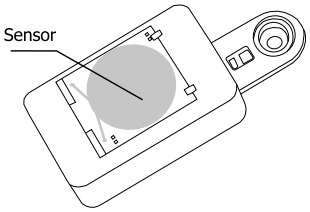
MASTER®
MOTION AHEAD

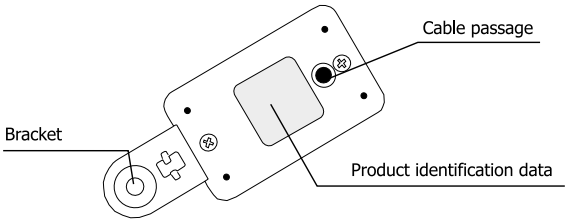
KIT RAIN SENSOR

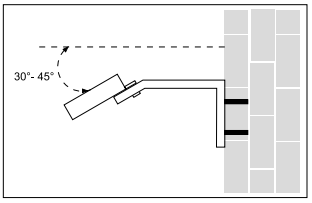
X11
AT12

MASTER MOTION AHEAD

RAIN SENSOR X11



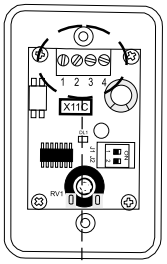




1. TECHNICAL SPECIFICATIONS (@ 20°C)

- Power supply: 12 Vac/dc, 50/60 Hz
- Contact capacity: 100 mA @ 12 Vac/dc
- Consumption: 6mA with open contact, 10mA with close contact
- Dimensions: 93 x 38 x 28 mm
- Weight: 50 g
- Working temperature: from –20 to +55 °C
- IP protection: IP55

NOTE FOR THE INSTALLATION: we suggest to install this sensor with a slope from 30° to 45°.



2. ELECTRICAL CONNECTIONS

- The module has to be installed from technical qualify staff to respect all the rules and laws in forces on the territory.
- Work with caution on the module, use suitable tools.
- Verify that the line of supply doesn't result from circuit for th lighting.
- The line of supply has to be protected from a suitable magnetothermic or differential device..
- In case of many radio installations in the same system, the distance between them doesn't have to be less than 1,5m.
- It is forbidden and dangerous open or tamper the box.
- Do not modify or replace parts without autorization of the manufacturer.
- Do not install the module near metallic surface.

2.1 Power supply

The module has to be powered by voltage of 12Vac/dc @ 50/60Hz. The power supply has to be apply to terminals **3** and **4**.

2.2 Rain contact

If the sensor relives the presence of rain, the contact betwenn terminals **1** and **2** close.

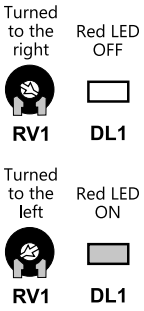
3. RAIN SENSOR LOGIC OF WORKING

If the sensor relieves rain, the rain contact closes (terminals 1 and 2). The contact opens when the plate of the rain sensor is dry enough. It is possible sets up the sensor so that the rain contact stay close at least 2 minutes (see point 3.2). When contact is close the LED is ON. When contact is open the LED is OFF.

3.1 Setting of sensibility

Through the regulator **RV1** it is possible set up the sensibility of the sensor. The factory set up the regulator in central position, this position assures the optimal solution almost in all cases. To change the threshold:

- Be sure that the microswitch **J2** is in **OFF** position.
- Be sure that the plate is dry and the **LED** is switch **OFF** (to switch **OFF** the **LED** revolve the regulator **Rv1** all toward right).
- Rotate the regulator **Rv1** all toward left. The **LED** switch **ON**.
- Rotate slowly the regulator **Rv1** toward right until switch **OFF** the **LED**. This is the highest sensibility reccomend (a more high sensibility could generate false trigger of the rain contact and difficult of release of the rain contact when the rain is over).
- Check the correct working of the system appling with little drops of water on the plate of the sensor. If the sensor is to much sensible, rotate the regulator **Rv1** to the right.

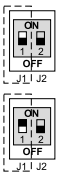


NOTE :
If during the setting the LED remains always ON, remove power supply to X11, rotate Rv1 all toward right, give power supply to X11 and repeat the procedure.

3.2 Rain contact logic of working

The microswitch **J1** allows to select the logic of working of the output contact:

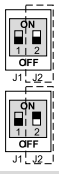
J1 OFF	With rain, the contact is closed for at least **1 second**; the contact is re-opened when the plate becomes dry enough. This is the default setting from the factory.
J1 ON	With rain, the contact is closed for at least **2 minutes**; the contact is re-opened when the plate becomes dry enough.



