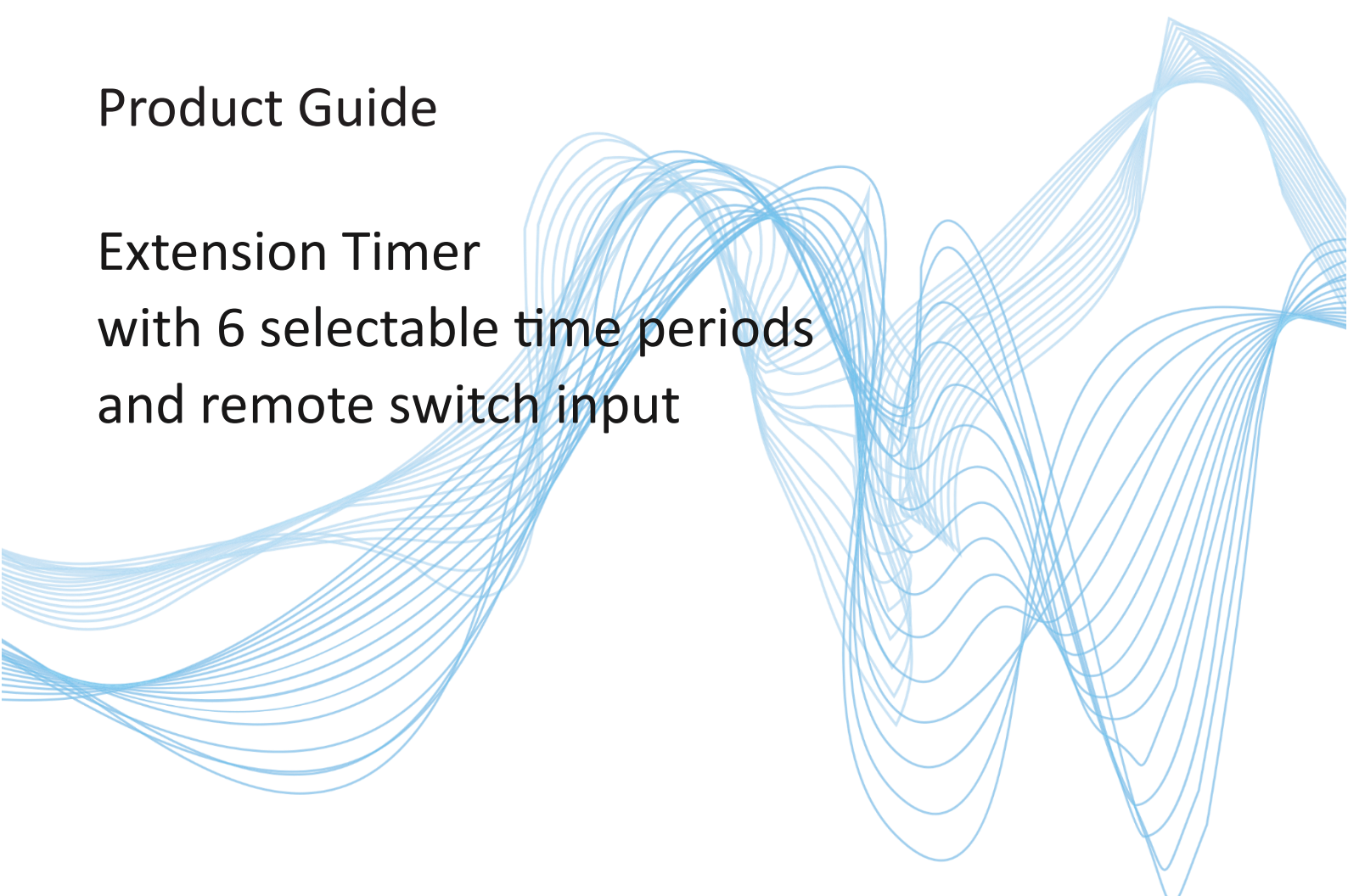


Product Guide

Extension Timer
with 6 selectable time periods
and remote switch input

An abstract graphic consisting of numerous thin, light blue lines that flow and curve across the page, creating a sense of motion and energy. The lines are most dense in the middle and right sections, with some lines extending towards the left edge.

today, tomorrow and in the future

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Product Overview

The E312 is a mains powered single-shot extension timer designed to control plant equipment such as heating, lighting or air-conditioning systems outside of normal occupancy hours. Suitable for installation into a single-gang UK pattress/back box or a control panel, it provides a voltage-free changeover relay output capable of switching loads of up to 16A (4kW) which is activated for a selectable time period.


