

Actual Size

FEATURES

- Compact 1/4 DIN size
- Rugged construction
- Ideal for retrofit applications
- Easy to program
- Dynamic thermal model
- Multifunction protection
- Microprocessor based
- On-line programming
- Nonvolatile memory
- Isolated RS-485 communication
- Data logging
- Wide temperature range
- Isolated analog output

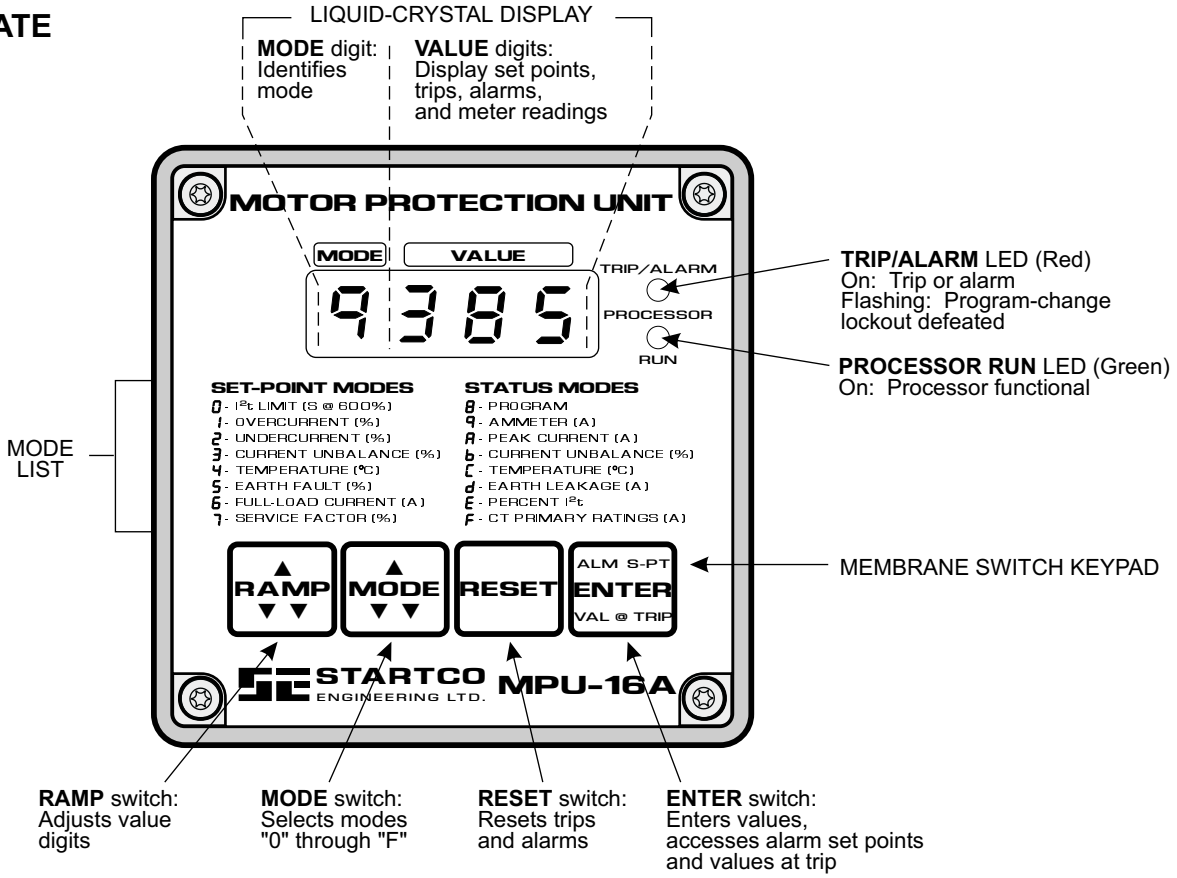
Manuals and additional information available at www.startco.ca

MPU-16A

PROGRAMMABLE MOTOR PROTECTION

The MPU-16A is a microprocessor-based motor protection unit that uses dynamic thermal modelling to continuously track used thermal capacity of a motor through starting, running, overload, and cooling cycles. The result is motor protection that allows a motor to operate within its design limits without nuisance tripping; yet, the MPU-16A quickly and accurately responds to an overload. Overcurrent, undercurrent, current-unbalance, phase-reverse, and earth-fault protection are also provided. A stator-temperature detector can be used to provide overtemperature protection and hot-motor compensation in the event of loss of ventilation or high ambient temperature. The MPU-16A's compact size and its separate ICT-2 interface current transformer increase mounting options—the unit is ideal for new and retrofit applications. The operator interface, comprised of a liquid-crystal display and four switches, is used to observe metered data, to retrieve stored information, and for programming. RS-485 communication provides remote access to metered values, set points, and 250 event records.

