

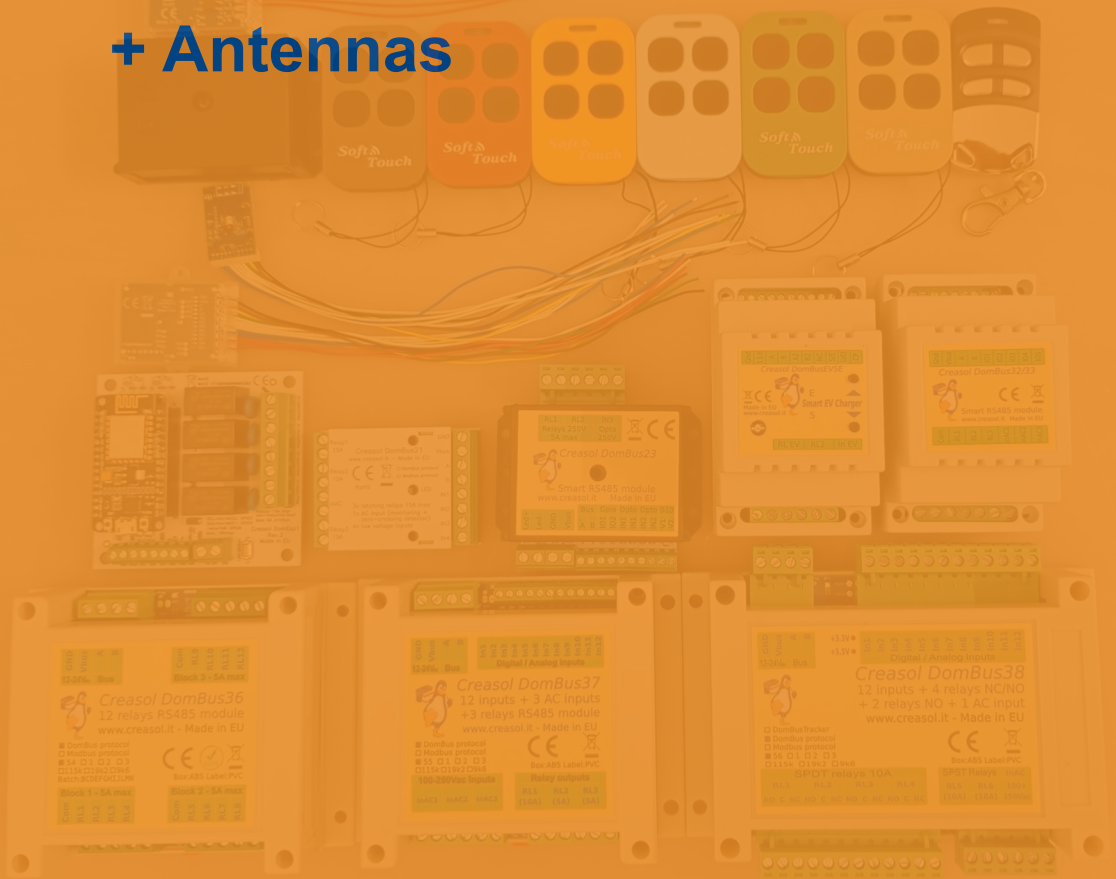


# Creasol Smart Solutions

Smart electronics from Italy since 2001

## Product Catalog

- + Home/building automations
- + Remote control duplicators
- + Universal receivers
- + Antennas



# Domotica - Modules for building automation systems

Our modules are designed for:

- **High reliability** (wired connection, like KNX®, by the industrial-grade RS485 balanced bus)
- **Very low power consumption** (typ. 15mW standby, +75mW for any additional relay)
- **No battery, no RF pollution**
- Supporting two different protocols of your choice:
  - **DomBus**: proprietary, low latency, working with Domoticz, Home Assistant, NodeRED and any system supporting MQTT
  - **Modbus**: standard protocol, working with almost any system, but not suitable for low latency systems
- Supporting **commands between modules (DCMD)**, to get simple automations working like KNX®, with **zero latency and even when the domotic controller is off!**



## DomBus protocol: supported home automation systems

*Domoticz*: using the Creasol DomBus plugin, available through github and PPmanager

*Home Assistant OS and Supervised*: using the DomBusGateway addon

*Home Assistant core and container, NodeRED, OpenHAB, ioBroker*: using

DomBusGateway (software) or DomBusGatewayPIS (hardware) working as a bridge between the DomBus protocol/buses and MQTT with AutoDiscovery

Other systems supporting MQTT can be used by DomBusGateway software/hardware.

## DomBus ↔ Bus connection

Solution #1:  
DomBusGateway sw/addon  
+ USB/RS485 adapter



MQTT or  
MQTT-AD



Solution #2:  
Using DomBusGatewayPIS  
to communicate with the  
domotic controller by  
MQTT + AutoDiscovery

## Network of DomBus modules

DomBusTH:  
Temp+Hum+Touch sensor  
+ RGW led + 6I/O board

3 relays + 3 AC inputs  
+ 12 low voltage inputs



for alarm systems



for each room



Single / dual axis  
solar tracker controller

Smart electric vehicle charger

DIY wallbox



3 15A latching relays  
+ 1 AC input + 4 I/Os



Only 15mW  
3x 3kW loads

DomBus12:  
very compact,  
7 inputs, 2 outputs



12 relays



Only 750mW with  
all 12 relays ON!  
2 relays + 3 AC inputs  
+ 1 mosfet (dimmer) +  
2 0-10V outputs



