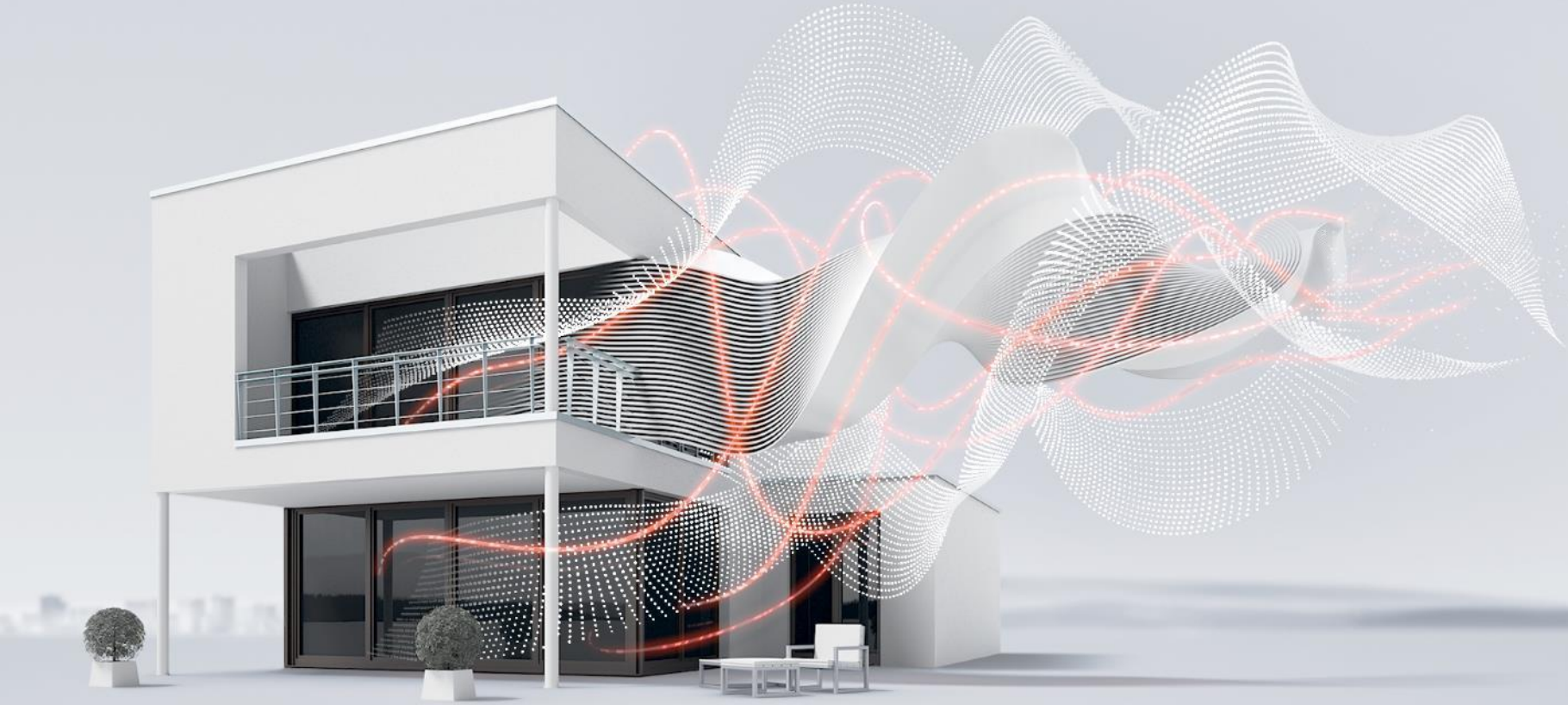

FEBRUARY 2020

Webinar “ABB Caldion® Room Temperature Controller”

Webinar – Competence Center Europe – Smart Buildings

Thorsten Reibel, Jürgen Schilder, Stefan Grosse, Martin Wichary & Ilija Zivadinovic

Agenda

Introduction, Projects and Product Overview

Technical Features and Connection Diagram

ETS Application

Commercial and Marketing Aspects

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Introduction, Projects and Product Overview

