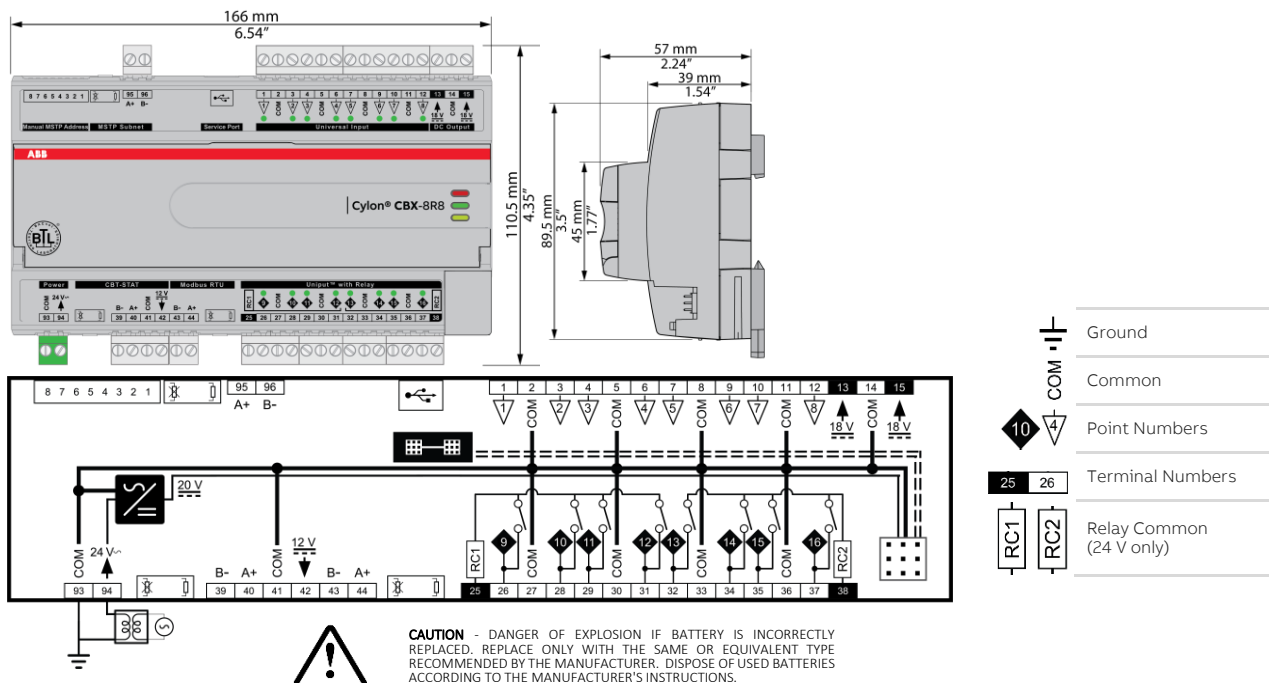


## INSTALLATION AND WIRING

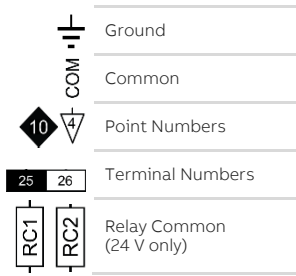
BDS0020 rev 9

# CBX-8R8, CBX-8R8-H



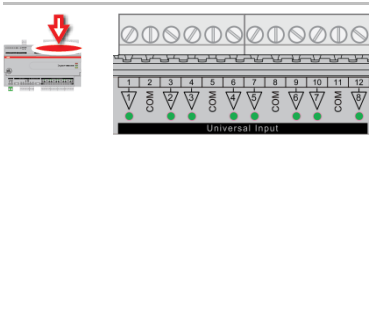
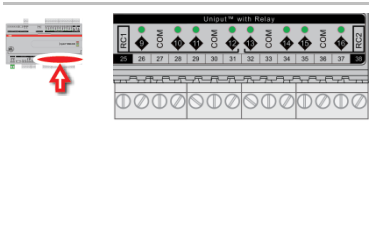




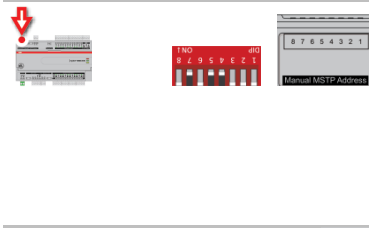











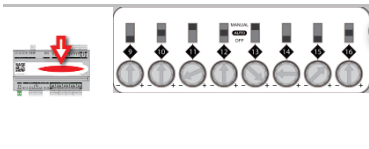
**CAUTION** - DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

Supply Requirements	24 V AC/DC $\pm 20\%$ 50/60 Hz
Supply	CBX 50 VA (no FLX modules)
Rating	CBX + 1 x FLX 66 VA
	CBX + 2 x FLX 82 VA
	CBX + 3 x FLX 98 VA
FLX Power Connection	Proprietary FLX bus connector carries power and comms from CBX-8R8 unit. CBX-8R8 can supply power to up to 3 FLX modules.
Auxiliary Power	18 V DC / 60 mA output
BACnet Loading	$\frac{1}{4}$ unit load device



Terminal Numbers	Description
93, 94	24 V AC/DC Power
13 ... 15	Auxiliary Power: 18 V DC output on 2 terminals, 60 mA total
95, 96	BACnet® MS/TP Port (RS-485) screw terminal MS/TP subnet terminator switch is located beside the port. If the switch is towards the  icon, then termination is <u>in</u> and if the switch is towards the  icon then termination is <u>out</u> .
39 ... 42	UCU Room Display / CBT-STAT Port The CBT-STAT bus Terminator Switch is located beside the port. If the switch is towards the  icon, then termination is <u>in</u> and if the switch is towards the  icon then termination is <u>out</u> .



