

SMART SOLUTIONS CATALOGUE





Smart Home & Building Solution



Introduction

► What is the KNX System?

ABB i-bus® KNX is the synonym for smart home and intelligent building control. In this innovative system, all devices communicate with one another via a single bus cable which is installed alongside the normal power lines.

This means that all electrical functions are connected with one another via the bus system, both in residential and commercial buildings.

Whether you need to control lighting, shutters, security systems, energy management, heating, ventilation, air-conditioning systems, signaling and monitoring systems, interfaces to service and building control systems, remote control, audio and video control... it's possible - with KNX - for all these functions to work via a single, uniform system. This is called the principle of interworking. This is KNX.

► KNX Advantages



Energy Efficiency

The intelligent, networked control reduces the consumption of energy during perfect function -ideal for light, standing, heating, ventilation and air conditioning.



Reliability

The system is stable because one has a clear overview of all values and can respond immediately when necessary. Monitoring and maintenance are noticeable simplified.



Comfort

Technology shapes the environment according to personal wishes. Today only a few movements of the finger are required to adjust all the factors for one's well-being.



Flexibility

The functions of building changes over course of decades. The bus system always remains flexible; everything that is necessary can be extended and programmed at all times.



Economic Efficiency

Good figures have reasons: energy saving automaton, intelligent control individual adaptation, and control and planning with a clear overview.

