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Actuator 16A with current sensor F522

Description

The device is an actuator with 1 bistable relay sensor with zero crossing functionality, intended for the load control and/or automation functions.

In load control mode:
The actuator will be given a priority indicating the tripping order that will be followed by the F521 load control central unit (e.g. Priority 1 will be the first load disabled if the threshold is exceeded). The actuator has an internal current sensor to measure the consumption of the controlled load, allowing the display on the Home + Control user interfaces and app of the instantaneous consumption and two cumulative consumptions that can be reset at any time by the user. The device also measures the residual current to allow displaying the diagnostics on the user interfaces (this feature is only available by connecting the optional external toroid 3523 to the actuator).
Using the forcing pushbutton it will be possible to re-enable the load for 4 hours after disabling by the central unit.

In automation mode, the actuator can perform the following functions:
- All operating modes that can be configured on the control devices, with the exception of those requiring the use of two interlocked relays (rolling shutters).

In mixed load control and automation mode, the following rules are followed:
The local button performs the load control management function (forcing/end of forcing)
- If the load is ENABLED or FORCED, the status of the relay follows the commands of the Automation system.
- If the load is DISABLED by the load control central unit, the status of the relay does not follow the commands of the Automation system, but can only be re-enabled by a command, ENABLING or FORCING, from load control management.
During disabling, the actuator keeps the statuses requested by the Automation commands in memory. After RE-ENABLING the relay is placed in the status required by the last automation command.
This function has been conceived for applications where the load control management function is implemented, with the need, via automation commands, of performing hourly load scheduling. If during the DISABLING stage the relay is switched OFF due to the scheduling settings, when re-enabling takes place it will stay switched OFF.
The bistable relay enables preserving the status of the load even if there is no voltage on the SCS BUS (and subsequent device reset).

NOTE: The Energy Meter & Load Control function is available and supported only by MyHOME F460, F461 and Classe 300EOS servers.
In case of existing installations with the MHS1 server, it is possible to guarantee the system upgrade and functional extension through the backup & restore function directly from H+P, without having to reconfigure the system from scratch.

Technical data

Primary input

Voltage:	110 – 240 Vac
Operating frequency:	50 / 60 Hz
Absorption:	30 mA

BUS SCS input

Power supply:	18 – 27 Vdc
Absorption:	10 mA

Load output

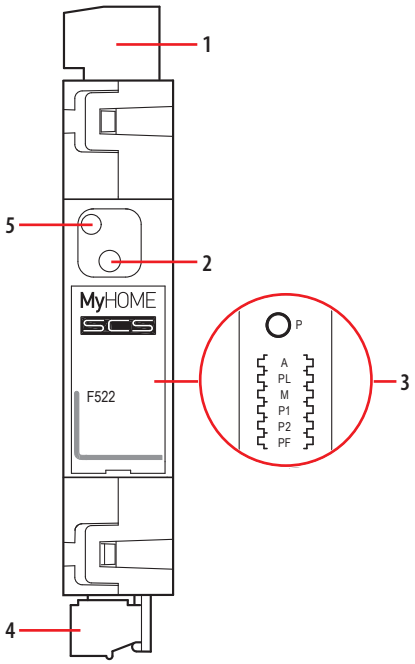
Rated voltage:	110 – 240 Vac
Operating frequency:	50 / 60 Hz
Max. current:	16 A
Current reading measurement interval:	200 mA – 16 A
Operating temperature:	0 – 40 °C

Power/Consumption of driven loads
- Incandescent lamps and halogen lamps 10 A / 2300 W
- LED lamps and compact fluorescent lamps 500 W / Max 10 lamps
- Linear fluorescent lamps and electronic transformers 4 A / 920 W
- Ferromagnetic transformers 4 A cosφ 0.5 / 920 VA
- Loads 16 A, cosφ 1 / 3680 W

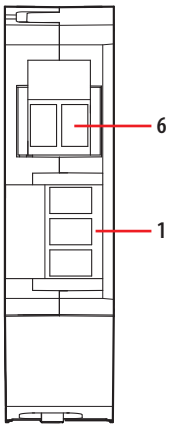
Dimensional data

Size: 1 DIN module.

