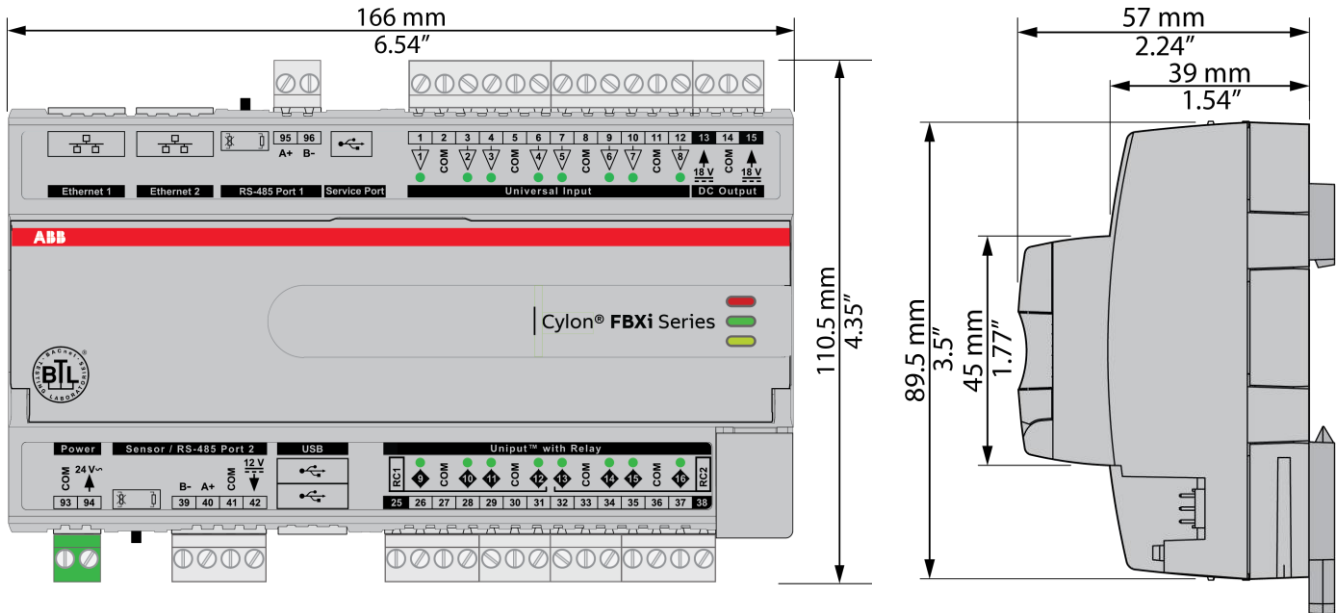


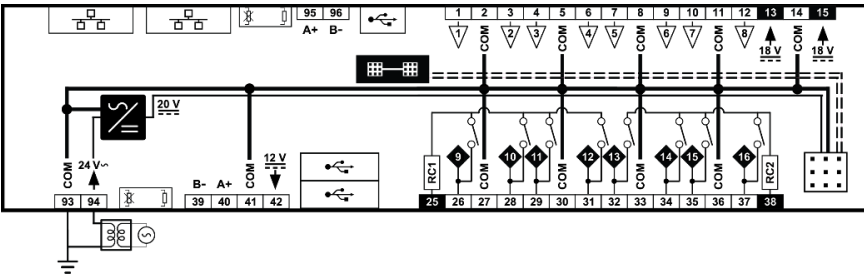
INSTALLATION AND WIRING

BDS0029 rev 18

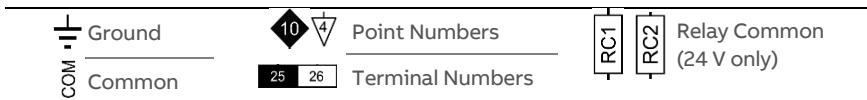
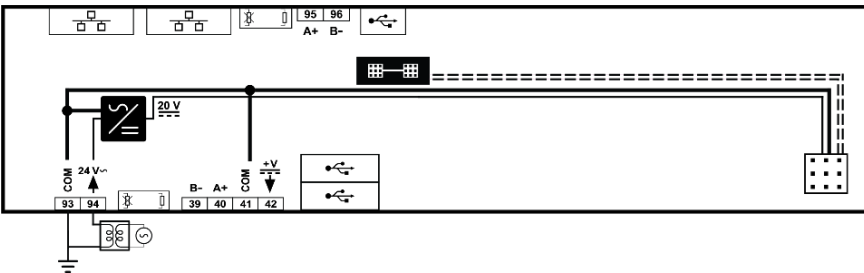
Cylon® FBXi



