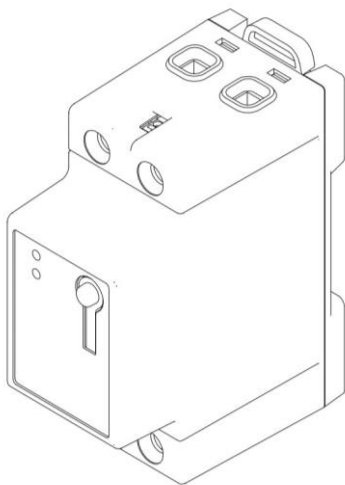




User Manual

MASTER - *PCH-0001*



## Summary



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## 1. General instruction

The installation and use of PRY-CAM Home devices requires compliance with the warnings contained in this chapter.

To avoid damage to things and people, carefully read the following instructions and follow them at all times together with the standards and directives on electrical safety.

	<b>DANGER</b>	
<p><b>Danger of death from electrocution</b></p> <p>Potentially lethal voltages are present in live components.</p> <ul style="list-style-type: none"><li>• Switch off the voltage at the connection point and secure it against reactivation.</li><li>• Before carrying out any work, disconnect the power supplies using an installed disconnect switch.</li><li>• Make sure that all conductors to be connected are voltage-free.</li><li>• Use the device only in dry environments and keep it away from moisture.</li><li>• Install the device only in electrical cabinets and make sure that the connection fields for the external conductors and the neutral conductor are laid behind a cover or contact protection.</li><li>• Unplug the device before cleaning and then use only a dry cloth.</li><li>• Respect the minimum distances between the mains cable and live components or use suitable insulation.</li></ul>		



## WARNING



### **Danger of fire due to dirty or oxidized contacts on undercurrent aluminium conductors**

The connection of aluminium conductors with dirty or oxidized contacts reduces the current carrying capacity of the undercurrent terminals, increasing the contact resistances. Components can overheat and catch fire as a result.

- Clean the contacts, brush them, and treat them with an acid and alkaline substance (e.g. Vaseline or specific conductive paste).



## WARNING



### **Danger of death from electrocution**

In case of missing overvoltage protection, Overvoltage (e.g. in the event of lightning) can be transmitted via the network cables inside the building and to other devices connected to the same network.

- Make sure that all devices on the same network are integrated into the existing surge protector.
- In case of external laying of network cables, it is necessary to ensure suitable protection from overvoltage at the point of passage between the external area and the network inside the building.

## 1.1. Safety Information

The devices in the PRY-CAM HOME family are part of a monitoring solution for low voltage applications. The devices are designed to test an electrical system and to detect electrical values at the measurement points and make them available via cloud

PRY-CAM HOME is not an active electricity meter within the meaning of the European directive 2004/22/CE (MID). It cannot be used as a meter. The data detected by PRY-CAM HOME MASTER may differ from the data reported by the energy meter used for official counts.

PRY-CAM HOME MASTER can only be installed in interior spaces, and exclusively on the secondary distribution line of the house, on the load side, after the electricity meter.

This instrument has been designed, manufactured and tested in accordance with IEC 61010, CAT III 300V. This instruction manual contains safety warnings that must be observed by all users for a correct and safe use of the device.

It is mandatory to read and understand the following instructions before using the instrument.

	<b>WARNING</b>	
<b>The use of this tool other than what is specified in this manual could damage its safety.</b>		

## 1.2. During the operation

While using the instrument, the user is obliged to observe all the normal rules of electrical safety and prevention against electric shocks;

Do not use the instrument if it appears damaged;  
Use the instrument only in accordance with what is described in this manual:

Use particular care when working with live conductors or BUSBARs; Do not use the device near explosive gases, vapours or highly dusty areas;

Use only accessory tools appropriate to the type of test to be performed.

When the instrument is connected to the circuit, do not touch the unused and / or exposed terminals.

Pay particular attention when working with systems whose voltage is higher than 60Vdc or 30Vac rms. Use the device only on systems whose rated voltage is known. Do not use the instrument in electrical systems whose voltage is higher than 300V in CAT III.

