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Touch-Plate[®]
Lighting Controls
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CONSENSIO



Native BACNet Wall Switch

Features

- Native BACnet device, connects directly to MSTP bus
- Programmable button color and intensity
- Supports subscriptions to button change of values (COVs)
- Integral IR remote receiver
- Integral ambient light sensor
- Fits single gang wallbox
- Gangable
- Fits standard Decora style faceplates



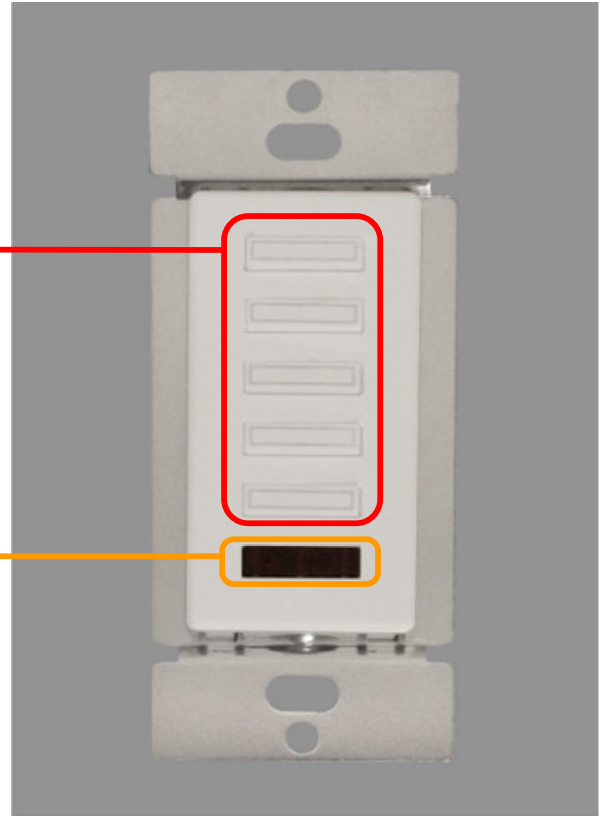
Consensio Front

Buttons:

The buttons are backlit by full color LEDs.

IR Receiver & Light Sensor:

Consensio can receive IR commands from a universal remote, as well as measure the ambient room light.



Consensio Back

Power:

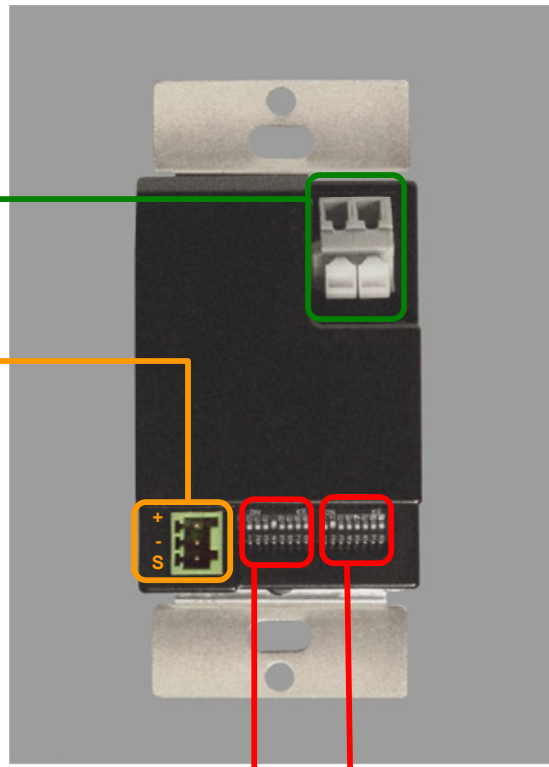
9-24V AC or DC (must be class 2, isolated)

MSTP 485 port:

+ non-inverted input

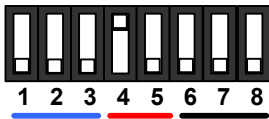
- inverted input

S Shield

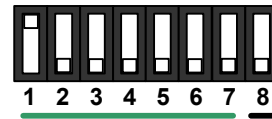


DIP Switches:

DIP 1



DIP 2



1, 2 & 3 : RS-485 Termination and Biasing

- 1 – Biasing - pull up
- 2 – Biasing - pull down
- 3 – Line to line termination

1 - 7: MSTP Address

Address settings are shown in the Appendix.

8: Unused

4 & 5: Baud Rate



6, 7 & 8: Unused

BACnet Objects

Buttons:

Each button is represented as 2 binary input objects (BI), one for momentary, and one for maintain.

Momentary values toggle between 0 and 1 on each press of the button.

The maintain value is 1 while the button is pressed, and is 0 when released. The maintain object instance is offset by +100 from the momentary object for the same button.

BI1 = Button 1 (momentary)

BI101 = Button 1 (maintain)

BI2 = Button 2 (momentary)

BI102 = Button 2 (maintain)

.....

BI5 = Button 5 (momentary)

BI105 = Button 5 (maintain)

The button state is stored in the BI objects present value property.

LEDs:

Every button is backlit by a full color LED. Each LED can be set to 1 of 7 colors, at 1 of 16 intensity levels. Each LED is controlled by an analog value object (AV). AV1 controls the LED under button 1, AV2 button 2, etc. The analog value must be in the range 0 to 255. The intensity is bit mapped to the upper 4 bits, and the color is mapped to the lower 4 bits.

LED examples:

Full Brightness	Medium Brightness	Low Brightness
241 = Red	49 = Red	17 = Red
242 = Green	50 = Green	18 = Green
243 = Blue	51 = Blue	19 = Blue
244 = Yellow	52 = Yellow	20 = Yellow
245 = Purple	53 = Purple	21 = Purple
246 = Light blue	54 = Light blue	22 = Light blue

AV1 = 241 turns the LED under button 1 Red at full brightness.

