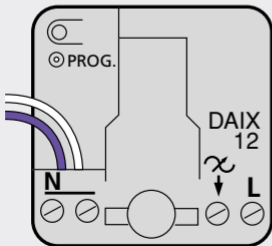


MARMITEK®

Marmitek X-10
Dimming actuator/interface 230 V
type DAIX12 LWM1P



Dimming actuator for installation behind retractive switches and wall sockets or in distribution boxes. Suitable for remote or on-site operation of lighting.



Note: Marmitek X-10 built-in modules should always be installed in a junction box or a distribution box.



Note: Inputs only suitable for 230 V phase potential!

Functions

- Transmission of ON/OFF/BRIGHT/DIM commands.
- Responds to ON, OFF, DIM, BRIGHT and extended dim level commands.
- One user-definable address (free programmable address) A1-P16.
- Suitable for operation with retractive switches with 1 or 2 normally open contacts.
- Can be used as an actuator for placing behind wall sockets (insulating connecting wires).

Connection applications

Suitable for the connection of:

1 Retractive switches:

- One retractive switch with two normally open contacts (two-level operation).
- One retractive switch with one normally open contact (single-level operation).

2 Wall sockets:

- One wall socket

Input wires color code

Two-level operation

Purple:	ON/BRIGHT
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White:	OFF/DIM
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Single-level operation

White or purple:	
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(possibly connected)	Alternating ON/BRIGHT and OFF/DIM
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Legend for the connecting wires

-  = Brown (L or Phase)
-  = Blue (N or Neutral)
-  = Black (switch wire)
-  = Purple (Marmitek X-10 module input wire)
-  = White (Marmitek X-10 module input wire)

1 Installation/assembly behind retractive switch

 Always switch off the power supply before commencing installation.

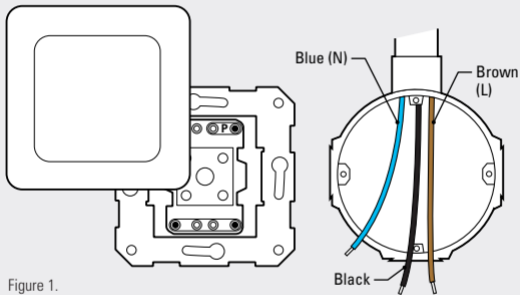


Figure 1.

- Remove the retractive switch from the junction box.
- Disconnect the wiring from the retractive switch.
- Put in a neutral wire (N) if this is missing.

1 Installation/assembly behind retractive switch

Assembly for two-level operation on a retractive switch

Two-level operation means a module connected to a retractive switch with two normally open contacts (see the following diagram).



(See Figure 2):

- Assemble the phase (L), neutral (N) and switch wire (black) of the load to the connection points of the Marmitek X-10 dimming actuator.
- Connect the purple input wire of the dimming actuator to the pulse terminal of the retractive switch for ON/BRIGHT regulation.
- Connect the white input wire to the pulse terminal of the retractive switch for OFF/DIM regulation.
- Connect the phase wire (L) to the P terminal of the retractive switch.

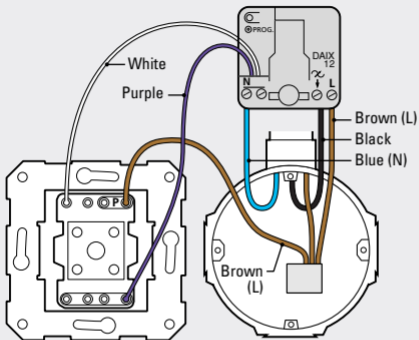
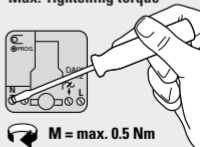


Figure 2.

Max. Tightening torque



1 Installation/assembly behind retractive switch

Assembly for single-level operation on the retractive switch

Single-level operation means a module connected to a retractive switch with one normally open contact (see the following diagram).



(See Figure 3):

- Assemble the phase (L), neutral (N) and switch wire (black) of the load to the connection points of the Marmitek X-10 dimming actuator.
- Connect the purple and/or the white input wire of the dimming actuator to the pulse terminal of the retractive switch.
- Connect the phase wire (L) to the P terminal of the retractive switch.

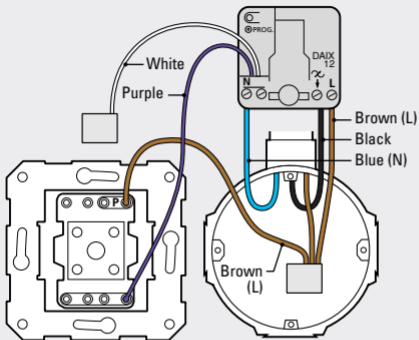
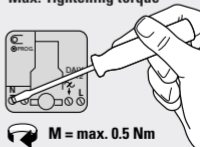


Figure 3.

