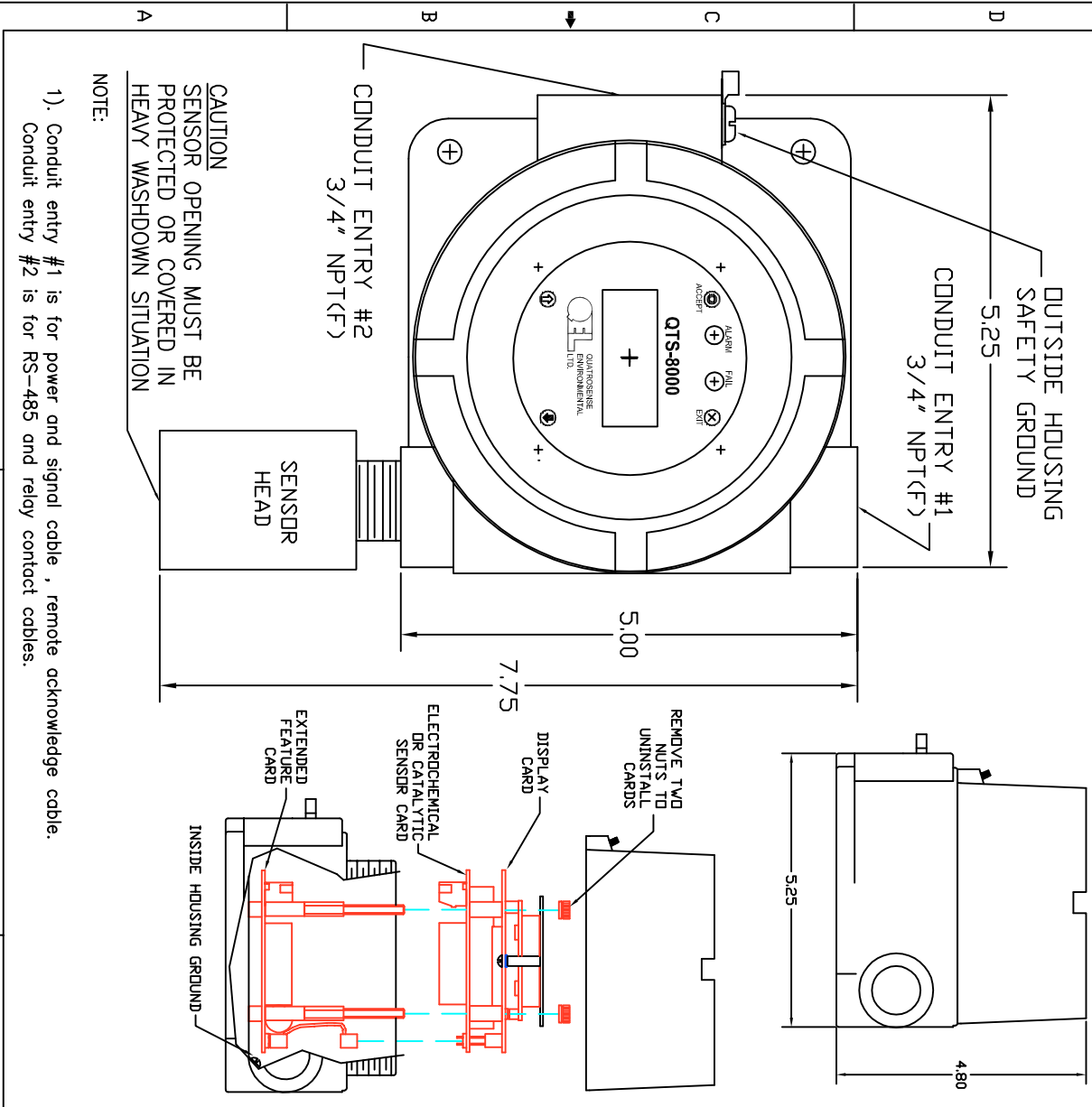


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REV	ECO	DESCRIPTION	DATE	BRN	CHK	APP'D
A	---	FIRST RELEASE	00-03-06	YD	BC	BC
B	345	UPDATE TO RED LINE	00-05-03	YD	BC	BC
C	403	ADD CAUTION NOTE	00-10-27	YD	SM	BC
D	556	HE = HIGH	03-06-19	YD	BC	BC
E	579	UPDATE	03-08-11	YD	BC	BC
F	647	03 SPAN -> 30PPM	2004/07	XY	XY	XY
G	895	UPDATE TEMP SPEC	08-11-19	CLG	XY	XY