Do not disassemble the device and / or use it disassembled.

All the instructions described in this manual must be carried out by qualified personnel only. A "qualified person" is someone who is familiar with the installation, construction and operation of equipment and the dangers involved. He is trained and authorized to power and disconnect electrical circuits in accordance with established practices.









If any anomaly or malfunction is detected, take the instrument out of service and make sure no one can use it before it has been repaired.

### 1.3. Passive protection

Device power supply protected by fuse.

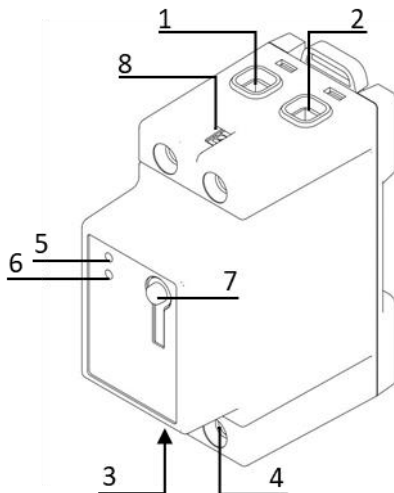
Metal Oxide Varistor for protection against fast transient bursts and voltage pulses (IEC 61000)

## 1.4. Symbol table

	<b>DANGER</b>		Causes serious injury or death
	<b>WARNING</b>		It can cause serious injury or death
	<b>ATTENTION</b>		It can cause minor or moderate injuries
	<b>NOTICE</b>		It can cause damage to property
			Information
			Note



## 2. Product drawing



1. Live in
2. Neutral in
3. Live out
4. Neutral out
5. STATUS LED
6. COM LED
7. Button
8. Ground



#### STATUS LED

- **Green:** Good electrical connection
- **Blinking red:** Improperly connected (earth disconnected or phase-neutral reversed)



#### Communication LED

- **Green:** Wi-Fi Communication ready
- **Blinking orange:** NB-IoT communication ready
- **Blinking red:** Device not connected
- **Blinking violet:** Professional mode activated

## 3. Technical features

### 3.1. General features

<b>Nominal Voltage</b>	110 - 230 V AC
<b>Frequency</b>	50 - 60 Hz
<b>Consumption</b>	1.5 W
<b>Max Current</b>	43 A
<b>Weight</b>	180 gr
<b>Dimension (L x H x W)</b>	16 x 8 x 17.5 cm
<b>Temperature</b>	0°C to 40°C
<b>Relative humidity</b>	70%
<b>Max Altitude</b>	2000 m
<b>Degree of protection</b>	IP20
<b>Pollution degree</b>	II
<b>Overvoltage Category</b>	300V – CAT III
<b>Usage</b>	Indoor



Technology	Frequency band / range	Maximum chipset/conducted output power
LoRa	869.5 MHz	14 dBm
NB IoT	832-862, 791-821 MHz (BAND 20)	23 dBm
Wifi 802.11 b/g/n HT20-HT40	2400-2483.5 MHz	100 mW

## 4. Operating Instruction

### 4.1. Mechanical assembly

Mount the device on the DIN rail. Hook the device anchoring teeth on the underside of the DIN rail and pull the upper tab of the device until the PRY-CAM Home Master is in place.

### 4.2. Electrical connection

	<b>DANGER</b>	
<p><b>Danger of death from electrocution</b></p> <p>Potentially lethal voltages are present in live components.</p> <ul style="list-style-type: none"> <li>• Switch off the voltage at the connection point and secure it against reactivation.</li> <li>• Before carrying out any work, disconnect the power supplies using an installed disconnect switch.</li> <li>• Make sure that all conductors to be connected are voltage-free.</li> <li>• Use the device only in dry environments and keep it away from moisture.</li> <li>• Do not use the instrument in electrical systems whose voltage is higher than 300V in CAT III.</li> </ul>		