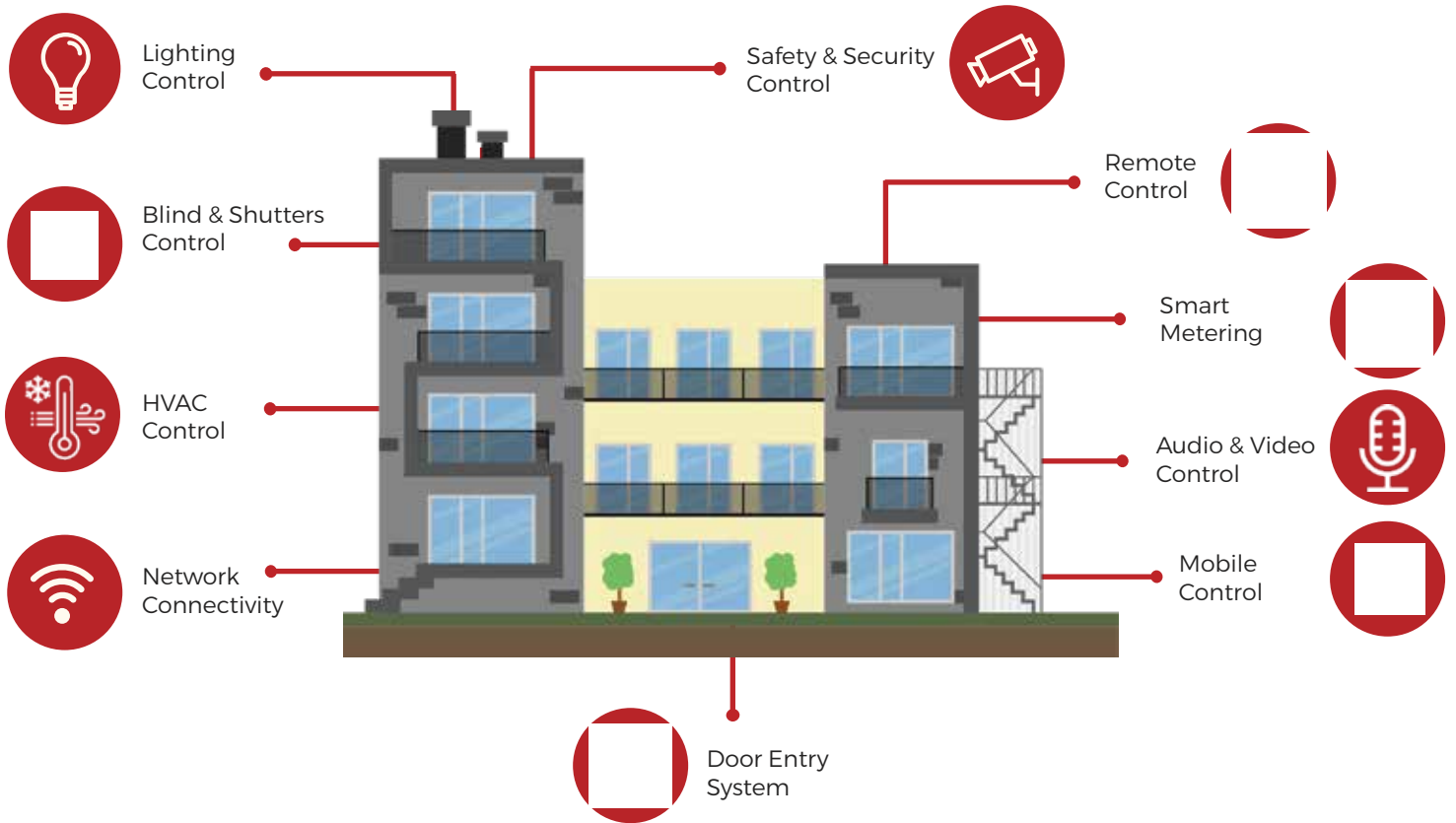


Safety

A lot can be happen in a building, ABB i-bus des everything to protect the people in it to be rescued during an emergency, and retain the value of the property



Introduction



01

Planning

The builder requirements flow into the design and are summarized in the description of the functions.

02

Project Planning

The suitable component and software application are selected and the planning of the bus topology is implemented.

KNX Planning & Project

Commissioning

The devices are installed and programmed, and the program which has already been created is loaded into devices via software.

03

Maintenance

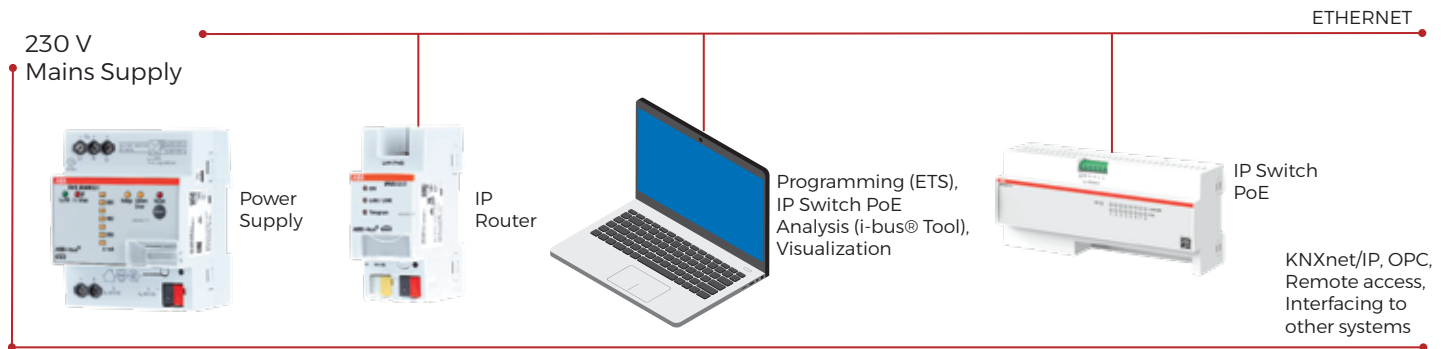
The requirements specified in the description of the functions are used to test the programmed functions during handover.

04

ABB i-bus® KNX

Product Range

System Infrastructure and Interfacing



System Infrastructure and Interfacing

ABB i-bus® KNX provides powerful system components for the KNX system.



SV/S 30.640.5.1

Power Supply with Diagnostics, 640 mA, MDRC

KNX Power Supplies

Compact Power Supply with integrated choke. Quick diagnostics by LED display and ETS communication objects. Analysis of the operating state and the bus line possible by means of ABB i-bus® Tool. Additional voltage output to supply an additional line in conjunction with an additional choke.



IPR/S 3.1.1

IP Routers

IP Routers and Interfaces

Connects the KNX bus with the Ethernet network. The device uses the KNXnet/IP protocol for communication (Routing and Tunneling). It can be used as a fast line and area coupler. The full filter table for main groups 0-31 is supported. KNX devices can be programmed via the LAN using ETS. For this and further clients 5 Tunneling Servers are available. The IP address can be fixed or can be received from a DHCP server. Power supply via 12...30 V DC or PoE (IEEE 802.3af class 1). The KNX Standard Communication (Multicast) can be switched off. In this case, up to 10 IPR/S 3.1.1 can communicate using unicast communication.

