Datasheet GRENTON RELAY X2+ WiFi
WRE-222-W-01

Grenton RELAY X2+ WiFi allows you to control up to two outputs (max. 350 VA) and two digital inputs (230 V_{ac}). The X2+ version provides current and power measurements each output channel. It contains the Common Logic Unit (CLU) with WiFi wireless communication controller, executes the function of processing logic and storing the configuration.

1. Parameters - CLU WiFi

Properties:	
Uptime	Working time since last reset (in seconds)
ClientReportInterval	Reporting period for changes in properties
Date	Returns the current date
Time	Returns the current time (hh:mm:ss)
LocalTime	Returns the current time
TimeZone	Local time zone
UnixTime	Returns the current Unix time
FirmwareVersion	WiFi module firmware version
UseCloud	Specifies whether WiFi module connects to the Cloud
CloudConnection	Specifies whether WiFi module is connected to the Cloud
NTPTimeout	NTP Timeout
UseNTP	Specifies whether WiFi module uses NTP
PrimaryDNS	Preferred DNS server
SecondaryDNS	Alternate (secondary) DNS server
RSSI	Received signal strength indicator
Methods:	
SetDateTime	Sets date and time
StartConsole	Starts Lua console
StartConsoleOnReboot	Starts Lua console on next boot
FactoryReset	Factory reset of module
SetClientReportInterval	Sets the reporting period for changes in properties
SetPrimaryDNS	Sets the PrimaryDNS property
SetSecondaryDNS	Sets the SecondaryDNS property
Events:	
OnInit	Event occurs once during the device initialization
Virtual Objects:	
Timer	Timer operating in Interval or CountDown modes. Detailed interface description in the Grenton 2.0 System Manual - chapter XIII.5 Virtual Object - Timer

2. Parameters - DOUT (output)

Properties:	
Value	The output state (0 - Off, 1 - On)
Overload	The value of power that it generates OnOverloadOn event when exceeded
OverloadTime	Minimal duration of the power overload needed for OnOverload event generation
LoadThreshold	The value of power that it generates OnPowerConsumptionOn event when exceeded
VoltageType	Type of voltage (0 - AC, 1 - DC)
DCVoltage	Declared DC voltage supplying the load
ACVoltage	Actual AC voltage in the power network
Current	Current flowing through the load (for AC: Irms)
Load	Actual load power consumption
AverageLoad	Average Load since power up or ResetPowerStatistics() function call
MaximumLoad	Maximum Load since power up or ResetPowerStatistics() function call
PowerOnTime	Total time of the output ON state since power up or ResetPowerStatistics() function call
PowerConsumption	Total power consumption since power up or ResetPowerStatistics() function call
State	Returns the output state (0 - POWER_OFF, 1 - POWER_ON, 2 - LOADED, 3 - OVERLOADED, 4 - ANTIBURN_OFF)
Methods:	
SetValue	Sets the output state to 1 or 0
SetOverload	Sets Overload property
SetOverloadTime	Sets OverloadTime property
SetLoadThreshold	Sets LoadThreshold property
Switch	Changes the output state to the opposite
SwitchOn	Sets the output value to On (1). The Time parameter specifies for how long [ms] the state change takes place, value 0 keeps the change for ever
SwitchOff	Sets the output value to Off (0). The Time parameter specifies for how long [ms] the state change takes place, value 0 keeps the change for ever
ResetPowerStatistics	Resets power measurement statistics
Events:	
OnValueChange	Occurs when a change in the output state takes place (regardless of the value)
OnSwitchOn	Occurs when On (1) is set to the output
OnSwitchOff	Occurs when Off (0) is set to the output
OnPowerConsumptionOn	Occurs when the value of Load property becomes higher than LoadThreshold
OnPowerConsumptionOff	Occurs when the value of Load property becomes lower than LoadThreshold
OnOverloadOn	Occurs when the value of Load property becomes higher than Overload
OnOverloadOff	Occurs when the value of Load property becomes lower than Overload
OnAntiBurnRelayOff	Occurs when switching off the relay after significantly exceeding safe Current value
OnUpdate	Occurs when parameters (Current, Load, ...) are updated on all outputs. Calls every 250 ms.

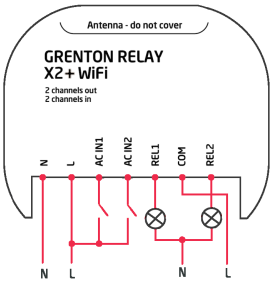
3. Parameters - DIN (digital input)

Properties:	
Value	Returns the input state as 0 or 1
Inertion	Specifies the entry time constant. The value step is 20 ms
HoldDelay	Time in milliseconds after which, when pressing and holding a button, the OnHold event occurs
HoldInterval	Cyclical interval in milliseconds after which, when pressing and holding a button, the OnHold event occurs
Coupling	Returns the percentage of coupling between wires. Less than 30%, there is little coupling between wires when input physically Off
Methods:	
SetInertion	Sets the input inertion time
SetHoldDelay	Sets HoldDelay property
SetHoldInterval	Sets HoldInterval property
Events:	
OnValueChange	Occurs when a change in the input state takes place (regardless of the value)
OnSwitchOn	Occurs when the high state is set at the input
OnSwitchOff	Occurs when the low state is set at the input
OnShortPress	Occurs after pressing the button for 500 - 2000ms
OnLongPress	Occurs after pressing the button for at least 2000ms
OnHold	Occurs for the first time after HoldDelay time and then cyclically every HoldInterval value
OnClick	Occurs after pressing the button for less than 500 ms

