MURPHY®
by ENOVATION CONTROLS

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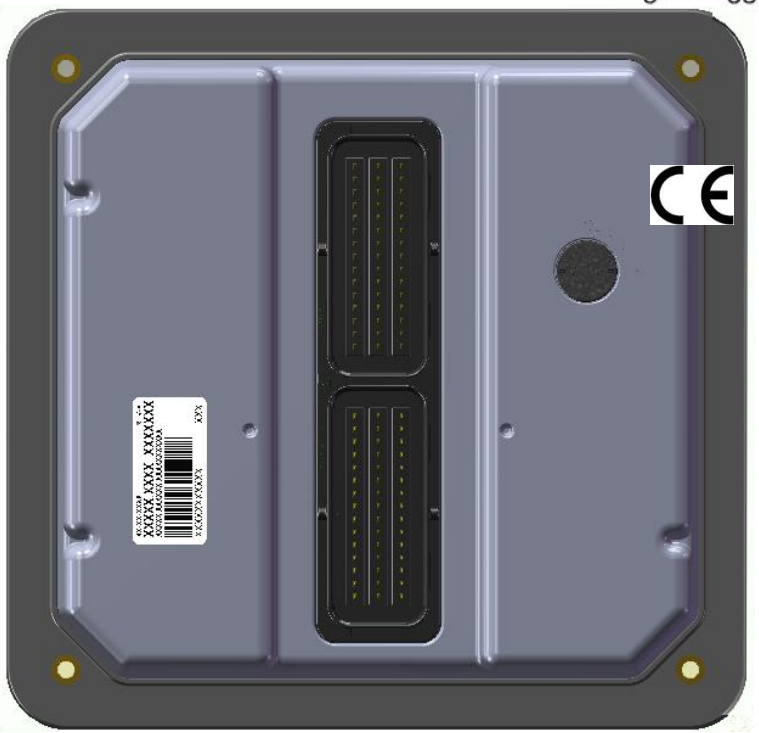

CXM-110
Installation Manual

00-02-0921
2019-12-18
Section 40

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time. The latest version of this manual can be found at enovationcontrols.com.

Warranty - A limited warranty on materials and workmanship is given with this Murphy product. A copy of the warranty may be viewed or printed by going to www.enovationcontrols.com/warranty

BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT:

- Read and follow all installation instructions.
- Visually inspect this product before installation for any damage during shipping.
- Disconnect all electrical power to the machine. Failure to do this before welding can result in damage to the panel and/or its components.
- It is your responsibility to have a qualified technician install the unit and make sure the installation conforms to local codes including but not limited to double insulation and fire containment.
- Observe all Warnings and Cautions in each section of these instructions.
- The CXM-110 is designed for use in industrial environments for monitoring and control which include engine driven pumps, compressors, grinders, chippers, & rock crushers. Potential difficulties may exist when ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbances.

Contact Enovation Controls Technical Service if you have any questions or concerns at: +1 918-317-4100.

IMPORTANT! Improper use and operation of electronic products can be dangerous. It is required that point-of-operation guarding devices be installed and maintained. All such devices must meet OSHA and ANSI Machine safety standards. The manufacturer shall not accept any responsibility for installation, application, or safety of systems.

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Hardware Installation

The following instructions will guide you through installing the CXM-110 display.

Inspecting Package Contents

Before attempting to install the product, it is recommended that you ensure all parts are accounted for and inspect each item for damage (which sometimes occurs during shipping). The items included in the box are:

CXM-110 Controller kit – P/N 40700489 includes:

- CXM-110 Controller
- P/N 00-02-0921 CXM-110 Installation Manual

Tools Needed

Use an 11/64 drill bit to make the approximately sized 0.0170" mounting holes.

Installation

Preparing the Enclosed Panel

Determine the location of the CXM-110 on the customer-supplied flat or enclosed panel. The suitability of the enclosure is subject to investigation by the local authority having jurisdiction at the time of the installation.

