Remotely monitor and control multiple transfer switches

Eaton’s HMi Remote Annunciator Controller (RAC) series provides users with the ability to remotely monitor and control multiple transfer switches from one intuitive, touch screen user interface.

Remote management, enhanced safety

Tightening arc flash regulations and requirements for personal protective equipment are driving more and more end users toward the use of remote monitoring and control devices. Eaton’s HMi Remote Annunciator Controller offers a simple and cost-effective means of providing transfer switch monitoring and control.

Designed to meet today’s most common specifications, including the City of Chicago Electrical Code, the HMi RAC communicates with Eaton’s automatic transfer switch controller via serial Modbus® or Ethernet (with Gateway device).

One product, multiple advantages

The HMi RAC has a multi-view option that allows for remote management of multiple transfer switches from an intuitive touch screen interface where users can:

- View the status of up to eight transfer switches on a single overview screen
- View and program transfer switch controller set points, control inputs and relay outputs
- Start and stop a generator engine test
- Initiate a transfer to the alternate source
- Bypass a time delay countdown
- Initiate a manual retransfer
- View and silence alarms
- Perform basic troubleshooting
- Analyze metering and trend data of source and load
- Monitor source synchronization during in-phase or closed transition

Key features

- Source and load metering of voltage, current, frequency, power, power factor, voltage unbalance
- Mimic bus graphic indicating status of source available, preferred and connection
- Source health indication
- Date and time stamped event and alarm history
- Programmable transfer switch designations
- Password protection
- Serial (Modbus RTU) and Ethernet (Modbus TCP/IP) communication
- Compatible with Eaton’s ATC-900 and ATC-300+ automatic transfer switch controllers

Design highlights

- Utilizes Eaton’s HMi (human-machine interface) series
- Display type: 7-inch TFT, 800 x 600, LED backlight
- Touch screen
- NEMA® 4X/IP65
- 24 Vdc operating voltage (ac power supply optional)
- 85 dB multi-tone-frequency alarm buzzer
- Operating temperature: 32–122 °F (0–50 °C)
- Storage temperature: −4 to +140 °F (−20 to +60 °C)
- 10% – 90% RH [0 – 40°C], 10% – 55% RH [41 – 50°C]
- 3 V lithium battery backup (CR2032 x 1)
- Serial interconnect module (included)
- CE and UL® safety approval

A reduced set of features are available when managing an ATC-300+ controller. Please consult the applicable HMi RAC Instruction Booklet (IB) for details.
ATS controller view screen
• Provides status indication of a single ATS including limited control functionality
• Time delay countdown
• Source available, preferred and connected indication
• Metering and health vitals for Source 1, Source 2 and Load
• Manual controls for Go To Emergency, Bypass Timers, Start Engine Test and Manual Retransfer
• System setup
• Event history
• Alarm status
• Real-time trend data graphic for Source 1, Source 2 and Load
• Source synchronization status
• Mimic bus diagram
• Silence audible alarm
• Not in Automatic, Go To Emergency and Emergency Inhibit status indication
• Return to overview screen

ATS overview screen
• Abbreviated status indication for up to eight transfer switches
• Single touch provides quick and easy access to controller view screen for a single ATS

Event history screen
Event messages:
• Preferred Source Avail.
• Overvoltage
• Undervoltage
• Overfrequency
• Underfrequency
• Plant Exerciser
• Engine Test
• Remote Engine Test
• Voltage Unbalance
• Phase Reversal
• Go to Emergency
• Monitor Mode
• More available w/ATC-900

Alarm messages:
• In Lockout
• Engine Test Aborted
• Failed to Sync (Freq.)
• Failed to Sync (Phase)
• S1 Mech Fault
• S2 Mech Fault
• More available w/ATC-900

Manual controls
• Start Engine Test: Password protected control to start and abort an engine test. The engine test will run according to the controller-programmed set points (with or without load)
• Bypass Timers: Provides ability to override programmed time delays
• Go To Emergency: Password protected control to initiate a transfer to the alternate source. Failsafe returns ATS to the normal source if the alternate source fails
• Manual Retransfer: Allows operator to manually initiate a retransfer from the alternate source to the normal source

Source health
• Voltage, frequency, phase loss and voltage unbalance are compared to programmed set points and provide real-time status indication of ‘source health’
• Bar graphs dynamically change color when source is not within programmed set point tolerances
• Trend icon provides single-touch access to source metering waveform data
Wiring diagrams

Serial diagram

Ethernet diagram

Note: To remotely manage multiple controller types (ATC-900 and ATC-300+), a dedicated HMI/RAC is needed for each controller type. A single HMI/RAC cannot manage a mix of ATC-900 and ATC-300+ controller types.

Note: HMI/RAC is shipped loose and not installed in the ATS enclosure. Communication and power wiring must be run to the HMI/RAC.

Note: Diagram shows direct Ethernet connection. The gateway may be placed anywhere on an existing network to communicate to the RAC.

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HMI/RAC dimensions in inches (mm)
Quick and easy panel-mount installation using four fasteners (included). For panel 5 mm thick or less.

ac power supply (optional)
- Can be used when external 24 Vdc is not available to power HMI/RAC
- 100–240 Vac, 50/60 Hz input
- DIN rail mount

HMI/RAC enclosure (optional)
- ANSI 61 grey finish
- Keyhole slots in the flat cover permit removal without extracting screws
- Grounding provision
- Rear mounting holes and knockout provisions on sides
- UL 50, Type 1