Current Sensing

USER MANUAL

Version: **1.0**

Date: **09/Jan/2024**

Contents

1. Current Sensing 4
Communication objects involved: 4
ETS page “Current Sensing x” 4

VERSION	DATE	CHANGES
1.0	09/Jan/2024	-

Any information inside this manual can be changed without advice.

This handbook can be download freely from the website:
www.eelectron.com

Exclusion of liability:
Despite checking that the contents of this document match the hardware and software, deviations cannot be completely excluded. We therefore cannot accept any liability for this.
Any necessary corrections will be incorporated into newer versions of this manual.

Symbol for relevant information 

Symbol for warning 

Eelectron S.p.A.
Via Claudio Monteverdi 6, I-20025 Legnano (MI), Italia
Tel +39 0331.500802 info@eelectron.com

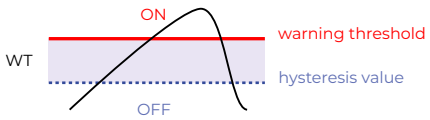
1. Current Sensing

Communication objects involved:

“<Current Sensing x> Measure”	2 bytes / 4 bytes	CRT
This object measures the current passing through the relay (mA or A).		
“<Current Sensing x> Measure (estimated)”	2 bytes / 4 bytes	CRT
This object calculates the estimated value of the power (W or kW) depending on the current measured through the relay and the estimated voltage associated to the output (see general parameters).		
“<Current Sensing x> Warning Output”	1 bit / 1 byte	CRT
“<Current Sensing x> Warning Threshold”	2 bytes / 4 bytes	CW
“<Current Sensing x> Alarm Output”	1 bit	CRT
“<Current Sensing x> Alarm Threshold”	2 bytes / 4 bytes	CW
“<Current Sensing x> Reset Alarm”	1 bit	CW

ETS page “Current Sensing x”

In this section you can enable for each channel, objects to measure current and power and set thresholds for warning and alarm functions.

KNX PARAMETER	SETTINGS
Sensing measure	disabled / enabled
It enables the object: “<Current Sensing x> Measure” for the current or the object “<Current Sensing x> Measure (estimated)” for the power.	
Sensing name	
It defines the name of the sensing channel.	
Sensing data type	DPT 14.019 electric current (A) DPT 9.021 current (mA) DPT 7.012 current (mA) DPT 14.056 power (W) DPT 9.024 power (kW)
For the current, it defines the DPT for the object “<Current Sensing x> Measure”. For the power, it defines the DPT for the object “<Current Sensing x> Measure (estimated)”.	
Voltage reference	voltage V1 voltage V2 voltage V3
It defines the voltage reference set in General Parameters - Voltage Configuration.	
Measure	
Correction coefficient [*0.01]	1...255
Sets the factor to be multiplied by the measured value expressed in cents, the value 100 is equivalent to not applying any correction value; values greater than 100 make the measured current/power value increase (200 = double, 250 = 2.5 times); values less than 100 cause the measured value to decrease (50 = half, 25 = a quarter, 10 = a tenth).	
Correction offset [x]	0 ÷ 20 (A) 0 ÷ 20000 (mA) -5540 ÷ 5540 (W) -5,54 ÷ 5,54 (kW)
Sets a fixed value to be added or subtracted from the measured value after applying the correction coefficient. The value 0 is equivalent to not applying any offset.	
Sending on variation [x] (0=never)	0 ÷ 20 (A) 0 ÷ 20000 (mA) 0 ÷ 5540 (W) 0 ÷ 5,54 (kW)
For the current, it defines whether the device will send telegrams on the bus when the deviation occurs. **Never** No sending of telegrams. **0 ÷ 20 (A)** **0 ÷ 20000 (mA)** Deviation value from the actual current that will determine the sending of telegrams. For the power, it defines whether the device will send telegrams on the bus when the deviation occurs. **Never** No sending of telegrams. **0 ÷ 5540 (W)** **0 ÷ 5,54 (kW)** Deviation value from the actual current that will determine the sending of telegrams.	
Cyclic send time	no cyclic sending 1, 2, 3, 4, 5, 10, 15, 20, 30, 45 min 1, 1 hour and 30 min, 2, 3, 4, hours
This parameter defines the time interval to send cyclically on the BUS the objects “<Current Sensing x> Measure” for the current and the object “<Current Sensing x> Measure (estimated)” for the power.	
Single channel load control	disabled / enabled
It enables the warning and the alarm functions to set thresholds and control the load connected to relative outputs. Once enabled, these objects are available: “<Current Sensing x> Warning Output” “<Current Sensing x> Warning Threshold” “<Current Sensing x> Alarm Output” “<Current Sensing x> Alarm Threshold” “<Current Sensing x> Reset Alarm”	
Warning function	
Warning threshold after download [x]	0 ÷ 20 (A) 0 ÷ 20000 (mA) 0 ÷ 5540 (W) 0 ÷ 5,54 (kW)
It defines the value after download the application. The values to be entered depend on the previously set sensing DPT: 0 ÷ 20 (A) 0 ÷ 20000 (mA) 0 ÷ 5540 (W) 0 ÷ 5,54 (kW)	
Hysteresis [x]	0 ÷ 20 (A) 0 ÷ 20000 (mA) 0 ÷ 5540 (W) 0 ÷ 5,54 (kW)
It defines the hysteresis value to be applied on warning threshold.	
	
Warning telegram	1 bit / 1 byte
It defines the size of the object “<Current Sensing x> Warning Output”: 1 bit: on/off command 1 byte value	

Warning type	value 0...255 value 0...100% HVAC mode
For 1 byte object the values are: 0...255 0...100% **HVAC mode:** it is possible to set the threshold in one of the following modes: AUTO, ECONOMY, STANDBY, COMFORT, BUILDING PROTECTION.	
Telegram when value is above threshold	nothing off on
It defines the telegram sent on the bus when the value is above threshold.	
Telegram when value is below threshold	nothing off on
It defines the telegram sent on the bus when the value is below threshold considering hysteresis (value < threshold - hysteresis).	
Alarm function	
Alarm threshold after download [x]	0 ÷ 20 (A) 0 ÷ 20000 (mA) 0 ÷ 5540 (W) 0 ÷ 5,54 (kW)
It defines the value after download the application. The values to be entered depend on the previously set sensing DPT: 0 ÷ 20 (A) 0 ÷ 20000 (mA) 0 ÷ 5540 (W) 0 ÷ 5,54 (kW)	
Alarm telegram	1 bit / 1 byte
It defines the size of the object “<Current Sensing x> Alarm Output”: 1 bit: on/off command 1 byte value	
Alarm type	value 0...255 value 0...100% HVAC mode
For 1 byte object the values are: 0...255 0...100% **HVAC mode:** it is possible to set the threshold in one of the following modes: AUTO, ECONOMY, STANDBY, COMFORT, BUILDING PROTECTION.	
Telegram when value is above threshold	1 bit: nothing / off / on 1 byte: 0...255 / 0...100% / HVAC mode
It defines the telegram sent on the bus when the value is above threshold.	
Telegram when value is below threshold	1 bit: nothing / off / on 1 byte: 0...255 / 0...100% / HVAC mode
It defines the telegram sent on the bus when the value is below threshold.	
Wait time to disable relay [s]	0...255
When value is above alarm threshold, it defines the time after which the relay is opened.	
Automatic time to re-enable relay [min]	0...255
It defines the time in minutes to re-enable the relay in case of alarm.	
Automatic time to re-enable relay [s]	0...255
It defines the time in seconds to re-enable the relay in case of alarm.	