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Introduction

ABB Caldion® Truly The One

ABB Caldion® is a new range of fan coil room temperature controller that is part of the ABB i-bus® KNX portfolio and ClimaECO

It is a KNX RTC sensor for hotels, commercial buildings, offices and public buildings with a dual option on the type of installation (stand alone or KNX)

It has a built-in temperature sensor, LED display, buttons and Fan Coil actuator to provide an efficient and cost-effective solution

The perfect frameless casing and intuitive icons using capacitive touch make customer life smarter and easier than ever

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Projects

Hospitality – Hotel guest room, common area

Commercial – Office building, common area

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Product Overview

Black version

2 devices

- On/Off - **BS standard** with/without electrical heater
- 0 - 10V - **BS standard** with/without electrical heater

White version

2 devices

- On/Off - **BS standard** with/without electrical heater
- 0 - 10V - **BS standard** with/without electrical heater

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Technical Features and Connection Diagram

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Features

ABB Caldion®

- For BS (British Standard) installation
- Frameless design
- Large LED display, illuminated capacitive touch buttons
- Intuitive icons for ease of operating mode identification
- Display and button illumination – efficiency mode (sleep mode when not in use) / constantly on
- Display illumination and button illumination can be activated/deactivated via group object
- °C/°F/ECO button – long press/short press function
- First trigger command – awake device/awake and send command
- On/Off button – long press/short press function
- Recall of last setpoint after On/Off of device

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Features

ABB Caldion®

- “In operation” monitor – antitheft and function monitoring
- In built temperature sensor for accurate room temperature measurement
- Lock and unlock of the device via group object to prevent unauthorized adjustment
- Compatible configuration similar to Fan Coil Controller FCC/S, also forced operation, temperature limitation or valve purge, PI-Controller, PWM, …
- Two Binary inputs – temperature sensor/binary input/window/ alarm function selectable
- ABB Caldion® can work as standalone device without KNX power supply thanks to power connection
- Occupancy presence detection logic: combination of door contact and presence detector to function as keycard holder for room occupancy status

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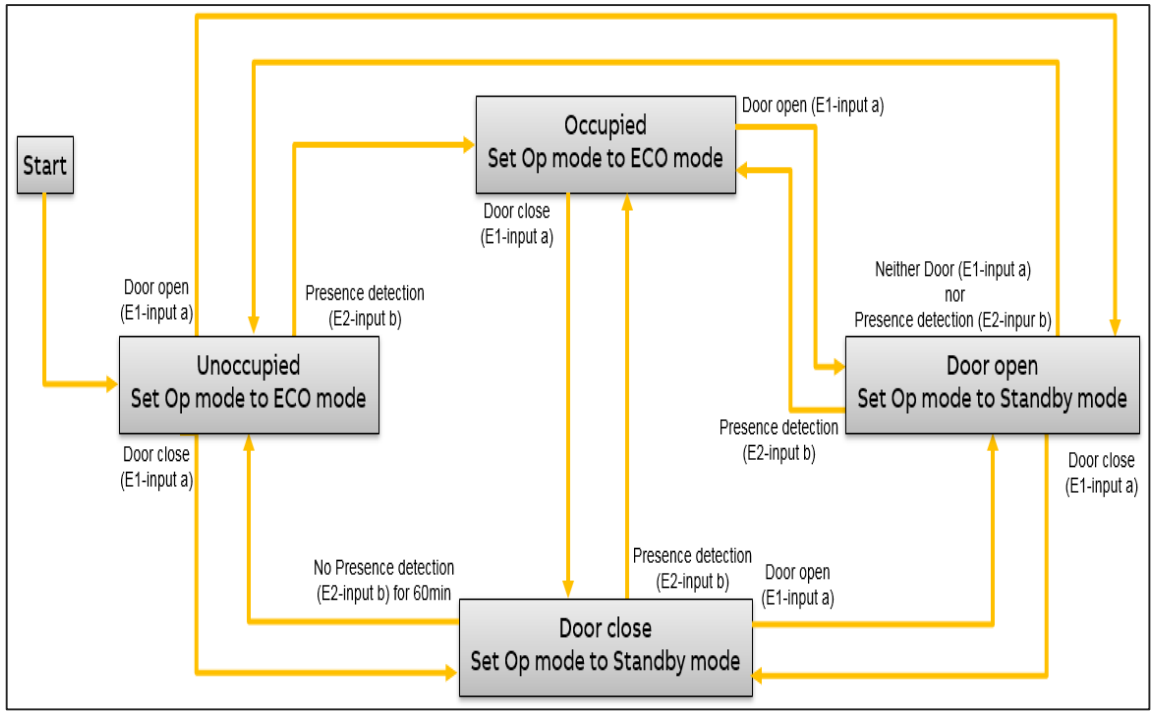
Features