Gas	Model Code	Range PPM	Mounting	Operating Temperature MIN °C (°F) MAX °C (°F)
Hydrogen Sulphide	H <sub>2</sub> S 81110X	0-25 PPM	LOW	-40 (-40) +50 (122)
Hydrogen Cyanide	HCN 81115X	0-20 PPM	MID	-20 (-4)
Chlorine	CL <sub>2</sub> 81120X	0-3 PPM	LOW	-20 (-4)
Chlorine Dioxide	ClO <sub>2</sub> 81123X	0-1 PPM	LOW	-20 (-4)
Hydrogen Chloride	HCL 81125X	0-10 PPM	MID	-20 (-4)
Oxygen	O <sub>2</sub> 81130X	07-25%	MID	-20 (-4)
Sulphur Dioxide	SO <sub>2</sub> 81140X	0-6 PPM	LOW	-20 (-4)
Nitrogen Dioxide	NO <sub>2</sub> 81150X	0-6 PPM	LOW	-20 (-4)
Carbon Monoxide	CO 81160X	0-250 PPM	MID	-20 (-4)
Nitric Oxide	NO 81190X	0-100 PPM	MID	-20 (-4)
Hydrogen	H <sub>2</sub> 81211X	0-2000 PPM	HIGH	-20 (-4)
Ammonia	NH <sub>3</sub> 81220X	0-50 PPM	HIGH	-25 (-13) +30 (86)
Ozone	O <sub>3</sub> 81240X	0-3 PPM	MID	-20 (-4)

Gas	Model Code	Range (%LEL)	Mounting	Operating Temperature MIN °C (°F) MAX °C (°F)
Methane	CH <sub>4</sub> 81170X	0-100%	HIGH	-40 (-40) +50 (122)
Acetylene	C <sub>2</sub> H <sub>2</sub> 81171X	0-100%	HIGH	-40 (-40) +50 (122)
Ethane	C <sub>2</sub> H <sub>6</sub> 81172X	0-100%	MID	-40 (-40) +50 (122)
Propane	C <sub>3</sub> H <sub>8</sub> 81173X	0-100%	LOW	-40 (-40) +50 (122)
n-Butane	C <sub>4</sub> H <sub>10</sub> 81174X	0-100%	LOW	-40 (-40) +50 (122)
n-Pentane	C <sub>5</sub> H <sub>12</sub> 81175X	0-100%	LOW	-40 (-40) +50 (122)
n-Octane	C <sub>8</sub> H <sub>18</sub> 81176X	0-100%	LOW	-40 (-40) +50 (122)
Hydrogen	H <sub>2</sub> 81177X	0-100%	HIGH	-40 (-40) +50 (122)
Gasoline	81178X	0-100%	LOW	-40 (-40) +50 (122)
Others	81179X	0-100%	Advise	-40 (-40) +50 (122)

**\* 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.

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

**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.

QUATROSENSE ENVIRONMENTAL LTD  
 RICHMOND, ONTARIO, CANADA

QTS-8000  
 TRANSMITTER/SENSOR  
 EXPLOSION PROOF INSTALLATION  
 EXTENDED FEATURE OPTION

INDUSTRIAL TYPE  
 SIZE B  
 DIMENSIONS ARE IN INCHES  
 DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS AND SHOWN FOR REFERENCE ONLY  
 SCALE --- FILENAME SHEET 1 OF 5