4. Technical data

Device power supply	110-230 V_{ac} 50/60 Hz
Maximum power consumption	1,8 W
Standby power consumption	1,0 W
Rated load voltage	230 V_{ac} or 24 V_{dc}
Rated channel load AC1	1,5 A / 230 V_{ac} / per channel
Rated channel load AC1	1 A / 24 V_{dc} / per channel
Maximal breaking capacity AC1	350 VA / per channel
Maximum wire cross section	2,5 mm^2
WiFi frequency band	2,4 GHz
Weight	40 g
Fixing	flush mounted
Dimensions (H/W/D)	19/45/36 mm
Operating temperature range	0 to +45°C

5. Wiring diagram



- The device without a target configuration loaded via Object Manager tool, has the minimal embedded configuration. The inputs are connected to the outputs, which allows for local loads control.
- The maximum recommended length of cables connected to the AC IN1 or AC IN2 inputs is 25 m. This value results from the capacitive-inductive coupling of a typical conductor between its lines. Additionally, the Coupling property was introduced in the DIN object that reveals the real coupling. Too much coupling can cause false input state detection.

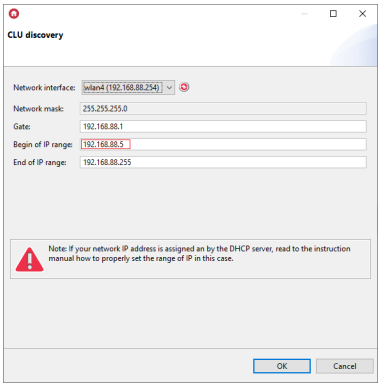
N	"Neutral" signal
L	"Line" signal
AC IN1	first channel input (230 V_{ac})
AC IN2	second channel input (230 V_{ac})
REL1	first channel output (potential free)
COM	common output for REL1 and REL2
REL2	second channel output (potential free)

6. Wireless communication configuration

The brand new device on power up starts with the AP (access point) SSID: CLU36xxxxxxx [reset] with the factory password (PIN) "00000000". After connection setup with the AP please connect to the device http server using web browser and http://192.168.4.1 link. Next please set up a PIN and a WiFi network parameters, the WiFi network the device is meant to be connected to. The PIN is the new AP password and the "Secret Key" used by the Object Manager tool during the discovery process as well. In case of connection failure with the previously configured WiFi network, the Relay X2+ WiFi starts with the AP SSID: CLU36xxxxxxx after 2 minutes of unsuccessful retries. After 10 minutes from the power on the AP is deactivated and the Relay X2+ WiFi only keeps trying to connect to the configured WiFi network.

7. Device configuration in the Grenton System

After connecting the device to the WiFi network, please process configuration using the Object Manager tool. Select the CLU Discovery action in the upper left corner. Then set the "Beginning of IP address" not less than x.x.x.5. After discovering the device, the Object Manager asks for a "Secret Key", it is the PIN mentioned earlier. Further configuration is the same as in the case of the CLU Z-Wave with devices connected via the TF-Bus.



8. Restoring Factory Settings

Restoring Factory Settings activates sequence of 5 pulses ended with 2-second break given to one of the inputs. Duration of the 5 pulses must be less than 5 seconds. The time window while the factory reset can be done is from 5 to 30 seconds from the power on.

9. Warnings and cautionary statements

ATTENTION !

- Before proceeding with the assembly, read the installation schematics and full instructions available at www.grenton.com. Failure to follow the guidelines contained in the instructions and other requirements of due care valid as a result of the nature of the equipment (device) may be dangerous to life / health, damage the device or installation to which it is connected, damage other property or violate other applicable regulations. The manufacturer of the device, Grenton Sp. z o. o. does not bear any responsibility for the damage (property and non-property related) resulting from the assembly and / or use of the equipment not in accordance with the instructions and / or due diligence in handling the equipment (device).
- Device power supply, permissible load or other characteristic parameters have to be in accordance with the device specification, described in particular in the "Technical data" section.
- The product is not intended for children and animals.
- If you have technical questions or comments about the device operation, contact Grenton Technical Support.
- Answers to frequently asked questions can be found at: www.support.grenton.pl

DANGER !

- Danger to life caused by electric current!
- The components of the installation (individual devices) are designed to work in a home electrical installation or directly in its vicinity. Incorrect connection or use may cause a fire or electric shock.
- All work related to the installation of the device, in particular works involving interference in the electrical installation, may be performed only by a person with appropriate qualifications or licences.
- When installing the device, make sure that the power supply voltage is disconnected from the circuit in which the device is connected or near which the assembly takes place.

10. CE marking

The manufacturer declares that the device is in full compliance with the requirements of EU legislation that includes the directives of a new approach appropriate for this equipment. In particular, Grenton Sp. z o. o. declares that the device fulfills the requirements on safety, specified by law, and that it conforms to the national regulations that implement the appropriate directives: The Radio Equipment Directive (RED - 2014/53/UE), the Low Voltage Directive (LVD 2014/35/UE) and the Directive on the limitation of the use of specific substances in electrical and electronic equipment (RoHS II - 2011/65/UE).

11. Warranty

Warranty available at: www.grenton.com/warranty

12. Manufacturer contact details

Grenton Sp. z o.o.
ul. Na Wierzchowinach 3
30-222 Kraków, Polska (PL)
www.grenton.com