FBXi-8R8-X96 / FBXi-8R8-H-X96:

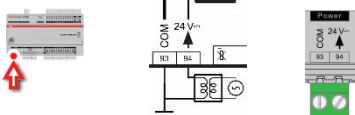







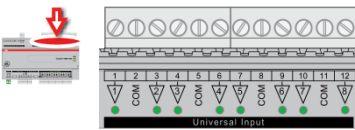
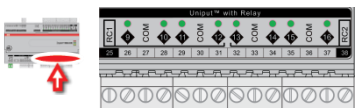
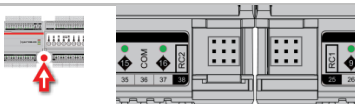



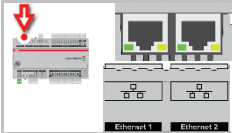
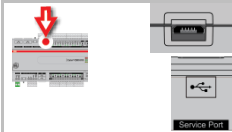

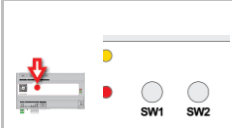
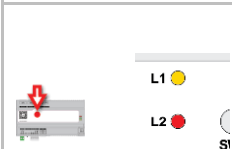
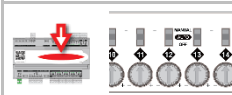
FBXi-X256 / FBXi-X48:



Supply Requirements	24 V AC/DC ±20 % 50/60 Hz	
Supply Rating	FBXi	Without onboard IO 20 VA (no FLX modules)
	FBXi + 1 x FLX	With onboard IO 30 VA (no FLX modules)
	FBXi + 2 x FLX	42 VA
	FBXi + 3 x FLX	54 VA
	FBXi + 4 x FLX	66 VA
FLX Power Connection	Proprietary FLX bus connector carries power and communications from FBXi unit to power to up to 3 FLX modules (with onboard IO) or 4 FLX modules (without onboard IO). Using FLX-PS24 units allows 4 additional FLX modules per FLX-PS24 unit, up to a maximum of 16 FLX modules.	
Auxiliary Power	18 V DC / 60 mA output	