DRN Y. DUBE 00-03-06  
 CHK. G.L. 00-03-20  
 DSGN Y. DUBE 00-03-06  
 APP'VD  
 Q/A

INDUSTRIAL TYPE  
 SIZE B  
 DIMENSIONS ARE IN INCHES  
 DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS AND SHOWN FOR REFERENCE ONLY  
 SCALE --- FILENAME SHEET 1 OF 5

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REVISIONS				
REV	ECO	DESCRIPTION	DATE	BRN   CHK   AP'VD
		SEE SHEET 1		

**SPECIFICATIONS**

**INPUT POWER**

24VDC nominal, range: 18 to 30VDC  
 24VAC nominal, range: 15 to 24VAC(Non-Grounded/Floating)

**FUSE**

1.0 Amp socketed pico fuse.

**SENSORS**

Electrochemical or Catalytic sensor.

**SIGNALS**

4-20 mA current signal, Max. load without HART multiprop 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 90% 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**

For combustible gas transmitter when painting in the area, turn off the transmitter and seal sensor opening with masking tape.

For toxic gas transmitter seal sensor opening with masking tape only

**DISPLAY**

2 x 8 Alphanumeric LCD with backlight.

**RELAY**

2 SPDT relays, 115 VAC, 30 VDC, 1 Amp

**REMOTE RESET/ACKNOWLEDGE**

For resetting latched relay and LED indicator.

Termination supplied for receipt of remote signal (24 VDC/VAC)

**DATA COMMUNICATION**

HART protocol (Pending)

MODBUS protocol

OPT022

**\*NOTE:**

- 1). AC input power, Relays and RS-485 can only be available with 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.

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

BRN   Y. DUBE		00-03-06	QUATROSENSE ENVIRONMENTAL LTD	
CHK			RICHMOND, ONTARIO, CANADA	
DESIGN		00-03-06		
AP'VD				
Q.A.				
APPLICATION			QTS-8000	
INDUSTRIAL			EXPLOSION PROOF INSTALLATION	
INDUSTRIAL			EXTENDED FEATURE OPTION	
DIMENSIONS ARE IN INCHES		SIZE	TYPE	DWG NO
DIMENSIONS IN PARENTHESES		B	ID	82050-004-000
SEE IN FILE FOLDERS AND				REV
SHEETS FOR REFERENCE ONLY		SCALE	FILENAME	SHEET 2 OF 5