FACEPLATE



PROTECTION

Thermal Overload

- Locked rotor
- Multiple starts
- Long-acceleration starts
- Stalls
- Cyclic overloads

Overcurrent

- Mechanical jam
- Short circuit

Overtemperature

- Loss of ventilation
- High ambient temperature
- Open/shorted RTD

Current Unbalance

- Phase failure/reversal
- Supply unbalance
- Single phasing
- Pole failure

Undercurrent

- Loss of load

Earth Fault

- Earth leakage
- Phase-to-frame fault

INTERFACE CT

- 5-A and 1-A CT inputs
- Shorting blocks not required
- Reduces CT lead lengths
- DIN rail mountable

FEATURES

- Stores meter values at last trip
- Program-change lockout
- Fused, Form C trip relay
- Fused, Form C alarm relay
- Liquid-crystal display
- Conformally coated electronics
- Proven reliability
- Plug-in terminal blocks
- Emergency Thermal Reset
- Solid-state starter compatible
- Backlit display option
- Remote-keypad input option
- ac and dc power supply options
- RTD or PTC inputs
- Sensitive earth-fault protection

USER SELECTABLE

- Trip and alarm set points
- Set point delete
- Phase sequence
- Phase-reverse detection
- Earth-fault time delay
- Hot-motor compensation
- Alarm latch
- Short-circuit trip
- Autoreset (Thermal Overload)
- Analog-output parameter
- Fail-safe or non-fail-safe output-relay operation

METERING DISPLAYS

- Motor current
- Peak motor current
- Percent current modulation
- Percent current unbalance
- Stator temperature
- Earth-leakage current
- Percent I²t used

INFORMATION DISPLAYS

- Trip and alarm set points
- Time-to-reset
- Meter values at trip
- Trip and alarm indication
- Processor-run indication
- Program-enable indication

COMMUNICATION

- RS-485 interface for up to 63 protection units
- Allen-Bradley and Modbus protocols
- Free PC software
- Remote monitoring, programming, and reset
- Access to all meter readings
- Data logging option:
 - 250 time/date stamp records
 - User-configured event mask

TECHNICAL SPECIFICATIONS

Supply:

120 or 240 Vac, 50/60 Hz	10 VA
Maximum Continuous	135/265 Vac
Minimum Continuous	85/170 Vac
Power-up Voltage	100/200 Vac
10 to 240 Vdc	10 W
Maximum Continuous	340 Vdc
Minimum Continuous	90 Vdc
12, 24, or 48 Vdc	10 W
Maximum Continuous	+ 50%
Minimum Continuous	- 25%

Interface-CT Inputs:

Thermal Withstand	
Continuous	5 x CT-Secondary Rating
1-Second	80 x CT-Secondary Rating
Burden	< 0.01 Ω

Temperature Input:

RTD	3 wire; 100-Ω Pt, 100-Ω Ni, 120-Ω Ni, or 10-Ω Cu
PTC	Cold Resistance < 1500 Ω

Output Relays:

Contact Rating	8 A Resistive, 250 Vac or 24 Vdc B300 Pilot Duty 0.25 hp @ 120 Vac
Contact Configuration	Form C
Fuse Rating (F1 & F2)	8 A, 250 Vac

Analog Output:

Parameter	0 to 125% FLA, 0 to 100% I ² t, 0 to 200°C, or 0 to 100% EF-CT Primary
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Drive

4–20 mA	700 Ω max
0–5 Vdc	25 mA max
0–10 Vdc	25 mA max
Isolation to Ground	300 Vac Continuous
Dielectric Strength	1500 Vac
Resolution	± 1% Full Scale

Accuracies:

Ammeter Accuracy	± 0.3% Full Scale, or ± 3% Reading ^{1,2}
Earth-Leakage Accuracy	± 3% EF-CT-Primary Rating ²
RTD Temperature Accuracy	± 2°C

¹ Ammeter Full Scale = 10 x FLA
² Interface-CT accuracy included

Shipping Weight 3.2 kg (7 lb.)

