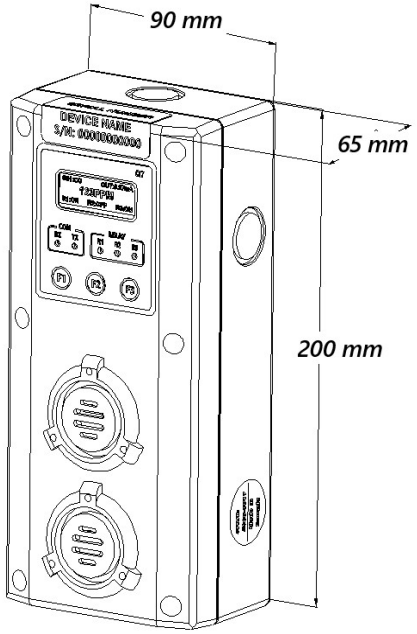
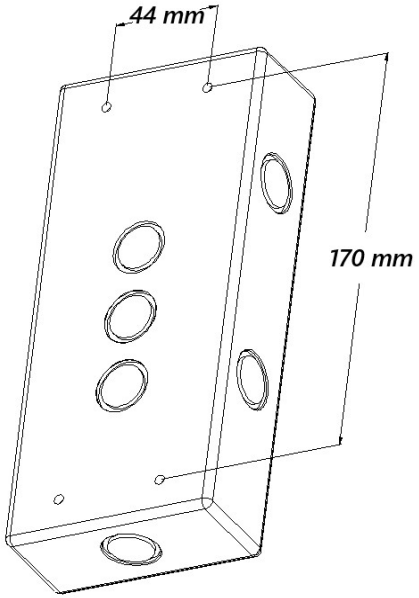
REVISIONS						
ECN	REV.	DESCRIPTION	DATE	DRAW	CHECK	APPROVED
1291	A	Initial Release	2025/06/23	XY	XY	XY





SPECIFICATION

INPUT POWER:
+24VDC nominal, range: 18 to 30VDC 0.3A DC Total Max.
~24VAC nominal, range: 18 to 24VAC 50/60HZ 0.3A AC Total Max.
(AC power must not be grounded when connected to an M-Controller with full-wave rectifier Terminal Blocks)

FUSE:
F2 on Main Board: Polyswitch 750mA
Polyswitch device resets after the fault is cleared and power to the circuit is removed

SENSOR:
Combustible gases: Catalytic or NDIR
Toxic gases and Oxygen: Electrochemical
Carbon Dioxide: Non-Dispersive Infra-Red (NDIR)

OUTPUT SIGNAL:
RS-485 with OptoMux, Modbus, BACnet MS/TP PROTOCOL
3X SPDT RELAYS: 1.0A MAX. @30VDC (RESISTIVE LOAD)
0.3A MAX. @125VAC (RESISTIVE LOAD)

ENCLOSURE:
IP 66 & NEMA 4, 4X, 12 & 13

OPERATING TEMPERATURE:
-40°C to 50°C, depends on sensor specification

AMBIENT HUMIDITY:
5% TO 95% RH (NON- CONDENSING)

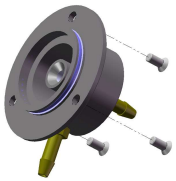
STORAGE TEMPERATURE:
0°C to 25°C, depends on sensor specification

SIZE: 200mm X 90mm X 65mm

WEIGHT: LESS THAN 0.5lbs

Option Accessories:

*Option Accessories are not included in Q7 Standard Package.



Pump-thru & Cal Cap Kit
SKU#: 85930-006-000

Duct Mount Adapter Kit: 85930-040-000

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32 ANGULAR: MACH ± .5 degrees BEND ± TWO PLACE DECIMAL ± .02 THREE PLACE DECIMAL ± .010	DRAWN	XY	2025/06/23
			CHECKED	XY	2025/06/23
			ENG APPR.	XY	2025/06/23
			MFG APPR.		
			Q.A.		
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		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

