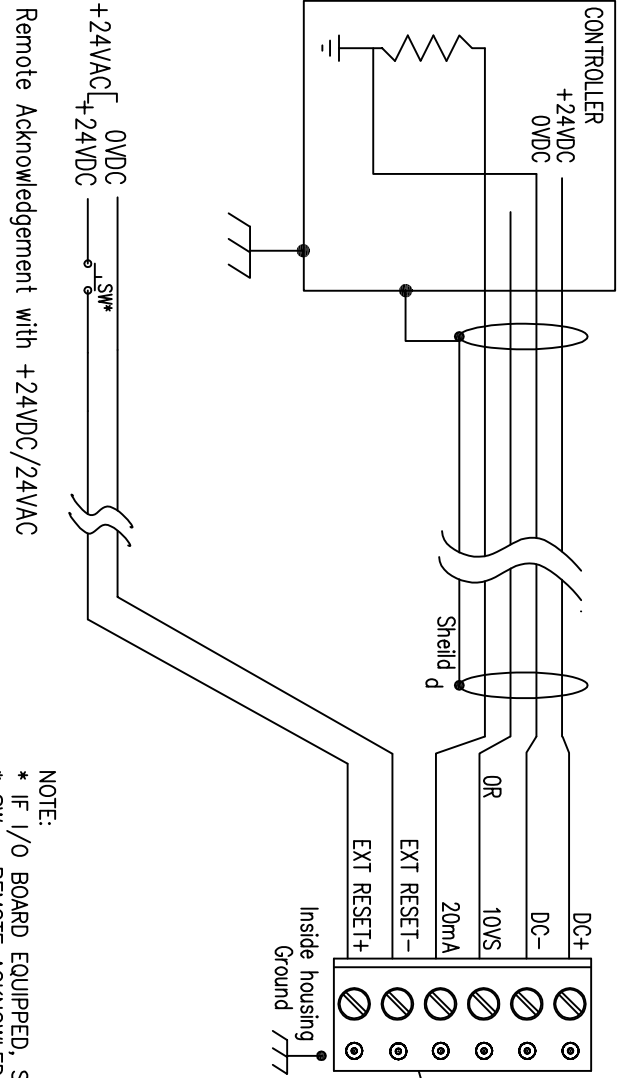
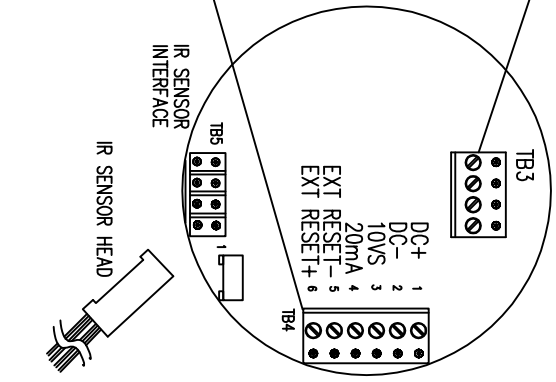
REVISIONS			
REV	ECO	DESCRIPTION	DATE
ALL		SEE SHEET 1	

NOTE:  
KEEP TB3 DISCONNECTED WHEN QIR-8000 WITH LOCAL SENSOR

TB3: TO REMOTE INTELLIGENT SENSOR (IF EQUIPPED SEE PAGE 5)



INTERFACE BOARD BOTTOM VIEW



NOTE:  
 \* IF I/O BOARD EQUIPPED, SEE PAGE 4.  
 \* SW - REMOTE ACKNOWLEDGEMENT BUTTON  
 \* REMOTE ACKNOWLEDGEMENT LOOP IS ISOLATED FROM POWER SUPPLY INSIDE OF THE TRANSMITTER.