AV2 = 53 turns the LED under button 2 Purple at medium brightness.

AV5 = 19 turns the LED under button 5 Blue at low brightness.

Etc...

Consensio

IR Receiver:

The built-in IR receiver responds to 36KHz RC5 codes. On most universal remotes these codes can be found as one of the Philips TV codes. Once the remote is set to the right code, pressing a number button on the remote is the same as pressing the corresponding button on the Consensio unit. There must be a direct line of sight between the remote and the Consensio wall switch. The range is approximately 15 to 20 feet.

Note: The IR receiver must be enabled before it is active. This is done by setting bit 2 of AV100 present value to 1 (AV100 = 4).

Light Sensor:

The built-in light sensor gives the amount of light hitting the wall switch in lux. This measurement is available in the present value property of AV101.

Warm Boot:

- Sets button states to 0.
- Turns off all LEDs.
- Requires the password “clearunit”

Cold Boot:

- Performs warm boot functions.
- Performs a factory reset.
- Requires the password “areyousure”

COVs:

The unit allows up to 64 subscriptions for the buttons. Setting bit 0 in AV100 allows infinite COV subscription.

Object Names:

Object names are limited to 32 characters in length.

BI Properties

- OBJECT_IDENTIFIER 1 to 5 Momentary, 101 to 105 Maintain
- OBJECT_TYPE: Binary Input
- OBJECT_NAME (r/w): (32 chars. max)
- Default for BI1 to BI5 is "Momentary##"
- Default for BI101 to BI105 is "Maintained###"
- PRESENT_VALUE: 0 or 1 (for Off or On)
- ACTIVE_TEXT: "ON"
- INACTIVE_TEXT: "OFF"
- DEVICE_TYPE: "Momentary Contact" OR "Maintained Contact"
- EVENT_STATE: 0 (Normal)
- OUT_OF_SERVICE: 0 = False
- POLARITY: 0 = Normal
- RELIABILITY: 0 = NO_FAULT_DETECTED
- STATUS_FLAGS: Normal
- BI_UCOV_ENABLE (r/w): 0 = Disabled, 1 = Enabled (Custom property of 2000)

AV1 - AV5 Properties

- OBJECT_IDENTIFIER 1 to 5 for Button Pilots 1 to 5
- OBJECT_TYPE: Analog Value
- OBJECT_NAME (r/w): "Pilot##" (32 chars. max)
- PRESENT_VALUE (r/w): Lower 4 bits color, Upper 4 bits intensity
- OUT_OF_SERVICE: 0 = False
- STATUS_FLAGS: Normal
- UNITS: 95 = No units for BACnetEngineeringUnits
- EVENT_STATE: 0 (Normal)

AV100 Properties

- OBJECT_IDENTIFIER 100
- OBJECT_TYPE: Analog Value
- OBJECT_NAME (r/w): "Device Options" (32 chars. max)
- PRESENT_VALUE (r/w) - Bit 0 = 1: Turn on to Enable Infinite COV subscriptions
- Bit 1 = 1: Reserved
- Bit 2 = 1: Receive IR Codes Enabled
- Bits 3 - 7 = IR system code (Default is 0)
- OUT_OF_SERVICE: 0 = False
- STATUS_FLAGS: Normal
- UNITS: 95 = No units for BACnetEngineeringUnits
- EVENT_STATE: 0 (Normal)

AV101 Properties

- OBJECT_IDENTIFIER 101
- OBJECT_TYPE: Analog Value
- OBJECT_NAME (r/w): "Light Sensor" (32 chars. max)
- PRESENT_VALUE: Light level
- OBJECT_TYPE: Analog Value
- OUT_OF_SERVICE: 0 = False
- STATUS_FLAGS: Normal
- UNITS: 37 = Luxes
- EVENT_STATE: 0 (Normal)

Object Summary

BI1 to BI5: Momentary Inputs 1 to 5
 BI101 to BI105: Maintain Inputs 1 to 5
 AV1 - AV5: Pilots for Inputs 1 to 5
 AV100: Device Options
 AV101: Light Level in Lux

Property	BI	Read	Write	BO	Read	Write	AV	Read	Write
OBJECT_IDENTIFIER	R	X					R	X	
OBJECT_TYPE	R	X					R	X	
OBJECT_NAME	R	X	X				R	X	X
PRESENT_VALUE	R	X					R	X	X
DEVICE_TYPE	O	X							
STATUS_FLAGS	R	X					R	X	
EVENT_STATE	R	X					R	X	
RELIABILITY	O	X							
OUT_OF_SERVICE	R	X					R	X	
POLARITY	R	X							
FEEDBACK_VALUE									
INACTIVE_TEXT	O	X							
ACTIVE_TEXT	O	X							
PRIORITY_ARRAY									
RELINQUISH_DEFAULT									
BI_UCOV_ENABLE	C	X	X						
UNITS							R	X	

Appendix : MSTP Address DIP switch settings

0*		17		34		51	
1		18		35		52	
2		19		36		53	
3		20		37		54	
4		21		38		55	
5		22		39		56	
6		23		40		57	
7		24		41		58	
8		25		42		59	
9		26		43		60	
10		27		44		61	
11		28		45		62	
12		29		46		63	
13		30		47		64	
14		31		48		65	
15		32		49		66	
16		33		50		67	

* 0 is an invalid address

Consensio

68		85		102		119	
69		86		103		120	
70		87		104		121	
71		88		105		122	
72		89		106		123	
73		90		107		124	
74		91		108		125	
75		92		109		126	
76		93		110		127	
77		94		111			
78		95		112			
79		96		113			
80		97		114			
81		98		115			
82		99		116			
83		100		117			
84		101		118			