ABB Caldion®

- Occupancy presence detection logic – with the combination of door contact & presence detector signal, ability to determine the status of guests in the room (room occupancy status)
- Change between ECO, Standby and Comfort mode
- Door contact and presence detector signal can either be received by group object or physical input via E1 and E2 binary input
- Detection checking duration is configurable via ETS
- In 2 pipe configuration only, VB/RO output can be configured as an relay output to energize the power for the room (via a external contactor) like keycard holder
- When logic is active and E1 and E2 are not configured as physical input, it can be used for other binary input functions



Solution ready for non keycard holder installation in hotel guest rooms

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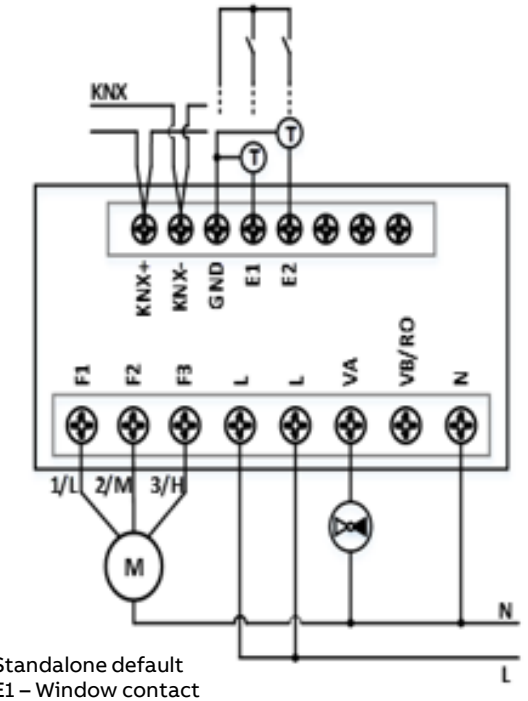
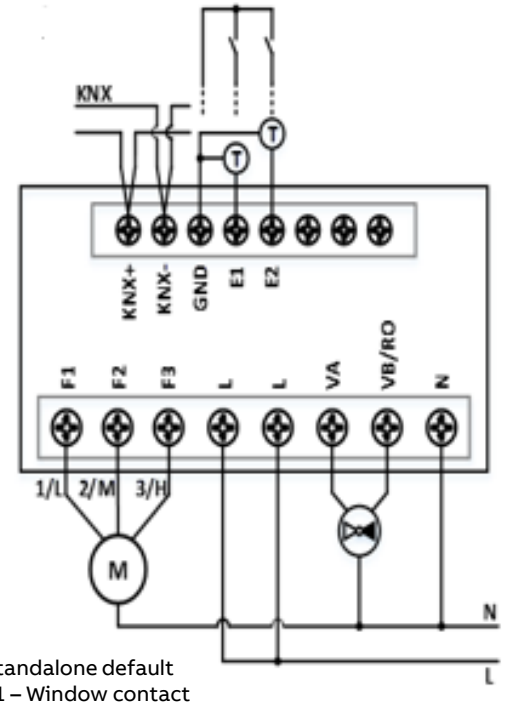
Connection Diagram - On/Off version and 3 step fan