(IF NO I/O BOARD EQUIPPED)  
 QIR-8000 CONNECTING CONTROLLER AND POWER SUPPLY

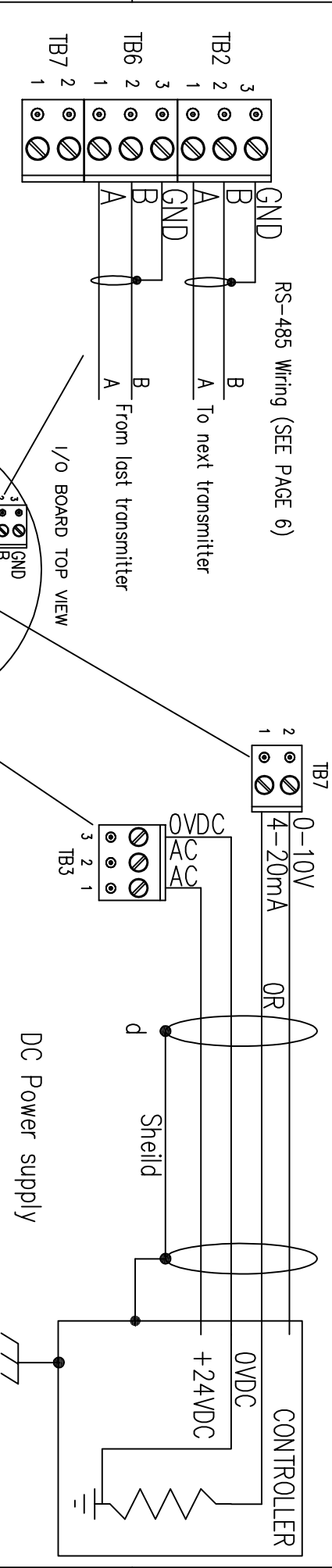
BRN XIANGYANG	2004/09	QUATROSENSE ENVIRONMENTAL LTD
CHK		RICHMOND, ONTARIO, CANADA
DSGN XY	2004/09	
APP'VD		
QA		
APPLICATION		
INDUSTRIAL		
SIZE	TYPE	DWG NO
B	1D	82050-064-000
DIMENSIONS ARE IN INCHES		REV