Max. Tightening torque



1 Installation/assembly behind retractive switch

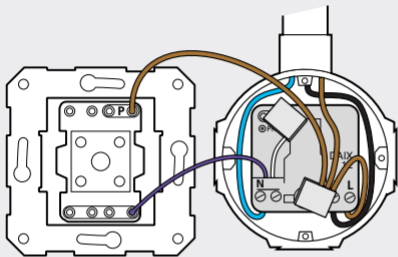


Figure 4.

- Position the module with the back against the rear of the junction box, behind the wiring.
- If the module has not yet been programmed or has been incorrectly programmed, then it can now be programmed.

→ See the chapter on programming.

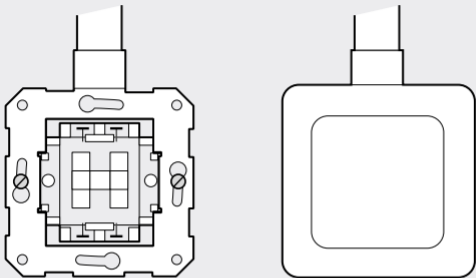


Figure 5.

- After programming, place the switch back in the junction box and click the push button with the cover frame back on the switch.

2 Installation/assembly behind wall socket



Always switch off the power supply before commencing installation.

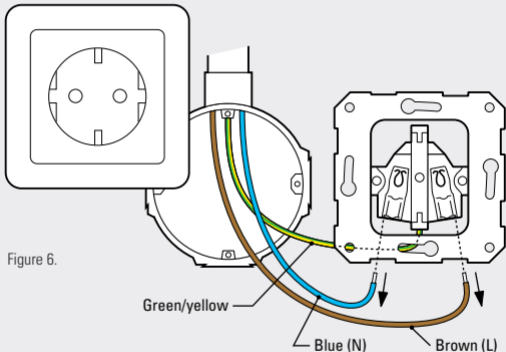


Figure 6.

- Remove the wall socket from the junction box.
- Disconnect the phase (L) and neutral (N) wires from the wall socket.

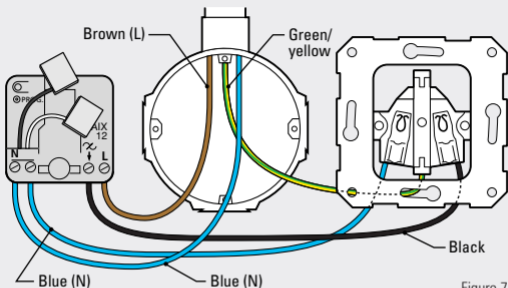
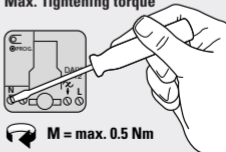


Figure 7.

- Connect the phase wire (L) to the L connection of the module and the neutral wire (N) to one of the neutral connections (N).
- Connect the other neutral connection (N) of the module to the neutral of the wall socket.
- Connect the output side of the module (↓) to the phase terminal of the wall socket.
- Insulate the ends of the white and purple input wires of the module.

Max. Tightening torque



2 Installation/assembly behind wall socket

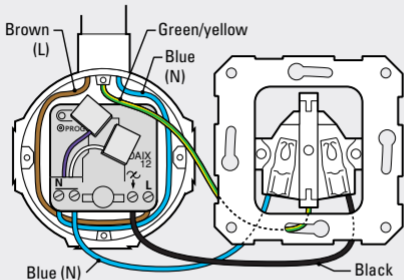


Figure 8.

- Position the module against the rear of the junction box, behind the wiring.
- If the module has not yet been programmed or has been incorrectly programmed, then it can now be programmed.

→ See the chapter on programming.

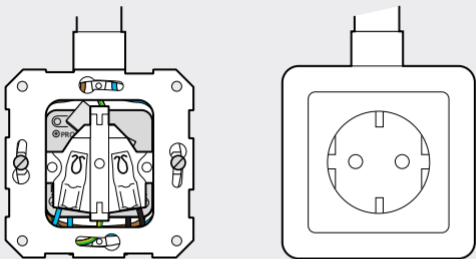


Figure 9.

- Place the wall socket back in the junction box and screw it closed.
- Screw the associated cap and cover securely onto the wall socket.



Note: Mark the wall socket with, for example, a sticker to indicate that this wall socket is dimmed and can only regulate bulbs to a max. of 250 W*.

* Consult the technical data on page 56 for details of the maximum load to be connected!



Switch on the power supply before you start programming. Avoid touching live parts!

Programming

The following six steps must be taken to program the module.

1. Switch to programming mode

In order to program the dimming actuator, it must be set to the programming mode as follows:

- Press the programming button for at least three seconds (see Figure 10). The red LED will light up and stay on after releasing the button.