For garage door,  
gate and LED strips

More info at [www.creasol.it/domotics](http://www.creasol.it/domotics)



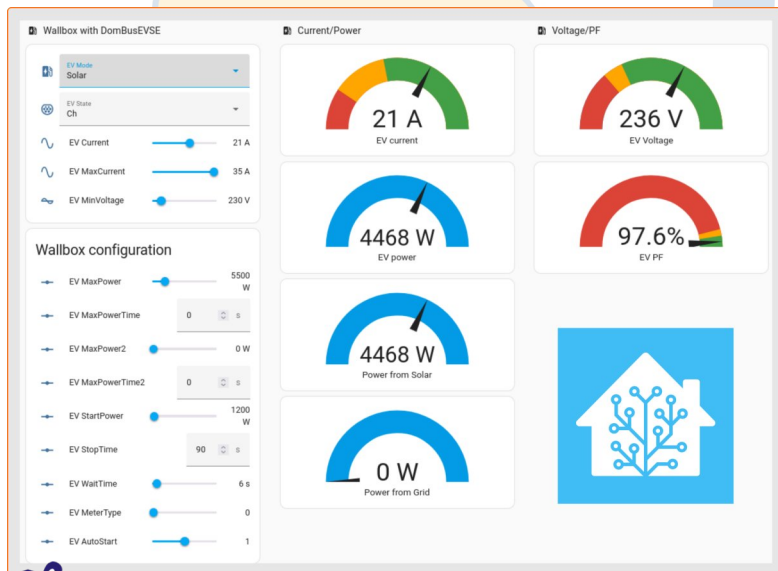
# DomBusEVSE - Electric vehicle charging controller

## Applications:

- Full feature Mode3 7.3kW (single phase) or 22kW (three phase) **DIY smart wallbox with load balancing**, using only solar power or adding extra power from the grid
- **Very simple and cheap stand-alone AC charging station** for electric vehicles, charging at fixed rate: 25%, 50%, 75%, 100% of max available power, without needing for an home automation system
- **Managed mode:** charging current (power) set by an automation in the home automation system

## Features:

- Checking power from the grid, to regulate charging power preventing disconnections, in 2 ways:
  - 1) using a meter connected directly to the EVSE module;
  - 2) in case that a meter (or hybrid solar inverter) already exists, connected to the home automation system, it's sufficient a simple automation that sends the actual power from grid to the EVSE module
- Selectable level of power from the grid used for charging: 0 (solar), 25, 50, 75, 100% of max available power
- Autostart: if enabled, when vehicle is plugged the charging starts immediately at the previous charging level
- Sends to the domotic controller the EV charging power/energy divided in total, from solar and from grid
- Sends to the domotic controller the Power Factor value, useful for evaluating charging efficiency
- Special features like:
  - EVMaxCurrent: dynamically limit the max charging current (power)
  - EVMinVoltage: limits charging power to prevent voltage falling below a threshold. Can be used when vehicle SoC is almost full and we want to use the car to prevent solar inverter overvoltage protection, by setting EVMinVoltage=248V for example to keep voltage at this value
  - EVMaxPowerTime, EVMaxPower2, EVMaxPower2Time: parameters to increase the max power from the grid, when charging at 100%, toggling between EVMaxPower and EVMaxPower2
- Low power consumption: 100mW in standby, 400mW while charging



More info at [www.creasol.it/EVSE](http://www.creasol.it/EVSE)

# DomBusTracker2 - Single/Dual axis sun tracker controller

## Applications:

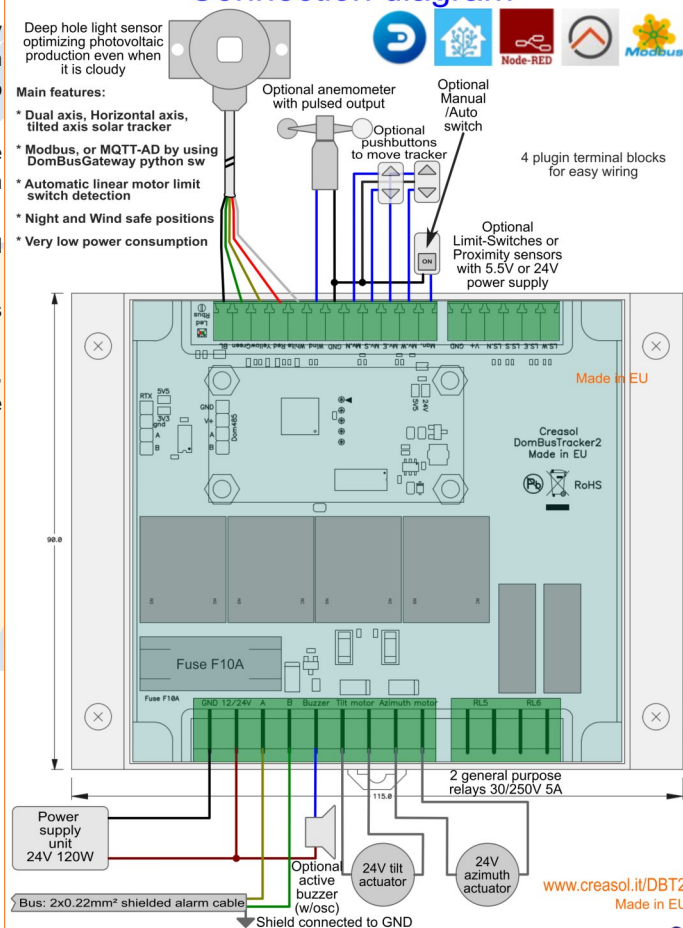
- Single (tilt or horizontal) or Dual axis solar tracker, **stand-alone**, with the ability to be monitored and controlled by a home automation system