SEE IN FILE LETTERS AND		B
SPEC IN FILE LETTERS AND		
SCALE	FILENAME	SHEET 3 OF 7

QIR-8000  
 INSTALLATION DRAWING

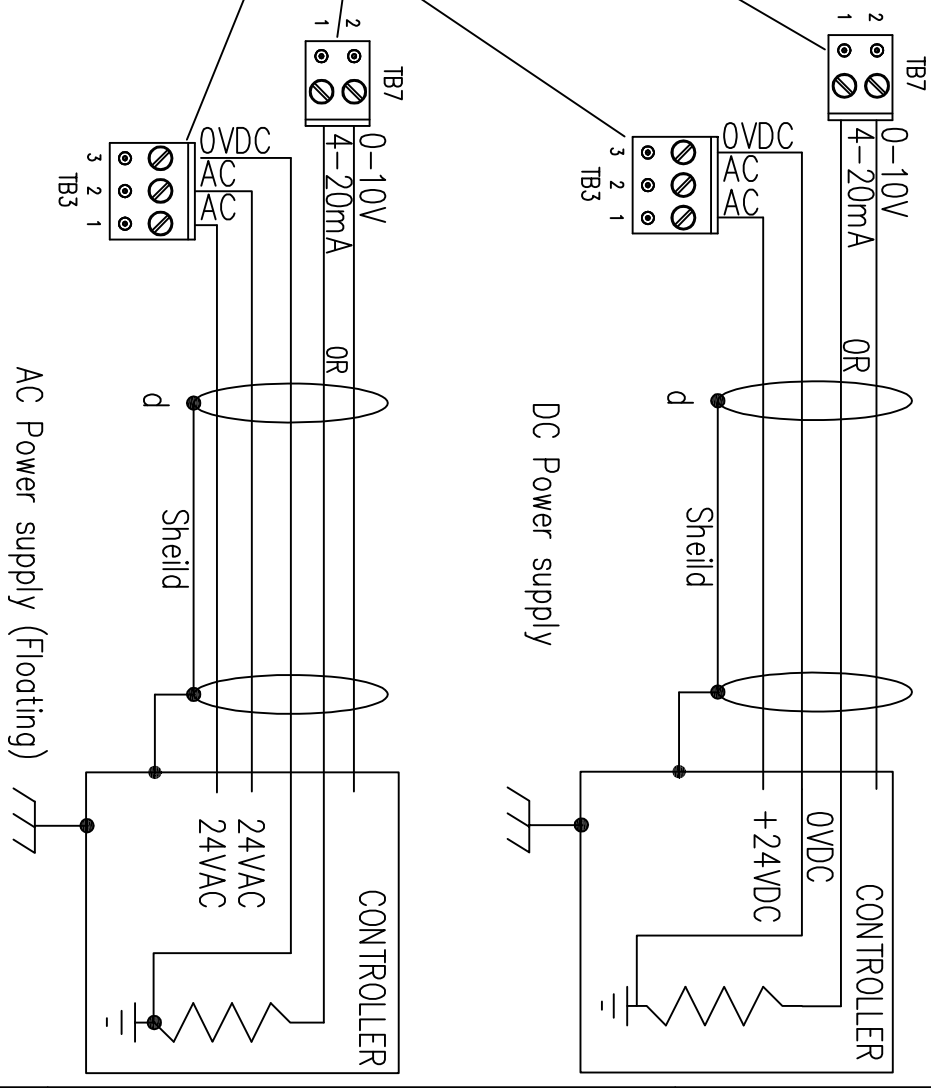
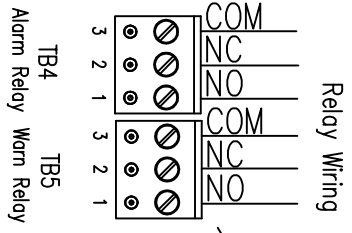
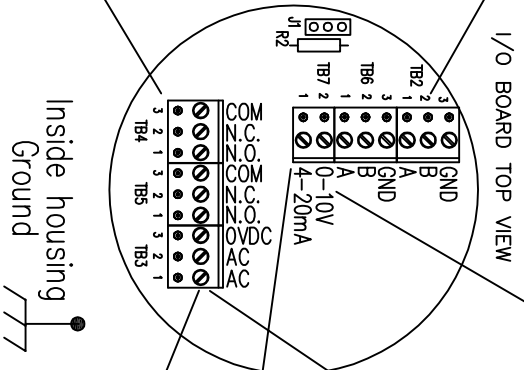
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REVISIONS			
REV	ECO	DESCRIPTION	DATE
ALL		SEE SHEET 1	