2 pipe/electrothermal valve



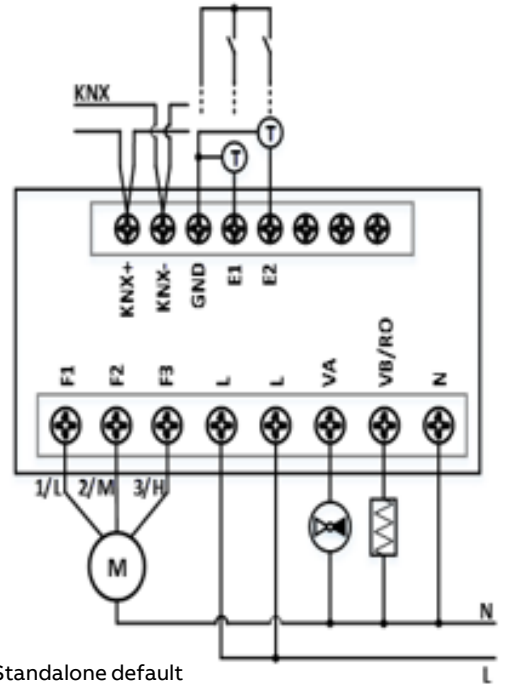
Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

2 pipe/3 point motor valve



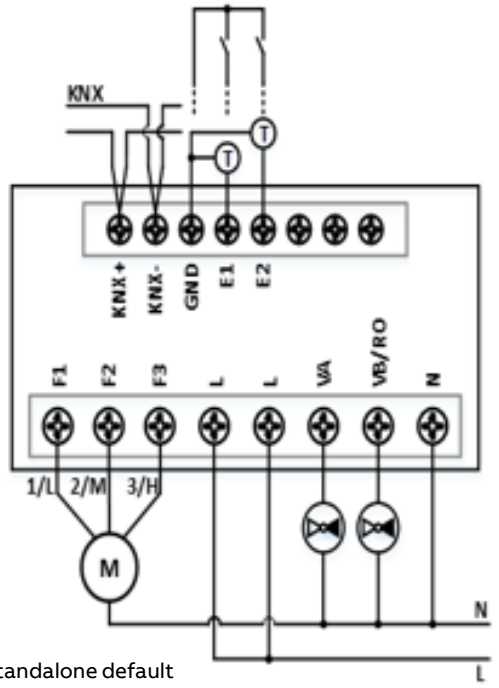
Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

2 pipe/electrical heater



Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

4 pipes



Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

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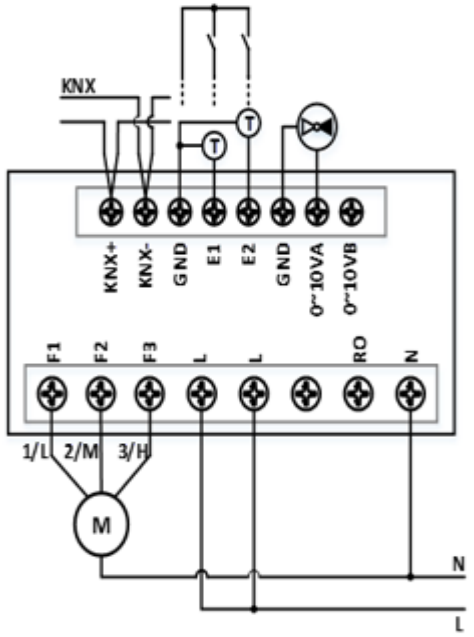
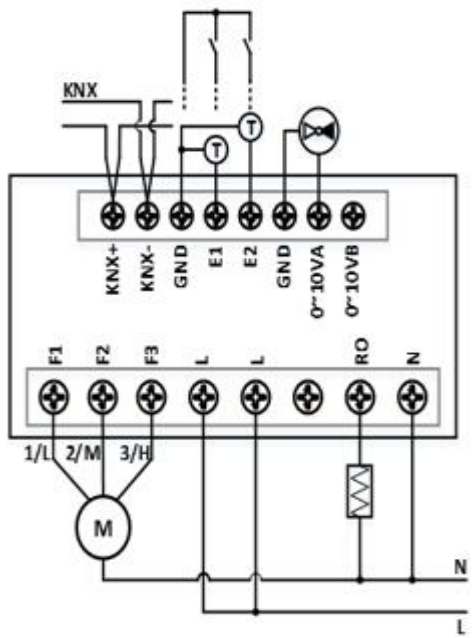
Connection Diagram - 0-10V version and 3 step fan