## Features:

- Deep hole sun light sensor, that **works good even when it's cloudy**
- **Automatically detects** when motor goes OFF by internal limit switches (useful for linear actuators)
- Optional external limit switches or proximity sensors
- Wind sensor input, for reed anemometer: **put tracker in safe position when wind speed** above a configurable threshold; wind speed may be set by the home automation system by writing a register/entity
- Red/green LED to notify status; buzzer output to notify some alarm states
- Up/Down buttons to manually control the tracker position; switch to lock tracker, disabling auto tracking
- Full control by bus, using a home automation system or a custom program using Modbus
- Configurable night, morning and wind safe positions
- Additional 2 general purpose relays 5A
- **Very low power consumption**, 15mW in the night when motors are OFF
- Very compact size
- Easy wiring, thanks to the **plugin terminal blocks**



## Creasol DomBusTracker2 Connection diagram



More info at [www.creasol.it/DBT](http://www.creasol.it/DBT)



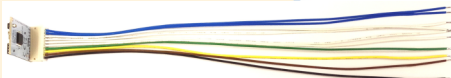
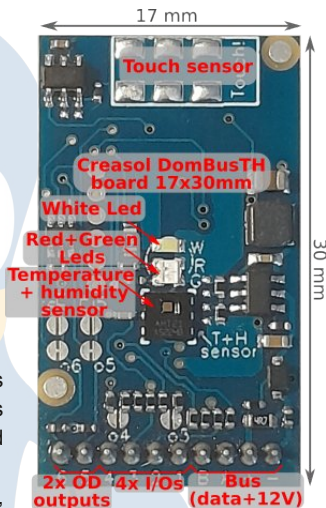
# DomBusTH - Temperature/Humidity/Touch sensor board

## Applications:

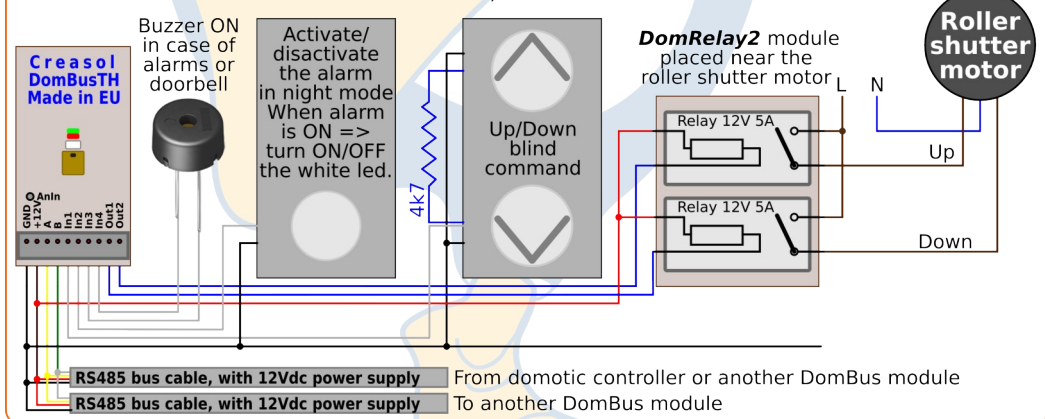
- **Indoor room sensor for temperature and relative humidity:** must be mounted on a blank cover with a 4mm hole in the middle to permit air exchanging (to measure humidity)
- **Alarm sensors** (magnetic contact sensors, PIRs, ...) management with RGW led for status notification
- **Up/Down roller shutter control**, by using the external relay module DomRelay2 to activate the motor
- Multi-function virtual button (touch sensor) with buzzer notification

## Features:

- Temperature and relative humidity sensor
- **Touch sensor, to get a multi-functions button:** if a piezo buzzer is connected between IN3 and IN4, by touching the upper area (touch) it's heard a beep every second so it's possible to easily select the desired function, for example turn on/off room light when touching for less than 1 second, turn on external lamps when touching for more than 1+2 seconds, activate alarm when touching for 2+3 seconds, etc.
- **Red + green leds for notifications**, white led that can be used for notifications or as a **night light and emergency light**
- **4 inputs** that can be connected to dry contact **buttons/switches**, **NTC thermal sensors**, **counters/meters**, **alarm sensors** (including double or triple biased), buzzer, ...
- **2 open-drain outputs** (40V 100mA max) that can be connected to **external relays** (DomRelay2 module) and **low power leds** (to illuminate the bedroom in the night, for example)
- **Very low power consumption**, less than 15mW
- Very compact, 17x30mm, easy wiring thanks to the 20cm long wires
- DCMD support (on DomBus firmware)



## DomBusTH in a bedroom, mounted beside bed switches



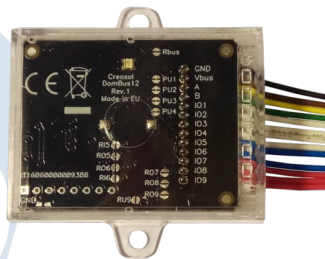
More info at [www.creasol.it/DomBusTH](http://www.creasol.it/DomBusTH)



