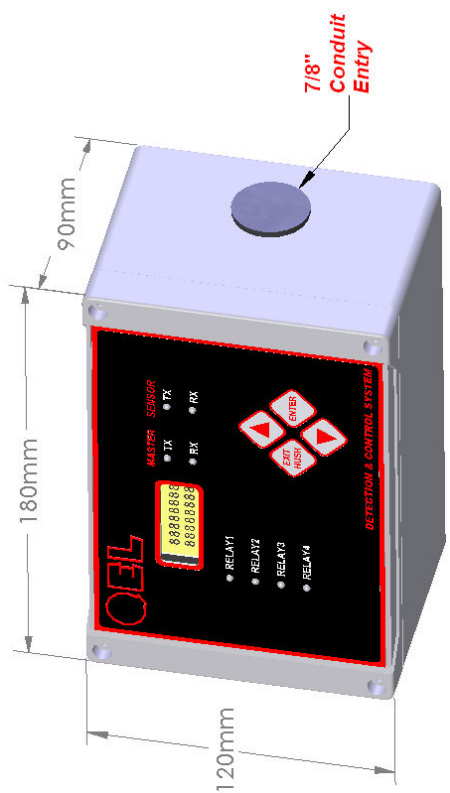
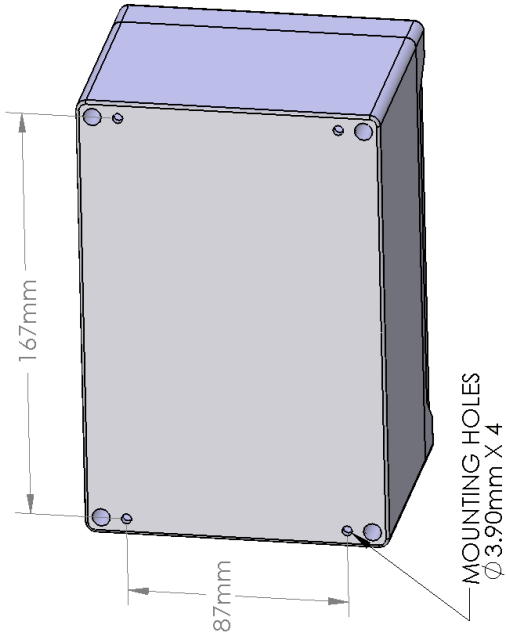


Physical Dimensions:



Installation Holes:



SPECIFICATION

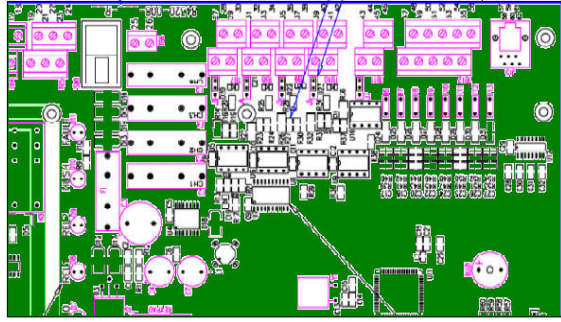
- INPUT POWER:**
 24VDC nominal, range: 18 to 30VDC
 24VAC nominal, range: 15 to 24VAC
 24VDC AC/DC Adaptor is provided in the package
 AC Power must be non-grounded (Floating)
- FUSE:**
 F1: Not Used in M-Logger
 F2: 1.0A VERY FAST Littelfus P/N: 0251001
- DISPLAY:**
 8 x 2 Character Display c/w Backlight
- INDICATOR:**
 Master RX TX, Slave RX TX, Relay Group 1 to 4 status
- KEYPAD:**
 4 Tactile & Audible Keypad
- BUZZER-STROBE-HORN:**
 Not Support in M-Logger
- INPUTS:**
 RS-422 port to M-Controller
 RS-232 PORT:
- OPTION:**
 RJ-11 Telephone Jack on Main Board to work with M-View
- ENCLOSURE:**
 RS-485 Board: Isolated, Modbus RTU slave to up level System
 IP 66 & NEMA 4* 4X* 12 & 13
- OPERATING TEMPERATURE:**
 -20 °C TO 50 °C
- AMBIENT HUMIDITY:**
 5% TO 95% RH (NON-CONDENSING)
- STORAGE TEMPERATURE:**
 -40 °C TO 70 °C
- SIZE:** 180mm X 120mm X 90mm
- WEIGHT:** LESS THAN 1.5lbs (0.680 kg)