3.3 Little drops sensibility

Some atmospheric phenomenon (e.g. dew, fog, etc..) tends to deposit some little drops on the plate of the sensor that could be interpret as a presence of rain. Through the microswitch **J2** it is possible choose between two levels of sensibility to the little drops:

J2 OFF	This setting makes the sensor more sensitive to the fine rain, consisting of very small droplets; however, could happen closing of the contact in case of dew, fog, etc. This is the default setting from the factory.
J2 ON	This choice makes the sensor less sensitive to fine rain and small drops that characterize atmospheric phenomena like dew, fog etc.



4. EXPIRED

At the end of the product life cycle, dispose of the device in compliance with local regulations. This product could contain substances that are harmful to human health and the environment: do not dispose of the product in domestic waste.

5. FAQ

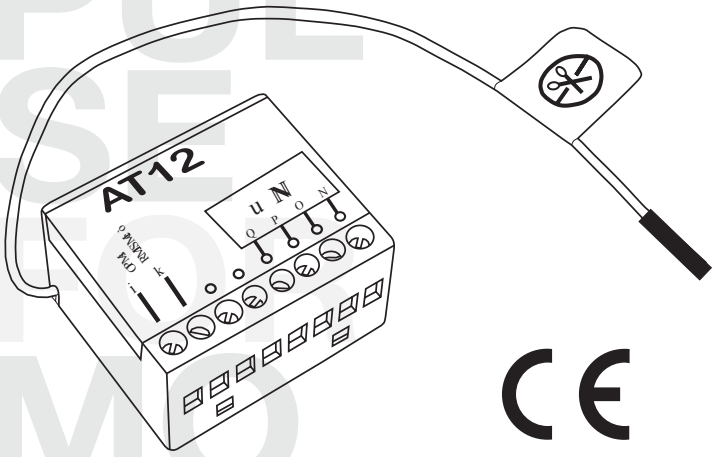
? The rain sensor doesn't close the contact in presence of rain.
- Just powered, the sensor briefly switch ON the LED. If it doesn't happen check the presence of power supply in terminals **3** and **4**.
- The sensor is too little sensible. Recalibrate the sensor (see point 3.1)

? The contact of the sensor is not stable, that's close and open without apparent reason.
- The sensor is too much sensible. Rotate lightly the regulator Rv1 toward right.
- Bring the microswitch **J1** to ON position.

MASTER
MOTION AHEAD

User manual:

AT12



433,42 MHz

www.mastermotion.eu

rev00_ENG del 17.04.15

INTRODUCTION

Dear Customer,
Thank you for purchasing a MASTER S.p.A. product. This guide contains all the information you will need concerning the use of this product.Read the instructions carefully and keep them for further consultation.

The AT12 is a power supply module for rain radio sensor; in addition to powering the sensor, the device is able to transmit to the associated receiver devices, the signal of rain presence detected by the rain sensor. The module is designed to be associated with the rain sensor X11.

All other use beyond the field defined by MASTER S.p.A. is forbidden. This, as well as the breach of the instructions given in this guide, shall release MASTER S.p.A. from any liability and shall annul the product warranty.

PACKAGE CONTENTS

- n° 1 AT12 module
- n° 1 wall bracket
- this guide

TABLE OF CONTENTS

The module LED MIR that you choose is equipped with many features.This is a guide to find out how to set up and use the various functions.In this guide you will find:

01. Technical specifications.
02. Notes on radio system.
03. Buttons and LED.
04. Warnings
05. Electrical connections.
06. Memorization of the module in a receiver device.
07. Deletion of the module in a receiver device.
08. Operating logic of rain sensor.
09. Disposal.
10. FAQ

Warning:
The module is designed to operate with devices receiving at a frequency of 433.42 MHz
Reference should be made to the respective user manuals to find out which functions are actually implemented.

01. TECHNICAL SPECIFICATIONS

- Power supply: 230 Vac, 50-60 Hz
- Dimensions: 44x38x25 mm
- Weight: 40 gr
- Working temperature: da -20 a +55°C
- Working frequency: 433.42 MHz
- Range (estimates): 100m outdoor, 20m indoor
- IP protection: IP20

02. NOTES ON RADIO SYSTEMS

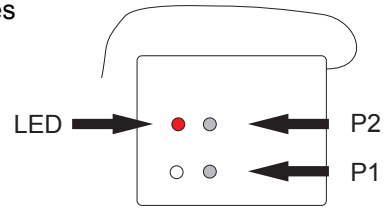
Do not use radio systems in places with strong interference (for example, near police stations, airports, banks, hospitals). It is in any case advisable to carry out a technical inspection prior to installing any radio system in order to identify possible sources of interference.