The E312 is extremely user-friendly with a single touch-sensitive pushbutton used to select the required extension, 6 LED indicators to indicate the remaining extension time period and a single LED to illustrate the status of the output relay. The extension LEDs also have a very low level background illumination which enables the unit to be easily located and controlled in poorly lit areas.

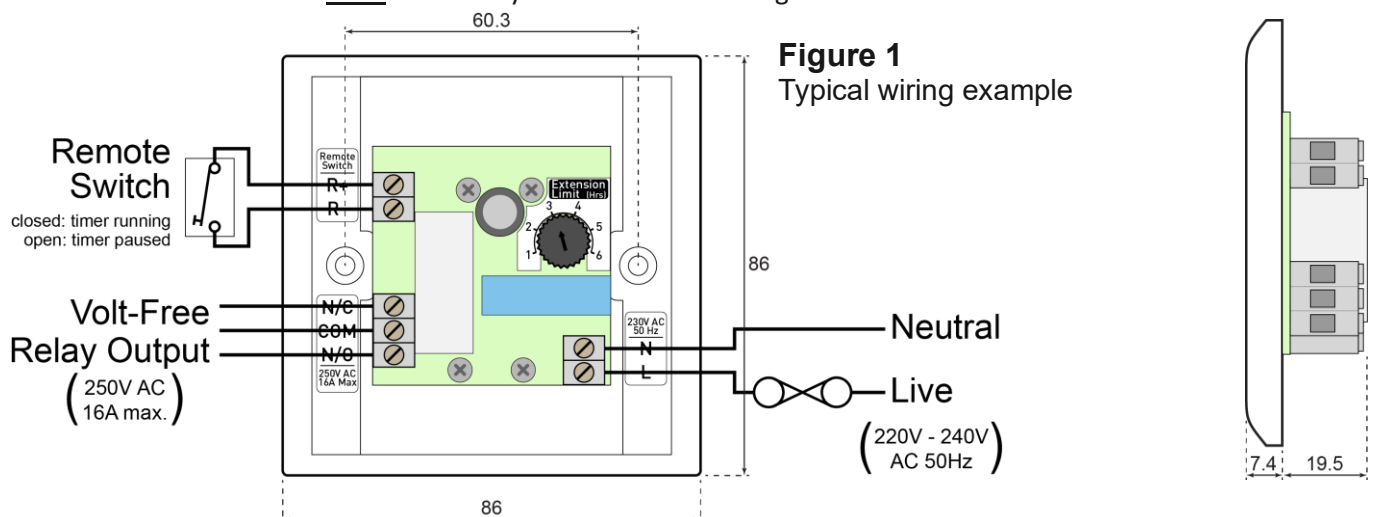
A remote switch input feature is provided so the extension timer can be activated by a remotely located switch or other timer. The E312 timer runs when the remote input contacts are closed or is paused when the contacts are open, thus enabling multiple E312 units to be linked together to add a delay before the extension or to be activated from a remote location.

The E312 also provides the functionality to pre-set a maximum extension period via an internal thumbwheel to ensure that the end-user cannot select an extension period longer than the authorised user so desires.

Product Wiring

1. **IMPORTANT:** ensure all electrical connections are isolated before commencing any work on the unit.
2. Power to the E312 extension timer is provided via the Live and Neutral input terminals labelled “L” and “N” (220V - 240V AC, 50Hz).
3. A voltage-free changeover relay output capable of switching loads of up to 16A, 250V AC (resistive) is provided by the extension timer.
4. The Common “COM” terminal is connected to the Normally Open “N/O” terminal during the extension period, otherwise it is connected to the Normally Closed “N/C” terminal at all other times.
5. The remote switch input contacts are labelled “R+” and “R-”. When they are open (not connected) the timer is paused and when they are closed (shorted together) the timer is running. If this feature is not required then leave the factory-fitted wire link in place.

 NOTE: Although this is a very low-current signal input, mains potential is present on these contacts and so the switch and cable used must be suitably rated for mains voltage.