ABB i-bus® KNX

Product Range

System Infrastructure and Interfacing



LK/S 4.2

Line Coupler, MDRC

Line Couplers

The line coupler is used in larger installations to connect KNX lines or areas. The lines or areas are galvanically isolated from one another. Telegrams can be filtered to simultaneously reduce the telegram traffic between lines or areas. With ETS 4 (V4.1.2 and higher) the complete group address range of the main groups 0...31 can be filtered. Within a line, the LK/S 4.2 can also be used as a line amplifier (repeater).



IPS/S 3.1.1

IP Interface, MDRC

IP Routers and Interfaces

Connects the KNX bus with the Ethernet network. The device uses the KNXnet/IP protocol for communication (Tunneling). KNX devices can be programmed via the LAN using ETS. For this and further clients 5 Tunneling Server are available. The IP address can be fixed or can be received from a DHCP server. Power supply via 12..30 V DC or PoE.



USB/S 1.2

USB Interface

USB and Serial Interfaces

Connects the KNX installation with PC software clients such as ETS or visualisations (programming, bus monitor, group monitor). The device supports Long Frames which allows faster download and download of KNX Secure devices.

ABB i-bus® KNX

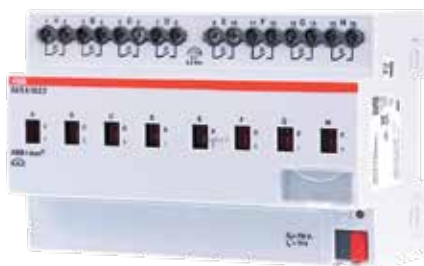
Product Range

Actuators

A KNX actuator converts the commands received from sensors, automatic control switches or timers into actions and form the interface between the KNX system and the electrical devices typically implementing for lighting “on/off, 0-10 and dali”, blinds, Security, audio video, cooling and heating applications.

Switch Actuator

Standard Outputs



SA/S 8.10.2.2

The switch actuator uses potential free contacts to switch 2, 4, 8 or 12 independent electrical loads via the ABB i-bus® KNX.

The device features a manual operation and displaying of the switching state of the outputs. The 10 A device is especially suited for loads with high surge currents e.g. fluorescent lighting acc. EN 60669. The device is powered by KNX and requires no additional power supply.

Dali Gateway

Lighting Control



DG/S 1.64.1.1

For controlling DALI devices via the ABB i-bus®. Two DALI output for up to 2x64 DALI slaves. DALI power supply is integrated. Control and status feedback is carried out via KNX per DALI slave (2x64), with groups (2x16), together in broadcast or per scenes (2x16).

Extensive fault and error messages are available Self-contained emergency converter (2x64) acc. EN 62386-202 will be supported. By means of KNX and emergency converter different emergency tests (e.g. function and duration test) can be triggered. Feedback is sent. Slave-, staircase-, force-, block- and scene- function are integrated. DALI telegram rate can change.

Dimming Actuator

Lighting Control



UD/S 4.315.2.1

Multichannel universal dimming actuator optimised for dimming retrofit LED lamps (LEDi). Also suitable for dimming incandescent lamps, low-voltage halogen lights with conventional or electronic transformers, 230 V halogen lamps and dimmable energy-saving halogen lamps. Automatic load detection (can be deactivated). Separate N-connection per channel. Parallel connection of the outputs possible to increase the output power. Outputs can be connected in parallel in groups.

ABB i-bus® KNX

Product Range

Actuators

0-10 Dimming Actuator

Lighting Control



SD/S 4.16.1

Used for switching and dimming of 2, 4 or 8 independent groups of luminaires with electronic ballasts with 1 – 10 V control interfaces. On each channel the power supply of the ballasts is switched by a floating load relay (16 A – AC1). Every output can be operated manually and features display of the switching state. The device can assume a range of applications thanks to the programming options. The switching load is identical to the SA/S x.16.2.1 range (see Standard Outputs – Overview).