4

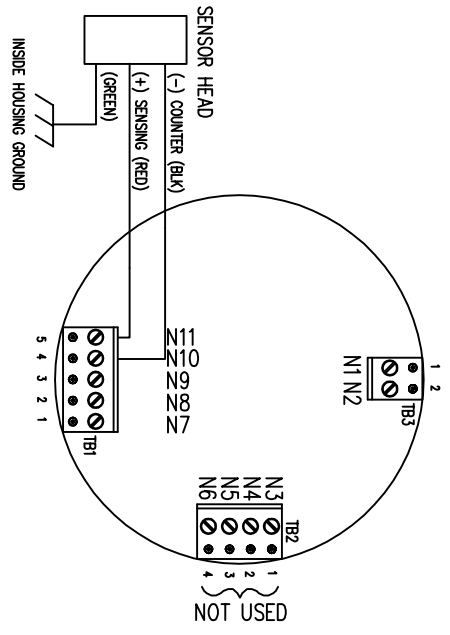
3

2

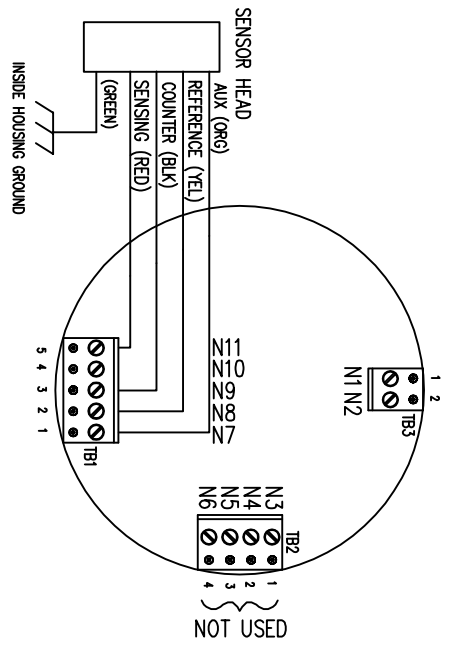
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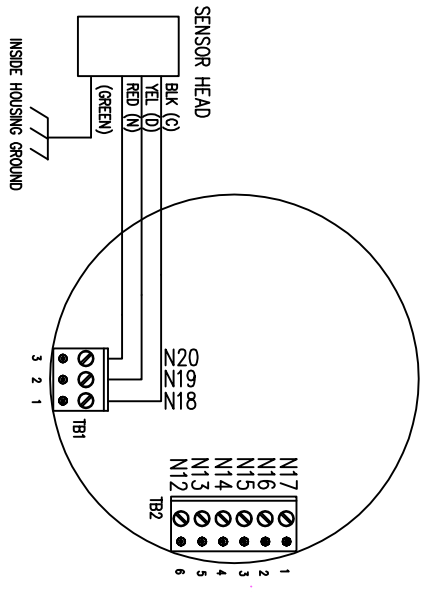
**ELECTROCHEMICAL SENSOR CARD:  
WIRING FOR OXYGEN SENSOR.**



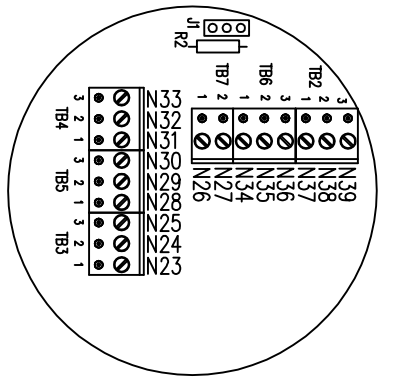
**ELECTROCHEMICAL SENSOR CARD:  
WIRING FOR OTHER SENSOR.**



**COMBUSTIBLE SENSOR CARD:  
WIRING FOR CATALYTIC SENSOR.**



**EXTENDED FEATURE CARD.**



**TERMINATIONS**

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

OXYGEN		OTHER		CATALYTIC GAS TRANSMITTER	
N1	ACK-	N1	ACK-	N12	ACK+
N2	ACK+	N2	ACK+	N13	ACK-
N3	NC	N3	NC	N14	NC
N4	NC	N4	NC	N15	NC
N5	NC	N5	NC	N16	NC
N6	NC	N6	NC	N17	NC
N7	NC	N7	AUX	N18	NC
N8	NC	N8	REF	N19	D
N9	NC	N9	Counter	N20	N
N10	Counter (-)	N10	NC		
N11	Sensing (+)	N11	Sensing		

**EXTENDED FEATURE CARD**

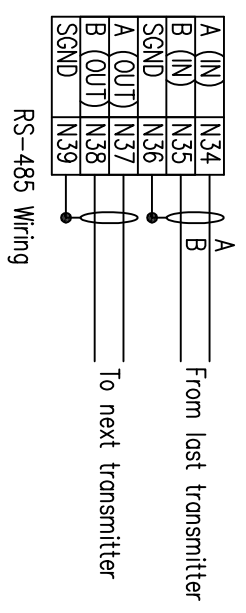
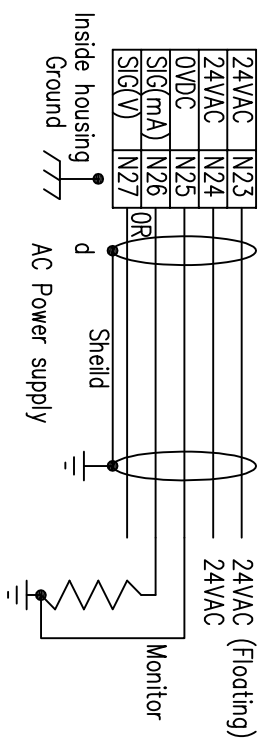
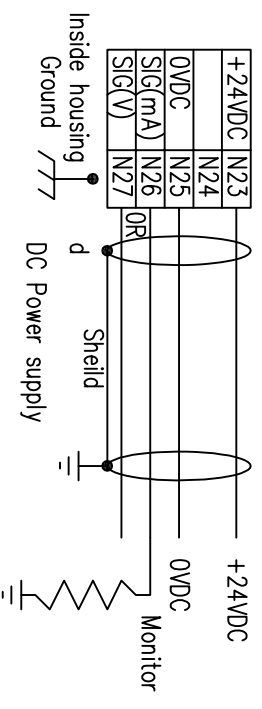
N23	+24VDC/AC		
N24	NC/AC		
N25	OVDC		
N26	SIG(4-20mA)		
N27	SIG(0-10V)		
N28	N.O.	}	WARNING RELAY
N29	N.C.		
N30	COMM	}	ALARM RELAY
N31	N.O.		
N32	N.C.	}	ALARM RELAY
N33	COMM		
N34	A(N)	}	RS-485 IN
N35	B(N)		
N36	SHIELD	}	RS-485 OUT
N37	A(OUT)		
N38	B(OUT)	}	RS-485 OUT
N39	SHIELD		