**DANGER**

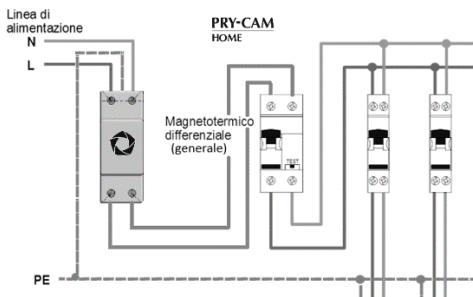


### **Danger of fire**

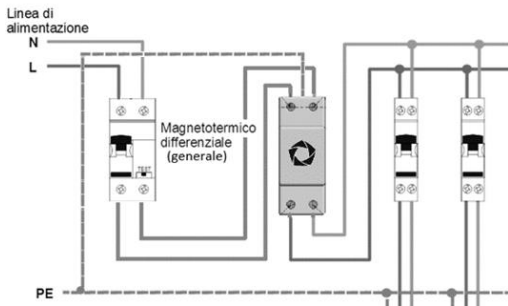
Use only cable with operating temperature higher than 60°C, insulation voltage higher than 750V, maximum section of 6mm<sup>2</sup> e current capacity higher than maximum current available on the system.

### **Assembly sequence:**

- Connect the live conductor L and the neutral conductor N to the device.
- Connect the earth conductor to the device;





Example of connection in which there is an electrical protection upstream of the panel in CAT III 300V.



Example of connection in which the main switch represents the main protection of the system.

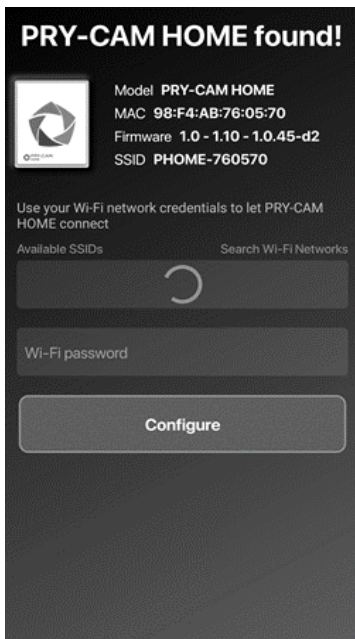
### 4.3. Device configuration via APP

	To correctly configure the PRY-CAM Home Master it is necessary to have a smartphone with internet connection and able to download the "PRY-CAM Home" APP from the market.
	To take advantage of all the features of the PRY-CAM Home Master, the device must be installed in an area with stable Wi-Fi internet coverage. If a stable connection cannot be provided, the device will operate in reduced mode using the NB-IoT connection, if present.

#### Configuration sequence:

1. Check the completion of the "MECHANICAL ASSEMBLY" and "ELECTRICAL CONNECTION" steps.
2. Download the "PRY-CAM Home" APP from the market (App Store or Google Play).
3. Register new account following the registration procedure or log in.
4. Activate the Access Point by switching the device to Professional mode by pressing the button for 5 sec until the led blink violet.
5. Connect the smartphone to the WiFi connection generated by the device (eg PHOME-123456) from the phone settings.

6. In the dashboard, tap on "Add PRY-CAM Home".
7. Enter the data of the device, the contractual power of your system, the country in which the device was installed and set, if present, the Wi-Fi:



8. Enter the device data.  
Enter the contractual power and the average cost per kilowatt hour (you can find this information in your latest electricity bill).

## PRY-CAM HOME

Assign a name to PRY-CAM HOME



Where is it installed?