2 pipe/0-10V valve



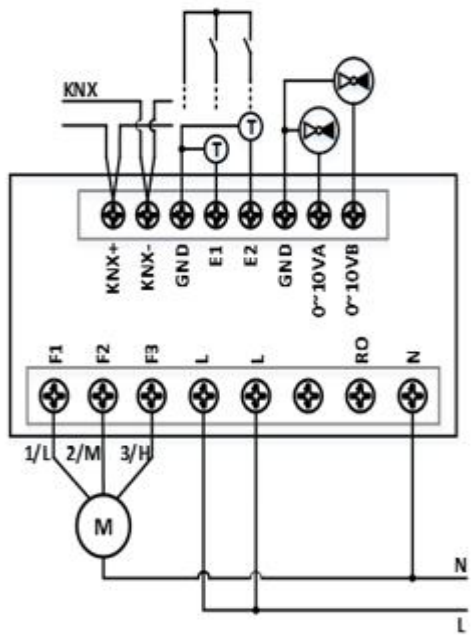
Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

2 pipe/0-10V valve + electrical heater



Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

4 pipes /2 x 0-10V valves



Standalone default
E1 – Window contact
E2 – Temperature sensor NTC 10K

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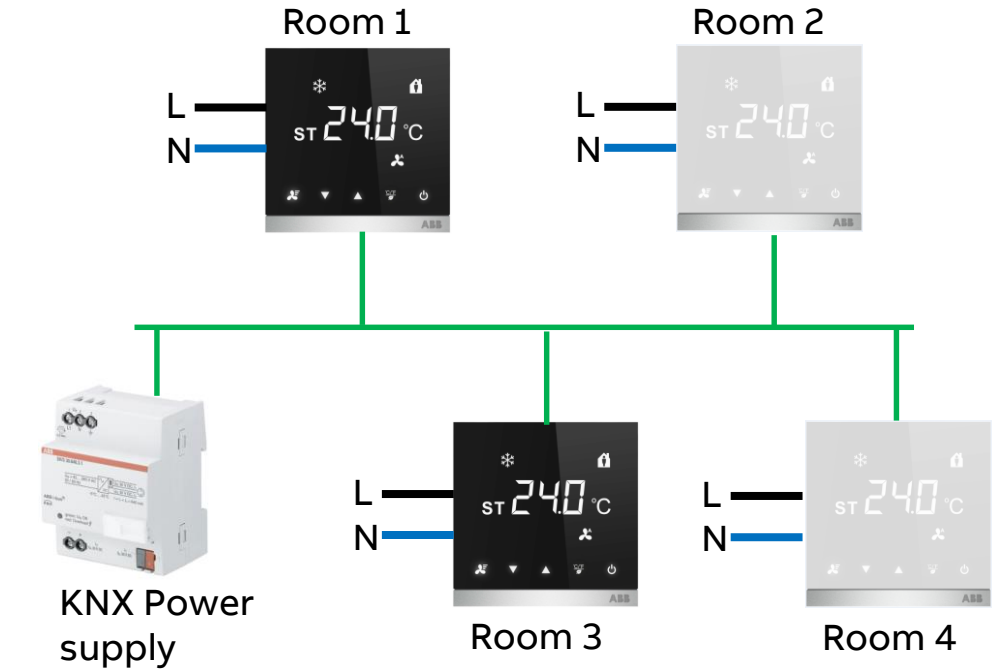
Architecture

Standalone configuration

- Configuration via DIP switches
- works without KNX power supply
- All options as KNX device with configuration via ETS

DIP Switch	1	2	3
KNX	1	1	1
Cool - 2 pipe (on/off, 0-10v)	1	1	0
Cool - 2 pipe 3pt (on/off)	1	0	1
Heat - 2 pipe (on/off, 0-10v)	0	0	1
Heat - 2 pipe 3pt (on/off)	0	1	0
Heat - 2 pipe w. heater (on/off, 0-10v)	0	1	1
Cool/Heat - 4 pipe (on/off, 0-10v)	0	0	0

KNX configuration



Flexible!! Install as standalone and be future proof to upgrade as system control

