

Bypass isolation automatic transfer switch contactor type (3000 A frame)



Introduction

Eaton's bypass isolation automatic transfer switch includes dual automatic switching mechanisms that provide redundancy for critical applications.

The primary switching mechanism (ATS) typically handles day-to-day distribution of electrical power to the load, while the secondary switching mechanism (automatic bypass switch) serves as a backup.

During inspection, maintenance, isolated testing, or repair of the ATS, service personnel can route power around the ATS through the automatic bypass switch to ensure that critical loads remain powered without interruption.

When in the automatic bypass switch mode of operation, the control system continues to monitor the normal power source and will automatically initiate a transfer to the alternate source should the normal source fail.

Alternatively, power can be routed around the automatic bypass switch through the ATS during inspection, maintenance, isolated testing, or repair of the automatic bypass switch.

The three-door, compartmentalized, dual drawout construction, coupled with a maintenance isolation switch, allows service personnel to more safely perform maintenance while the bypass isolation transfer switch continues to power the load.

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Technical data

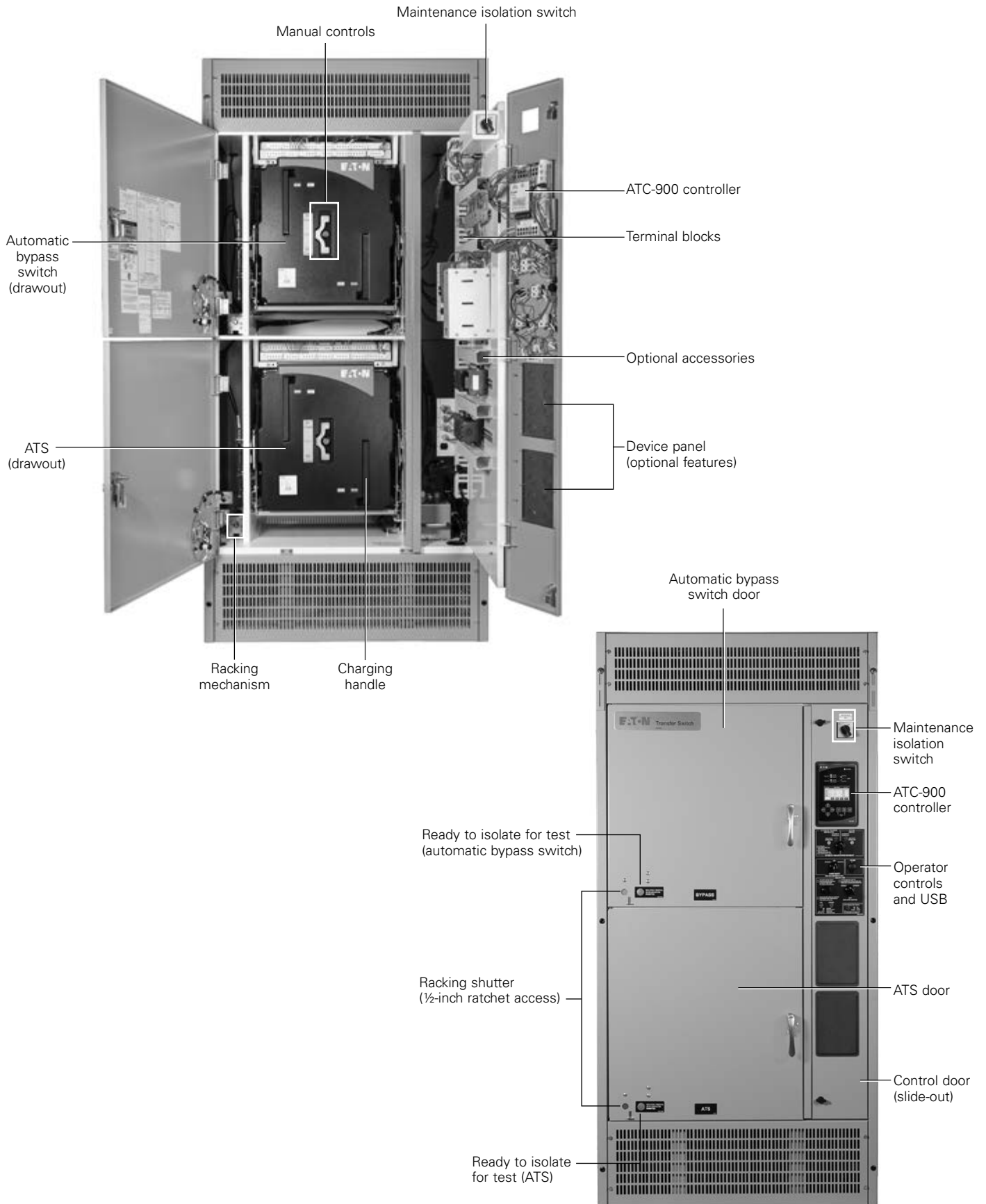
Features	Description
Type	Bypass isolation automatic transfer switch
Transition	Closed, open (time delayed, load voltage decay, in-phase)
Operation	ATS: automatic, non-automatic, manual Bypass switch: automatic, non-automatic, manual
System application	Current: up to 3000 A (100% rated) Voltage: up to 600 Vac Frequency: 50, 60 Hz Phases: 1, 3 (wye/delta, grounded/ungrounded) Poles: 2, 3, 4 Neutral (fully rated): solid, switched
Automatic controller	ATC-900 ①
User interface	Display: 4.3 inch, color TFT, 480 x 272 resolution; LED indication: unit status (green), source 1 available (white), source 1 preferred (green), source 2 available (amber), source preferred (green), source 1 connected (green), source 2 connected (red); Pushbuttons: navigation, enter, help/lamp test, engine test, bypass timer
Display language	English