Use the Installation Template measurements (included at the end of the manual). Drill holes where indicated on the template for the mounting screws. Please read IMPORTANT note below:

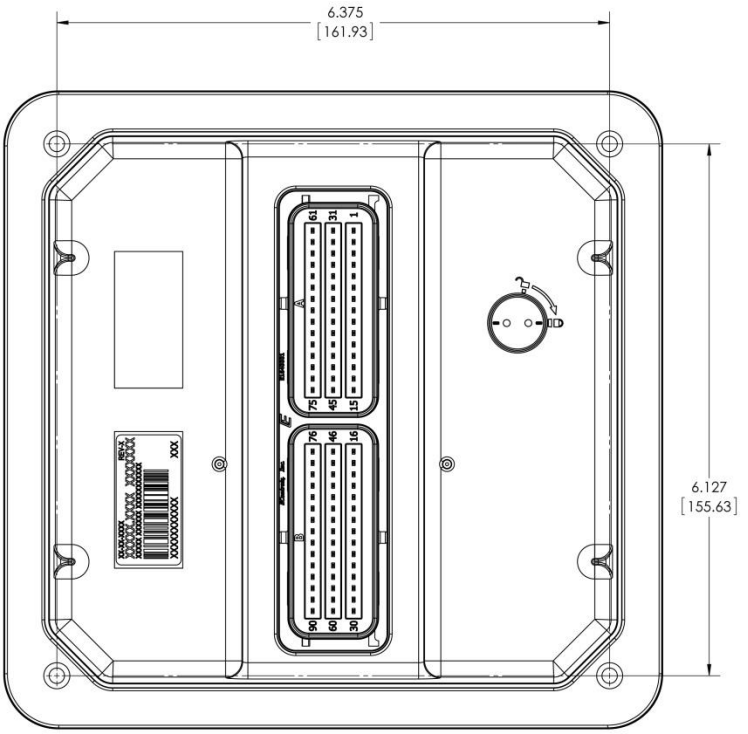
IMPORTANT: When using the paper template from the manual, please be aware that the drawing is not represented to scale. The measurements provided are accurate, and should be referred to when preparing the placement of the unit.

Recommended torque for tightening the mounting screws is 7.5-inch pounds. Although not required, only Blue polycarbonate compatible thread lock should be used for the CXM-110 mounting screws if thread lock is desired.

Install the CXM-110 controller on the front side of the panel and install the four mounting screws and lock washers. Plan the CXM-110 mounting for easy wiring and access.

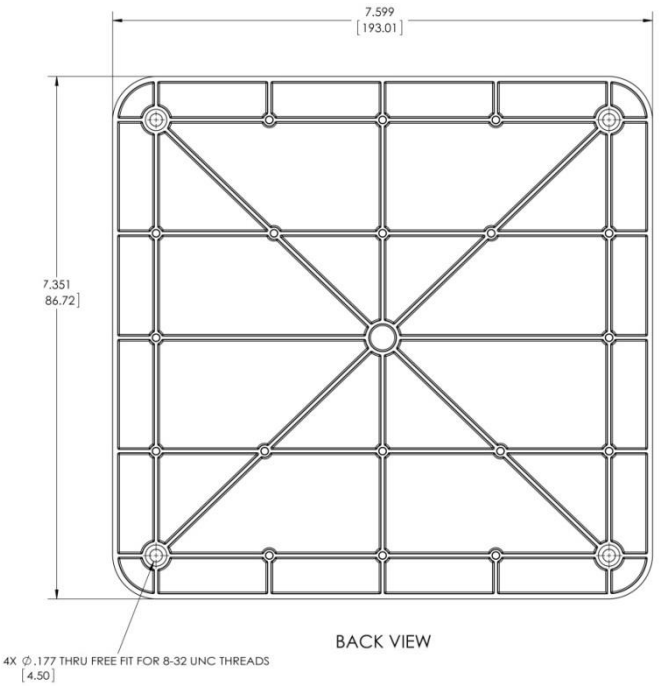
Dimensions for Installation

Front **Inches [mm]**

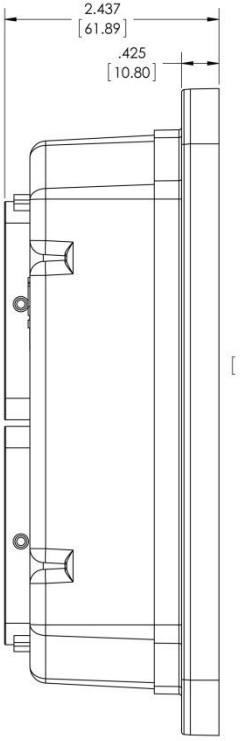


FRONT VIEW

Back View


7.599
[193.01]
7.351
86.72]
BACK VIEW
4X Ø.177 THRU FREE FIT FOR 8-32 UNC THREADS
[4.50]