REVISIONS						
ECN	REV.	DESCRIPTION	DATE	DRAW	CHECK	APPROVED
	A	Initial Release	2007/12/20	XY	CG	XY

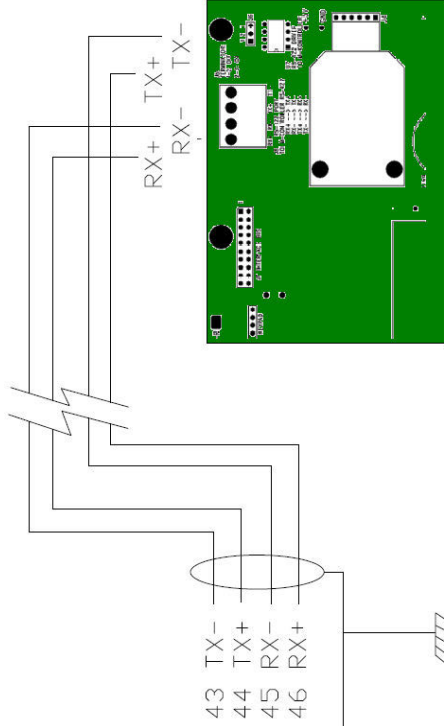
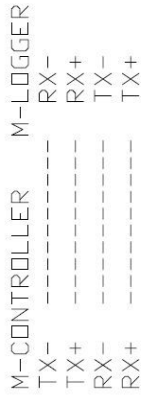
UNLESS OTHERWISE SPECIFIED:	NAME	DATE	Quatrosense Environmental Ltd		
DIMENSIONS ARE IN INCHES	XY	2007/12/18			
TOLERANCES:	DRAWN				
ANGULAR:	CHECKED	XY			
MACH ±.5 DECIMALS BEND ±	ENG APPR.	XY			
TWO PLACE DECIMAL ±.02	MFG APPR.				
THREE PLACE DECIMAL ±.010	Q. A.				
INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:				
MATERIAL					
FINISH					
USED ON					
NEXT ASSY					
APPLICATION					
DO NOT SCALE DRAWING					
TITLE: M-LOGGER			INSTALLATION DRAWING		
SIZE	DWG. NO.	REV			
B	85550-002-000	A			
SCALE: 1:2	WEIGHT:	SHEET 1 OF 4			

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RS-422 Connection:



M-Controller Main board

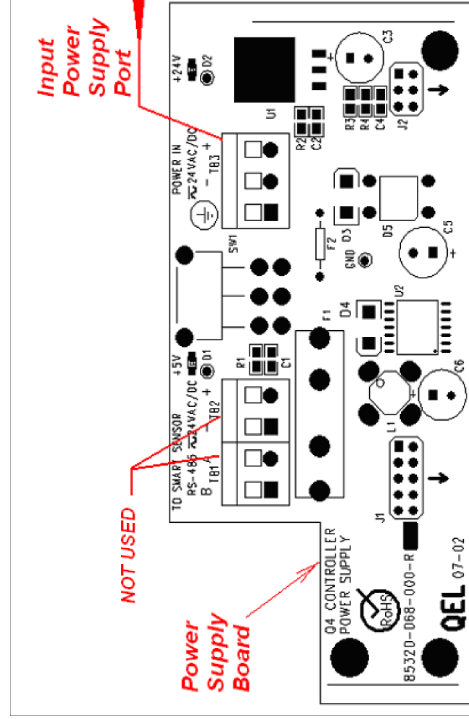


M-Logger Main Board

Power Supply Board Connection:



24VDC AC/DC Adaptor



Power Supply:

M-Logger operates on 24V AC 50/60HZ, or 24VDC. There are no selections required by the user to select the input power. Connect the two wires of AC/DC Adaptor to the Power Supply Board using the Terminal Block TB3 located inside the unit.