# DomBus12 - Compact inputs/outputs module

## Applications:

- **Alarm sensors management:** up to 9 sensors, up to 7 double/triple biased alarm sensors
- **Greenhouse:** up to 7 temperature NTC sensors management and 2 outputs (DomRelay2 external relays) to activate fan and heater
- **Climate/boiler management:** 2 outputs (external relays), up to 7 NTC sensors to measure water pipes temperature
- **Tank level measurement,** using ultrasonic distance sensor
- **Meters management:** up to 9 meters/counters with pulsed output



## Features:

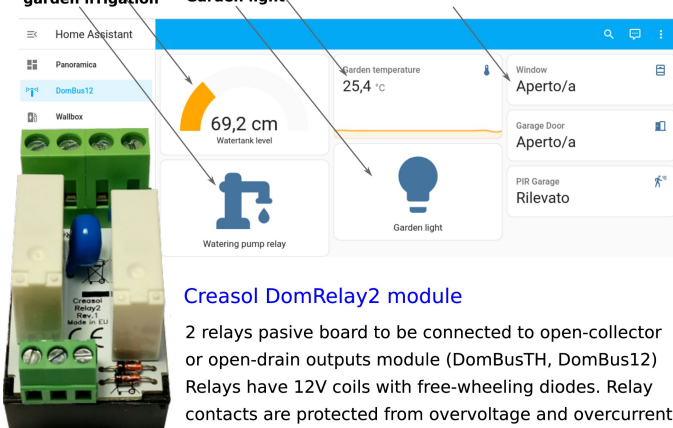
- IO1÷4 and IO7÷9 configured as inputs, with or without 10k pullup, can be connected to buttons/switches, up/down buttons, counters, alarm sensors, analog voltages, NTC thermal sensors, distance sensors
- IO5÷6 configured as open-drain outputs (to drive relay coils or small power LEDs), but can also be configured as inputs without 10k pullup (for buttons, counters, analog voltage, distance sensors, ...)
- IO7÷9 can also be configured as small current output (only 3mA) and used to drive piezo buzzer or external electronic boards with 3.3V logic levels (for example relay boards).
- **Very low power consumption,** less than 15mW
- Very compact, 41x31x11mm, easy wiring thanks to the 20cm long wires already available
- DCMD commands support (on DomBus firmware)

### Several functions performed by DomBus12 with Home Assistant

Rainwater tank level  
Relay to enable garden irrigation

Garden temperature using NTC sensor  
Garden light

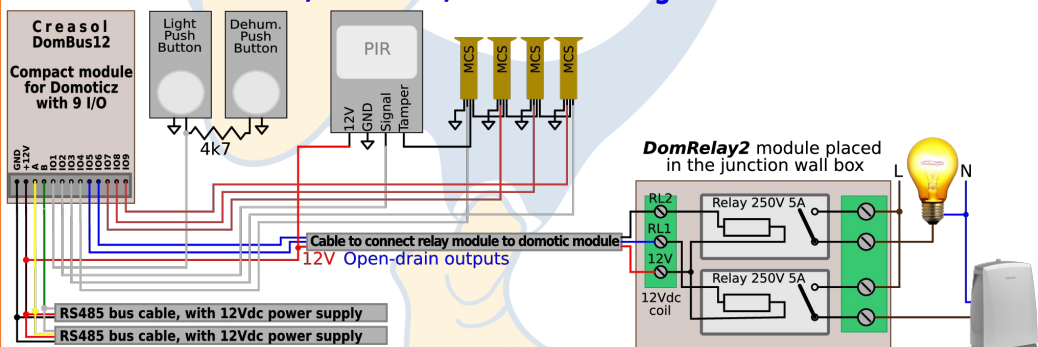
Alarm sensors: magnetic contact sensors and PIR



### Creasol DomRelay2 module

2 relays pasive board to be connected to open-collector or open-drain outputs module (DomBusTH, DomBus12). Relays have 12V coils with free-wheeling diodes. Relay contacts are protected from overvoltage and overcurrent

### Connect 2 loads, 2 buttons, 1 PIR and 4 magnetic contact sensors



More info at [www.creasol.it/DomBus12](http://www.creasol.it/DomBus12)



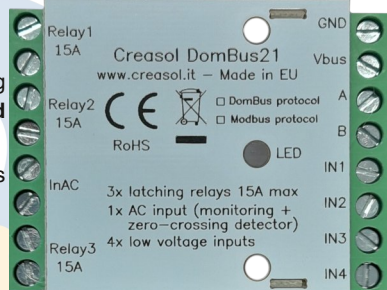
# DomBus21 - 3 relays 15A, 1 AC input, 4 low voltage inputs

## Applications:

- **High power loads control:** can enable loads up to 3kW (15A)
- **Disabling loads that remains off for long periods,** reducing stand-by energy consumption, like **heat pumps, boilers, gate and garage door** (it's good to disable when alarm is on)
- **Battery powered device controlling external loads:** it uses latching relays, that consume nothing when on or off
- **230V presence detection**
- **Meters management:** up to 4 meters/counters with pulsed output