Radio systems can be used where any disturbances or malfunction of the transmitter or receiver do not constitute a risk factor, or if such factor is eliminated using appropriate safety systems.

The presence of radio devices working at the same transmission frequency (433.42 MHz) may interfere with the radio receiver and reduce the range of the system, limiting functionality.

03. BUTTONS AND LED

On the back of the module there are two buttons (P1 and P2) and a LED to use during the configuration procedures



04. WARNINGS!

GENERAL SAFETY INSTRUCTIONS

- Incorrect installation can cause serious injuries.
- Keep these instructions for future maintenance work and disposal of the product.
- All the product installation, connection, programming and maintenance operations must be carried out only by a qualified and skilled technician, who must comply with laws, provisions, local regulations and the instructions given in this manual.
- The wiring must comply with current IEC standards.
- Certain applications require hold-to-run operation and can exclude the use of radio controls or require particular safety devices.

WARNINGS FOR THE INSTALLATION

- Check that the package is intact and has not been damaged in transit.
- The product is designed to be inserted inside of junction boxes. The module does not provide any protection against water and only essential protection for contact with solids.
- It is forbidden to install the module in areas not adequately protected, and near sources of heat.
- Install the product carefully, using suitable tools.
- If there are several radio appliances in the same system, they must not be less than 1.5 m apart.
- Do not install the product near metal surfaces.
- Do not modify or replace parts without the manufacturer's permission. Do not pierce or tamper the box.
- The antenna cable carries line voltage. Do not cut the antenna cable as this would be dangerous. If the antenna cable is damaged, replace the product.

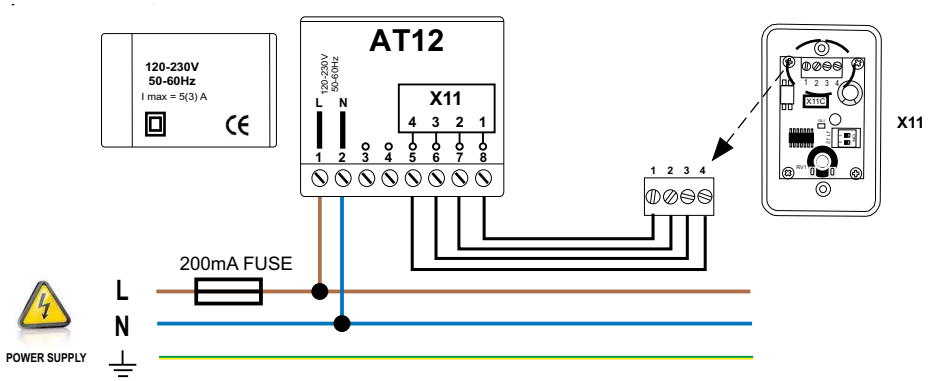
WARNING FOR USE

- Before operating the roller shutter/awning, make sure there are no people or objects in the area involved in its movement. Check the automation during movement and keep people at a safe distance, until the movement ends.
- Do not operate the roller shutter/awning when maintenance operations are being carried out (e.g. window cleaning). If the control device is automatic, disconnect the motor from the power line.

05. ELECTRICAL CONNECTION

WARNINGS

- Make the connections with the power switched off.
- Check that the power line does not come from electrical circuits intended for lighting.
- A circuit breaker or residual current device must be inserted in the power line. An isolating device with overvoltage category III, namely distance between contacts of at least 3.5 mm, must be inserted in the power line.
- The product has no protection against overloads or short circuits. Install a protective device in the power line that is appropriate for the load, such as a fuse of max. 200 mA.



Power supply

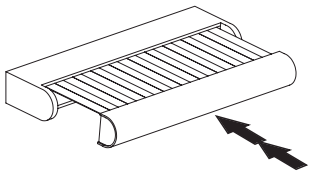
The module can be powered at 120 Vac or 230 Vac. The supply voltage must be applied to terminals 1 and 2.
The rain sensor X11 is equipped with a terminal block with 4 contacts. Terminals 1 and 2 of the rain sensor must be connected to terminals 7 and 8 of the PS12 TX MIR (Contact neutral); terminals 3 and 4 of the rain sensor must be connected to terminals 5 and 6 (supply voltage). Terminals 3 and 4 of the module are not used.
When you switch on the module, the LED lights up briefly.