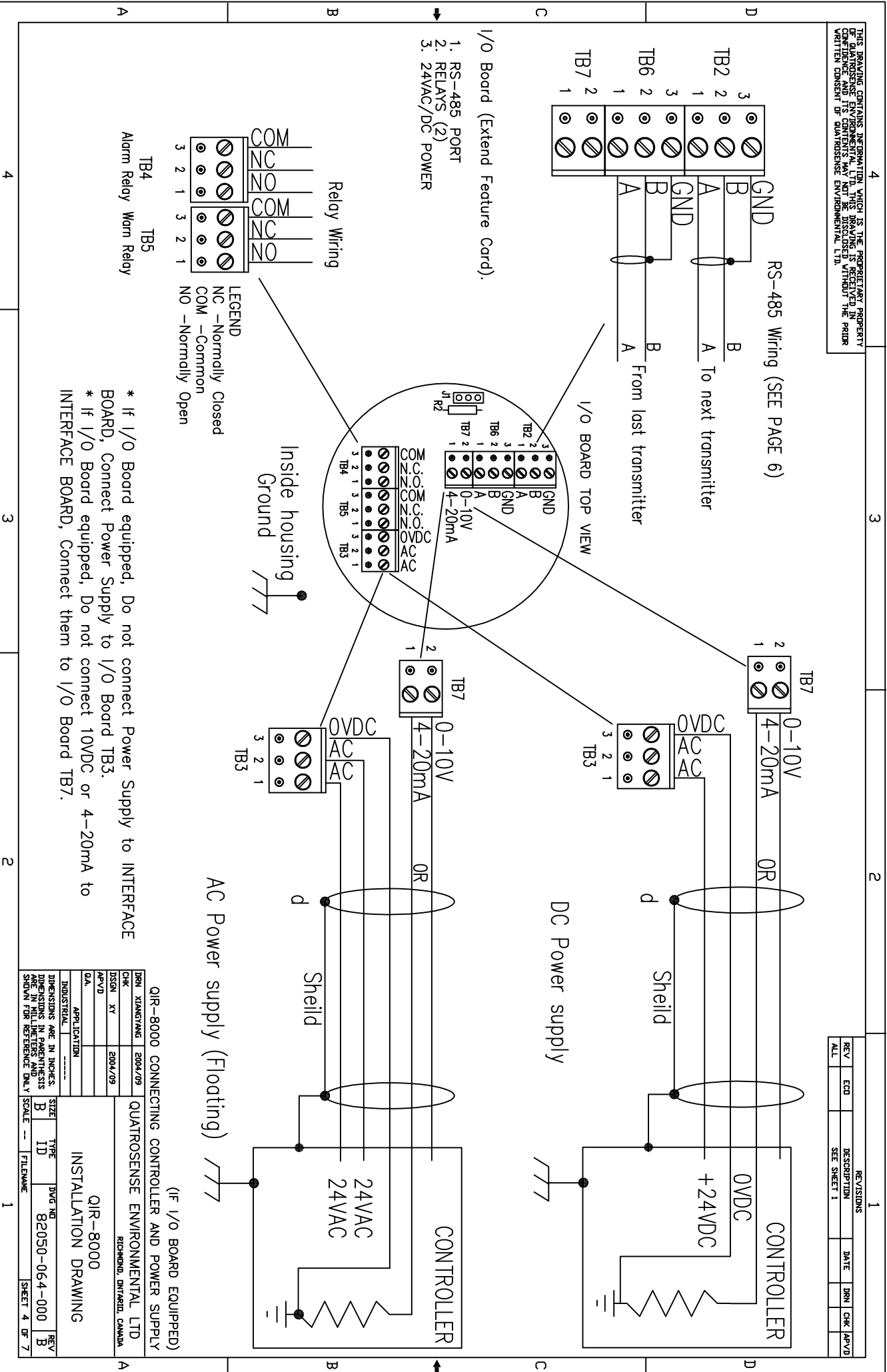


- I/O Board (Extend Feature Card).
1. RS-485 PORT
  2. RELAYS (2)
  3. 24VAC/DC POWER



\* If I/O Board equipped, Do not connect Power Supply to INTERFACE BOARD, Connect Power Supply to I/O Board TB3.  
 \* If I/O Board equipped, Do not connect 10VDC or 4-20mA to INTERFACE BOARD, Connect them to I/O Board TB7.

QIR-8000 CONNECTING CONTROLLER AND POWER SUPPLY		QUATROSENSE ENVIRONMENTAL LTD	
RICHMOND, ONTARIO, CANADA			
DRN	XIANGYANG	2004/09	
CHK			
DSGN	XY	2004/09	
APP'D			
QA			
APPLICATION			
INDUSTRIAL			
DIMENSIONS ARE IN INCHES			
DIMENSIONS IN PARENTHESES			
ARE IN MILLIMETERS AND			
SCALE IN FULL REFERENCE ONLY			
SIZE	TYPE	DWG NO	REV
B	1D	82050-064-000	B
INSTALLATION DRAWING			FILENAME
			SHEET 4 OF 7



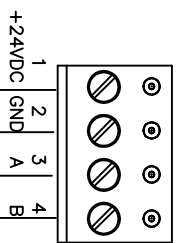
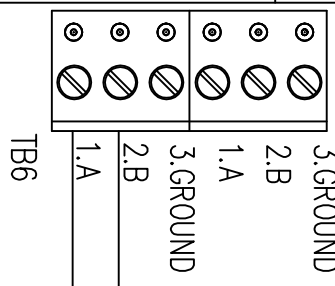
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REV		ECO	DESCRIPTION	DATE	DRN	CHK	APP'D
ALL			SEE SHEET 1				