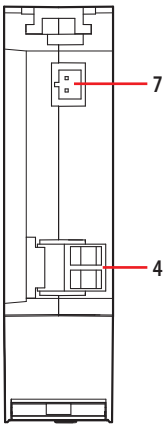
Front view



Top view



Bottom view



Legend

1. Primary clamp
2. Multifunction pushbutton.
   Load activation forcing following automatic disconnection.
   Identification in Home+Project: press briefly when prompted by the App
3. Configurator socket.
4. BUS SCS clamp
5. Notification LED.
6. Load clamp
7. Toroid connector (3523) for differential current measurement

List of Functions

The device performs the following functions:
1. LIGHT SWITCH
2. LOAD CONTROL ACTUATOR

Configuration

When installed in a MyHOME system, the device can be configured directly from Home + Project following the App flow, making the process much more simple and immediate. For device configuration and installation and for any other information, refer to the App or documentation that can be downloaded from the website:

www.homesystems-legrandgroup.com

Download App

Home + Project

•Google Play: it is recommended the use of the latest version of Android with access to Google Play

•iOS: to control this HomeKit accessory, we recommend the use of the latest version of iOS or iPadOS

In addition, however, the following will continue to be guaranteed:
- The PHYSICAL CONFIGURATION, by connecting the configurators to the appropriate sockets (*).
- The configuration using the MyHOME_Suite software, which can be downloaded from the website www.homesystems-legrandgroup.com; this last type of configuration has the advantage of offering many more options when compared with the physical configuration (*) .

For the list of modes and the corresponding meanings refer to the indications of this data sheet, and to the "Function description" section of the MyHOME_Suite software.

(*)

1. Lights actuator

1.1 Addressing

Address type		Virtual configuration (MYHOME_Suite)	Physical configuration
Point-to-point	Room	0-10	A=1-9
	Lighting point	0-15	PL = 1-9

To configure the group address 0-255, use MYHOME_Suite virtual configuration.

1.2 Mode

The actuator performs all the operating modes that can be configured on the control devices, with the exception of those requiring the use of two interlocked relays.
Moreover further operating modes with the configurator in position M of the same actuator are listed in the table below.
In the A and PL positions it will be necessary to indicate the device addresses in order for this to be reached as automation actuator. In order to display the instantaneous and cumulative consumptions of the controlled load (saved inside the actuator), it will be necessary to configure also P1 and P2. In this case P1 and P2 do not indicate the cut-off priority, but the address to be entered in the software programs in order to make it possible to display consumptions on the dedicated pages.

Virtual configuration (MYHOME_Suite)		Physical configuration	
Function	**Parameter / setting**		
Master Actuator	Master	M=0	
Actuator as Slave. Receives a control sent by a Master actuator with the same address	Slave	M=SLA	
Pushbutton (ON monostable) ignores Room and General controls	Master PUL OFF Delay = 0	M=PUL	
Master Actuator with OFF control delayed on the corresponding Slave actuator. [1)]	Master PUL OFF Delay = 1 - 255	M=1	1 minute
		M=2	2 minutes
		M=3	3 minutes
		M=4	4 minutes

To use the "Actuator as a slave with PUL function", "Load status upon central unit enabling" and to select the type of load (Actuator, Lamp, Valve, Differential Reset, Fan, Irrigation, Controlled Outlet, Lock) use MYHOME_Suite virtual configuration.

NOTE 1): Only for a point-point type control. With the OFF control the Master actuator deactivates; the Slave actuator deactivates after the time set with the configurators has elapsed. In the Off delayed mode, the master sends the Off command after a period of time set using the 1 - 4 configurator connected to M as shown in the table.

2. Load control actuator

2.1 Load control management mode:

In the P1 and P2 positions it will be necessary to indicate the priorities from 01 to 63, in PF the power factor (see table), the A, PL and M positions must be configured equal to zero.

Virtual configuration (MYHOME_Suite)		Physical configuration
Function	**Parameter / setting**	
Priority	1-63	P1,P2: 01-63

To use "Phase" (Single, 1, 2 and 3), "Type of load", "Load status upon central unit enabling" and "AC or DC voltage" use MYHOME_Suite virtual configuration.

Power factor

Virtual configuration (MYHOME_Suite)		Physical configuration		
Function	**Parameter / setting**		**Power factor**	**Typical loads** [1]
Power factor %	0-100 %	PF=0	0.92 (default)	vacuum cleaner, microwave, TV
		PF=1	1	oven, iron, electric stoves, hair straightener, hot loads, electron. transformers, Toroid. transformers
		PF=2	0.85	CFL lamps
		PF=3	0.8	
		PF=4	0.75	Washing machines, dishwashers, desktop PCs
		PF=5	0.7	
		PF=6	0.65	
		PF=7	0.6	Other electronic devices (home theater, DVD recorder, notebook PC, etc.)
		PF=8	0.55	
		PF=9	0.5	

To use "Phase" (Single, 1, 2, 3), "Load Type" (Single Phase, Three Phase), "Load status upon central unit enabling" (Previous state, Off) to select "AC or DC voltage", the selection of the voltage to be measured (automatic or from 1 to 255V), "Upper threshold for diagnosing the residual current" and "Power threshold on standby for energy management actuators" use MYHOME_Suite virtual configuration.