	<p><b>1 ... 12</b></p> <p><b>Universal Inputs</b></p> <p>When input is configured as <b>Digital</b>:</p> <ul style="list-style-type: none"> <li>LED <b>Off</b>: open circuit or logic 'off'</li> <li>LED <b>On</b>: logic 'on'</li> </ul> <p>When input is configured as <b>Resistor/thermistor</b>:</p> <ul style="list-style-type: none"> <li>LED <b>Off</b>: valid resistance connected (<b>Note</b>: 0 Ω is counted as valid)</li> <li>LED <b>Slow blink</b>: resistor/thermistor not connected</li> </ul> <p>When input is configured as <b>Analog</b>:</p> <ul style="list-style-type: none"> <li>LED intensity is modulated by the analog signal</li> </ul> <p>When the LED is blinking:</p> <ul style="list-style-type: none"> <li><b>Fast blink</b> indicates error condition</li> <li><b>Two short flashes followed by a value*</b> indicates the input is in an override state (overridden by <b>CXpro<sup>HD</sup></b>).</li> </ul> <p><b>*Note:</b> The LED intensity illustrates the value measured at the input terminals. The flash indicates that this value has been overridden.</p>																				
	<p><b>25 ... 38</b></p> <p><b>UniPuts™ + Relay</b></p> <p>When a Uniput channel is configured as an input, the LED signals are identical to Universal Inputs above. When configured as an output the following apply:</p> <p>When output is configured as <b>Digital</b>:</p> <ul style="list-style-type: none"> <li>LED <b>Off</b>: open circuit or logic 'off'</li> <li>LED <b>On</b>: logic 'on'</li> </ul> <p>When output is configured as <b>Analog</b>:</p> <ul style="list-style-type: none"> <li>LED intensity is modulated by the analog signal</li> </ul> <p>When the LED is blinking:</p> <ul style="list-style-type: none"> <li><b>Fast blink</b> indicates error condition</li> <li><b>Two short flashes followed by a value</b> indicates the output is in an override state (overridden by <b>CXpro<sup>HD</sup></b> or HOA).</li> </ul>																				
	<p><b>43, 44</b></p> <p><b>Modbus RTU</b></p> <p>The Modbus Terminator Switch is located beside the port. If the switch is towards the  icon, then termination is <u>in</u> and if the switch is towards the  icon then termination is <u>out</u>.</p>																				
	<p><b>Service Port (Micro USB)</b></p>																				
	<p><b>8-way MS/TP address DIP switch</b></p> <p>The controller's BACnet MAC address can be set either electronically (USB or BACnet) or manually using the 8-way DIP switch.</p> <ol style="list-style-type: none"> <li><b>Manual setting for ease of replacement:</b> Setting the 8-way DIP switch to an address between 1 and 254, and then cycling the power, will force the controller to update its MAC address to match the DIP settings. To replace a manually-addressed controller in the field simply copy the DIP switch setting of the controller you are replacing.</li> <li><b>Electronic setting for remote configuration:</b> Setting the 8-way DIP switch to all zeros will allow the MAC address to be set electronically either locally by USB or remotely over BACnet.</li> </ol> <p>It is also possible to use manual setting for initial commissioning, and then cycling the power to force the controller to update its MAC address to match the DIP settings. To enable subsequent electronic configuration, set the DIP switch to all zeros. The controller will retain the manually-set address until it is electronically overwritten.</p>																				
	<p><b>Indicator LEDs</b></p> <table border="1" data-bbox="527 1081 1282 1312"> <thead> <tr> <th></th> <th>Off</th> <th>On</th> <th>Slow Blink</th> <th>Fast blink</th> </tr> </thead> <tbody> <tr> <td> <b>Red LED (Power)</b></td> <td>Power is off</td> <td>Power is on</td> <td colspan="2">— Unit Rebooting —</td> </tr> <tr> <td> <b>Green LED (Status)</b></td> <td>Unit is not running</td> <td>Strategy Loaded but no network connectivity</td> <td>Strategy Loaded and device communicating on network</td> <td>No Strategy loaded</td> </tr> <tr> <td> <b>Yellow LED (FLX)</b></td> <td>FLX bus comms are ok</td> <td>No FLX bus comms</td> <td>FLX bus address clash</td> <td>FLX bus comms error</td> </tr> </tbody> </table> <p>During firmware upgrade the Yellow LED will remain on while the strategy/comms section reboots, and then the LEDs will rotate Red-Green-Yellow while the IO section reboots.</p> <p><b>Note:</b> During typical operation, the Red LED should be on, the Green LED should be blinking and the Yellow LED should be off.</p> 		Off	On	Slow Blink	Fast blink	 <b>Red LED (Power)</b>	Power is off	Power is on	— Unit Rebooting —		 <b>Green LED (Status)</b>	Unit is not running	Strategy Loaded but no network connectivity	Strategy Loaded and device communicating on network	No Strategy loaded	 <b>Yellow LED (FLX)</b>	FLX bus comms are ok	No FLX bus comms	FLX bus address clash	FLX bus comms error
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 <b>Yellow LED (FLX)</b>	FLX bus comms are ok	No FLX bus comms	FLX bus address clash	FLX bus comms error																	
	<p><b>Output Override (CBX-8R8-H only)</b></p> <p><b>Bottom position:</b> Off - outputs forced off.</p> <p><b>Centre position:</b> Auto - outputs are controlled by strategy.</p> <p><b>Top position:</b> Manual – for digital outputs, the output is forced on. For analog outputs the knob setting controls the output value.</p> <p><b>Note:</b> Manual position is supervised, i.e. the strategy is aware of the manual value.</p>																				