ABB Cylon® CB Line
BACnet® Field Controllers

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ABB Cylon® CB Line
Flexible building automation control

The CB Line is the most flexible family of BACnet controllers in the industry, delivering the capability to enhance building automation performance, reduce time on task and create more efficient, secure environments.

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01 01 ABB Cylon®
CBX Series
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02 ABB Cylon®
CBV-2U4-3T
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03 ABB Cylon®
CBV-2U4-3T-N
—
04 ABB Cylon®
CBT-3T6-5R
—
05 ABB Cylon®
CBT-4T4-2U1R
—
06 ABB Cylon®
CBT-STAT
—
07 ABB Cylon®
UCU Room Display

ABB Cylon® CB Line series
BACnet® field controllers feature the CBX System, CBT and CBV Series. The powerful freely-programmable controllers are designed to work as part of the ABB Cylon® Cylon dual-platform offering and can be used as field level BACnet/IP and BACnet MS/TP controllers for ASPECT® and INTEGRA™ building management solutions.

UniPuts™
The CB Line offers ABB Cylons patented UniPut technology, a revolutionary answer to flexible point configuration allowing points on the controller to be configured as an input or an output, maximizing flexibility relative to programming changes as well as point capacity on the controller and utilizing less space in the enclosure.

Design Flexibility
Both the CBXi Series (IP) and CBX Series (MS/TP) utilize the same form factor and I/O complement, including sharing of the same Field Level eXtension (FLX) modules. This versatility ensures flexibility in design and usability for connection to mechanical and electrical building systems.

Multi-protocol Communications Support
The CBXi Series controllers are BACnet Building Controllers (B-BC) and communicate on a Local Area Network. Additionally, the controllers support routing for BACnet MS/TP and integration support for both Modbus TCP and Modbus RTU without the use of additional gateways.

The CBX Series controllers are BTL listed, BACnet Advanced Application Controllers (B-AAC) and communicate using BACnet MS/TP over an RS-485 network. The controllers also provide support for Modbus RTU.

Powerful Engineering
The freely programmable CB Line of controllers can be tailored to meet an extensive variety of applications by creating and modifying strategies using CXproHD Engineering Software.

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CBX System | Advantages

The CBX System is the most advanced BACnet controller of its kind, with on-board I/O, optional HOA, multi-protocol support and a range of FLX (Field Level eXpansion) modules, providing ABB Cylon® System Integrators with even greater control flexibility.

The CBX System provides a flexible and expandable building energy management solution for intelligent control of HVAC equipment, lighting control and electrical systems including metering applications.

Flexibility to Expand with Modular Hardware Design

CBX and CBXi share the same form factor, I/O points are located in the same position, and FLX modules are common to both CBX and CBXi controllers making the CBX System one of the most powerful and flexible controller families available. Extending I/O or future proofing a site is quick and easy with reduced inventory requirements.

Reduced Diagnostic Time

Software-free diagnostics are included to facilitate instant visual identification of wiring faults; status LEDs for all I/O points instantaneously providing a visual diagnostic and error status for each connected system point reducing problem-solving time and associated costs.

Efficient Commissioning and Testing

Manual over-ride of UniPuts enables easy configuration, quick commissioning and post-installation testing without the need to connect to the **CXpro^HD** engineering tool. Over-ride of UniPuts can be undertaken through **CXpro^HD** or locally using the HOA facility where available. Hand/Off/Auto Local Over-ride function available for FLX UniPuts with '-H' variants.

Quick & Easy Installation

FLX I/O bus/power connection is achieved through a single plug connector, simplifying the installation process and eliminating the possibility of misconnection between components of a CBX system trunk.

CBX System Additional Features

- Supports Cylon's Intelligent Sensor Series
- Local micro-USB service port
- Accurate Universal Inputs support a variety of thermistors and RTDs that range from 0 to 450 kOhms as well as 0 to 10 VDC, 4 to 20 mA and pulse counting
- On-board 18 VDC power supply