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ETS Application

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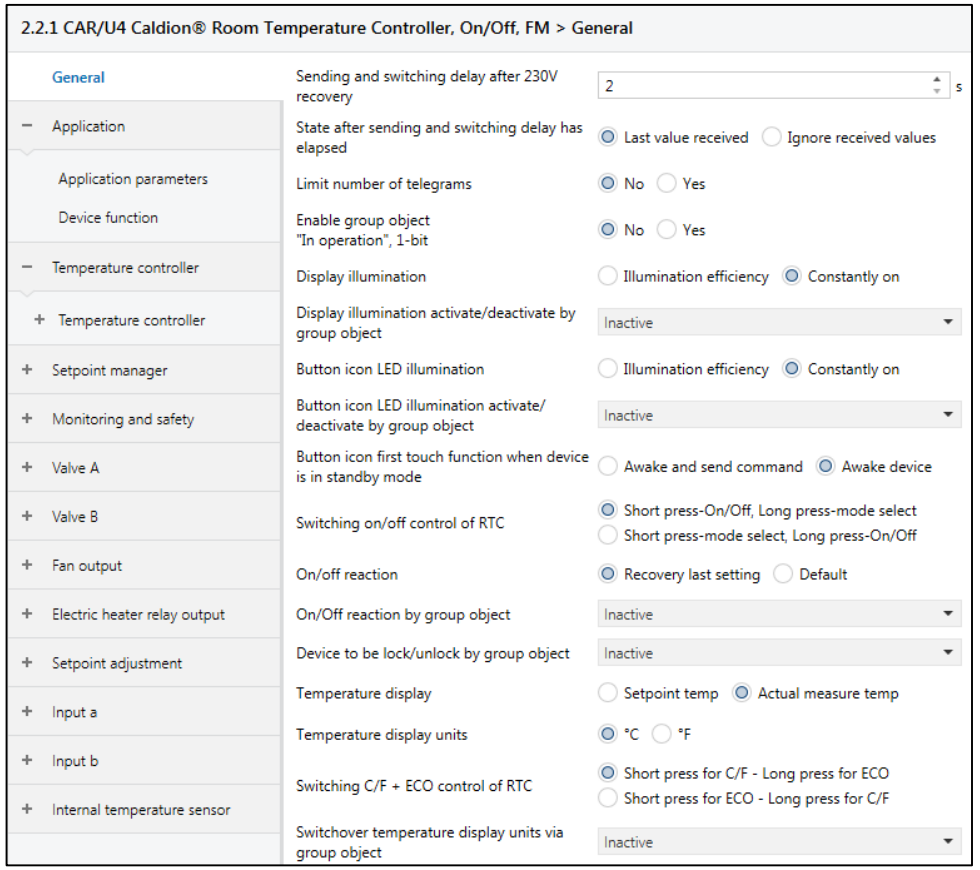
ETS

ABB Caldion®

ETS Application similar to Fan Coil Controller FCC/S

Parameter block ‘General’

– Various parameter for display and buttons
  - Display Illumination
  - On/Off operation
  - Device lock/unlock
  - Temperature Display
  - …



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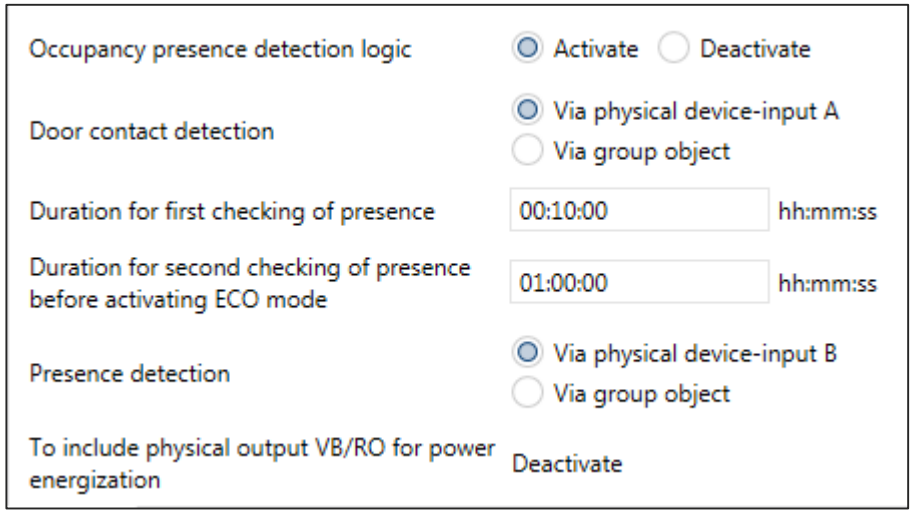
ETS