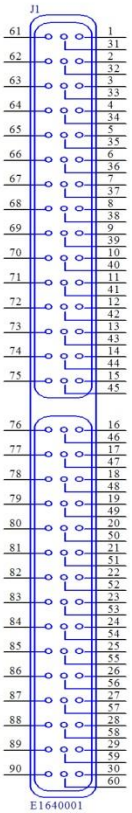
Side View



Wiring Instructions

PIN Specifications for FCI Connection

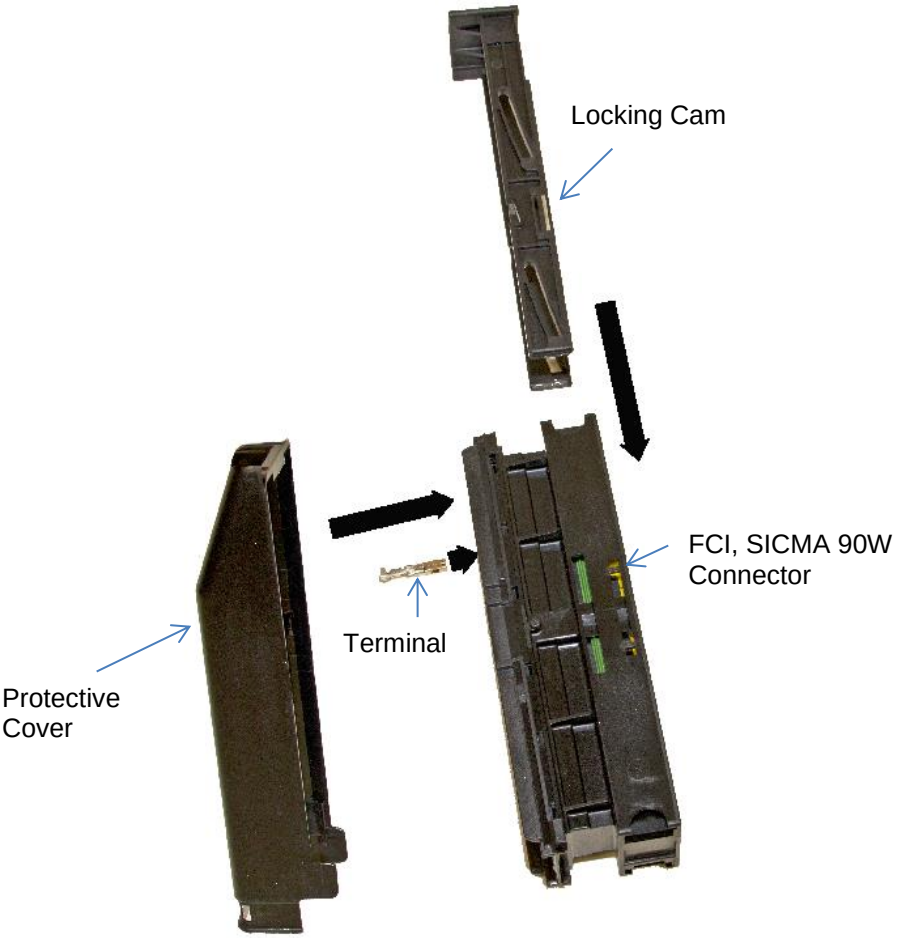
Pin #	Pin Assignments	Pin #	Pin Assignments	Pin #	Pin Assignments
1	SW_BATT	31	BATT	61	BATT
2	GND	32	GND	62	GND
3	AN1_IN	33	DIG_IN1	63	DIG_IN2
4	AN2_IN	34	DIG_IN3	64	DIG_IN4
5	AN3_IN	35	DIG_IN5	65	DIG_IN6
6	AN4_IN	36	Not used	66	HS_2A_OUT_1
7	AN5_IN	37	Not used	67	HS_2A_OUT_2
8	AN6_IN	38	Not used	68	Not used
9	AN7_IN	39	Not used	69	FREQ_IN
10	AN8_IN	40	AN_OUT	70	GND
11	Not used	41	Not used	71	Not used
12	RS485_L	42	Not used	72	CAN1L
13	RS485_H	43	Not used	73	CAN1H
14	ETH_TD_P	44	ETH_TD_N	74	CAN2L
15	ETH_RD_P	45	ETH_RD_N	75	CAN2H
16	USB_DP_OUT	46	USB_DM_OUT	76	USB1_VBUS
17	USB_GND	47	USB_SHLD	77	USB_ID_OUT
18	RLY4_NC	48	Not used	78	RLY1_NC
19	RLY4_COM	49	Not used	79	RLY1_COM
20	RLY4_NO	50	Not used	80	RLY1_NO
21	Not used	51	Not used	81	Not used
22	RLY5_NC	52	Not used	82	RLY2_NC
23	RLY5_COM	53	Not used	83	RLY2_COM
24	RLY5_NO	54	Not used	84	RLY2_NO
25	Not used	55	Not used	85	Not used
26	RLY6_NC	56	Not used	86	RLY3_NC
27	RLY6_COM	57	Not used	87	RLY3_COM
28	RLY6_NO	58	Not used	88	RLY3_NO
29	LS_1A_OUT_1	59	Not used	89	HS_5V_OUT_1
30	LS_1A_OUT_2	60	Not used	90	HS_5V_OUT_2



Wiring of this device must meet all applicable electrical codes.