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01 ABB Cylon smart building solutions provide flexible site control applications for small to large scale building automation systems.
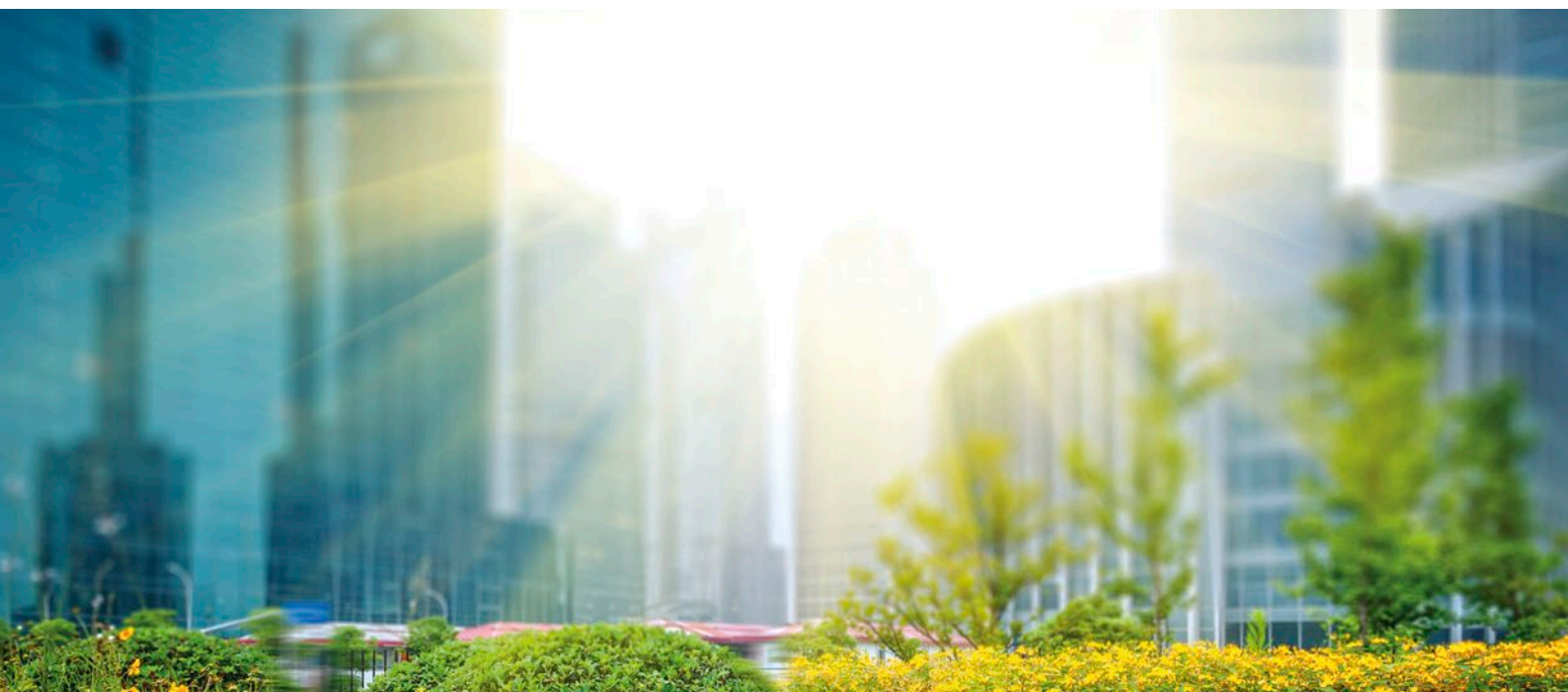
CBXi Series and CBX Series
The most advanced BACnet® controller of its kind

CBXi-8R8, CBXi-8R8-H, CBX-8R8 and CBX-8R8-H controllers are designed for a wide range of energy management applications for intelligent control of; HVAC equipment such as Central Plant, Boilers, Chillers, Cooling Towers, Pump Systems, Air Handling Units (Constant Volume, Variable Air Volume and Multi-zone), and Rooftop Units, Electrical systems such as lighting control, variable frequency drives and metering.

CBXi Series

CBXi-8R8 and CBXi-8R8-H are freely programmable IP-based BTL-Listed BACnet Building Controllers (B-BC) that support simultaneous multi-protocol communications including BACnet/IP, BACnet MS/TP, Modbus TCP, and Modbus RTU.

CBXi Series of controllers are built on an extendible platform that features 8 UniPuts with Relay and 8 Universal Inputs, the CBXi Series allows up to 96 points of control with five FLX Series extension modules.

FLX expansion modules are available in a variety of options to allow maximum flexibility in achieving the required point configuration. CBXi-8R8-H provides local Hand-Off-Auto override functionality. The CBXi Series features BACnet/IP communications with dual port Flexible wiring topoloy, daisy chain or star and support for both DHCP and Static IP.

CBX Series

CBX-8R8 and CBX-8R8-H are freely programmable BTL-Listed BACnet Advanced Application Controllers (B-AAC) that communicate on a RS-485 local area network using the BACnet MS/TP and feature support for Modbus RTU devices. Modbus allows the integration of devices into control strategies such as motor drives, meters, and other sensors.