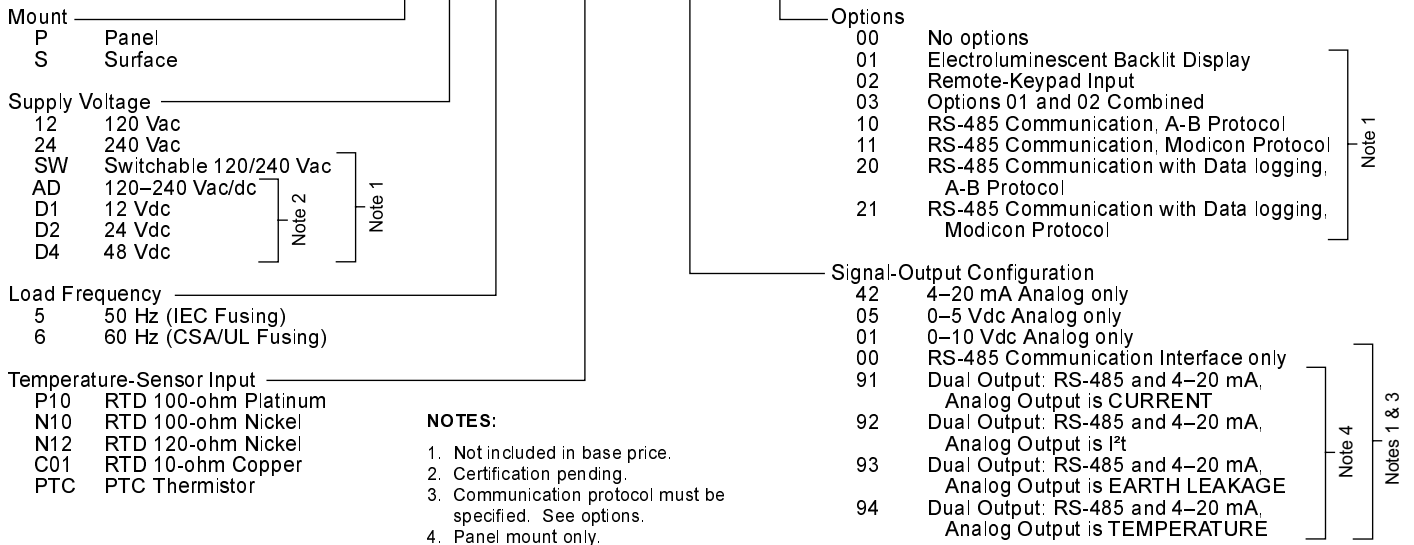
Environment:

Operating Temperature	-40°C to 60°C
Storage Temperature	-55°C to 80°C

ORDERING INFORMATION

MPU-16A supplied with ICT-2, 6 m (20 ft) ICT-2 interconnection cable, and mounting hardware. Provide complete model number with order.

MODEL NUMBER: MPU-16A -



ACCESSORIES

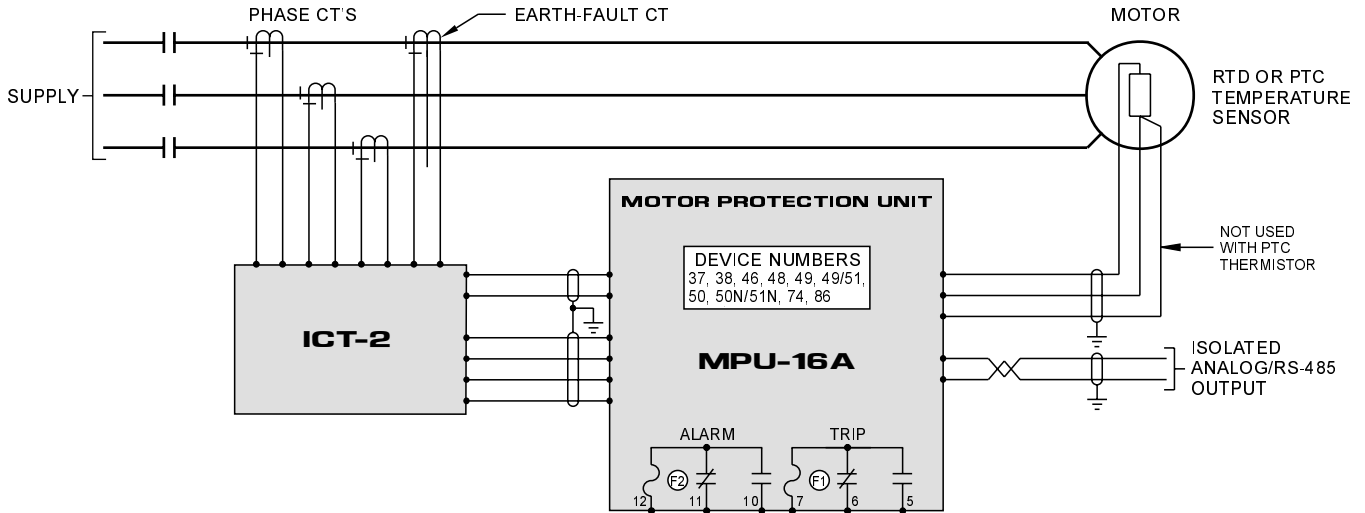
EFCT-1	Sensitive Earth-Fault CT with 82-mm (3.2") Window
EFCT-1FC	Flux Conditioner, 70 mm (2.7")
EFCT-2	Sensitive Earth-Fault CT with 155-mm (6.1") Window
EFCT-2FC	Flux Conditioner, 139 mm (5.5")
SE-EFVC	Voltage Clamp
BPU-2A	Bearing Protection Unit
SE-485	RS-232/RS-485 Converter
SE-TA485	Termination Assembly
SE-COMM16	PC Communication Software*
MPU-PLOT	PC Graphing Software*
Retrofit Adapters	Consult Factory