ABB Caldion®

– Occupancy presence detection logic (Block Application Parameters)
  - Duration of first checking of presence, e.g. 10 min
  - Duration of second checking of presence before activating ECO mode, e.g. 60 min
  - Presence- and door contact detection via physical device input or group object
  - In 2 pipe configuration only, VB/RO output can be configured as an relay output to energize the power for the room (via a external contactor) like keycard holder



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Commercial and Marketing Aspects

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Range

ABB Caldion®

Article Code	Order Code	Type	Colour
CAR/U4.1.1.1-71	2TAZ740010R2001	On/Off valve	Black
CAR/U4.2.1.1-71	2TAZ741010R2001	0 – 10 V valve	Black
CAR/U4.1.1.1-84	2TAZ740010R0001	On/Off valve	White
CAR/U4.2.1.1-84	2TAZ741010R0001	0 – 10 V valve	White

Available in markets with British Standard installation or countries which allow this installation

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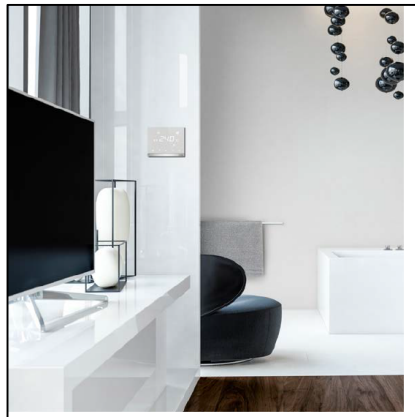
Further information

Product Overview

LINK



Features:
- An integrated (control and actuator) room temperature controller
- One device supports multiple types of application
- Option to select standalone or KNX configurations
- Enhance function configurable via ETS application

Benefits:
- Easy replacement for existing conventional thermostat
- Cost-effective installation
- Intuitive design for ease of controls
- Simple and effective application with option for expansion

Product overview

ABB Caldion®, part of the ABB i-bus® KNX portfolio is a Room-Temperature Controller for fan coil units with either 2 pipes, 2 pipes with electric heater or 4 pipe system application. Flush Mounted, BS standard; it can be installed as a standalone configuration or with built-in integrated bus coupling as a KNX device. It is equipped with a temperature sensor and 2 x binary input for either presence detection, window, dewpoint alarm or condensate alarm. It has an integrated actuator for valve control of on/ off or 0-10V with 3 x fan speed control. It has dedicated capacitive touch control button for intuitive control and mode operation selection. Its frameless design equipped with a large display ensures the ease of viewing and elegance to complement the surrounding.

ABB Caldion®
Black

ABB Caldion®
White

Technical data:

Power supply	Rate voltage	AC 230V(min.AC 110V),50/60 Hz
	Power consumption	Max. 4 VA
	Maximum allowable inputload(fan+valve +electric auxiliary heat)current through phase input(L)terminal	Max. 7 A
	KNX bus voltage	21…32 V DC
Wire connection	Wiring cross section on L,N,F1,F2,F3,VA,VB	1 x 0.5…2.5 mm²
	Wiring cross section on GND, E1, E2, 0~10VA, 0~10VB, KNX+, KNX-	stranded wires 1 x 0.5…1.5 mm²
Degree of protection	IP 20	EN 60529
Protection class	Overvoltage category III	EN 60664-1
Ambient conditions	Operating temperature range	-5°C to +50°C
	Transport and Storage temperature	-25°C to +70°C
	Humidity max range	not more than 98%, no dew permissible
	Maximum air pressure of atmosphere	up to 2000m
Outputs	Control output Rating [Resistive(Inductive)] on F1, F2; F3-N; VA/VB -N; RO-N	AC 230 V / Min. 8.3 mA, Max. 5(2) A
	Max. total load current through terminal "L" (Fx + Vxx)	Max. 7 A
	Control output load on 0~10VA-GND 0~10VB-GND	SELV DC 0…10 V/ 1.5 mA(Max) / > 10 kohms
Inputs	Input port E1 & E2	10V/1mA
	Input cable length	Maximum 30 m