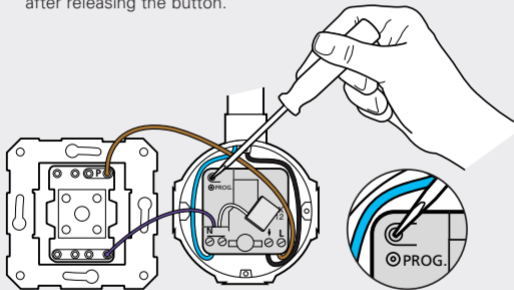


Figure 10. Activating and deactivating the programming mode.

2. Send address

Send the set-up command (letter code and figure code) which belongs to the desired address twice via the power line for example, using a programming unit (PRU256), a Marmitek X-10 Control Box or another X-10 compatible transmitter (e.g. a remote control). The LED will flash twice once the two identical set-up commands (addresses) have been received. A detailed description of the steps to be followed when programming and the various programming options can be found in the Marmitek X-10 Step by Step Plan. This can be found at www.marmitek.com

Standard	Optional	Set-up command	No. of LED flashes
Address A1	A2-P16	Address	2 x



Note:

- In programming mode, always set the address first and then enter the other settings.
- If, immediately after putting the module in programming mode, an address is sent twice, the module will return to the default value for function and options (reset).

3. Send any required function code

(only when using the "single-level" retractive switch)

If a single-level retractive switch is used then the set-up command "Bright" should be sent twice via the power line. The LED will respond with 12 flashes when two identical set-up commands have been received. The module can remain in the default setting when used behind a wall socket.

Function to be set*	Set-up command	No. of LED flashes
Single-level retractive switch	Bright	12 x

* Default setting: Two-level retractive switch (two inputs).

To reset the module to the default settings please set the module into the programming mode and send the desired address over the power line again (see page 48)

4. Send options

The DAIX12 has a number of options that can be programmed. An example of this is would be to switch on after receipt of a group command. If you wish to set one or more options, the following steps should be taken:

- Send the desired command twice from "Set-up Command" using the PRU256 programming unit, the Marmitek X-10 Control Box or another X-10 compatible transmitter (such as a remote control).
- The programmed LED confirms the "Set-up Command" by way of a specific number of flashes.
- Exit programming mode.

Basic options

Basic options are the most common options that are programmed into the module. As standard, the DAIX12 does not respond to group commands. The set-up commands per option are shown in the following table.

Option(s) to be set*	Set-up command	No. of LED flashes
Must respond to All Units Off	AUF	8 x
Must respond to All Lights On	ALN	6 x
Must respond to All Lights Off	ALF	10 x

* Default setting: no option(s).

Special options

Special options are options that should only be set in specific cases. **Setting these functions when it is not necessary may lead to undesirable effects.**

The set-up commands per option are shown in the following table. If you are in any doubt, we advise you not to program these functions.



NOTE:

These special functions can **not** be programmed with a remote control.

Option to be set*	Set-up command	No of LED flashes
Automatic load switching when load is connected	HRQ	9 x
Automatic status sending when load is connected	HAK	5 x

HRQ = Hail Request

HAK = Hail Acknowledge

5. Exit programming mode

- Press the programming button once briefly: the red LED is now off; or wait 60 seconds and the programming mode will automatically be switched off.



Note!

If no set-up command has been received within 60 sec., the module will automatically exit programming mode.

6. Test the operation of all the inputs

Example

Two-level retractive switch must switch the lamp with address C10 and must respond to All Lights On and All Units Off
The steps to be followed are:

1. Switch the module to programming mode:
press the programming button for a minimum of three seconds, the LED lights.
2. Addressing:
send C10 2 x, LED flashes 2 x.
3. Determine function:
two-level retractive switch operation, is the default position, no set-up command needs to be sent.
4. Set options:
send 2 x All Lights On (ALN), LED flashes 6 x
send 2 x All Units Off (AUF), LED flashes 8 x.
5. Exit the programming mode:
briefly press the programming button, LED flashes every three seconds.

Testing and replacing the dimming actuator fuse

Testing the operation of the dimming actuator fuse (type TR5-1, 6 AT)

Disconnect the load (lamp, transformer) from the dimming actuator. Measure the voltage on the output terminal using a voltmeter. If there is no current then the fuse is faulty.



Note: If the fuse has blown, the programming LED will still flash.

Replacing a faulty fuse on the DAIX12

It is possible to replace the fuse without opening the module! (If the module is opened, the warranty will be null and void).



Switch off the power supply so that the module is isolated before proceeding.

Remove the film over the fuse and pull the fuse carefully out of the module using a pair of long angled nose pliers (see Figure 2).