Setpoints	User programmable, local or remote (via communication or HMI/RAC)
Access control	Password protection (4 digit)
Voltage	Source 1, Source 2, Load (Line-Line: Vab, Vbc, Vca) Range: up to 720 Vac rms Accuracy: ±1% of nominal
Frequency	Source 1, Source 2, Load Range: 40 Hz to 80 Hz Accuracy: ±0.2 Hz
Current (optional DCT module)	Load Range: 100 to 5000 A (CT ratio set point: 100:5 to 5000:5) Accuracy: ±1 %; Burden: 0.0115 VA (per phase at 5 A) Current input: 0–5 A, wire range 6–22 AWG
Power (optional DCT module)	Load Accuracy: ±2% kW, kvar, kVA, power factor (PF)
Inputs	Programmable: Form A type (wetted), 6 mA at 24 Vdc
Outputs	Programmable and source available: Form C type, 10 A at 250 Vac/30 Vdc Engine start: Form C type, 5 A at 250 Vac/30 Vdc I/O module (optional) includes (4) inputs and (4) outputs, maximum of (4) modules can be daisy chained with the ATC-900 controller
Serial port	USB 2.0 (type A) Download: set points, event log with timestamp, statistics, metering data Upload: set point profile, firmware
Supply power	120 Vac or 24 Vdc (externally supplied via optional DCT module)
Service	Maintenance isolation switch
Operator controls	Automatic/non-automatic operation select, source select, lamp test, test enable (isolated ATS or bypass switch)
Pilot lights	Rack position (ATS and bypass switch), door latch status (ATS and bypass switch), ready to isolate (ATS and bypass switch)
Network communication	
Serial (native)	Modbus® RTU
Ethernet (optional)	CAENET serial-Ethernet adapter (protocols supported ICMP, IP, TCP, UDP, DHCP, HTTP, Modbus TCP, EtherNet/IP) PXG-900 gateway (protocols supported Modbus TCP/IP, BACnet/IP, SMTP, DHCP, HTTP)
HMI/remote annunciator controller (optional)	Remote management, single or multi-view (up to 8 transfer switches), 7-inch color display, touchscreen, serial or Ethernet communication
Structure	
Compartments (front)	Three (ATS, bypass switch, control), steel barrier isolation
Compartments (rear)	One (cable/bus termination), steel barrier isolation
Doors	ATS and bypass switch: independent operation, left hinged, padlock provision, racking shutter (for ½-inch ratchet access) Control: independent operation, slide-out, adjoining panel with DIN rail, right hinged, keyed T-handle (optional)