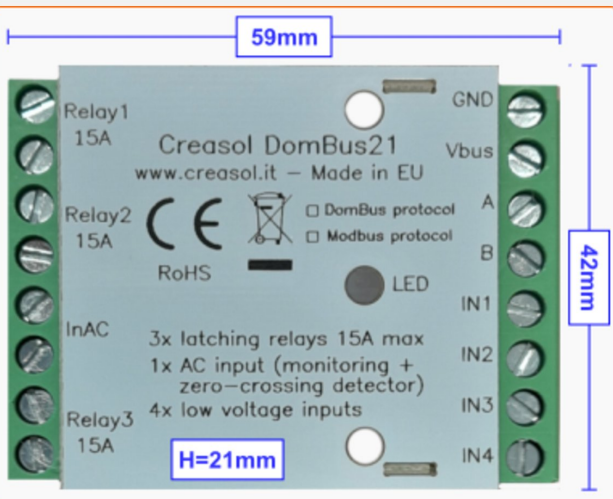
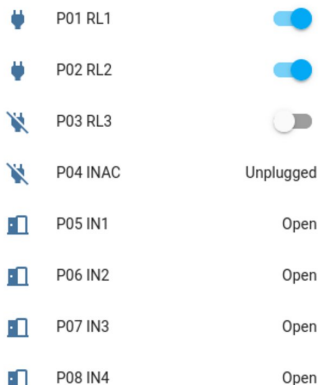
## Features:

- **3x 15A SPST relays with latching coil** (zero consumption)
- **1x optoisolated AC input**, 100-250V, that is used for two functions: **zero-crossing detector + voltage presence**
- **4x configurable low voltage inputs, analog or digital:** each input, using GND as common voltage, can be configured as pushbutton, twinbutton (UP/DOWN buttons that uses a single input), alarm sensor (magnetic, PIR, double-biased and triple-biased balanced alarm sensors), NTC 10k thermal sensor, counter / meter with pulsed output.
- **Very very low power consumption:** 15mW, even with relays on!
- Very compact, 59x42x21mm
- DCMD commands support (on DomBus firmware)



Be smart, be green reducing energy consumption

DomBus21 ff21



3 latching relays, 15A, zero power consumption!

The best solution to enable/disable loads that remain active for long time, such as heat pump, boiler, gate/garage door, and that can be disabled to avoid stand-by energy consumption.

More info at [www.creasol.it/DomBus21](http://www.creasol.it/DomBus21)



**DomBus23 - 2 relays, 1 mosfet, 2 0÷10V out, 2 I/O, 3 AC in**

### Applications:

- **Led strip dimmer**, 12/24V, 10A max
- **2 external dimmers management** by using the 0÷10V analog outputs
- **Gate or garage door management**: relays and optoisolated inputs to know the gate status. **Open the gate or garage door from the smartphone**
- **Converting a door bell in a smart door bell**



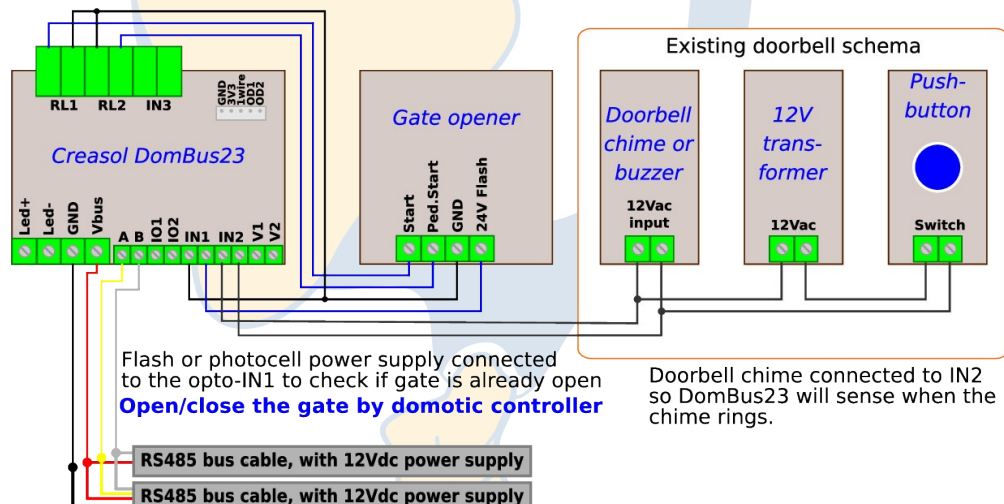
## Features:

- **2x relay** outputs, 250Vac 5A
- **1x mosfet output, 30V 10A max**, with both digital and dimmer functions
- **2x 0-10V analog outputs**: they can also be configured as open-drain output (available by the optional cable)
- **2x I/O lines**, each one can be configured as digital input, analog input, twinbutton, counter (for energy gas or water meters), alarm sensor (magnetic, PIR, double-biased and triple-biased balanced alarm sensors), digital output, blind, dimmer (to be connected to external mosfet) and buzzer.
- **2x low voltage AC/DC opto-isolated inputs**, 9÷40V
- **1x 230V AC opto-isolated input** for 230V presence and blackout detection
- Compact size: 74x72x24mm including terminal blocks
- DCMD commands support (on DomBus firmware)

## Using *DomBus23* to interface the gate/garage door opener and doorbell

When somebody **push the doorbell** button, DomBus23 notified the home automation system that can take a **picture from IPCam** and **send it to the smartphone (Telegram group?)**. Then from the smartphone it's possible to **open the gate** and **monitor the gate status**.