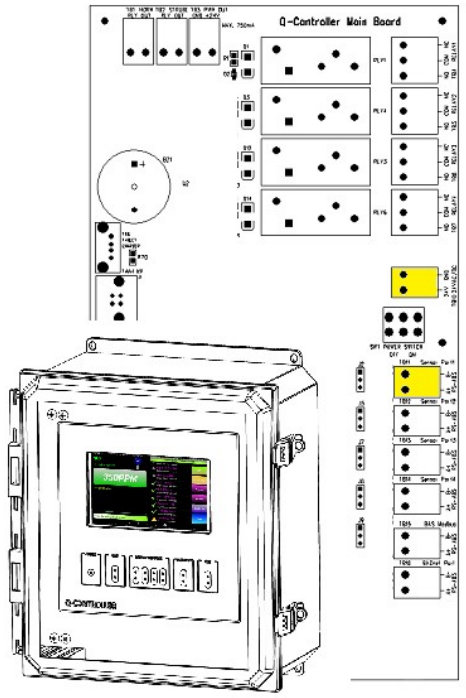
TITLE:
Q7
INSTALLATION DRAWING

SIZE	DWG. NO.	REV
B	86750-002-000	A

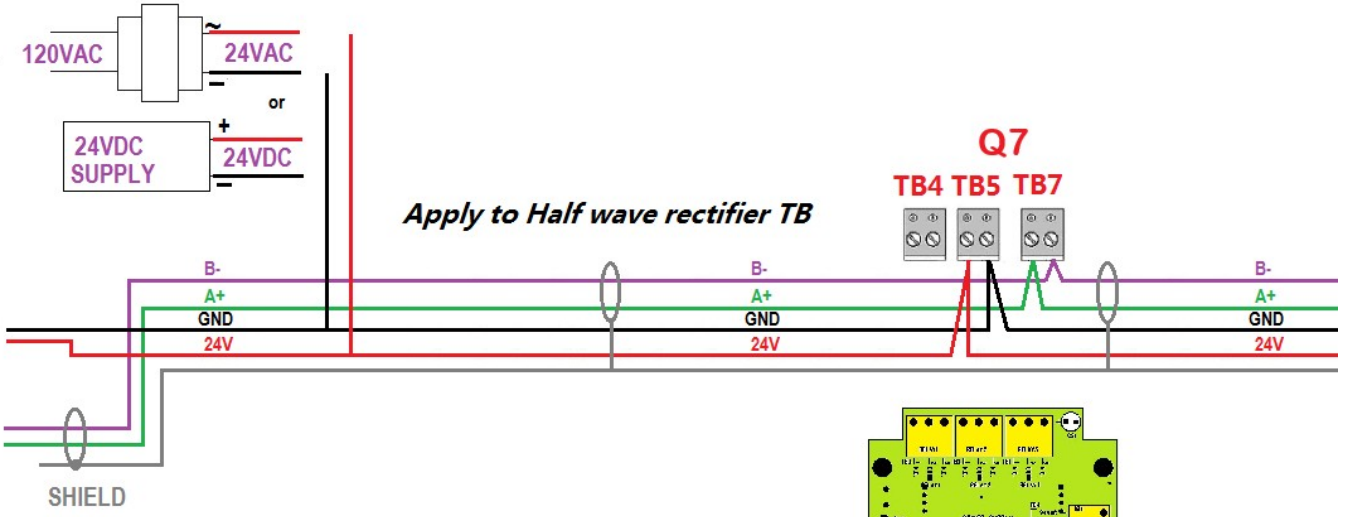
SCALE: 1:8 | WEIGHT: | SHEET 1 OF 4

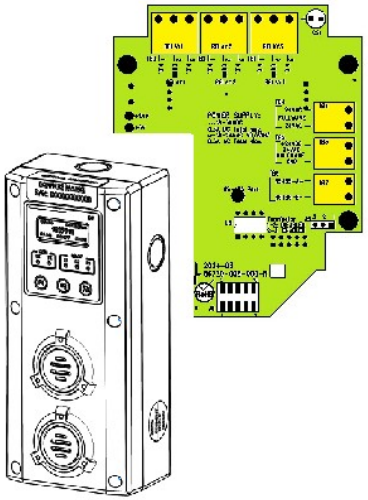
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet1	-	-

Q7 Connection with Q-Controller



Q-Controller





Note:
Q7 takes two address in the Q-Controller system:
Address is for Q7M (1st Sensor)
Address +1 is for Q7R (2nd Sensor)

Power Requirements:

The Q7 power supply voltage requirements are nominally 24VAC or 24VDC. Q7 has a full wave rectifier and a half wave rectifier on board. If the Q7 works alone, the 24VAC/DC can connect to either full wave rectifier or half wave rectifier connectors. If the Q7 connects to controllers, you will damage devices if you mix half wave and full wave rectifiers on the same AC source. Use extreme caution when sharing a common AC source. Sharing a common DC source is less problematic.

