URC | Utility Relay Company

AC-PRO®

MICRO-CONTROLLER BASED TRIP UNIT

A universal trip unit for low voltage circuit breaker retrofitting.

Standard trip unit functions:
- ☐ Long-Time
- ☐ Short-Time
- ☐ Instantaneous
- ☐ Ground Fault
- ☐ Phase Unbalance

All functions, except for long time, are selectable On/Off during programming **(No rating plugs required)**.

True RMS
The AC-PRO® is a 60 Hz solution and utilizes true RMS sensing on all functions, including instantaneous. If your power system is 50 Hz please refer to our AC-PRO-II or AC-PRO-MP solutions.

Programming
Settings are programmed using the ▲, ▼, and **SAVE** buttons on the front of the trip unit. All settings and last trip data are stored in non-volatile memory.

Security is provided by a security key, which must be plugged in to the top of the trip unit before any trip settings can be changed.

16-Character LCD
The large backlit display provides continuous 3-phase current metering when the trip unit is in service. Last trip data and trip settings can be reviewed at any time by pressing the **REVIEW** key.

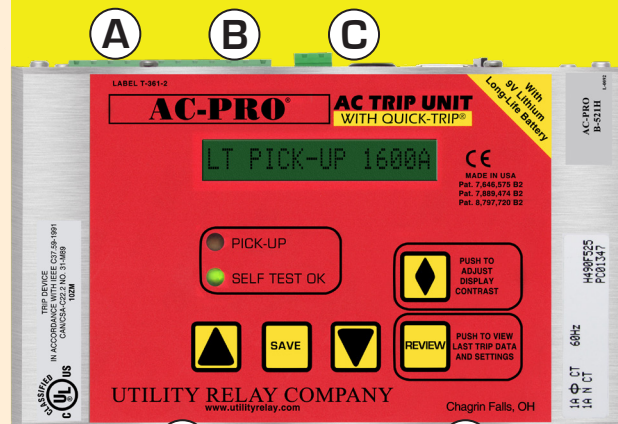The ◆ button on the front of the trip unit is provided to adjust the LCD's contrast.

Last Trip Data
The AC-PRO® retains the data from the most recent trip in non-volatile memory. This information includes the type of trip and current at the time of the trip. This information can be reviewed at any time by pressing the **REVIEW** button.

Continually pressing the **REVIEW** button will display a trip counter, which indicates the number of times the trip unit has operated on each function. The present trip unit settings will also be displayed. Last trip data and the trip counter can be cleared at any time.

Warranty
2-Year limited warranty.

A ACTUATOR OUTPUT

B SCREW DOWN CONNECTOR FOR PHASE CTS & NEUTRAL CT

C SECURITY KEY

D RS485 COMMUNICATION PORT (OPTIONAL)

E PT MODULE CONNECTION (USED WITH COMMUNICATIONS)

"PICK-UP" Indication
The red LED on the front of the trip unit illuminates when current reaches or exceeds the long-time PICK-UP value.

QUICK-TRIP® Feature
The QUICK-TRIP® system helps reduce the arc flash hazard on downstream equipment for times when personnel must work on energized equipment. The QUICK-TRIP® system can be turned on and off without opening the cubicle door and features:
- ☐ QT-Instantaneous setting
- ☐ QT-Ground fault setting
- ☐ Door mounted switch with lockable clover
- ☐ Door mounted QT-DISPLAY® with LCD display

"SELF-TEST OK" Feature
The green LED indicates that the trip unit is operating properly. This feature:
- ☐ Continuously monitors the trip unit
- ☐ Verifies that an actuator is connected
- ☐ Monitors software routines
- ☐ Monitors micro-controller and A/D converter

Construction
- ☐ Rugged extruded aluminum housing
- ☐ Conformal coated circuit boards
- ☐ Contamination resistant membrane keypad

REV 2.07.18

ISO 9001 2015 CERTIFIED

NETA CORPORATE ALLIANCE PARTNER

Complete Retrofit Kits

The AC-PRO® can be supplied as part of a complete retrofit kit. Kits include all necessary brackets, mounting hardware, wiring, actuator, and installation documentation and instruction manuals. Thousands of different kits are available including kits for the following breakers:

- ❑ General Electric - AK, AKR, AKRT, AE, AL
- ❑ Westinghouse - DA, DB, DBL, DK, DS, DSL
- ❑ ITE - K, KA, KB, KC, KD, KE, LG, LX, LK
- ❑ Siemens/Allis-Chalmers - LA-15, LA-25, LA-50, LA-75, G, RL, RLX
- ❑ Federal Pacific/Federal Pioneer - FP, FPS, FM, DMB, H1, H2, H3

Trip Unit Acceptance Testing

In addition to being UL classified and short circuit tested in accordance with ANSI C37.59 on many breakers, the AC-PRO® has been independently tested to and passed the following:

- ❑ **ANSI/IEEE C37.90.1** - Oscillatory Wave Surge Test
- ❑ **ANSI/IEEE C37.90.1** - Fast Transient Test
- ❑ **ANSI/IEEE C37.90.2** - RFI Test
- ❑ **Capacitive Discharge Test** - 1.5 kA, 80 & 180 us pulses applied to primary CT inputs superimposed on load current
- ❑ **Electrostatic Discharge Test** - 8 kV & 15 kV direct air discharge applied to trip unit
- ❑ **Insulation Test** - 2.2 kVAC, 60 Hz applied for 60 seconds
- ❑ **Environmental Test** - Secondary injection test trip unit at -20, +23, & +60 C. Minimum exposure of eight hours at each temperature

RS485 Communications Port

The optional communications port uses the industry standard MODBUS RTU protocol. Multiple trip units can be daisy-chained together using a single shielded twisted pair cable. Additional components supplied with a communications ready AC-PRO® retrofit kit include: PT module and cable, communications cable, cell wiring accessories, mounting brackets, and hardware.

Information Monitored over communications includes:

- ❑ Currents, 3-Phase
- ❑ Voltages, 3-Phase, L-L & L-N
- ❑ KW, 3-Phase
- ❑ KWH, Total
- ❑ Power Factor, 3-Phase
- ❑ Breaker Position
- ❑ Trip Counter
- ❑ Alarm Conditions
- ❑ Trip Unit Settings

The AC-PRO® also features remote programmability, which allows trip settings to be programmed remotely from a PC. Two addressable form-C contacts are also supplied with the PT module.

Secondary Injection Test Set

The Model B-292 test set is micro-controller based and designed to test the AC-PRO® trip unit. The test set features a selectable frequency for testing versions of the AC-PRO®.