### Electricity contract type

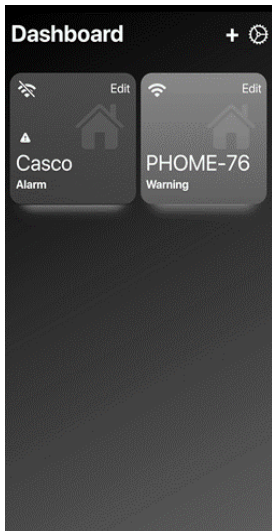
 kW  
 €/kWh



9. Tap on “Configure” and wait for the device to be configured.

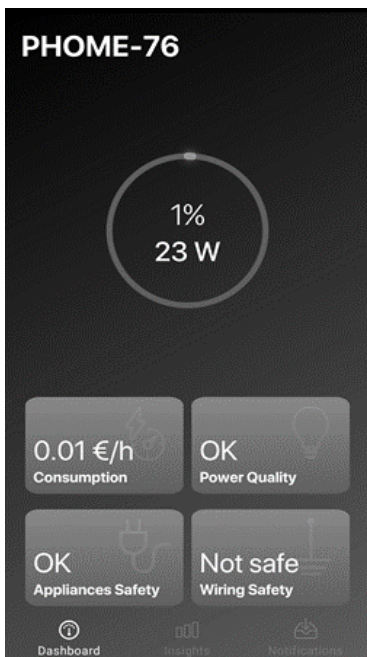
	Make sure that your smartphone, during the registration phase, switches from the PRY-CAM Home Access Point connection to your Wi-Fi connection or to the cellular network connection.
	If the configuration is not successful, make sure you have entered the Wi-Fi data correctly and that you have not omitted any data required in the two screens.

10. Once configured, the device will be showed on your dashboard from which you can monitor the system parameters.



### 4.3.1. Dashboard

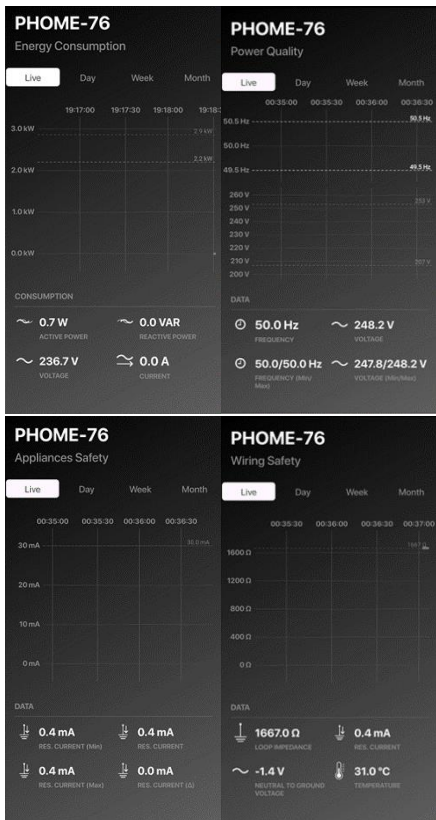
By clicking on the device icon you can view in the dashboard. In the center is displayed the graph of the power adsorbed by the grid. In the bottom of the screen is shown the instant energy consumption, the power quality, the appliances and wiring earth safety.



### 4.3.2. Insights

In this screen is shown the detail of every insight. For each of them it's possible to see the live, daily, weekly or monthly trend of the graph.



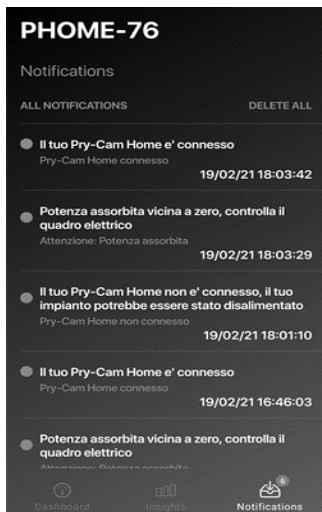


In the screens are showed the following bulk:

- Active power [kW]
- Reactive power [kW]
- Phase/neutral Voltage [V]
- Current [A]
- Estimate consumption [kWh]  
*the estimate is calculated as the integral of the data shown over time.*
- Estimate cost [€]  
*The estimate is calculated as the product of the consumption estimate by the cost €/kWh set in the registration phase and editable from settings.*
- Estimate emission CO<sub>2</sub> [Kg CO<sub>2</sub>]  
*The estimate is calculated by multiplying the estimate consumption [kWh] by the coefficient 0,43 KgCO<sub>2</sub>/kWh.*
- Frequency [Hz]
- Frequency Min/Max/Media [Hz]
- Phase/neutral Voltage (Min/Max) [V]
- Minimum residual current [mA]
- Maximum residual current [mA]
- Earth resistance [Ω]  
*Earth resistance is estimated as relationship between earth7neutral voltage and residual current.*
- Maximum earth resistance [Ω]
- Earth/Neuter Voltage [V]
- Device temperature [°C]

#### 4.3.3. Notifications

In the notifications section it's possible to see the notifications and the alert received from device.