Features	Description
Control power transformer	Primary: multi-tap via quick connect plug (multiple system voltages) Secondary: 120 Vac
Switching mechanism Drawout	Contactor type, 3-position Dual drawout (ATS and bypass switch), rack in/out via ½-inch ratchet, rear shutters (self open/close during rack in/out) Positions: connected, isolated for test, disconnected, removed
Actuation	Electrical and manual (under load)
Manual controls	Open, close, charge (stored energy)
Indicators	Mechanical flags: open, closed, charged
Main contacts	Silver composition
Interlock	Electrical and mechanical (open transition only), Kirk key (optional)
Auxiliary contacts	Form C (10 A at 250 Vac / 0.5 A at 125 Vdc / 0.25 A at 250 Vdc)
Lifting device	Optional: hydraulic hoist or winch lift truck
Electrical bus	Silver-plated copper (standard), tin-plated copper (optional)
Terminal connections	
Mechanical lug	Solderless screw-type, Cu/Al (standard)
2000 A rating ②	(8) 1/0–750 kcmil per phase, (24) 1/0–750 kcmil solid neutral
2600–3000 A rating ②	(12) 1/0–750 kcmil per phase, (36) 1/0–750 kcmil solid neutral
Compression lug	2-hole long barrel type, Cu or Al (optional)
Bus	Close couple or flange (optional)
Cable entry	Standard: Source 1 (top), Source 2 (bottom), Load (top/bottom) Optional: Source 1 (bottom), Source 2 (top), Load (top/bottom) Access: Rear (standard), front (optional)
Enclosure	
Type	NEMA® 1, 3R
Standard finish	Light gray (ANSI 61) paint, powder coat
Material	Steel: 12 gauge (structural), 14 gauge (doors and panels)
Door hinge orientation	ATS and bypass switch (left side), control compartment (right side)
Mounting	(12) internal floor anchor points
Environmental	Storage temperature: –30 °C to +80 °C (–22 °F to 176 °F) Operating temperature: –20 °C to +70 °C (–4 °F to 158 °F) Relative humidity: up to 90% (noncondensing)
Altitude derating factors	Up to 6561 ft (2000 m): Voltage = 1.0, current = 1.0; Up to 8530 ft (2600 m): Voltage = 0.95, current = 0.99; Up to 12,795 ft (3900 m): Voltage = 0.80, current = 0.96
Standards (safety)	UL® 1008 (transfer switch equipment) CSA® C22.2 No. 178 (automatic transfer switches)
Withstand closing current rating	F and G frame: Short-circuit (time based): 100 kA (up to 600 V) / 0.05 sec Short-circuit (specific breaker): 100 kA (up to 600 V) Short-circuit (fuse): 200 kA (up to 600 V) G frame: Short-time (time based): 85 kA (up to 600 V) / 0.5 sec
Emissions	FCC Part 15 (Subpart B, Class A); CISPR 11 (Class A)
Electromagnetic compatibility (EMC)	IEC 61000-4-2: Electrostatic discharge immunity IEC 61000-4-3: Radiated immunity IEC 61000-4-4: Fast transient/burst immunity IEC 61000-4-5: Surge immunity IEC 61000-4-6: Conducted immunity
Seismic certification	International Building Code (IBC) California Building Code (CBC) Uniform Building Code (UBC) Zone 4 State of California—Office of Statewide Health Planning and Development (OSHPD)

① Reference ATC-900 technical document TD140001EN for more features and details.

② Lug quantity and size for phase terminations apply to two-, three-, and four-pole (switched neutral) configurations.