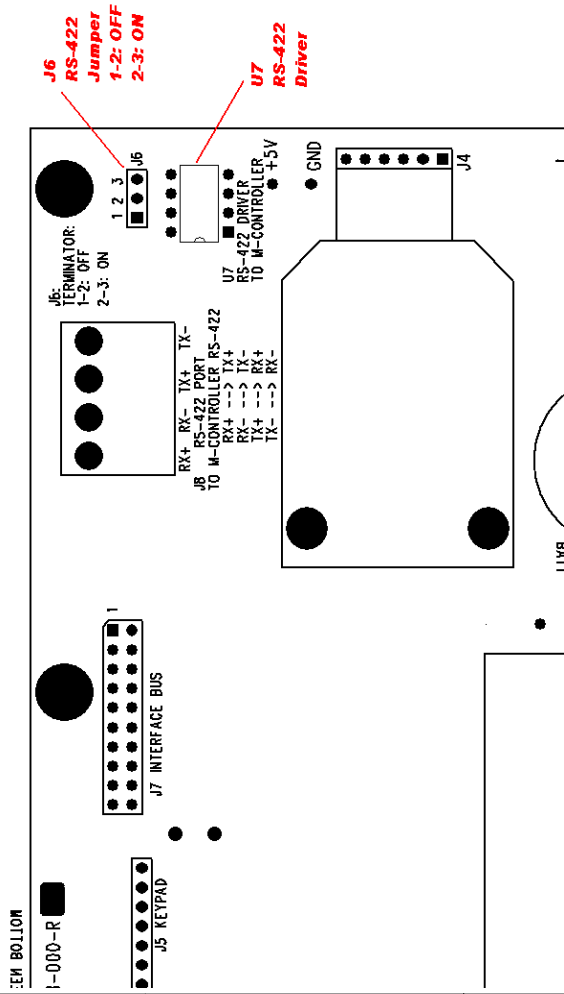
Black Wire is GND ==> connects to TB3 - Black/White Wire is 24VDC => connects to TB3 +

NOTE: AC Power must be non-grounded (floating) if other 24VAC power supply is used.

REVISIONS		DATE	APPROVED
ZONE	REV.	DESCRIPTION	
-	A	See Sheet 1	

NAME	DATE	Quattrosense Environmental Ltd	
DRAWN	XY	2007-12-18	
CHECKED	XY	2007-12-18	
ENG APPR.	XY	2007-12-18	
MFG APPR.			
G. A.			
COMMENTS:			
UNLESS OTHERWISE SPECIFIED:			
DIMENSIONS ARE IN INCHES			
FRACTIONAL: 1/16			
ANGULAR: MACH ± BEND ±			
HOLE POSITION: ±			
THREE PLACE DECIMAL ±			
INTERPRET GEOMETRIC TOLERANCING PER:			
MATERIAL:			
FINISH:			
NEXT ASSY USED ON:			
APPLICATION:			
DO NOT SCALE DRAWING			
TITLE: M-LOGGER		INSTALLATION DRAWING	
SIZE	DWG. NO.	REV	
B	85550-002-000	A	
SCALE: 1:2			SHEET 2 OF 4

RS-422 Terminator and Driver



Terminator Enable/Disable?

The terminator on each end of the RS422 loop is designed to match the electrical impedance characteristic of the twisted pair loop, and will prevent signal echoes from corrupting the data on the line. The terminator should be enabled on BOTH ends of the RS422 loop at long length situation. Short and medium length modbus/422 loops can operate without the terminating resistor. But adding terminator dramatically increases power consumption.

The M-L ogger supplies this resistor on its Main Board, and it is chosen using a jumper at J6.

Twisted Pair?

We recommend using BELDEN 9829 for communications. This wire has 120 ohm input impedance, which will eliminate RS-422 communication problems.

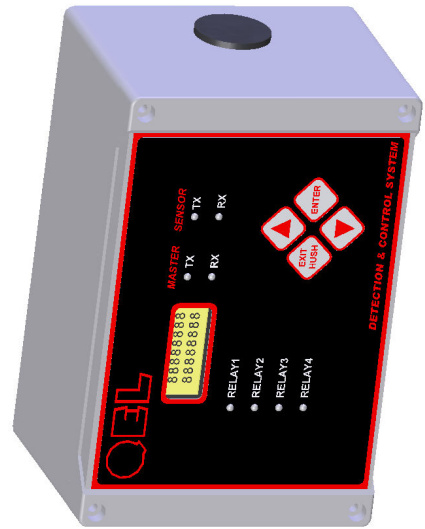
M-Logger Location:

The M-Logger is designed and certified for installation in a fixed location where is not subject to shock and vibration. Please observe the temperature and humidity specifications above for ambient conditions. Observe the possibility of leaks or possible water damage from cleaning done in the area.

If the M-Logger is going to be operating at temperatures below the operating temperature, a controlled heaters or strips are recommended to keep the temperature adequately warm. Contact your local distributor or the factory for additional information.