Blind Actuator

Shading Control



JRA/S 2.230.2.1

For the control of independent 230 V AC drives via ABB i-bus® KNX. The devices are designed for positioning blinds, roller shutters, awnings and other shading products as well as for controlling doors, windows and ventilation flaps. Additional auxiliary voltage is not needed. To protect the drives, the output contacts are electromechanically locked against each other. Push buttons are located at the front of the device to control the outputs e.g. during commissioning. The current status of the output is displayed via LEDs.

VRF Gateway



The Midea-KNX gateway allows fully bi-directional communication between Midea Commercial and VRF systems and KNX installations, Configured by ETS standard configuration tool, Reduced dimensions allowing a quick installation inside the Air Conditioner unit, Offered all the required DPT objects to be compatible with all KNX thermostats in the market, Energy efficiency functions, such as “timeout”, “open window” or “Occupancy”, Costs related to HVAC systems in a building are one of the highest and these functions allow to reduce them.

ABB i-bus® KNX

Product Range

Actuators



FCC/S 1.1.1.1

Fan Coil Controller

Heating, Ventilation and Air Conditioning

For the control of fan coil units. Via two electronic outputs, two thermoelectric or one motor-driven valve drive can be controlled for heating and cooling. For the fan control the device features three relay outputs. A relay output switches an additional load of up to 16 A, such as auxiliary heating. Over 4 inputs the room status can be detected and monitored (Use for window contact, dew point sensor, level sensor or temperature sensor).



Split Unit Gateway

Heating, Ventilation and Air Conditioning

The Split Unit Gateway forms the interface between the KNX system and many manufacturers' air conditioners, so-called split units. The device converts the KNX telegrams into infrared commands and transmits them to the split unit. The transmitter of the supplied cable is bonded directly onto the split unit's receiver. The split unit then no longer receives the commands from a remote control.



VAA/S 6.230.2.1

Valve Actuator

Heating, Ventilation and Air Conditioning

For controlling thermoelectric valve drives (e.g. TSA/K) in heating/cooling systems at 24...230 V AC. The outputs are protected against short circuits and overload and can be switched on or off via manual push buttons during commissioning.



MT/S 8.12.2M

Security Terminal

Security System

Used for the monitored connection of sensors from security technology (e.g. magnetic contacts or glass-breakage sensors) to the ABB i-bus® KNX. The device has eight inputs ("zones") available and can be used as a stand-alone security system or in combination with the security module or intrusion alarm panel with KNX interface. 12 V DC SELV power supply required, e.g. NTU/S 12.2000.1.

ABB i-bus® KNX

Product Range

Sensors



LFO/A 1.1

Light Sensor

Lighting Control

Outside Light Sensor for the connection with the Interface HS/S 4.2.1.



6179/01-204-500

Wall Movement Detector

Motion Detectors

With 2 movement channels. With 1 twilight channel with 3 switching thresholds. No remote control possible via IR remote control KNX. With integrated KNX bus coupler. No additional power supply necessary. Surveillance density: 92 sectors with 368 switching segments.

Twilight sensor: approx. 1 - 1000 lux Switch-off delay: approx. 10 sec to 1092 min Sensor angle: 220° Range: approx. 16 m



6131/20-24-500

Movement Detector

Presence Detectors

Targeted for connection and disconnection of lights bands depending on the room brightness. Regulation in response to the movement possible. Using the device as presence and/or movement detectors. Detectors application with 2 power off stages. Detectors application with integrated monitoring function.

Constant light switch with up to two independent channels.

Constant light switch with max.

2 outputs for brightness dependent switching of two light bands in the area. With integrated KNX bus coupler.

ABB i-bus® KNX

Product Range

Visualization

ABB Tacteo®

Intelligent control that adapts to your individual needs



The ABB-tacteo® KNX sensor is a capacitive control element for the intelligent building automation of high-end luxury hotels, offices and public and residential buildings.

ABB-tacteo® KNX meets all the requirements that modern design demands – the highest levels of quality and above all comfort: from blinds, lighting and heating to media and access, everything is easy to control.