Battery lines to the unit must all come through a single 10 Amp or less fuse or circuit breaker.

Connector


Locking Cam
FCI, SICMA 90W
Connector
Terminal
Protective
Cover

Accessories

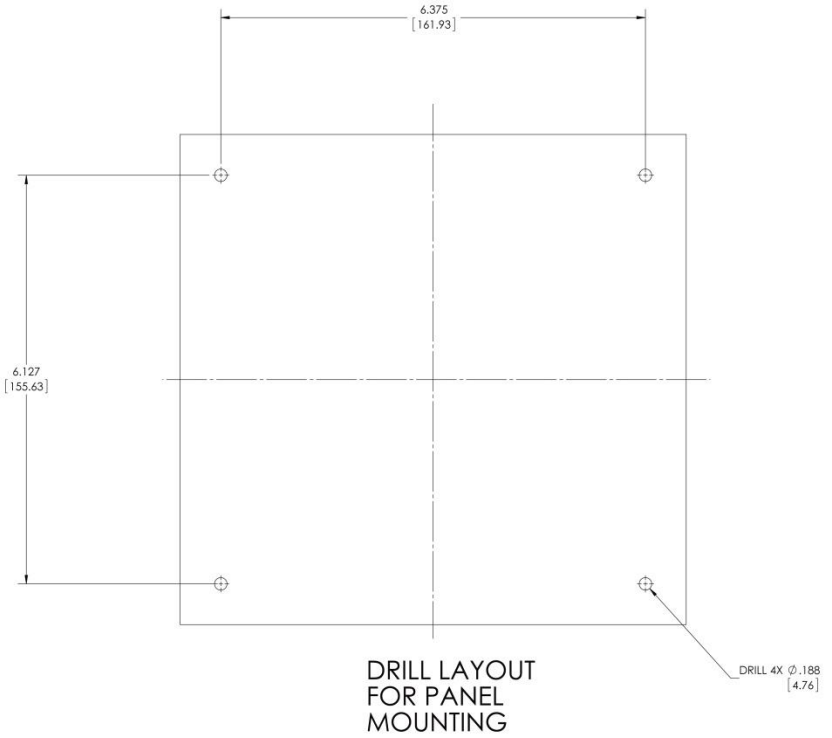
No accessories available at this time.

Specifications

PRODUCT SPECIFICATIONS	
Electrical	
Microprocessor	Texas Instruments LM3S9D92, 32-bit ARM Cortex-M3, 80MHz, 512KB flash
Operating Voltage	8V ~ 32V, protected against reverse battery and load dump
Power Consumption	18W Max without 2 2A High-sides active, 146W Max with 2 2A High-sides active
Communications	
2- CAN	J1939
USB	2.0B (Not in Primeguard 2 initial release)
Ethernet	(Not in Primeguard 2 initial release)
RS485	Modbus RTU
Connection	FCI-like, SICMA 90 way connector, 1.5mm
Inputs	
6- Digital Inputs	high/ low
8- Analog Inputs	configurable (4-20mA, 0-5V, resistive)
1- Frequency Input	supporting Magnetic Pickup (2 Hz - 10KHz, 3.6 VAC - 120 VAC)
Outputs	
6- Relays	10A, SPDT, Form C (30VDC @ 10A or 125VAC @ 10A max.), 40A maximum aggregate @ 85C
2- Low-side Outputs	1A
2- High-side Outputs	2A
2- 5V Outputs	200mA (to drive external relays)
1- Analog Output	0-5V
Real-time Clock	included with battery back-up
Environmental	
Operating Temperature	-40C ~ 85C
Storage Temperature	-40C ~ 85C
Protection	IP67
Emissions	SAE J1113
Immunity	SAE J1113
Vibration	Random Vibration, 7.86 Grms (5-2000 Hz), 3 axis
Shock	.+/- 50G in axis
Mechanical	
Case Material	PC/ABS

Mounting Template

Inches
[mm]



-NOTES-

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