NOTE 1): The parameters listed in the table are only indicative.

LED notifications based on the status of the actuator in load control management mode.

Device status	LED
Enabled	Orange
Enabled with consumption below 50 W	Orange flashing 900 ms ON/100 ms OFF on Green
Forced	Orange flashing 1 s / 1 s on green
Disabled	Red

2.2 Lights and load control management mode:

In positions P1 and P2 priority from 01 to 63 must be indicated (see table above), in A and PL you need to indicate the address of the device, as specified on page 2.

LED notifications based on the status of the actuator in load control management and light control mode.

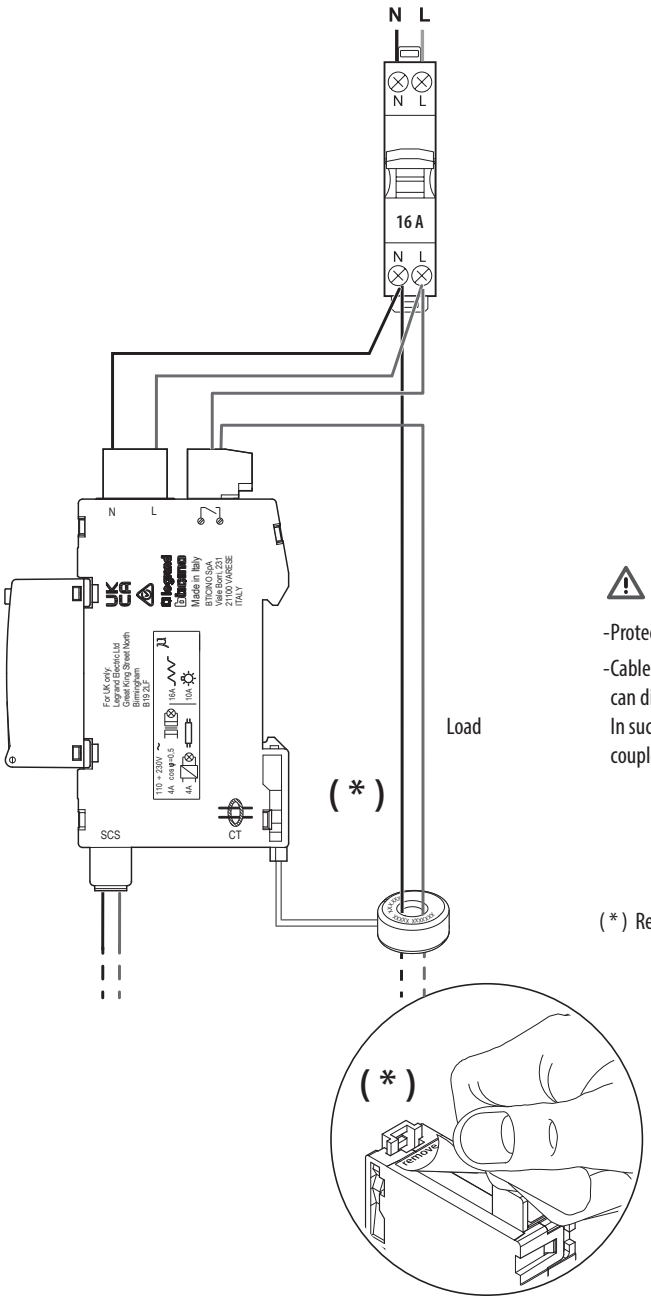
Device status	LED
Enabled + ON	Orange
Enabled + OFF	Green
Enabled + ON with consumption below 50 W	Orange flashing 900 ms ON/100 ms OFF on Green
Disabled	Red
Forced + ON	Orange flashing 1 s / 1 s on green
Forced + OFF	Orange flashing 1 s / 1 s

Common LED notifications:

Device status	LED
Installation error (no primary voltage) \ abnormal current reading (*)	Red flashing 100 ms / 900 ms
Configuration error	Orange flashing irregularly on Green
Not configured	Orange flashing 128 ms / 128 ms on green

(*) In case of abnormal current reading, press and hold the load forcing button for 10" to reinstate operation.

Wiring diagrams



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-Protect with ≤ 16 A thermal magnetic circuit breaker

-Cables carrying high currents passing vertically in the vicinity of the actuator (< 5 cm) can distort the measurement of the integrated current sensor.
In such a case, it is advisable to remove these cables and keep phase and neutral coupled.

(*) Remove for additional toroid