Black Glass



White Glass

ABB Tenton®

Versatile in function and design

ABB has optimized its range of KNX room control units for commercial buildings and now offers easy-to-use room temperature controllers. The design and function of the operating elements can be selected according to your individual requirements and elements can be labeled individually. The ABB Tenton® sensors are easy-to-use, high quality sensors. A surface-mounted and flush-mounted installation is possible, all versions can be connected via a FM box.



reddot award 2019
winner



ABB i-bus® KNX

Product Range

Visualization

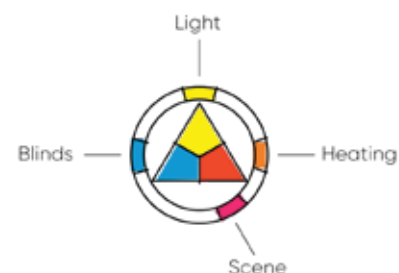
Busch-Triton®

Elegant ergonomics



With freely programmable switch rockers, backlit label fields and IR sensor, Busch-triton® is ideal for any application and, with its elegant design, it is commonly installed in hotels and public areas.

Busch-triton® is equipped with an integrated bus coupler and IR receiver. The unit is composed of control element and integrated bus coupler with everything required to control building systems elegantly and comfortably.



Standard Control Elements

Centralised, convenient operation and display

The standard control elements are available as 1/2gang, 2/4gang or 4/8gang models. Every switch rocker has two LEDs, which display the status of the connected loads. The separate switch rockers are freely programmable and are suitable for switching and dimming, as well as for operating blinds and as a light scene extension unit. They can also be used in commercial applications. Anti-vandal protection has also been integrated – an important factor for installations in public areas.



ABB i-bus® KNX

Product Range

Visualization

ABB RoomTouch®

As individual as your home



The ABB RoomTouch® KNX display is a capacitive multi control element for intelligent controlling of rooms either in residential homes or commercial applications such as hotel rooms, offices and medical practices. With a super slim 11 mm design, ABB RoomTouch® features a sleek metal frame and high-quality glass panel and is available in stylish black or white color finishes.



ABB SmartTouch® 10"

Elegant central control for smart buildings

ABB SmartTouch® 10" combines smart building automation ABB i-bus® KNX or ABB-free@home®, and ABB-Welcome door communication in one device, providing central monitoring and control of your smart building devices.

The high-quality capacitive display can be operated intuitively at the touch of a finger and with swipe gestures. This allows you to switch and dim the light, control the blinds and regulate the heating in the entire building, control time programs, audio devices and presence simulation via the tip of a finger.

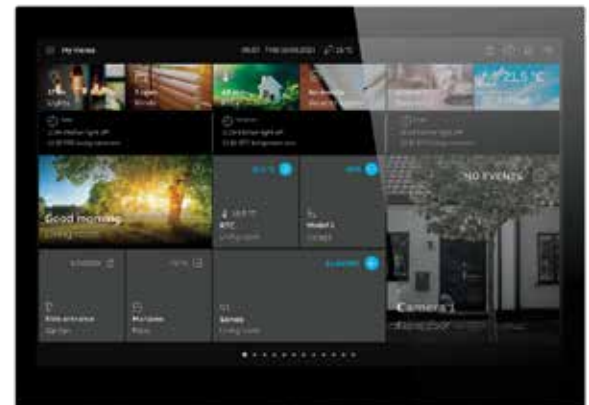


ABB i-bus® KNX

Product Range

Visualization

ABB-Welcome IP

IP touch



The IP touch 10 control panels are dedicated to the creation of a more intelligent community that can realize the unlimited connection and control of devices. It makes every home and building become a comfortable and safe place. Powerful and beautiful.

The ABB's IP touch is available in two timeless classic colors: white and black glossy glass.

The end strips are easily changed with a variety of material and color options, delivering the look you desire. The integration with home and building automation makes it the best universal visualization panel in residential and non-residential areas.



Busch-ControlTouch®

Easy KNX remote control with mobile device

Smartphones, tablets and smartwatches turn into a practical remote control, thanks to Busch-ControlTouch® KNX. It connects the KNX installation with the IP network, allowing control of all KNX functions in the building. Applications for iOS and Android create intuitive operation, allowing switches, dimmers, blinds, scenes, IP cameras, UPnP devices (for instance Sonos wireless boxes), Philips Hue lamps and many more to be integrated into the system.