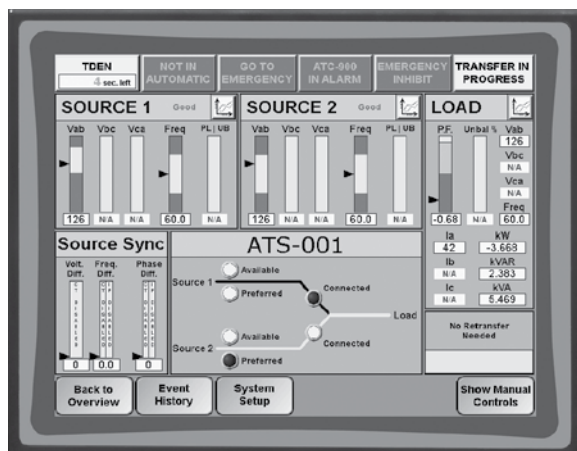
Anatomy of three-door, compartmentalized, dual drawout construction



Remote management

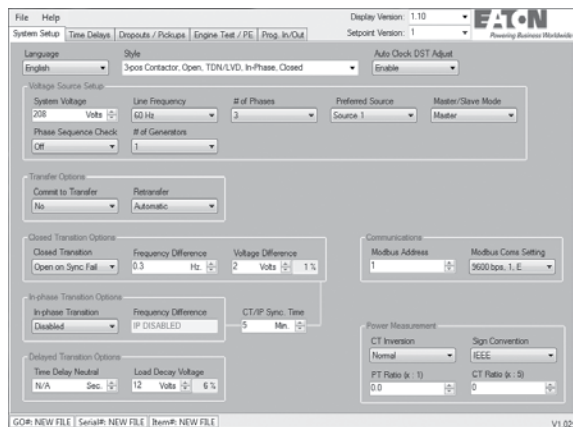
Eaton's HMI/ Remote Annunciator Controller (RAC) provides users with the ability to remotely manage up to eight transfer switches from a single interface.

- Seven-inch color display with touchscreen graphical interface
- Remote monitor and control to include set point programming and metering data
- Password protection for all control and setup functions
- Mimic bus to include source availability, position indication, and preferred source
- Date and time-stamped alarm history
- Flush-mount design
- Modbus RTU and Ethernet communication
- Audible alarm with silence feature



EASE configuration tool

The Eaton Setpoint Editor (EASE) is available on the Eaton website and allows you to create, edit, and save set point configuration files (csv format) for easy upload to the ATC-900 controller via the USB interface located on the transfer switch front door.



Ethernet communication

The CAENET module is a serial-to-Ethernet adapter and supports a variety of protocols. Eaton document MN05002003E can be referenced for details.

The Power Xpert™ PXG-900 is a full-featured gateway and includes an embedded Web server. Eaton technical document TD152008EN can be referenced for details.



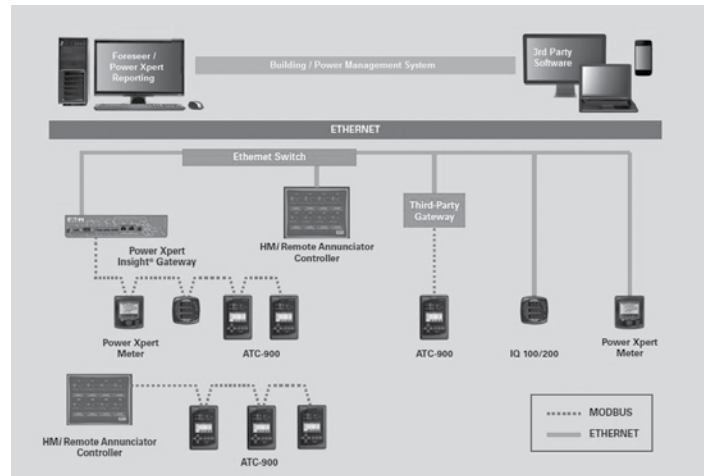
CAENET



PXG-900

Building/power management system

Eaton's bypass isolation automatic transfer switches with ATC-900 automatic controller can be integrated into an existing building management system (BMS) or power management system (PMS) via serial or Ethernet communication.



Power Xpert Architecture with ATC-900 and HMI RAC

For more information, visit
Eaton.com/bypassats

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