Sigla	Type of alert	Description
AC 1	Connection to the electricity grid	Your system is powered by the electrical grid.
	Disconnection from the electricity grid	Your system has been disconnected from the electrical grid.
LOAD 2	Powered system	A load connected downstream of the system is correctly absorbing power.
	System disconnected	No load connected downstream of the system is absorbing power, check the system.

<b>WIFI 3</b>	Wi-Fi data connection ok	Your device is connected to the internet
	No Wi-Fi data connection	The internet connection was lost.
<b>P80 4</b>	Excess power	Your system is close to the limit of the contractual power available. Do not connect other loads to the system to avoid disruptions
		Alert over.
<b>P100 5</b>	Power limit exceeded	Your system has exceeded the limit of the contractual power available, disconnect some loads from the system to avoid disruptions
		Alert over.
<b>DIFFS 6</b>	Danger	The system has detected a device connected to the system that disperses a differential current step higher than that set by your electrician (Default 4mA).
<b>OV 7</b>	Overvoltage	System voltage higher than 126V for a nominal 120V system. System voltage higher than 264.5V for a nominal 230V system.
<b>UV 8</b>	Undervoltage	System voltage below 114 V for a nominal 120V system. System voltage below 195.5 V for a nominal 230V system.
<b>GND 9</b>	Danger	The earth system is properly connected
		The earth system is not properly connected



#### 4.4. Switching to professional mode, reset and restart

The device is equipped with a single button that allows several different functions based on the duration of its pressure:

**1 – 4 sec:** restart

**>5 sec:** switch to Professional mode and activate the Access Point (press until the device LED starts flashing violet)

#### 4.5. Deactivation

	<b>DANGER</b>	
<b>Danger of death from electrocution</b> Potentially lethal voltages are present in live components.		
<ul style="list-style-type: none"><li>• Switch off the voltage at the connection point and secure it against reactivation.</li><li>• Make sure that all conductors to be connected are voltage-free.</li></ul>		

#### Disassembly sequence:

- After turning off the system, disconnect all cables connected to the device.
- Remove the device from the DIN rail by lifting the upper tab.

## 5. Accessories

2 x Cable Prysmian section  $6mm^2$ , length 300mm  
(red, blue)

1 x Cavo di section  $0,5mm^2$ , length 1m (yellow/green)

1 x Instruction manual



## 6. Disposal and maintenance

### **For private households: Information on Disposal for Users of WEEE**

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic equipment (WEEE) should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge. Alternatively, in some countries, you may be able to return your products to your local retailer upon purchase of an equivalent new product. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.



### **For professional users in the European Union**

If you wish to discard electrical and electronic equipment (EEE), please contact your dealer or supplier for further information.

### **For disposal in countries outside of the European Union**

This symbol is only valid in the European Union (EU). If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.



**DANGER**



**Risk of death by electrocution**

- Disconnect the device before cleaning and later use only a dry cloth

## 7. Support

In the event of problems with the App and / or Equipment and for any questions regarding the Service, you can contact the Supplier by writing to:

- Prysmian Electronics S.r.l., Via Chiese n. 6, 20126 Milano, Italia
- The e-mail references in the contact section of [www.prycamhome.com](http://www.prycamhome.com)

## 8. Declaration of conformity

Prysmian Electronics S.R.L. declare that the name of the radio model PCH-0001 with the PRY-CAM HOME brand is in compliance to the Directive 2014/53 UE.

The declaration of conformity complete text is available at the following web address:

[https://prycamhome.com/more/doc/DoC\\_PCH-0001.pdf](https://prycamhome.com/more/doc/DoC_PCH-0001.pdf)



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