- For smartphones and tablets (iOS and Android) and Apple Watch.
- Web-based commissioning.
- Intuitive and comfortable operation.
- IP cameras, UPnP devices (for instance Sonos wireless boxes) and Philips Hue lamps can be integrated KNX.
- Error and alarm messages via push message.



ABB i-bus® KNX

Applications

Office Buildings



Residential Buildings



Hotels



Schools & Universities



Hospitals



Stadiums & Sport Facilities



Airports



Industrial buildings



**Building
Management
System (BMS)**

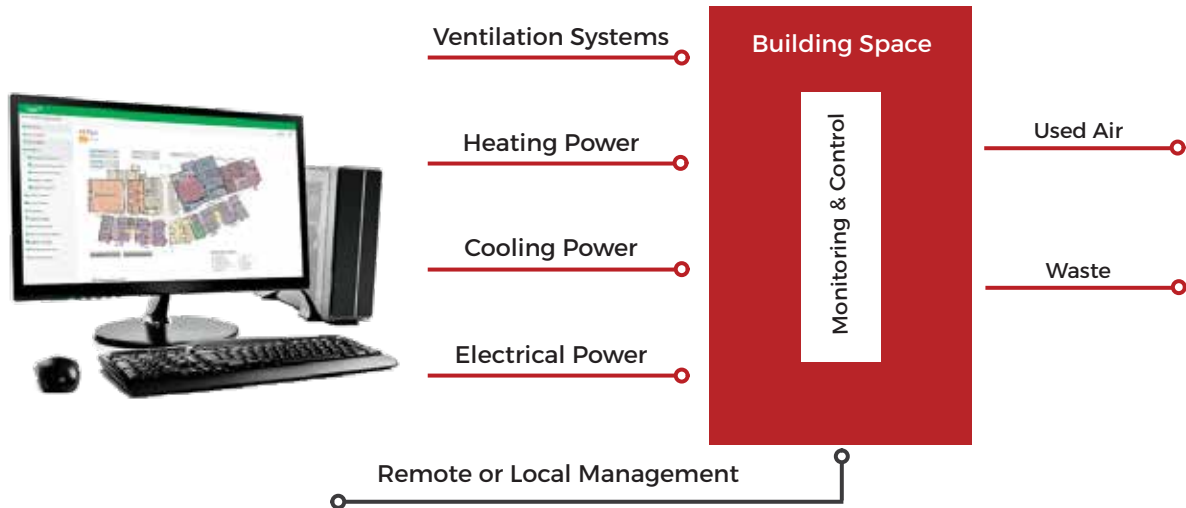


The Optimum Solution for all Kinds of Buildings



► What is a Building Management System (BMS)?

It is a software + hardware system that monitors and controls all building systems from one or multiple locations called BMS stations.

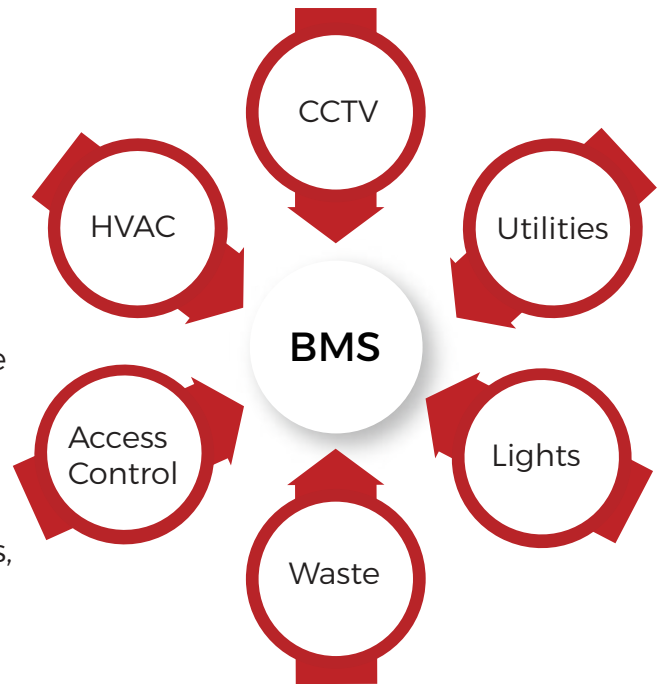


► Why Buildings Need BMS?