CERTIFICATION AND COMPLIANCE

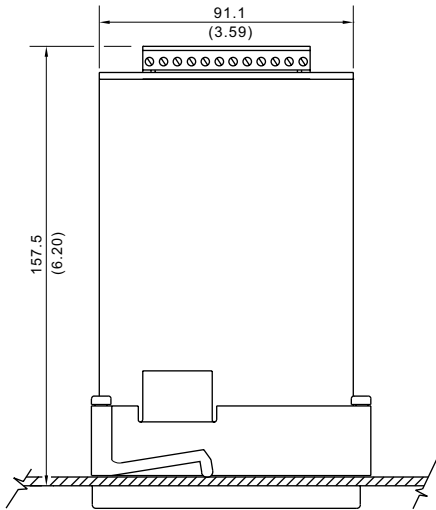
- CSA NRTL/C certified
- Impulse Voltage Withstand to IEC 255-4, Appendix E, Class III
- High-Frequency Disturbance to IEC 255-4, Appendix E, Class III
- Dielectric to IEC 255-5, Clause 6
- Insulation Resistance to IEC 255-5, Clause 7
- Surge withstand to ANSI/IEEE C37.90.1-1989 (Oscillatory and Fast Transient)

* Available at www.startco.ca

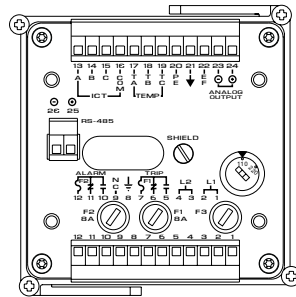
SIMPLIFIED CONNECTION DIAGRAM



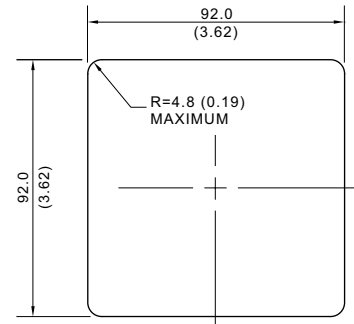
DIMENSIONS



TOP



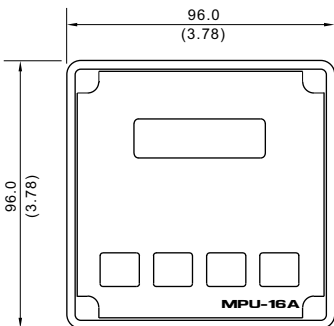
REAR



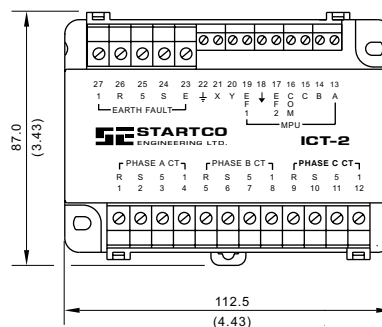
PANEL CUTOUT DETAIL

NOTES:

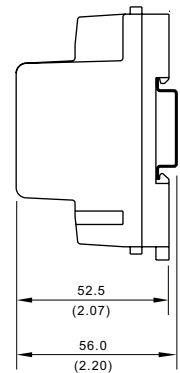
1. Dimensions in millimeters (inches).
2. Switchable supply and dual output shown.
3. Panel-mount MPU-16A shown.



FRONT



TOP



SIDE

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