REV		ECO	DESCRIPTION	DATE	DRN	CHK	APP'D
ALL			SEE SHEET 1				

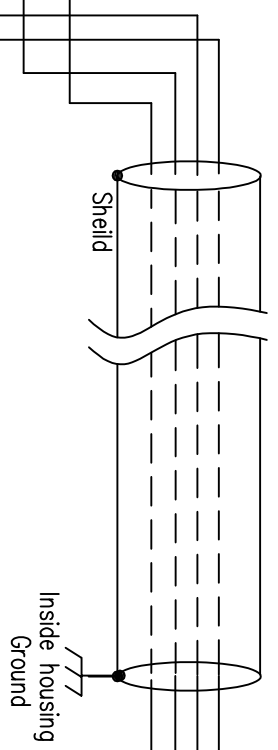
REMOTE ADAPTOR BOARD

TB5 \*TB5: to next Remote Sensor, it is not used in QIR-8000

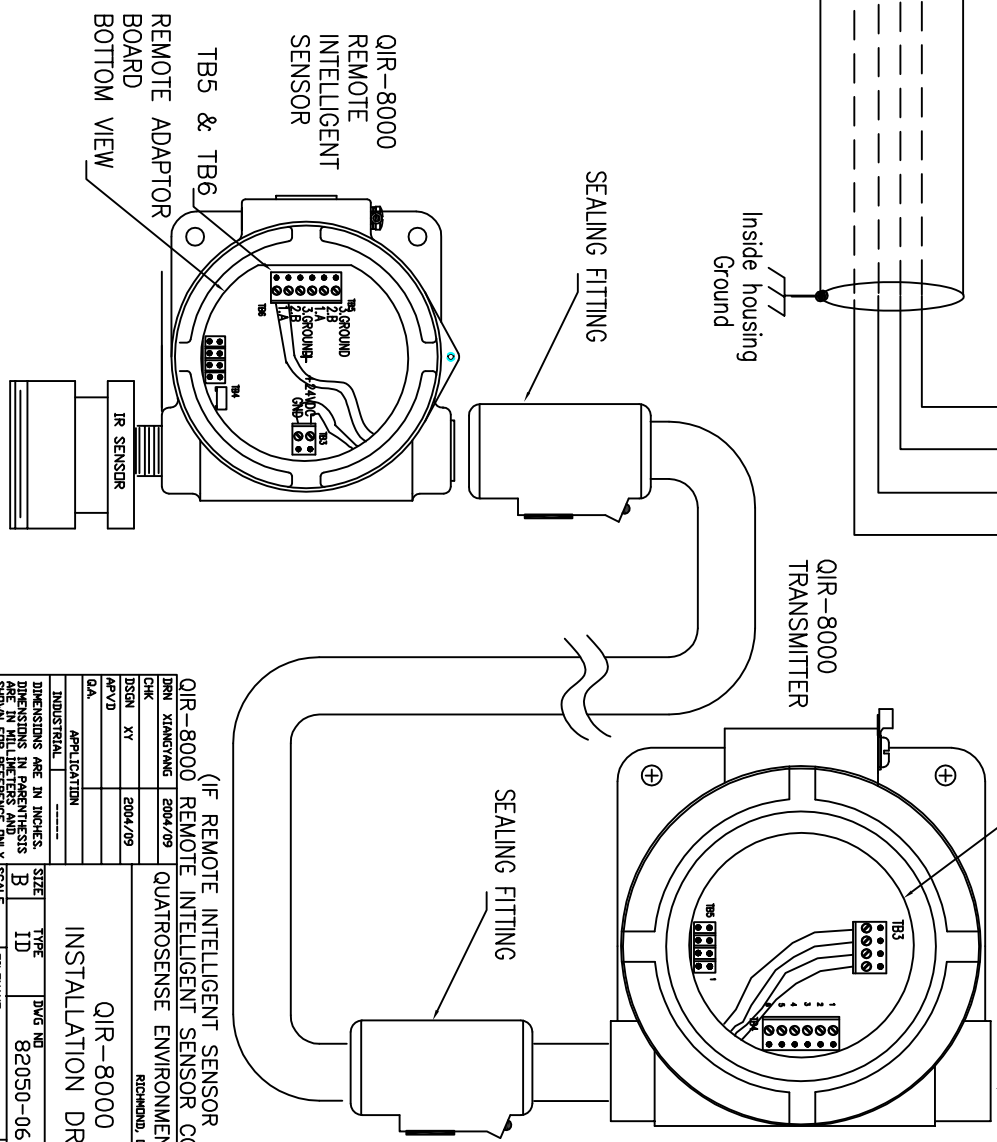


INTERFACE BOARD

CONNECTING CONTROLLER & POWER SUPPLY SEE PAGE 3,4

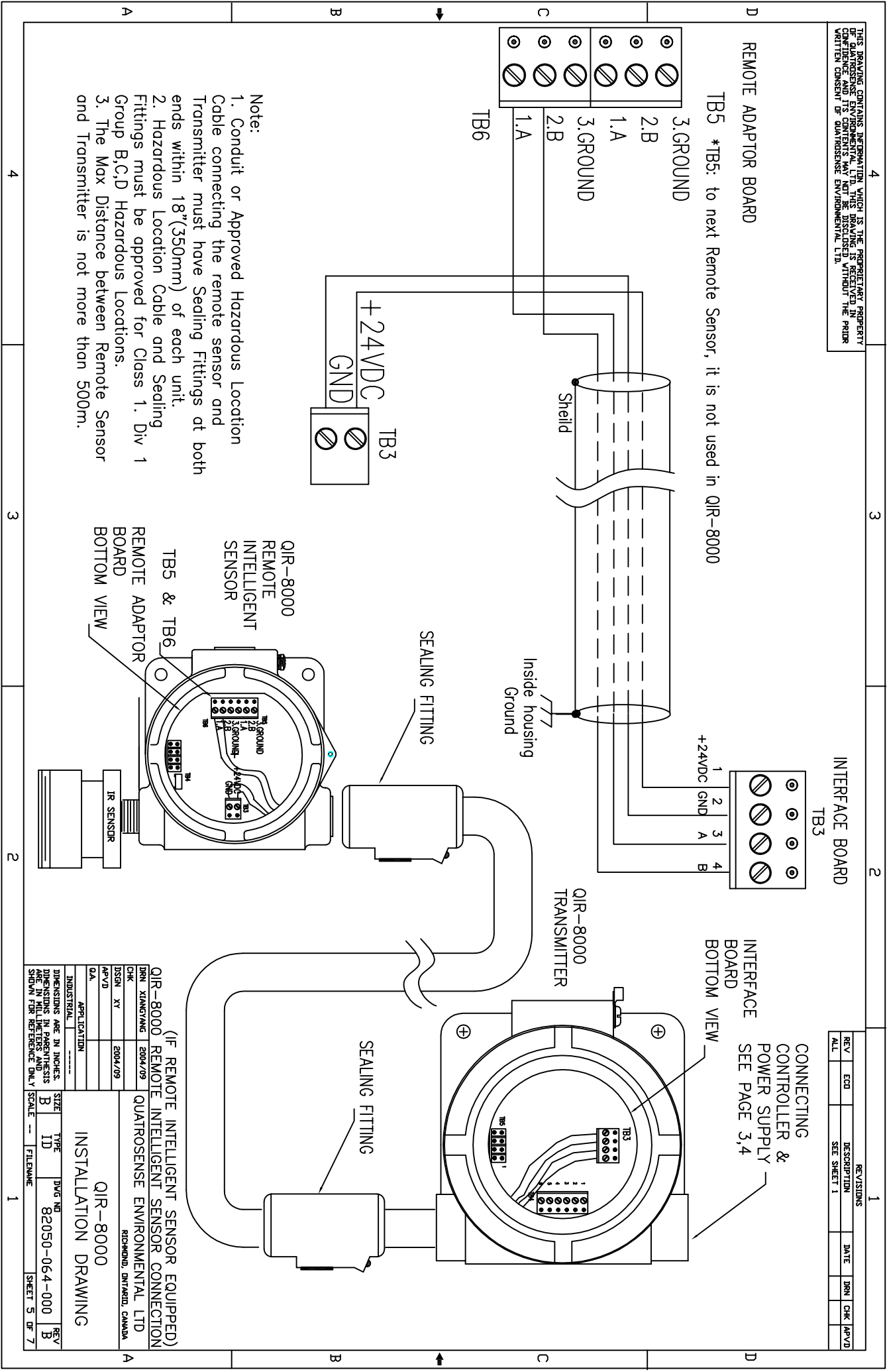


- Note:
1. Conduit or Approved Hazardous Location Cable connecting the remote sensor and Transmitter must have Sealing Fittings at both ends within 18"(350mm) of each unit.
  2. Hazardous Location Cable and Sealing Fittings must be approved for Class 1, Div 1 Group B,C,D Hazardous Locations.
  3. The Max Distance between Remote Sensor and Transmitter is not more than 500m.



(IF REMOTE INTELLIGENT SENSOR EQUIPPED)

DRN	XIANGYANG	2004/09	QIR-8000 REMOTE INTELLIGENT SENSOR CONNECTION
CHK			QUATROSENSE ENVIRONMENTAL LTD
DESIGN	XY	2004/09	
APP'D			
QA			
APPLICATION			
INDUSTRIAL			
DIMENSIONS ARE IN INCHES			
DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS AND SHOWN FOR REFERENCE ONLY			
SIZE	TYPE	DWG NO	REV
B	1D	82050-064-000	B
INSTALLATION DRAWING			SHEET 5 OF 7