Each feature-rich controller features 8 UniPuts with Relay and 8 Universal Inputs. The CBX-8R8-H features supervised manual override of UniPuts using local Hand-Off-Auto switches and potentiometers.

The CBX Series' 16 on-board I/O can be expanded up to 64 points using the FLX Series of Field Level eXpansion modules.

CBX SYSTEM

Field Level eXpansion (FLX) I/O modules
CBXi and CBX Series feature 16 points of control and are designed with the flexibility to expand using FLX-8R8, FLX-8R8-H, FLX-4R4, FLX-4R4-H, and FLX-16DI Field Level eXpansion modules.

Replace or Extend I/O Points Quickly and Easily
FLX modules snap together without the need for the System Integrator to prepare special cabling, however, when necessary, a cable (FLX-RMC) can be used to extend the FLX modules' range to a total distance of 100 feet (30 meters) from the CBXi or CBX controller.

Reduce Time On-Site
Pre-configuration of FLX expansion modules via the FLX dip switch addressing facility; reduces on-site installation time, simplifies setup and system checks, and reduces the skill level requirement for a hardware upgrade or expansion.

FLX MODULES

FLX-8R8
8 UniPuts with Relay
8 Universal Inputs

FLX-8R8-H
8 UniPuts with Relay
8 Universal Inputs
Hand/Off/Auto Local Override Function

FLX-4R4
4 UniPuts with Relay
4 Universal Inputs

FLX-4R4-H
4 UniPuts with Relay
4 Universal Inputs
Hand/Off/Auto Local Override Function

FLX-16DI
16 Digital Inputs

CBT Series and CBV Series
Powerful HVAC Control

CBT Series and CBV Series provide flexible automation control and management of vital HVAC equipment and plant enabling efficient operations, optimal occupant comfort, and energy cost savings for building owners.

BACnet MS/TP Advanced Application Controller (B-AAC)
CBT-3T6-5R is a BTL Listed BACnetAdvanced Application Controller (B-AAC) with 3 UniPuts with Triac, 6 Universal Inputs and 5 Digital (Relay) Outputs.

CBT-3T6-5R is part of the CB Line and is designed for direct digital control of Rooftop HVAC units, fan coil units, heat pumps, small air handling equipment and custom unitary system control.

The **CBT-3T6-5R** terminal equipment controller offers reduced costs in terms of implementation, training, rollout, and maintenance. Along with UniPuts, the CBT-3T6-5R features high-power relays for direct connection to the equipment's electrical circuits.

Applications
CBT-3T6-5R is a 14-point Unitary BTL Listed BACnet Advanced Application Controller. This field controller is suitable for controlling a variety of small to medium-sized HVAC equipment such as:

• Rooftop Units
• Fan Coil Units
• Heat Pumps
• Unit Ventilators
• Custom Unitary Equipment

Both **CBT-3T6-5R** and **CBT-4T4-2U1R** controllers accommodate available pre-engineered strategies or can be tailored to custom applications using **CXpro^{HD}** programming software.

CBT-4T4-2U1R is a BTL Listed BACnet Advanced Application Controller (B-AAC) with 4 UniPuts with Triac capable of switching a 24 V AC load, 4 Universal Inputs, 2 UniPuts, and 1 Digital (Relay) Output, configureable as analog / digital outputs or voltage inputs.

CBT-4T4-2U1R is ideal for Fan Coils with ECM and features a high power relay for directly enabling the motor circuit without the use of an interface relay.

Applications
CBT-4T4-2U1R is an 11-point Unitary BTL Listed BACnet Advanced Application Controller. This field controller is designed for a wide range of applications for the intelligent control of a variety of unitary and small sized HVAC equipment such as:

• Fan Coils Units with ECM
• Heat Pumps
• Chilled Beams/Ceilings
• Unit Vents
• Unit Heaters
• Exhaust Fans
• Custom Unitary Equipment
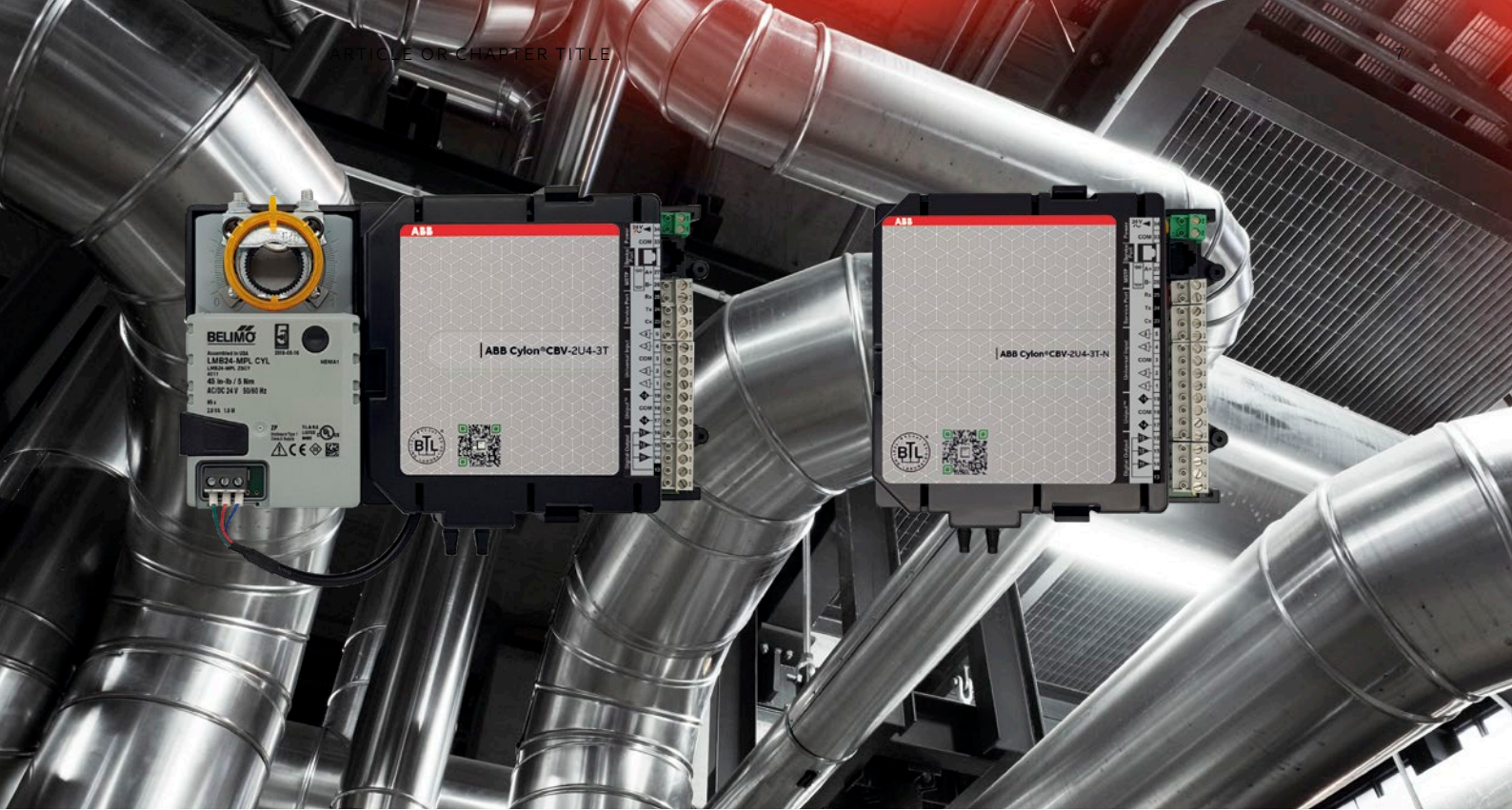
CBV Series

BACnet MS/TP Advanced Application Controllers (B-AAC)
CBV Series BACnet VAV Controllers are part of the CB Line.

CBV-2U4-3T and **CBV-2U4-3T-N** are BTL Listed BACnet Advanced Application
Controllers (B-AAC) with 2 UniPuts, 4 Universal Inputs and 3 Triac Digital Outputs,
and an integrated airflow sensor. CBV-2U4-3T features a Belimo actuator with a
brushless DC motor.

The -N variant has a facility for connection to an external actuator.
The **CBV-2U4-3T-N** can be used in retrofit building applications to help
reduce cost by reusing existing actuators.

The freely programmable **CBV Series** can be tailored to meet a variety of
applications using the pre-loaded and configurable application library or by creating
and modifying strategies using **CXpro^HD** programming interface.

Applications

The **CBV Series** is suitable for controlling single duct or fan-assisted Variable Air
Volume (VAV) applications.

Typical VAV zoning applications include;

- Cooling only
- Cooling with Reheat
- Cooling with Reheat and Perimeter Radiation
- Series fan VAV
- Parallel fan VAV
- Dump box
- Room pressurization

With **CBV-2U4-3T** and **CBV-2U4-3T-N** controllers you can add a demand ventilation
application, and occupancy sensors or lighting control to enhance energy savings.