Relay outputs used to activate the gate commands *start* and *pedestrian start* (or *open* and *close* commands)



More info at [www.creasol.it/DomBus23](http://www.creasol.it/DomBus23)



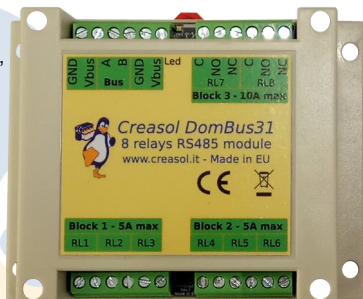
# DomBus31 - 6 relays SPST 5A + 2 relays SPDT 10A

## Applications:

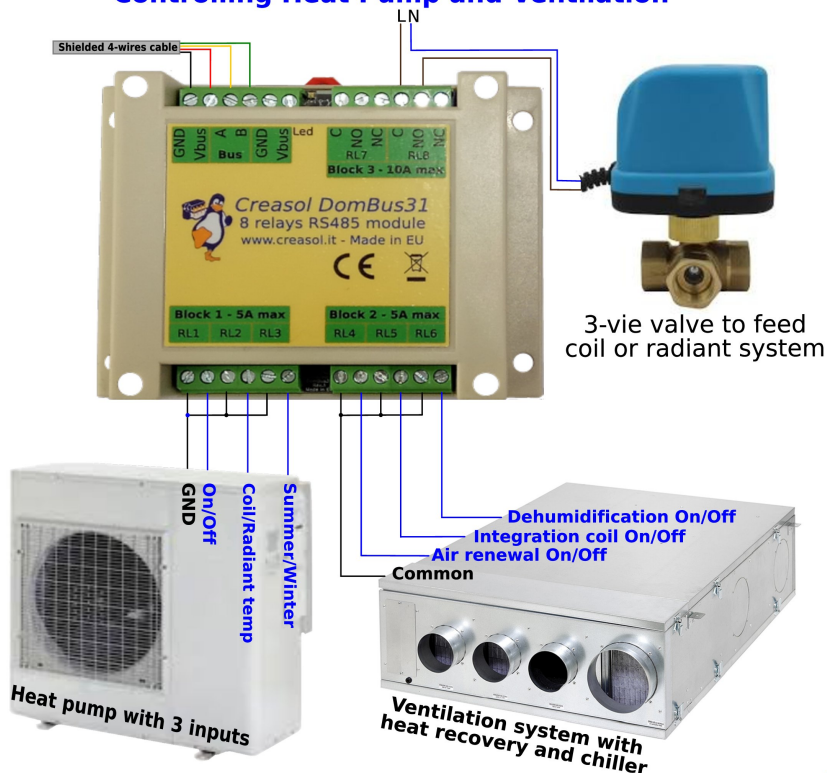
- Management of devices with many digital inputs (like heatpump, ventilation system, ...)
- Zone valves activation in heating/cooling systems
- Lights and sockets activation

## Features:

- 6x relay outputs, 250Vac 5A, with NO contact
- 2x relay outputs, 250Vac 10A, with NO and NC contacts
- Relays are divided in 3 blocks, respecting creepage distance between blocks
- Overvoltage and inrush current protection
- DIN rail, low profile, 115x90x40mm
- Low power: 15mW in standby, 600mW with all relays on
- DCMD commands support (on DomBus firmware)



## Controlling Heat Pump and Ventilation



More info at [www.creasol.it/DomBus31](http://www.creasol.it/DomBus31)

# DomBus32 - DomBus33 - 3 relays, 3 AC inputs, 5 I/Os

## Applications:

- **Lights and loads** with energy meters with pulsed output connected to IO1÷5 to keep account of power and energy
- **230V presence and blackout detection**

## Features:

- **3x relay outputs, 250Vac 5A, with NO contact**
- **3x AC inputs** for 100÷250V detection (power outage, and check that critical appliances are really supplied, like fridge and heatpump)
- Relay outputs and AC inputs share the same common terminal block (neutral or line) for **easy and quick wiring**
- **5x configurable I/O** that can be connected to pushbuttons/switches, counters/ meters, NTC thermal sensors,
- DIN rail 53x89x65mm
- **Low power: 15mW in standby, 150mW with all relays on**
- DCMD commands support (on DomBus firmware)



## DomBus33 vs DomBus32

Same hardware but different firmware: **DomBus33 is designed for light systems using step relays**, supporting up to 3 lights. For each light it **shows the light status: clicking on light status it sends a short pulse to the existing step relay to turn it on or off (toggle)**.

This is the right way to domotize an existing light system using pushbuttons.

Moreover, new pushbuttons or PIRs can be connected to the input ports to make get more new automations.

