AC-PRO®

AC TRIP UNIT | MICRO-CONTROLLER BASED

State of the art technology for low voltage circuit breaker retrofitting

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

All functions are selectable ON/OFF, with the exception of the Long-Time function, during programming.

True RMS
The AC-PRO is true RMS sensing on all functions, including Instantaneous.

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 into 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

Actuator Output | Screw down connector for phase CTs and neutral CT | Security Key | QT-DISPLAY® Connection

LABEL T-361-2
AC-PRO™ **AC TRIP UNIT** WITH QUICK-TRIP™
LT PICK-UP 1600A
MADE IN USA
PAT 7,646,575 B2
PICK-UP
SELF TEST OK
PUSH TO ADJUST DISPLAY CONTRAST
SAVE
REVIEW
PUSH TO VIEW LAST TRIP DATA AND SETTINGS
UTILITY RELAY COMPANY
www.utilityrelay.com
Chagrin Falls, OH

RS-485 Communication Port (Optional) | PT Module Connection (Used with Communications)
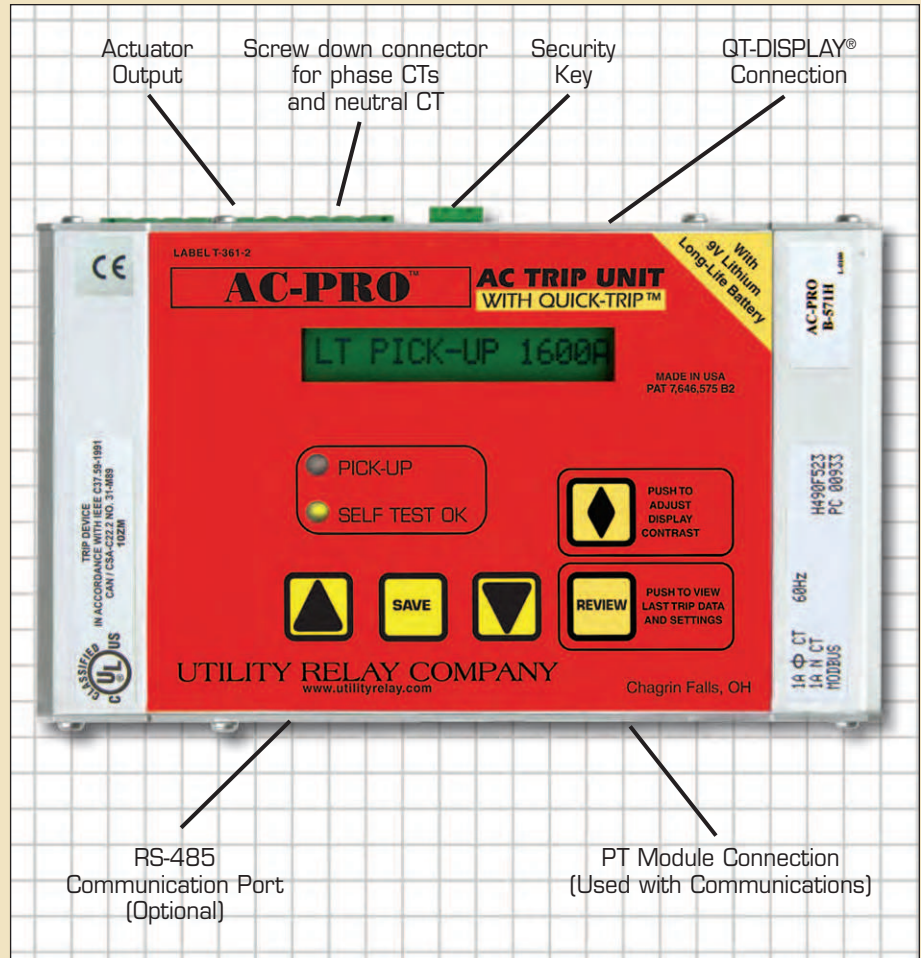
Last Trip Data
The trip unit retains the data from the most recent trip in non-volatile memory. This information includes the type of trip and the individual phase currents at the time of trip. This information can be reviewed at any time by pressing the **REVIEW** button.

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.

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.