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

DRN Y. DURE	00-03-06	QUATROSENSE ENVIRONMENTAL LTD
CHK		RICHMOND, ONTARIO, CANADA
DSGN Y. DURE	00-03-06	
APP'VD		
QA		
APPLICATION		
INDUSTRIAL		
DIMENSIONS ARE IN INCHES	SIZE	
DIMENSIONS IN PARENTHESES	B	
ARE IN FILL LETTERS AND	ID	
SHOWN FOR REFERENCE ONLY	DWG NO	82050-004-000
	REV	5
	SCALE	
	FILENAME	SHEET 3 OF 5

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POWER SUPPLY CONNECTION

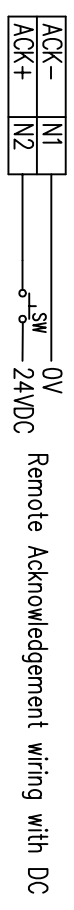


N.O.	N28	
N.C.	N29	WARNING Relay
COMM	N30	
N.O.	N31	
N.C.	N32	ALARM Relay
COMM	N33	

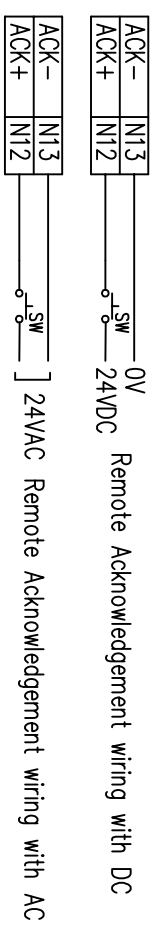
Relays Wiring

REVISIONS				
REV	ECO	DESCRIPTION	DATE	BRN   CRK   ARVD
		SEE SHEET 1		

\* For high EMI environment, the cable shield (at point d) connect to housing ground inside of the transmitter.