06. MEMORIZATION OF THE MODULE IN A RECEIVER DEVICE

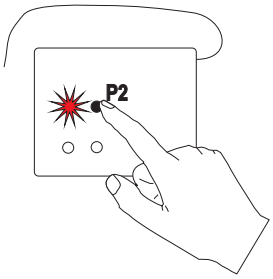
To memorize the module in a receiver device:

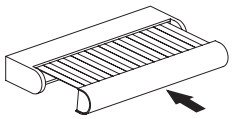
A Bring the motor connected to the receiving device in an intermediate position, in order to make visible the signaling movements supplied by the motor.

B Press for approximately 5 seconds the PROG button of a transmitter already memorized in the receiving device, until the connected motor makes 2 short movements up (entrance in the “Transmitter Programming mode”).



C Within 15 seconds briefly press the button P2 of rain sensor to be stored.
The motor makes one short upward movement to indicate that the sensor was stored.





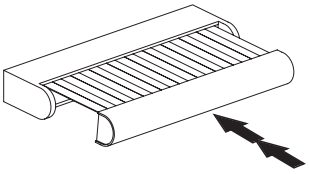
NOTE:
- Refer to the manual of the receiving devices: the procedure may vary from device to device.

07. DELETION OF THE MODULE FROM A RECEIVER DEVICE

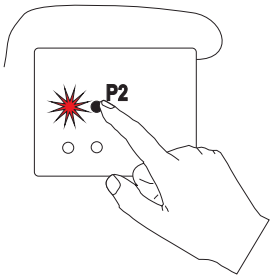
To delete the module from a receiver device:

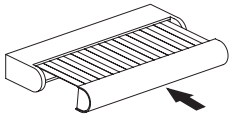
A Bring the motor connected to the receiving device in an intermediate position, in order to make visible the signaling movements supplied by the motor.

B Press for approximately 5 seconds the PROG button of a transmitter already memorized in the receiving device, until the connected motor makes 2 short movements up (entrance in the “Transmitter Programming mode”).



C Within 15 seconds briefly press the button P2 of rain sensor to be deleted.
The motor makes one short downward movement to indicate that the sensor was deleted.





NOTE:
- Refer to the manual of the receiving devices: the procedure may vary from device to device.

08. OPERATING LOGIC OF RAIN SENSOR

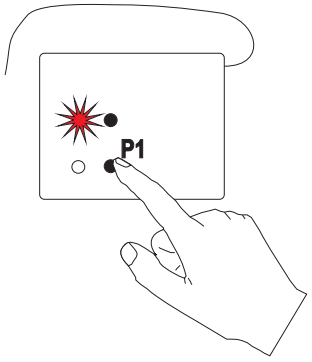
When rain sensor X11 detects the presence of rain, the contact across terminals **7** and **8** closes.
If the contact is closed for at least 2 seconds, the module performs some transmissions during which the LED lights. At the end of transmission the LED will flash to indicate that transmission for rain presence have been made.

When the rain sensor X11 detects the absence of rain, the contact across terminals **7** and **8** opens.
If the contact is open for at least 60 seconds, the LED will stop flashing and the module AT12 is ready for new transmissions in case of rain.

Manoeuvre associated with rain sensor
It's possible to select the type of movement (upward or downward) that must be commanded by the module in rain case. The factory sets the module to command an **upward movement**.

To modify this setting:
- press the P1 button of module AT12 for approximately 4 seconds until the LED flashes, then release the button.

The module changes the operation associated with the presence of rain and back to the normal activities.



09. DISPOSAL

At the end of the product life cycle, dispose of the device in compliance with local regulations. This product could contain substances that are harmful to human health and the environment: do not dispose of the product in domestic waste.

10. FAQ

? The module doesn't work.
- Check that to terminals 1 and 2 is present the mains voltage.
- Check that the power LED on the module lights up briefly.

? I can not store the module in the memory of the receiving device.
- Make sure that the receiving device operates with its hand-held transmitter.
- Make sure that the environment is not disturbed by other devices operating on the same frequency (eg radio headphones, alarms, etc.).
- Be sure to correctly perform the storage procedure (see point 06).
- Bring the module near to the receiving device and redo the storage procedure (see point 06).

? The rain sensor is working properly, but the maneuver performed by the receiving device is not the one you want.
- Change the maneuver associated with rain sensor (see section 08).