### How to reliably domotize an existing light system with Creasol DomBus33

IO1..5 can be connected, for example, to

- \* PIRs to automatically turn ON a light with a configurable timer (using DCMD, it will work even without programming scenes or automations in the domotic controller)

- \* switches (connected to GND) to control each light

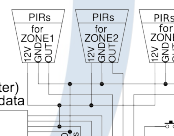
- \* one switch to toggle ON/OFF all lights

Bus connected to the domotic controller and other DomBus modules

Bus cable (4x0.22mm, shielded cable, 5mm diameter)  
2 wires for 13.6V power supply, 2 wires for RS485 data

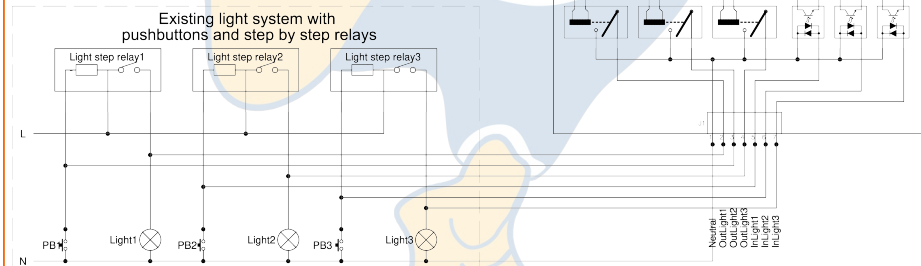


**Connecting both contact and coil of each step-by-step relay to the module, it gets the status ON/OFF of each light and is able to switch light ON/OFF by a short pulse on the relay coil.**



Motion detectors, that activate the light for each zone for 120s (or different time) when motion is detected

Example: pushbutton switch that turns all lights ON with a short pulse, or OFF with a long pulse



**Line and Neutral can be reversed, so Line can be used instead of Neutral. Do not connect light zones that are protected by different RCCBs!**

More info at [www.creasol.it/DomBus33](http://www.creasol.it/DomBus33)



# DomBus36 - 12 relays SPST 5A in 3 blocks with common

## Applications:

- Management of devices with many digital inputs (like heatpump, ventilation system, ...)
- Zone valves activation in heating/cooling systems
- Lights and sockets activation
- Digital/analog line multiplexing
- X/Y actuator matrix or bank

## Features:

- 12x relay outputs, 250Vac 5A, with NO contact
- Relays are divided in 3 blocks, respecting creepage distance between blocks
- Common for each block (line, neutral, GND, +V) for easy and quick wiring
- Overvoltage and inrush current protection
- DIN rail, low profile, 115x90x40mm
- Low power: 15mW in standby, 750mW with all relays on
- DCMD commands support (on DomBus firmware)



## 12 relays module (DomBus36) with Node-RED

DomBus36 - 12 relays

Node-RED

DomBus36

|         |                                     |
|---------|-------------------------------------|
| Relay1  | <input checked="" type="checkbox"/> |
| Relay2  | <input type="checkbox"/>            |
| Relay3  | <input type="checkbox"/>            |
| Relay4  | <input type="checkbox"/>            |
| Relay5  | <input checked="" type="checkbox"/> |
| Relay6  | <input type="checkbox"/>            |
| Relay7  | <input type="checkbox"/>            |
| Relay8  | <input type="checkbox"/>            |
| Relay9  | <input type="checkbox"/>            |
| Relay10 | <input type="checkbox"/>            |
| Relay11 | <input checked="" type="checkbox"/> |
| Relay12 | <input checked="" type="checkbox"/> |



More info at [www.creasol.it/DomBus36](http://www.creasol.it/DomBus36)

# DomBus37 - 12 inputs, 3 AC inputs, 3 relays

## Applications:

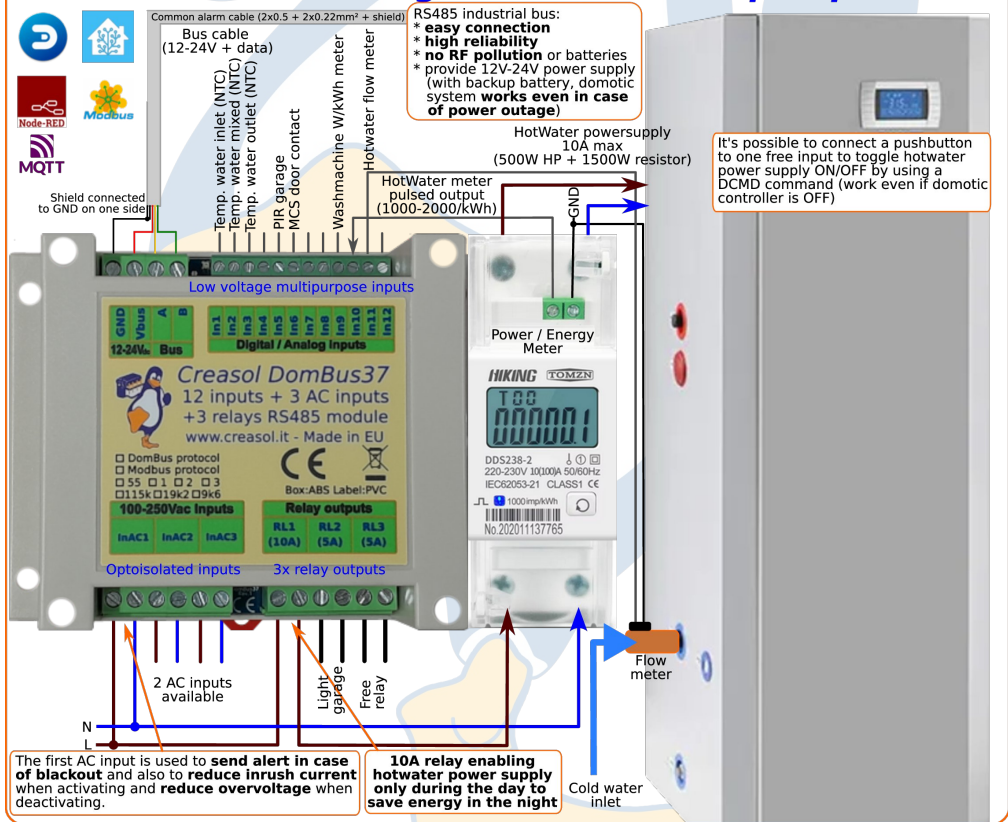
- **Alarm system:** connect up to 12 alarm sensors, 3 sirens and monitor 3x 230V to detect power outage
- **Green house:** monitor up to 12 NTC temperature sensors, command heaters and fans.
- **Monitoring:** monitors up to 12 voltages and up to 12 meters (energy, gas, water) with pulsed output
- **Boiler and heatpump system:** monitors water flow (meter) and temperature (NTC), turn on/off boiler, resistors, ...