Installation



All electrical installation and maintenance must be carried out by qualified personnel in accordance with the current edition of the IET Wiring Regulations (BS7671).

1. **IMPORTANT:** ensure all electrical connections are isolated before commencing any work on the unit.
2. The E312 is designed to be mounted in a 20mm (or deeper) single-gang UK pattress box.
3. Connect the wiring to the terminal blocks on the extension timer as shown in Figure 1 (or any suitably appropriate form). Make sure to choose the correct output terminals that are suitable to your application.
4. Adjust the “Extension Limit” dial to suit the operational requirement (see the “Operation” section).
5. Secure the E312 into the pattress box using the two supplied M3.5 screws.
6. Fit the supplied screw covers to complete the installation.
7. To remove the screw covers without damage, use an adhesive putty such as blu-tack as an aid.

Operation

IMPORTANT: ensure all electrical connections are isolated before commencing any work on the unit.

During installation, adjust the “Extension Limit” dial to select the maximum time period the end user may select for the extension period.

Operation Modes

The E312 has 4 modes of operation which can be summarised as follows:

Standby	Power-saving mode where all extension LEDs are dimmed to a very low level to aid location in the dark. The output relay is not activated (“COM” is connected to “N/C”).
Setting Up	The user selects the required extension via the flashing extension LED. After 3 seconds of no activity the selection is accepted and the extension starts. The output relay is not activated (“COM” is connected to “N/C”).
Running	The “On/Off” LED is illuminated to show the output is activated (“COM” is connected to “N/O”) and the extension is running. The extension LEDs illuminate to show the remaining time for the extension.
Paused	The “On/Off” LED flashes to show the extension timer is paused. The output stays in the state it was previously (this mode can be reached from either the “Setting Up” or “Running” modes).

Typical Example

Setting up a 4 hour extension period on an E312/6Hr product:

- From the Standby mode touch the “Select” button to select the first time period (it will start flashing).
- Hold or repeatedly press the “Select” button until the “4Hr” LED is flashing.
- Wait 3 seconds for the chosen extension period to be accepted. If the remote switch is closed the extension LED will stop flashing and the “On/Off” LED will illuminate continuously to indicate the output is now activated and the timer is running. If the remote switch was open however then the extension will be paused before starting and the “On/Off” LED will flash to indicate this.
- The timer will run any time the remote switch contacts are closed. The extension period may be paused in its current state at any time by opening the remote switch contacts (the “On/Off” LED will again flash when it is paused).
- The relay output will be activated for 4 hours with the extension LEDs showing the time period remaining as the timer counts down.

Additional Operating Guidelines

- An active extension may be cancelled at any time by holding down the “Select” button for 1 second until the unit reverts back to the “Standby” mode.

Technical Specification	
Power supply:	220V - 240V AC, 50Hz
Output switch rating:	16A, 250V AC (resistive)
Output switch type:	Changeover relay (volt-free)
Operating temperature:	-10°C to +40°C
Suitable for:	20mm (or deeper) single-gang UK pattress box
Extension variants available:	E312/1Hr: 10 minutes to 60 minutes (10 minute steps) E312/3Hr: 30 minutes to 3 hours (30 minute steps) E312/6Hr: 1 hour to 6 hours (1 hour steps) E312/12Hr: 2 hours to 12 hours (2 hour steps) E312/24Hr: 4 hours to 24 hours (4 hour steps)
Guarantee:	3 Years
Weight:	89g
Dimensions:	86mm x 86mm x 26.9mm

IMPORTANT INSTALLATION NOTICE

The installation of this product should be carried out in accordance with the latest IEE wiring regulations and all wiring completed by a qualified electrician.

Technical Support

For further help or information on this and the other products in the MS Electronics range visit www.mselectronics.co.uk or call 0333 666 1176.

Alternatively, email techsupport@mselectronics.co.uk

Additional copies of this product guide can be downloaded from our website.

Product Warranty

MS Electronics guarantees all their products against manufacturing defects for 3 years from the purchase date. If your product is found to be faulty, MS Electronics will, at their discretion, repair or replace the product free of charge.

Note

Any modification or damage to the outer casing of the product, as well as any damage to the product due to abuse or incorrect wiring may invalidate the guarantee.

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MS Electronics reserves the right to alter or change this specification without prior notice.