- Q-Controller uses half-wave rectifier only, M-Controller uses full-wave rectifier only, so the Q7 can work with both controllers
- When Q7 shares a common AC source with a Q-Controller, use the half wave rectifier connector Q7 TB5
- When the Q7 shares a common AC source with an M-Controller or Q4 Controller, use the full wave rectifier connector Q7 TB4

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		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN	XY	2025/06/23
			CHECKED	XY	2025/06/23
			ENG APPR.	XY	2025/06/23
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

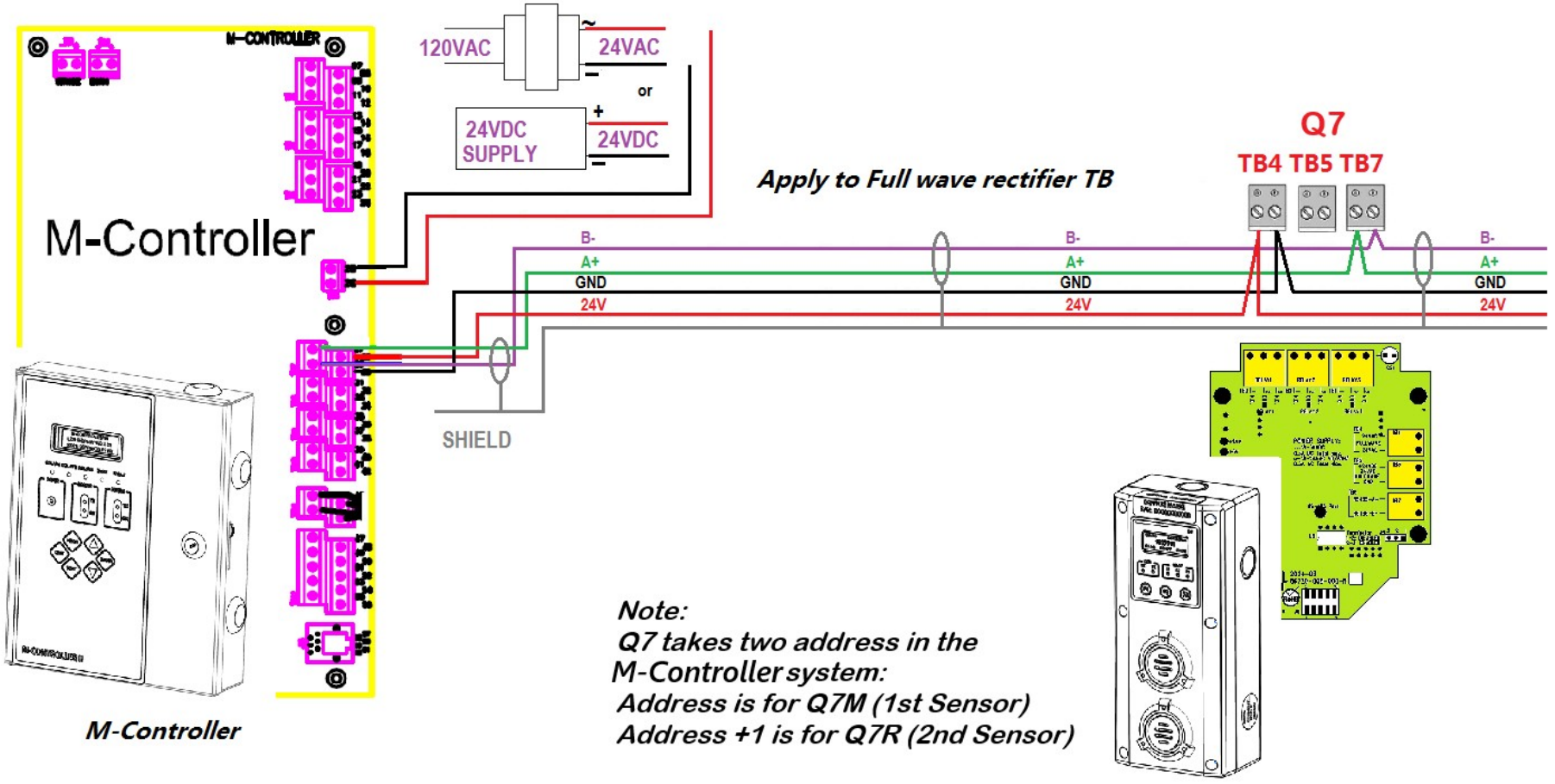
TITLE:
Q7
INSTALLATION DRAWING

SIZE	DWG. NO.	REV
B	86750-002-000	A

SCALE: 1:2 | SHEET 2 OF 4

Q7 Connection with M-Controller

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet1	-	-



Power Requirements:

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			CHECKED	XY	2025/06/23
			ENG APPR.	XY	2025/06/23
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.	XY	2025/06/23
		MATERIAL	COMMENTS:		
		FINISH			
APPLICATION		DO NOT SCALE DRAWING			

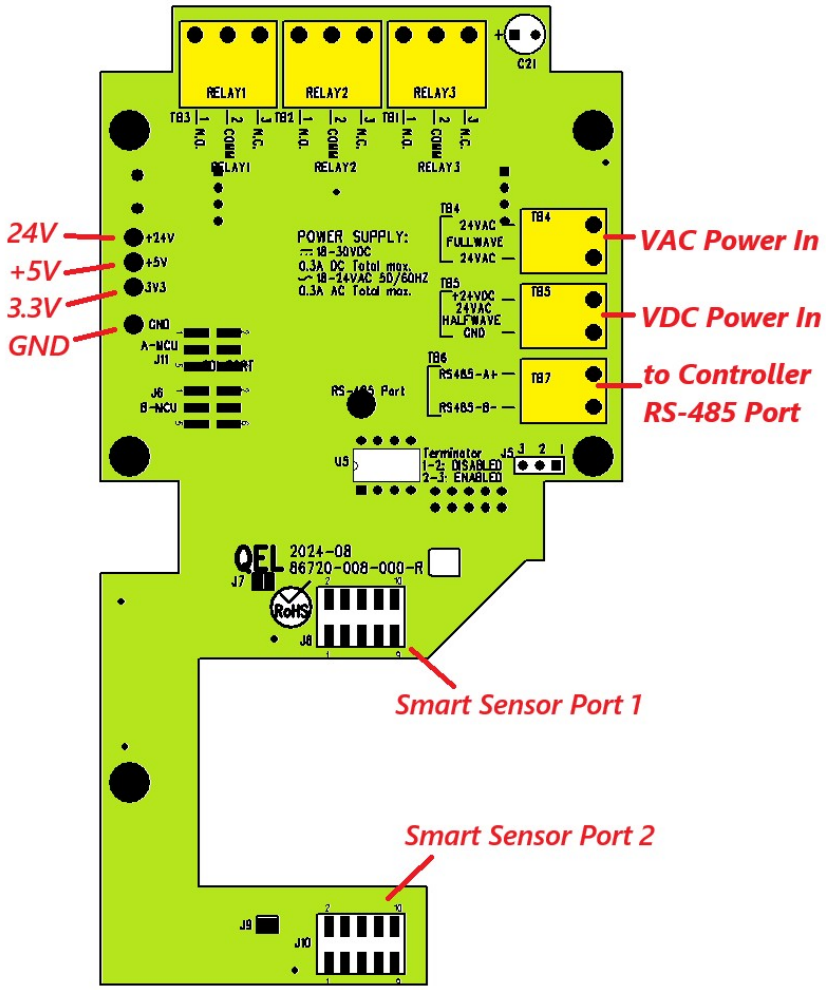
TITLE:

Q7
Installation Drawing

SIZE	DWG. NO.	REV
B	86750-002-000	A

SCALE: 1:2	WEIGHT:	SHEET 3 OF 4

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet1	-	-



Twisted Pair?

RS-485 is designed to be a balanced system. The signal on one wire is ideally the exact opposite of the signal on the second wire. In other words, if one wire is transmitting a high, the other wire will be transmitting a low, and vice versa. Although RS-485 can be successfully transmitted using multiple types of media, it should be used with wiring commonly called "twisted pair."

Terminator Enable/Disable?

The terminator on each end of the RS485 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 RS485 loop. Short and medium length modbus/485 loops can operate without the terminating resistor. Longer runs may require the terminating resistors. But adding terminator dramatically increases power consumption.

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: For the target gas heavier than air. Detecting location should be 9 - 18 inch (0.23m to 0.46m) above the floor.
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.

Note:

Avoid running communication wires or sensor input wires next to AC power wires or the relay output wires. These can be sources of noise that can affect signal quality.

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			CHECKED	XY	2025/06/23
			ENG APPR.	XY	2025/06/23
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

TITLE:
Q7
INSTALLATION DRAWING

SIZE	DWG. NO.	REV
B	86750-002-000	A

SCALE: 1:2 | SHEET 4 OF 4