CXpro^{HD}
Features

CXpro^{HD} is a suite of software applications that allows all facets of ABB Cylon´s ® CB Line of BACnet controllers to be designed, engineered, programmed, configured, tested, commissioned and maintained with minimal engineering effort. **CXpro^{HD}** puts you in control of delivering energy efficient systems.

CXpro^{HD} empowers you to manage all aspects of controllers and sites to be designed, configured, tested, engineered, commissioned and maintained with minimal engineering effort.

Features of **CXpro^{HD}** include:
- BACnet properties support
- Equation module that allows functionality to meet the most complex of strategies
- Mass device commissioning
- Modbus TCP and RTU device integration
- Configuration of eXplore display

Application
CXpro^{HD} offers a graphical programming interface that enables you to visually assemble building blocks as necessary to create a custom control sequence for any HVAC/building automation application.

Set up and configure datalogs, alarms, and time schedules easily and quickly.

Strategy simulation allows offline development and testing, data scanning helps verify system behavior and online programming mode allows a site to be engineered in real-time and changes to become instantly effective.
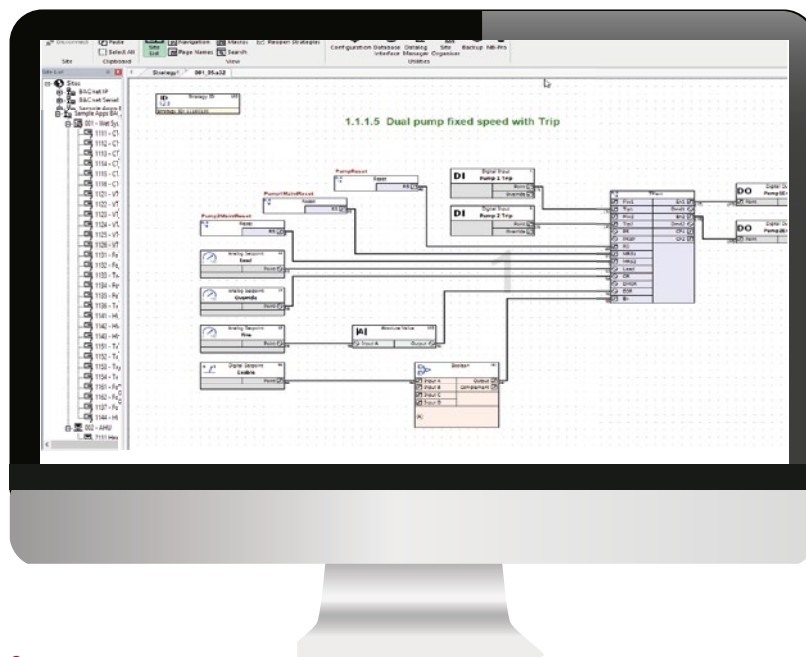
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01 CXproHD graphical programming makes it easy to create custom sequences, visually assembling strategy building blocks as required.

CXpro^HD Features

Simulation and Online Programming

Full strategy simulation features allow testing of strategies off-site, emulating the complete end-to-end strategy without the need to connect to the physical controller. Simulation testing helps identify any problems or issues with strategies, allowing for more comprehensive engineering and more time effective and efficient commissioning on-site.

Export Data to ASPECT® and INTEGRA™

Data from **CXpro^HD** can be easily imported into ABB Cylon® ASPECT® or INTEGRA™ making your project easy to engineer and deliver. All point values are automatically populated and ready for immediate use in ABB Cylon® ASPECT® - Studio or INTEGRA™ Niagara Workbench.

BACnet Properties

BACnet properties in **CXpro^HD** allow you to access and modify the properties of any selected module, point or device over BACnet in real-time. With BACnet properties you can integrate and modify strategies on controllers while connected.

Equation Module

The equation module, supports Logic and IF statements that simplify the programming of the most complex strategies, by combining analog and digital values to new modules.

Ribbon Command Bar

Located at the top of the **CXpro^HD** User Interface, the Ribbon Command Bar, is similar to many Windows applications, and allows access to the majority of **CXpro^HD** features. If there are specific Ribbon feature options that you use often, you can add them to the Quick Access Toolbar where they will be accessible at all times.

Site List

The site list provides an overview of all configured sites, allowing specific controllers to be selected for configuration.

Strategy Drawing Window

View modules and points in the current strategy, and the connections between them, including live data when connected to a CB Line controller.

Page Navigation Panel

The page navigation panel gives an overview of the full controller strategy and allows you to jump directly to different parts of the Strategy. **CXpro^HD** also features Zoom controls for greater visibility.

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