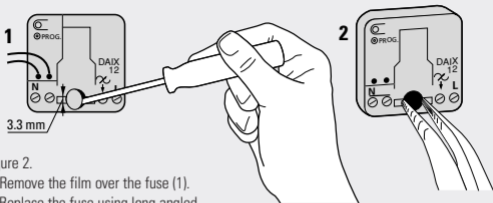


Figure 2.

- Remove the film over the fuse (1).
- Replace the fuse using long angled nose pliers (2).


Replace the fuse with one of the following types of fuse (if any other type of fuse is used, the warranty will be null and void):

Supplier of the dimmer fuse	Description	Supplier order no.
Littel fuse	LT-5 ALg	0663.01.6
Bussman	ETF Radial Lead Micro Fuse	BK ETF1.6
ELU	Sub-miniature fuse links	166050-1,6AT
Wickmann	Sub-miniature fuse No 372.TR5	372-1160-041
Bel fuse	Time Lag Radial Lead Micro Fuse	MTR1,6 short leads

List of permitted dimming actuator fuses for the Marmitek X-10 DAIX12 module.

Technical data

Marmitek X-10 home automation

Rated voltage	230 Vac, 50 Hz
Output	250 W (*) bulbs
	200 VA (*) Halogen lighting with wound transformer
	250 VA (*) Halogen lighting with leading edge electronic transformer (**)
Cartridge fuse	Radial lead micro fuse, 1.6 AT, according to IEC 60127-3, standard sheet 4
Current consumption	< 1 W
Signal transmission	> 5 Vpp in 5 Ω at 120 kHz in accordance with EN 50065-1, EN 50065-2-1, EN 50065-4-1
Transmission synchronization	1 pulse burst at 0°/180°
Signal sensitivity	25 mVpp...6 Vpp at 120 kHz \pm 4 kHz
Signal/noise ratio	1,35 : 1
Connection range	Up to 2.5 mm ² , tightening torque 0.5 Nm
Minimum ambient temperature	0 °C
Maximum ambient temperature	40 °C (*) (***)
Atmospheric pressure	86 pKA - 106 pKA
Relative humidity (non condensing)	30 tot 90%
Standards	NEN-EN-IEC 60669-2-1, NEN-EN-IEC 60669-2-2
Marking	

Subject to technical changes without notice.



If a bobbin wound transformer of more than 150 VA is connected to the dimming actuator while the dimming actuator is fully opened then there is a possibility that the internal cartridge fuse of the dimming actuator might blow.

- (*) The maximum output of this module may not always be used as this depends on various factors. Before using these components, consult the supplied technical information relating to the power reduction of Marmitek X-10 dimming actuators (MBO 6012356G01).
- (**) The dimming actuator may not be connected to trailing edge electronic transformers . If such a transformer is connected then this will cause a buzzing noise and may damage the dimming actuator. This also renders the warranty null and void.
- (***) Marmitek X-10 modules are suitable for use in homes where the ambient temperature in the living area is not higher under normal circumstances than 35°C or may (exceptionally) reach a maximum of 40°C.

Undisturbed functioning of Marmitek X-10 automation

Electrical equipment and systems can be sensitive to signals from other equipment, which causes electro magnetic disturbance. In the European Union, countries agreed upon laws for the immunity (sensitivity) of signals of other equipment as well as equipment emission (disturbance). When equipment or applications in a certain surrounding comply with the valid standards, they will not disturb each other's operations (they are called "Electro Magnetic Compatible").

For residential surroundings, where the home automation system Marmitek X-10 is being applied, the European standard for immunity is standardised in EN 61000-6-1. Equipment that complies with this standard is resistant to electro magnetic emission of other equipment, which complies with the European standard EN 61000-6-3 for residential surroundings. Experience has shown that in domestic surroundings, equipment is being used which has an EMC-emission level that is above the levels stated in EN 61000-6-3. This equipment can disturb the correct functioning of the Marmitek X-10-modules. The immunity of the Marmitek X-10 built-in modules is therefore reevaluated and equivalent to EN 61000-6-2 (the more severe European standard for immunity in industrial surroundings).

Nevertheless, the application area for Marmitek X-10 will remain restricted to residential areas.

Marmitek x-10 is therefore not responsible for the disfunctioning of the Marmitek X-10 system as a consequence of equipment in the building with emission levels that exceed the maximum allowed levels set as standard for residential, commercial and semi-industrial surroundings stated in EN 61000-6-3.

Application area	Valid European Standard		Marmitek X-10-home automation*
	Immunity of equipment	Emission of equipment	Immunity and emission standards
Residential	61000-6-1	61000-6-3	Compatible/ meets the requirements
Commercial			
Semi-industrial			

* Condition is that the total Marmitek X-10-system is installed in accordance with valid instructions supplied by a certified and trained Marmitek X-10 dealer.

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