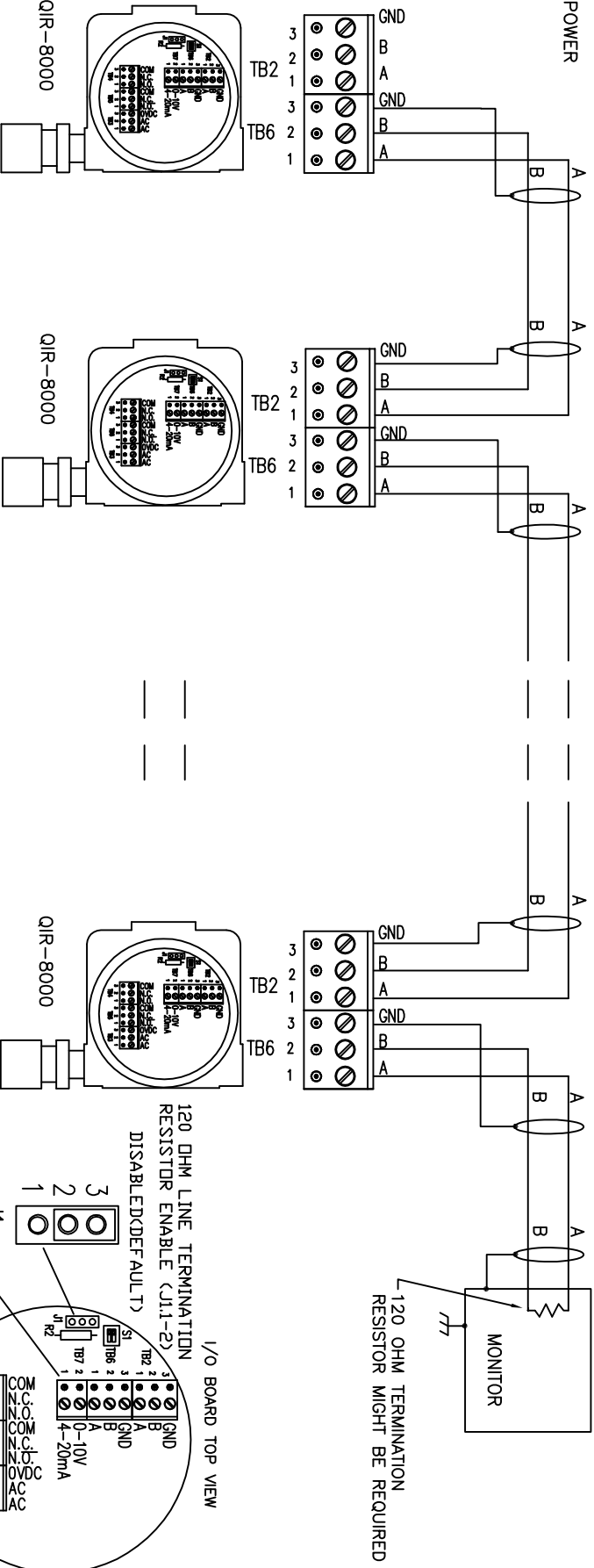


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REV. NO.		DESCRIPTION		DATE	DRN	CHK	APP'D
REV	ECO	DESCRIPTION	DATE	DRN	CHK	APP'D	
ALL		SEE SHEET 1					

**I/O BOARD EXTENDED FEATURE OPTION**

- RS-485 PORT
- RELAYS (2)
- 24VAC/DC POWER



**NOTE:**

- Ground the shield inside monitor (metal) case.
- If conduit grounds at monitor case then set dipswitch S1 (see I/O card for physical position of S1) ON to ground shield to last transmitter case.
- If conduit is not a good ground, then some other method, depending upon installation is necessary, consult factory.
- Grounding on one end protects against electrical fields only. Grounding inside the enclosures at both ends protects against electrical and magnetic fields.

Terminal resistor configuration in RS-485 network:  
The terminal resistor (R2 on I/O card) of the transmitter at two endpoints of the RS-485 network should be connected by connecting J1 jumper to 1-2 position (see I/O card for physical position of R2 and J1.)

DRN	XIANGYANG	2004/09	QUATROSENSE ENVIRONMENTAL LTD			
CHK			RICHMOND, ONTARIO, CANADA			
DESIGN	XY	EQM4/09	INSTALLATION DRAWING			
APP'D			QIR-8000			
QA			INDUSTRIAL			
APPLICATION			INDUSTRIAL			
DIMENSIONS ARE IN INCHES.			SIZE			
DIMENSIONS IN PARENTHESES			TYPE			
ARE IN MILLIMETERS AND			ID			
SHOWN FOR REFERENCE ONLY			SCALE			
			FILENAME			
			SHEET 6 OF 7			