Buildings are like live organisms. Multiple systems must work together to maintain comfortable work spaces.

Without BMS these systems would work asynchronously and would need to be managed from multiple controlling stations.

We provide a complete monitoring and controlling for HVAC, Lighting, Power and Security systems for the whole building from a single platform (Centralized supervision) based on the ABB Cylon® solutions which deliver scalable, front-end building automation solutions, open protocol building controls, and cloud-based energy analytic tools to meet the needs of today's high-performance, green-conscious commercial facilities.



► BMS Features:



Monitoring

Monitoring values from all sorts of connected systems



Alarming

Alarms and notifications sent to building maintenance & facility management teams



Trending

Showing graphs of building parameters and their correlation within local systems



Controlling & Scheduling

Scheduling and energy efficient control of HVAC equipment is a key function



Optimizing

Knowledge about building performance helps in energy optimization



Integrated Building Functions

Connectivity to other building systems such as lighting, meters, security & CCTV to optimize energy consumption

► Supported BMS Protocols:



Building Automation & Control Network Officially unveiled by ASHRAE in 1996 Approved as ISO standard 16454-5 Becoming a standard in the European Union.



Serial communications protocol originally published by Modicon (now Schneider Electric) in 1979 for use with its programmable logic controllers (PLCs).



Local Operating Network Networking platform specifically created to address the needs of control applications. The platform is built on a protocol created by Echelon.



KNX is an open standard for commercial & domestic building automation. KNX devices can manage lighting, blinds and shutters, HVAC, security systems, energy management, audio, video, white goods, displays, remote control.



The EnOcean technology is an energy harvesting wireless technology used primarily in building automation systems. The EnOcean technology is an energy harvesting wireless technology used primarily in building automation systems.



The Niagara Framework is a universal software infrastructure that allows building controls integrators, HVAC and mechanical contractors to build custom, web-enabled applications.

► Benefits of BMS:

- Intelligent IoT BEMS control beyond automation
- Flexibility for a smarter world
- Reduced operational costs with energy optimization
- Reduce energy costs
- Occupant comfort
- Put control in users' hands
- Centralized Supervision
- Real time monitoring
- Assured safety
- Future proof essential plant and equipment
- Protect your investment

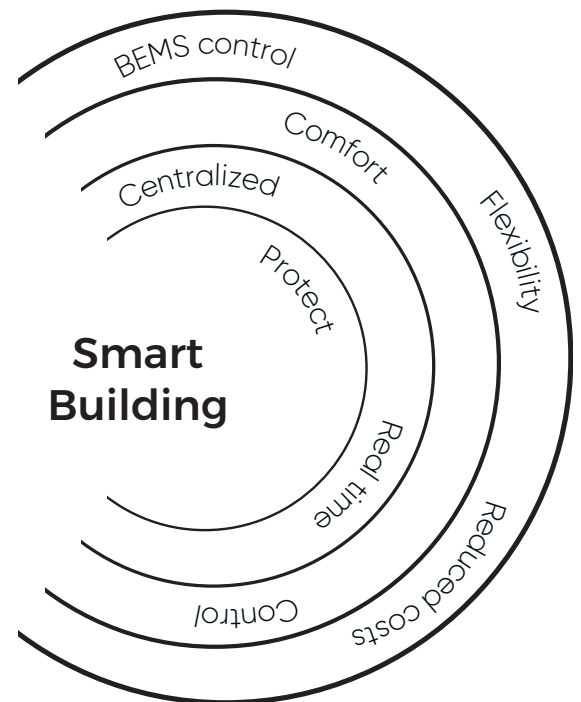


ABB Smart building solutions provide the flexibility building owners and tenants require to control and optimize workspaces while managing energy usage and reducing costs

▶ BMS are responsible for monitoring and maintaining control across systems that are common within a typical building, for example:

- HVAC Equipment :

- Boilers , Chillers and Cooling Towers
- Air Handling Units , Fan Coil Units & VAVs
- Flow, BTU Meters
- Fans (Supply , Exhaust , Smoke fan , etc)
- Domestic & Fire Fighting Pumps

- Lighting Control:

- On/off control & Scheduling
- Full integration with KNX System

- Electrical Systems:

- Electrical Distribution Panels (MDBs , EMDB , etc)
- Transformers, Generators, UPS , ATS & Variable Frequency Drives