	Terminal Numbers	Description																				
	93, 94	24 V AC/DC Power Important: The common power connection (terminal 93) must be connected to Earth. ABB Cylon recommend that this is done at the 24 V AC/DC transformer.																				
	13 ... 15	Auxiliary Power: 18 V DC output on 2 terminals, 60 mA total																				
	95, 96	RS-485 Port 1 (BACnet® MS/TP) screw terminal MS/TP subnet terminator switch is located beside the port. If the switch is towards the  , then termination is in and if the switch is towards the  , then termination is out .																				
	39 ... 42	Sensor / RS-485 Port 2 (Cylon® room sensors or BACnet® MS/TP or Modbus RTU) The bus Terminator Switch is located beside the port. If the switch is towards the  , then termination is in and if the switch is towards the  , then termination is out .																				
 <p>When input is configured as Resistor/thermistor:</p> <ul style="list-style-type: none"> LED Off: valid resistance connected (Note: 0 Ω is counted as valid) LED Slow blink: resistor/thermistor not connected <p>When input is configured as Analog:</p> <ul style="list-style-type: none"> LED intensity is modulated by the analog signal <p>When the LED is blinking:</p> <ul style="list-style-type: none"> Fast blink indicates error condition Two short flashes followed by a value* indicates the input is in an override state (overridden by CXpro^{HD}). <p>*Note: The LED intensity illustrates the value measured at the input terminals. The flash indicates that this value has been overridden.</p>	1 ... 12	Universal Inputs When input is configured as Digital : <ul style="list-style-type: none"> LED Off: open circuit or logic 'off' LED On: logic 'on' 																				
 <p>When output is configured as Digital:</p> <ul style="list-style-type: none"> LED Off: open circuit or logic 'off' LED On: logic 'on' <p>When output is configured as Analog:</p> <ul style="list-style-type: none"> LED intensity is modulated by the analog signal <p>When the LED is blinking:</p> <ul style="list-style-type: none"> Fast blink indicates error condition <p>Two short flashes followed by a value indicates the output is in an override state (overridden by CXpro^{HD} or HOA).</p>	25 ... 38	UniPutS™ + Relay 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:																				
	Inter-module connection sockets To join the FLX bus, place the devices side-by-side and place the FLX bus connector into the two adjacent sockets at once.																					
The end device on a FLX bus (either a FLX device or the CBXi itself) must have a terminator inserted into its interconnector socket. One terminator is shipped with each CBXi-8R8(-H) device.																						
 <p>Indicator LEDs</p> <p>During firmware upgrade over IP network, 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>Note: During typical operation, the Red LED should be on, the Green LED should be blinking and the Yellow LED should be off.</p> <table border="1" data-bbox="292 1701 1039 1921"> <thead> <tr> <th></th> <th>Off</th> <th>On</th> <th>Slow Blink</th> <th>Fast blink</th> </tr> </thead> <tbody> <tr> <td>Red LED (Power)</td> <td>Power is off</td> <td>Power is on</td> <td>— Unit Rebooting —</td> <td></td> </tr> <tr> <td>Green LED (Status)</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>Yellow LED (FLX)</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>		Off	On	Slow Blink	Fast blink	Red LED (Power)	Power is off	Power is on	— Unit Rebooting —		Green LED (Status)	Unit is not running	Strategy Loaded but no network connectivity	Strategy Loaded and device communicating on network	No Strategy loaded	Yellow LED (FLX)	FLX bus comms are ok	No FLX bus comms	FLX bus address clash	FLX bus comms error		
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Yellow LED (FLX)	FLX bus comms are ok	No FLX bus comms	FLX bus address clash	FLX bus comms error																		

	Ethernet Ports
	Service Port (Micro USB)
	USB ports Used for firmware upgrade
 <p>Reset to Factory default IP/Password: while the controller is <i>running</i>, press SW1 until LED L2 lights up, then release SW1.</p> <p>Restart the controller: while the controller is <i>running</i>, press SW2 until LED L2 lights up, then release SW2.</p> <p>Factory Reset (Reset to default Factory settings including, Shipped version of firmware, wipe strategy data, and reset IP/Password): while the controller is <i>booting</i> hold SW1 until LED L2 lights up, then release SW1. LED L2 will indicate the progress as shown in L1/L2 signals below.</p> <p>USB upgrade: insert a FAT-formatted USB drive containing valid firmware (.swu) into either of the USB ports, while the controller is <i>booting</i> hold SW1 until LED L1 lights up, then release SW1. LED L1 will indicate the progress as shown in L1/L2 signals.</p>	Push buttons Reset to Factory default IP/Password: while the controller is <i>running</i> , press SW1 until LED L2 lights up, then release SW1 . Restart the controller: while the controller is <i>running</i> , press SW2 until LED L2 lights up, then release SW2 . Factory Reset (Reset to default Factory settings including, Shipped version of firmware, wipe strategy data, and reset IP/Password): while the controller is <i>booting</i> hold SW1 until LED L2 lights up, then release SW1 . LED L2 will indicate the progress as shown in L1/L2 signals below. USB upgrade: insert a FAT-formatted USB drive containing valid firmware (.swu) into either of the USB ports, while the controller is <i>booting</i> hold SW1 until LED L1 lights up, then release SW1 . LED L1 will indicate the progress as shown in L1/L2 signals.
	LED L1 / LED L2 signals Slow blink: Upgrade / Reset in progress Solid colour: Upgrade / Reset successful. Power-cycle the controller to activate. Fast blink: Upgrade / Reset failed
	Output Override (FBXi-8R8-H-X96 only) Bottom position: Off - outputs forced off. Centre position: Auto - outputs are controlled by strategy. Top position: Manual - for digital outputs, the output is forced on. For analog outputs the knob setting controls the output value. Note: Manual position is supervised, i.e. the strategy is aware of the manual value.