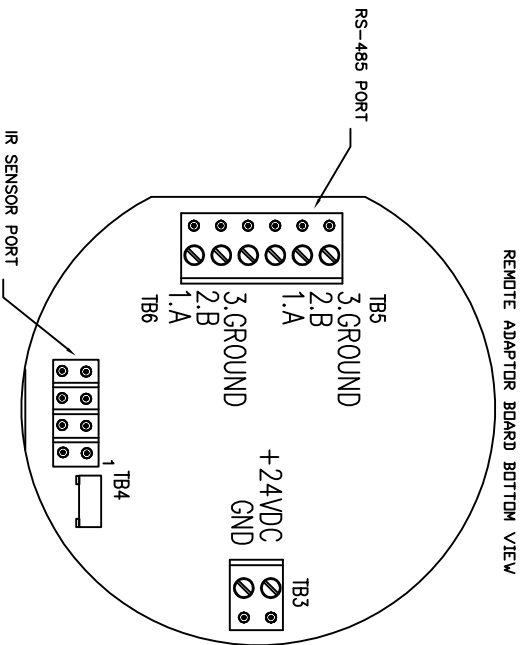
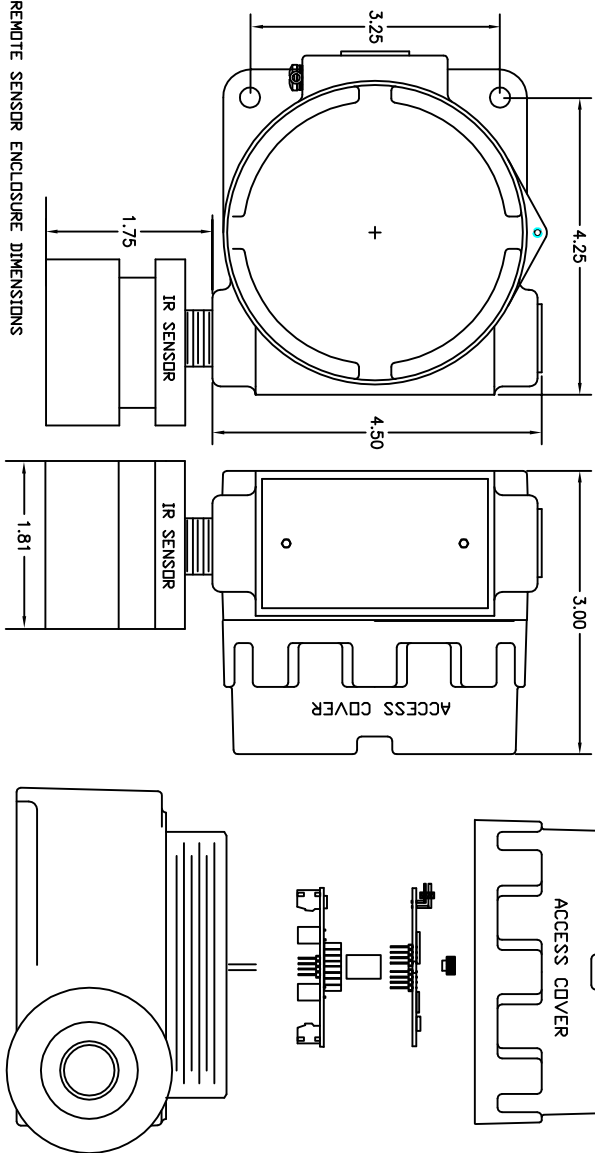
4

3

2

1

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REV		ECO	DESCRIPTION	DATE	DRN	CHK	APP'D
ALL			FIRST RELEASE				

TABLE FOR GAS

Gas	Mounting	Operating Temperature	
		MIN. C (°F)	MAX. C (°F)
Methane	HIGH	-40 (-40)	+75 (167)
Ethylene	MID	-40 (-40)	+75 (167)
Methanol	HIGH	-40 (-40)	+75 (167)
Propane	LOW	-40 (-40)	+75 (167)
Butane	LOW	-40 (-40)	+75 (167)
n-Pentane	LOW	-40 (-40)	+75 (167)
Benzene	HIGH	-40 (-40)	+75 (167)
Acetone	HIGH	-40 (-40)	+75 (167)
Bitanol	LOW	-40 (-40)	+75 (167)

\* Note:  
 HIGH = 9 to 18" (0.23 to 0.46m) below ceiling.  
 MID = 4 to 6 ft. (1.2 to 1.8m) above floor.  
 LOW = 9 to 18" (0.23 to 0.46m) above floor.

**Sensor Location:**

Several factors should be considered when selecting locations to install sensors. the following general suggestions should be considered to assure the detection of the target gas. Select the most suitable location for each sensor.

1. Air Currents: If there are fans, winds, or others sources of air movement, gases may tend to rise to collect in certain areas of a facility. The local air currents should be assessed to aid in selecting the sensor location. In outdoor situations considerations such as prevailing winds should be accounted for. Air connection can often be more important in determining gas concentrated areas than factors of Vapor Density.
2. Vapor Density: See table above.
3. Gas Emission Sources: As a rule, at least one sensor should be located in close proximity to each point where a leak is likely to occur. this is particularly important when a liquid having a low volatility is monitored.
4. Environmental Factors: Designed to rugged outdoor use consider the following in selecting locations. Install sensors where they will be protected from wind, dust, snow, water, vibration and shock.

(IF REMOTE INTELLIGENT SENSOR EQUIPPED)

QIR-8000 REMOTE INTELLIGENT SENSOR ENCLOSURE

DRN	Xiangyong	2004/09	QUATROSENSE ENVIRONMENTAL LTD			
CHK	XY	2004/09	RICHMOND, BRITCOLUMBIA, CANADA			
DESIGN	Xiangyong	2004/09	QIR-8000			
APP'VD			INSTALLATION DRAWING			
INDUSTRIAL			QIR-8000			
DIMENSIONS ARE IN INCHES	SIZE	TYPE	DWG NO	REV	REV	REV
DRN IN FULL LETTERS AND	B	1D	82050-064-000	B	B	B
SIZE IN FULL LETTERS AND	SCALE	FILENAME	SHEET	7	7	7