- Light Current Systems:

- Fire alarm , CCTV , Access Control & Public Address



Enterprise
Systems
Integration



Mechanical
Maintenance



lighting
Control &
Retrofit



Digital
Video
Manager



Water
Management



Indoor
Air Quality



HVAC
Maintenance



Security
& Access
Control



Smoke
Detection
& Alarm



On Site
Technical
Service















Intrusion
Detection

▶ ABB Cylon® Smart Building Solution

ABB Cylon® Building Automation and Controls is a powerful and flexible system that provides comprehensive and efficient energy management solutions for commercial and industrial buildings. The system offers a range of features and benefits for System Integrators, Facility Managers, and building owners.

ABB Cylon Building Automation and Controls solutions provide an optimized environment that is safe, smart, and sustainable.

▶ Range Overview

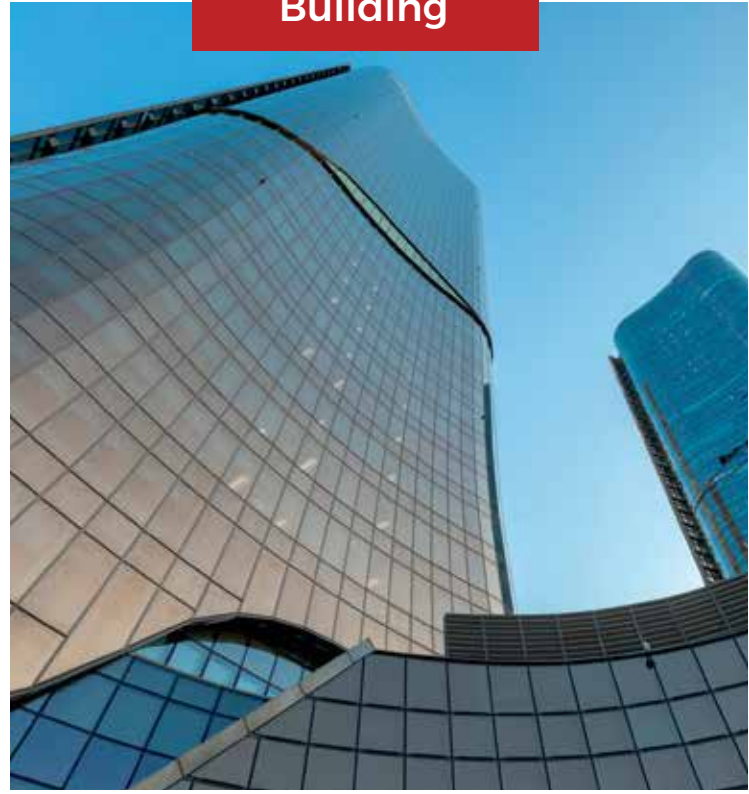
Main Plant Controller Digital/Analogue IO's	CBXi FLX	CBXi-8R8(-H) FLX-4R4(-H), FLX-8R8(-H) FLX-16DI, FLX-PS24	
	CBX FLX	CBX-8R8(-H) FLX-4R4(-H), FLX-8R8(-H) FLX-16DI, FLX-PS24	
Variable Air Volume Controller	CBV	CBV-2U4-3T/-N	
Terminal Controller	CBT	CBT-3T6-5R CBT-4T4-2U1R	
Main Plant Controller Digital/Analogue IO's	FLXeon	FBXi-X256 FLX-4R4(-H), FLX-8R8(-H) FLX-16DI, FLX-PS24	
Variable Air Volume Controller	FLXeon	FBVi-2U4-4T	
Room and Panel Displays	Room Sensors/ Displays	CBT-STAT (Room Sensor) UCU (Room Display) eXplore	
Engineering	Software	CXpro HD	
Visualization	Software/ Hardware	Nexus Matrix Aspect-Studio and Enterpris	
Visualization	APP	AeroBT (for CBV devices, view, edit, and configure operating parameters of VAV)	
Engineering	INTEGRA TM	IT-8000 INTEGRA-Supervisor INTEGRA-ProPack	
Sensors	Wired/ Wireless	Temperature Humidity Air Quality	

Applications

Datacenter



Commercial Building



Switchgears



Industrial Building

