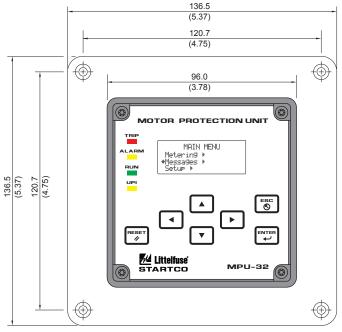


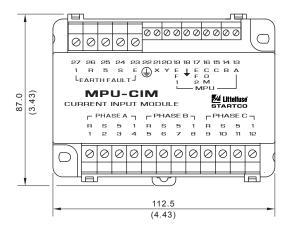
The MPU-32 Motor Protection Unit is an excellent choice as a replacement upgrade for the obsolete Multilin Protect 4A due to similarities in physical size. While an MPU-32 can be programmed to simulate a P4A, it can also be programmed with additional protective functions, and includes metering, data logging, and communications capabilities.



MPU-32 WITH PMA

NOTES:

- DIMENSIONS IN MILLIMETRES (INCHES).
 MOUNTING SCREWS: M4 x 12 OR 8-32 x 0.50.
 MPU-32 AND MPU-CIM MUST BE ORDERED SEPARATELY
 - WITH FULL PART NUMBER.





	102.0 (4.00)
1	
102.0 (4.00)	
1	MAXIMUM DEPTHS

...178 mm (7.00")

..132 mm (5.2") .. 56 mm (2.20")

MULTILIN P4A.....

MPU-32... MPU-CIM.



As illustrated, the MPU-32 and the P4A are similar in size. Startco can supply a PMA Panel-Mount Adapter to facilitate the retrofit process. An MPU-CIM Current Input Module must be installed; either in the relay cubicle or adjacent to the CTs.

Before removing the Multilin P4A from service, record the information required in Table 1. Use this information when programming the MPU-32.

MULTILIN P4A	DESCRIPTION	MPU-32 MENU LOCATION, UNITS
Phase C.T. Ratio	Phase CT primary rating (A)	Setup/System Ratings/CT Primary (A)
C.T. Ratio =	Thase of primary rating (A)	
G/F C.T. Ratio	Ground-fault CT primary rating (A)	Setup/System Ratings/EF-CT Primary (A)
GF C.T. = 2000:1		(enter 100 A for this value - refer to TN CT-07 for details)
Motor Full Load Current	Full load current FLA (A)	 Setup/System Ratings/FLA Rating (A)
FLC =CT%	Amps = FLC(%) x CT Primary	octupy oystem ridings/1 EA riding (A)
Stall Time (sec.)	Cold Locked-Rotor Time (s)	Setup/Protection/Overload/LR Time Cold (s)
Stall =s	Gold Edokod Flotor Fillio (b)	
Ground Fault Pick Up (A)	Ground-fault trip level (A)	 zSetup/Protection/Earth Fault/Trip Level (%)
G/F Trip =A	% = Amps/100 A	(if switch #304 is OFF, enter this value as an Alarm Level)
	*also refer to rear switch #304	
G/F Trip Time Delay	Ground-fault trip delay (s)	Setup/Protection/Earth Fault/Trip Delay (s)
G/F Delay =s	*also refer to rear switch #304	(if switch #304 is OFF, enter this value as an Alarm Delay)
Rear Switch #301	Switches for calibration and watchdog defeat.	Not applicable
Rear Switch #302		Not applicable
		Setup/Protection/Jam/Trip Action
		ON = Disabled, OFF = Trip 1
Rear Switch #303	ON = No Jam Protection	Setup/Protection/Jam/Trip Level
ON / OFF	OFF = Jam Protection @ 300%	OFF = 3 x FLA
		Setup/Protection/Jam/Trip Delay
		OFF = 1 s
Rear Switch #304	ON = Ground-Fault Trip	*see G/F Pick Up and Time Delay for settings
ON / OFF	OFF = Ground-Fault Alarm	
Rear Switch #305	ON = Single Phase Enable	Setup/Protection/Phase Loss/Trip Action
ON / OFF	OFF = Single Phase Defeat	ON = Trip 1, OFF = Disable
Rear Switch #306	ON = Auto Reset	Not applicable
Tical Switch #300	OFF = Manual Reset	Not applicable
Rear Switch #307	Not Used	Not applicable
Rear Switch #308		

Table 1: Programming Information

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The MPU-32 can use the existing phase CTs, ground-fault CT, thermistor, control power, and control wiring as shown in Figure 2. All connections and settings in this document assume a Multilin 2000:1 CT is used for ground-fault-current sensing. When the Multilin 2000:1 CT is connected to the sensitive input terminals 23 and 26 on the MPU-CIM, it will appear as a 100 A primary CT. Refer to TI. 11.7 GE Multilin 2000:1 CT Compatibility with Startco Relays for more information.

The output contacts on the P4A operate in non-failsafe mode. On the MPU-32, assign the Trip 1 function to Relay 1 (Setup/Relay Outputs/Relay 1/Function) and set the mode to non-failsafe (Setup/ Relay Outputs/Relay 1/Mode).

If a thermistor is used, program the MPU-32 local temperature sensor type to be a PTC Sensor (Setup/Hardware/MPU Temp Sensor)

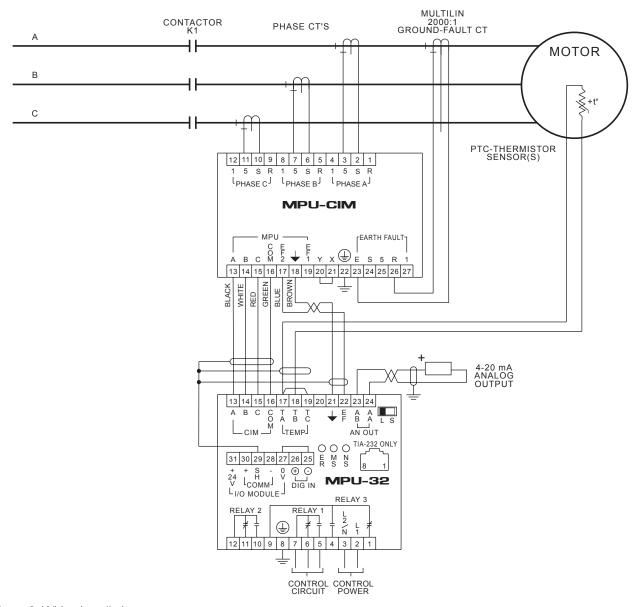


Figure 2: Wiring Installation



P4A	MPU-32	MPU-CIM
1	5	
2	7	
3	6	
4	23	
*5	18 or 24	
6	17	
7	3	
8	2	
9		23
10		26
11		2
12		3
13		6
14		7
15		10
16		11

Table 2: Equivalent Terminals between P4A, MPU-32, and MPU-CIM

In addition to the terminals mentioned in Table 1, the MPU-32 requires terminal 8 to be grounded, terminals 17 and 19 to be jumpered, and terminals 13, 14, 15, 16, 21 and 22 are connected to the equivalent terminals on the MPU-CIM. The MPU-CIM requires terminals 20 and 21 to be jumpered, and terminal 22 to be grounded.

This document is used as a guideline to install and program the MPU-32 only to mimic a P4A. It may be beneficial to use the MPU-32's advanced thermal-modeling capability and additional protective functions. For complete details, refer to the MPU-32 manual.

^{*} Terminal 5 on the P4A is a common between the thermistor and the 4-20 mA analog output. The MPU-32 requires these to be separately connected as shown in Figure 2.