REMOTE ACKNOWLEDGEMENT FOR ELECTROCHEMICAL GAS TRANSMITTER



REMOTE ACKNOWLEDGEMENT FOR CATALYTIC GAS TRANSMITTER

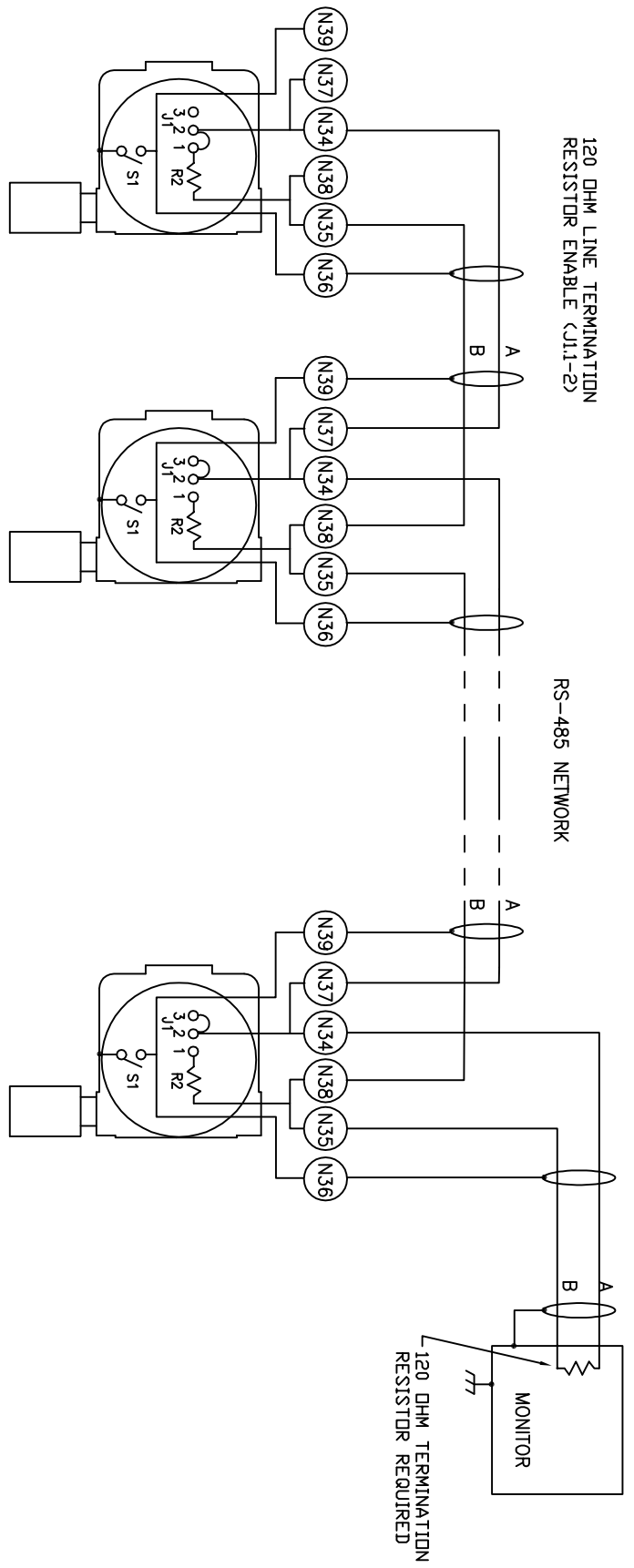
- \* SW - Remote Acknowledgement button
- \* Remote Acknowledgement loop is isolated from power supply inside of the transmitter.

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

BRN   Y. DUBE	00-03-06	QUATROSENSE ENVIRONMENTAL LTD
CHK		RICHMOND, ONTARIO, CANADA
DSGN   Y. DUBE	00-03-06	
APVD		
QA		
APPLICATION		
INDUSTRIAL		
DIMENSIONS ARE IN INCHES		
DIMENSIONS IN PARENTHESES		
ARE IN MILLIMETERS AND		
SHOWN FOR REFERENCE ONLY		
SIZE	B	FILENAME
TYPE	ID	82050-004-000
REV	1D	G
SHEET 4 OF 5		

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REVISONS				
REV	ECO	DESCRIPTION	DATE	BRN   CRK   ARV/D
		SEE SHEET 1		



NOTE:

- 1- Ground the shield inside monitor (metal) case.
- 2- 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.
- 3- If conduit is not a good ground, then some other method, depending upon installation is necessary, consult factory.
- 4- 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.)

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CHK		RICHMOND, ONTARIO, CANADA
DESIGN	Y. DUBE	00-03-06
APP'D		
QA		
APPLICATION		
INDUSTRIAL		
DIMENSIONS ARE IN INCHES.		
DIMENSIONS IN PARENTHESES		
ARE IN MILLIMETERS AND		
SCALE --- FILENAME		
SIZE	B	82050-004-000
TYPE	ID	G
REV		
SHEET 5 OF 5		

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