Name	Article code	Order code	Type	Colour
ABB Caldion®	CAR/U4.1.1.1-71	2TAZ740010R2001	On/off valve	Black
	CAR/U4.2.1.1-71	2TAZ741010R2001	0-10v valve	Black
	CAR/U4.1.1.1-84	2TAZ740010R0001	On/off valve	White
	CAR/U4.2.1.1-84	2TAZ741010R0001	0-10v valve	White

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Further information

Product page will all relevant files

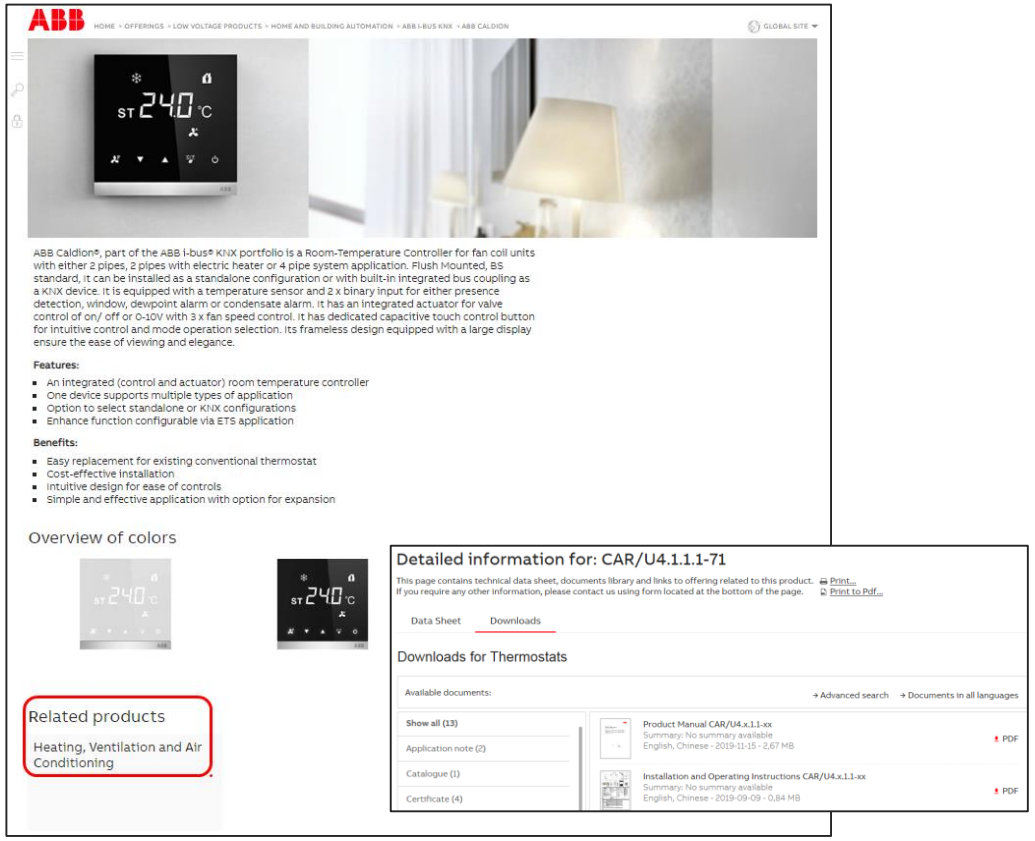
LINK

Link on this page to *Related Products* (ABB Caldion® Room Temperature Controller” CAR/U) shows all relevant files:

- ETS Application
- Product Manual
- Installation and Operating Instructions
- CE Declaration
- …

Link works only in countries with availability of this product

Option: Simulate Country via Country Selector



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