The mounting height and location should provide easy access to the wiring terminals and front-panel. Backlighting is provided for the display in case of low lighting conditions.

It is recommended that controllers be installed 5 feet (1.5m) above the floor.



REVISIONS		DATE	APPROVED
ZONE	REV.	DESCRIPTION	See Sheet 1
-	-	-	-

UNLESS OTHERWISE SPECIFIED:	NAME	DATE	QUATTROSENSE ENVIRONMENTAL LTD
DIMENSIONS ARE IN INCHES	XY	2007-12-18	M-LOGGER
TOLERANCES:	XY	2007-12-18	
FRACTIONAL: 1/16 1/8 1/4 3/8 1/2 3/4 1	XY	2007-12-18	
ANGULAR: MACH 1/2 BEND 3/16 THREE PLACE DECIMAL 1/2	XY	2007-12-18	
INTERPRET GEOMETRIC TOLERANCING PER:	G. A.		INSTALLATION DRAWING
MATERIAL			SIZE DWG. NO. B 85550-002-000
FINISH			SCALE: 1:2
USED ON			REV A
APPLICATION			SHEET 3 OF 4

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Isolated RS-485 Board (Option):

The upstream RS-485 port can be used to connect the M-Logger to other Control System, in which the M-Logger works as a Modbus RTU Slave, M-Controller and M-Logger can be integrated into a larger monitoring network.

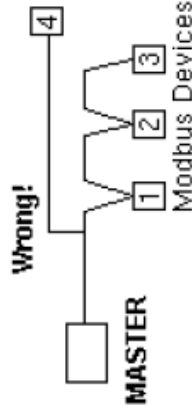
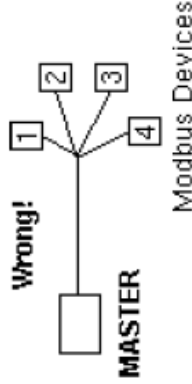
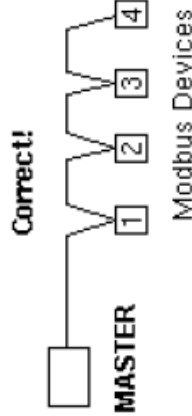
Modbus is a protocol specification designed for building automation equipment used to interface with various devices over RS485 serial, and TCP/IP interfaces.

For Modbus commands supported by M-Logger, see M-Logger Operation Manual.

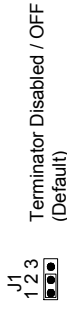
More information on Modbus can be found at <http://www.modbus.org>

RS-485 Modbus Connection:

Daisy chain the devices together. Do not use 'spur' lines, or a star configuration. Terminating Resistors of 120 Ohms should be used on the ends of long modbus/485 loops. In the first example below, the terminator should be placed at the master and modbus slave device 4.

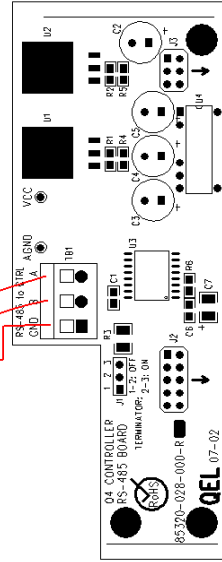


RS-485 Terminator:

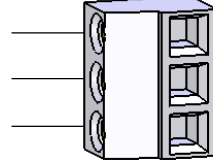


TB1:
Isolated
RS-485
A
B

RS-485 A
RS-485 B
GND



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NOTE: In order to communicate with the RS-485 Board, the RS-485 port should be activated in the M-Logger Menu.

UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Quatrosense Environmental Ltd	
DRAWN	XY	2007-12-18		TITLE:	M-LOGGER
CHECKED	XY	2007-12-18		SIZE	DWG. NO. B
ENG APPR.	XY	2007-12-18		REV	85550-002-000 A
MFG APPR.				SCALE	4:1
G. A.				SHEET 4 OF 4	
COMMENTS:					
DIMENSIONS ARE IN INCHES					
TOLERANCES:					
FRACTIONAL: ±					
ANGULAR: MACH ± BEND ±					
HOLE POSITION: ±					
THREE PLACE DECIMAL ±					
INTERPRET GEOMETRIC TOLERANCING PER:					
MATERIAL:					
FINISH:					
USED ON:					
APPLICATION:					
DO NOT SCALE DRAWING					