## Features:

- **12x configurable inputs** (pushbuttons/switches, meters/counters, analog inputs, NTC thermal sensors, alarm sensors including double and triple biased)
- **3x AC optoisolated inputs** (230V presence, power outage)
- **3x relays with NO contact:** 1x 10A and 2x 5A, DCMD commands support (on DomBus firmware)
- DIN rail, low profile, 115x90x40mm, **Low power: 15mW in standby, 180mW with all relays on**



## DomBus37 controlling a hotwater heatpump boiler



More info at [www.creasol.it/DomBus37](http://www.creasol.it/DomBus37)



# DomBus38 - 12 inputs, 1 AC input, 6 relays

## Applications:

- **Alarm system:** connect up to 12 alarm sensors, 4 sirens with NC or NO contact, monitoring 230V to detect power outage
- **Green house:** monitor up to 12 NTC temperature sensors, command heaters and fans.
- **Monitoring:** monitors up to 12 voltages and up to 12 meters (energy, gas, water) with pulsed output
- **Boiler and heatpump system:** monitors water flow (meter) and temperature (NTC), turn on/off boiler, resistors, ...

## Features:

- **10x configurable inputs** with 10k pullup that can be enabled by PCB jumper (pushbuttons/switches, meters/counters, analog inputs, NTC thermal sensors, alarm sensors including double and triple biased)
- **2x configurable inputs** with MCU internal pullup (pushbuttons/switches, meters/counters, analog inputs, alarm sensors with ON/OFF output)
- **1x AC optoisolated input** (230V presence, power outage)
- **4x relays with NO and NC contact**, 10A 250V
- **2x relays with NO contact**, 10A 250V
- DCMD commands support (on DomBus firmware)
- DIN rail, low profile, 145x90x40mm, **Low power: 15mW in standby, 805mW with all relays on**



More info at [www.creasol.it/DomBus38](http://www.creasol.it/DomBus38)



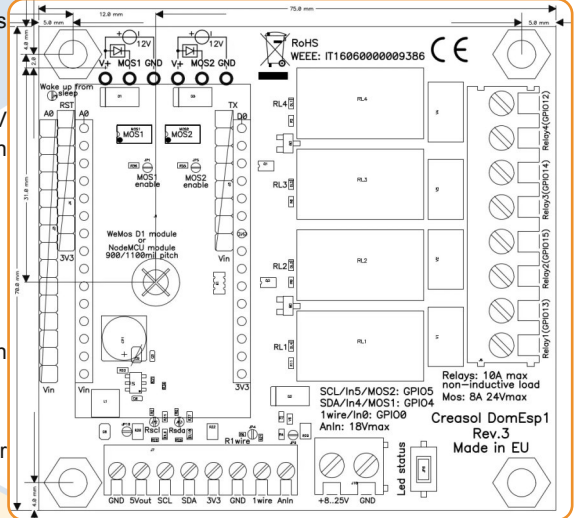
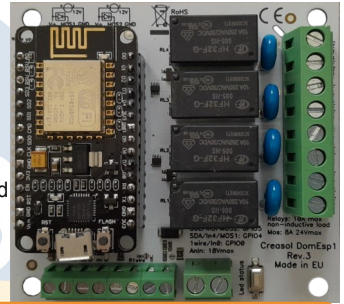
# DomESP1 - ESP8266 board with 4 relays, 2 mosfet, ...

## Applications:

- Gate and garage door opener by smartphone
- Light dimmer for 2 LED strips (12/24V 10A max)
- Network of 1wire devices, including temperature sensors DS18B20
- Relay board with some 3 I/Os shared with 1wire and I<sup>2</sup>C bus
- Swimming pool, measuring water temperature and activating pumps and heater

## Features:

- Supporting **NodeMCU v3 module** with 900mil pitch, optionally 1100mil pitch and WeMos module.
- **4x relays SPST 10A (NO contact)**
- **2x mosfet in open-drain configuration** 30V 10A max (I<sup>2</sup>C bus disabled) with dimmer function (ESPEasy, ESPHome, ...)
- **1 analog input**, 18Vin max
- **I<sup>2</sup>C bus** (mosfet must be disabled)
- **1wire bus** (DS18B20 or other devices)
- I<sup>2</sup>C and or 1wire can be used as normal I/O
- 8+25V input voltage, 480mW power consumption with relays OFF
- 75x70mm size
- Supporting **ESPeasy**, **ESPHome** and other firmwares for NodeMCU ESP8266 module



More info at [www.creasol.it/DomBus37](http://www.creasol.it/DomBus37)