SELF-TEST OK Feature
The green LED indicates that the trip unit is operating properly. This feature:
❏ Continuously monitors the trip unit.
❏ Verifies that the actuator is connected.
❏ Monitors software routines.
❏ Monitors micro-controller.

QUICK-TRIP® Arc Flash Reduction
The QUICK-TRIP system helps reduce the arc flash hazard on downstream equipment for times when personal 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 cover or KIRK Key switch
❏ Door mounted QT-DISPLAY® with LCD display

Special Applications
In addition to the standard 60Hz model, the AC-PRO is available in true RMS versions for 50Hz, 40Hz, and 25Hz power systems.

Construction
❏ Rugged extruded aluminum housing.
❏ Conformally coated circuit boards.
❏ Contamination resistant membrane keypad.

Warranty
2-year limited warranty.

URC Utility Relay Company

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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.

AC-PRO retrofit Kit for G.E. AK-2-25

Over 1100 different kits available including kits for these breakers:

General Electric
AK   AKR   AKRT   AE   AL

Westinghouse
DA   DB   DBL   DK   DS   DSL

I-T-E
K   KA   KB   KC   KD   KE
LG   LX   LK

Siemens / Allis-Chalmers
LA-Blue   LA-Gold   LA-15
LA-25   LA-50   LA-75
G   RL   RLX

Federal Pacific/Federal Pioneer
FP   FPS   FM   DMB   H1   H2
H3

Sylvania/Unelec
SSPB   CN2

Roller Smith
RS   BD   HD

Secondary Injection Test Set

The Model B-291 test set is micro-controller based and designed to test the AC-PRO trip unit.

The test set features a selectable frequency for testing the 60Hz, 50Hz, 40Hz and 25Hz versions of the AC-PRO.

AC-PRO Direct Replacement

The AC-PRO trip unit is designed to use existing ½ or 1 amp CTs and operate the magnetically latched OEM actuators used with many older style electronic trip units.

Reusing the existing CTs and actuator can greatly reduce material costs and cuts installation time to a fraction of that required for a complete retrofit.

Direct Replacement of a Static-Trip II on a Allis Chalmers LA-600 breaker
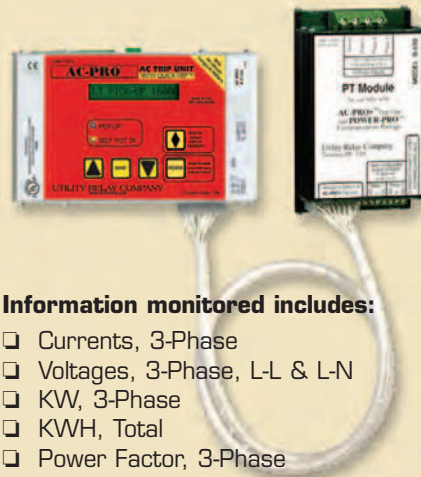
Trip Unit Acceptance Testing

In addition to being UL CLASSIFIED and short circuit tested in accordance with ANSI C37.59, 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 µs pulses applied to primary CT inputs superimposed on load current.
- ❏ **Electrostatic Discharge Test** – 8 kV and 15 kV direct air discharge applied to trip unit.
- ❏ **Insulation Test** – 2.2 kVAC, 60 Hz applied for 60 sec.
- ❏ **Environmental Test** – Secondary injection test trip unit at –20, +23 and +65 C. Minimum exposure of eight hours at each temperature.

RS-485 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 includes:

- ❏ Currents, 3-Phase
- ❏ Voltages, 3-Phase, L-L & L-N
- ❏ KW, 3-Phase
- ❏ KWH, Total
- ❏ Power Factor, 3-Phase
- ❏ Breaker Position
- ❏ Last Trip Data
- ❏ 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.

With the addition of an **LCI™** (Local Communications Interface), multiple AC-PRO trip units can communicate directly across a local area network.

The LCI Features:

- ❏ 4-line X 20-character display
- ❏ Rugged NEMA 4X enclosure
- ❏ RS-485 Input
- ❏ 10Base-T Ethernet port
- ❏ Programmable IP Address
- ❏ Embedded WEB Pages
- ❏ 2-year Limited Warranty

Call Toll Free: 888.289.2864

For additional information visit our website:
www.utilityrelay.com

URC Utility Relay Company

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