HPM
PRODUCT
INFORMATION

Excel Light Switch and Timer
24 hour and 7 day

Cat XL770T & XL770TH (horizontal)

The Cat XL770T & XL770TH timer switch simply replaces a normal light switch and provides automatic switching of incandescent, fluorescent, halogen or dichroic lights as well as fan motors. A multitude of switching options can be carried out over a 7 day period.

Specification (at 25ºC)

Supply voltage:	230-240V a.c. 50Hz
Setting options:	Up to 8 on/off times per day
Max and min load:	See table below
Operating temperature	0 to 50ºC

Load Type	Min Load	Max Load
Incandescent & 240V Linear Halogen	10W	500W
240V GU10 Halogen Downlights	Not suitable*	
Compact Fluorescent	150W**	500W
Linear Fluorescent *(Electronic Ballast)*	150W**	500W
Linear Fluorescent *(Magnetic Ballast with Power Factor Correction)*	40W***	500W***
Linear Fluorescent *(Magnetic balast without Power Factor Correction)*	100VA****	500VA****
Low Voltage Halogen *(Electronic Transformer)*	10W	500W
Low Voltage Halogen *(Magnetic Transformer)*	10W	400W
Fan Motor	10VA	500VA

N.B. If connected incorrectly or if load exceeds the above values, an internal fuse will rupture, rendering the unit inoperable.

* GU10 240V Halogen Downlights can damage the XL770T when they fail, and are therefore not recommended for use with this product.

** A minimum load of 10W can be achieved if a resistive load is connected in parellel with the fluorescent load. This can be, for example a resistor or incandescent lamp rated at least 10W.

*** Power factor correction capacitors must be placed on the line side of the XL770T. If this is not possible then they should either be removed, or a 36W magnetic ballast should be connected in parallel with the fluorescent load, to prevent damage to the XL770T.

**** Refer to the following table for VA ratings when power factor correction is not used:

Tube Size	Effective load	Tube Size	Effective load
1 x 15W	85VA	1 x 65W	170VA
1 x 20W	85VA	1 x 80W	210VA
1 x 30W	85VA	2 x 20W	185VA
1 x 40W	105VA	2 x 40W	210VA

Note:
1. This product cannot be used for two-way switching.
2. This product cannot be used with a light dimmer.

Features
■ Simply replaces a standard light switch.
■ Operates as a normal light switch - or can be quickly switched to 'automatic' for timer control.
■ If required, several may be used in key rooms of the house to simulate a 'lived in' appearence.
■ Has 'random' setting to simulate 'lived in' situations when the home is vacant.
■ Accurate 24 hour digital clock.
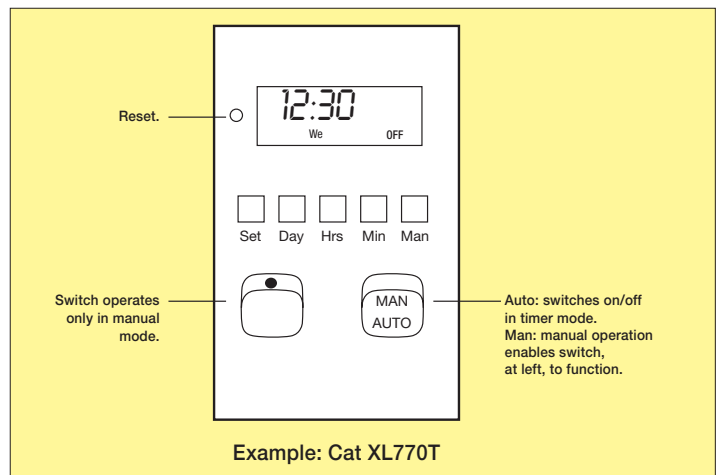■ Backlight turns on with first button press.

Reset.

12:30
We   OFF

Set   Day   Hrs   Min   Man

Switch operates only in manual mode.

MAN AUTO

Auto: switches on/off in timer mode.
Man: manual operation enables switch, at left, to function.

Example: Cat XL770T

Fig 1.

WHAT TO DO IF THE DISPLAY IS BLANK

When this unit is not connected to power for a long period of time, the back-up battery will run down and the display will go blank. When power is re-connected, wait for about 20 minutes for the internal battery to charge up before attempting to program the unit. After this time, the display may still not return to normal. If this should happen, press the reset button, see Fig 1, using a small insulated object.

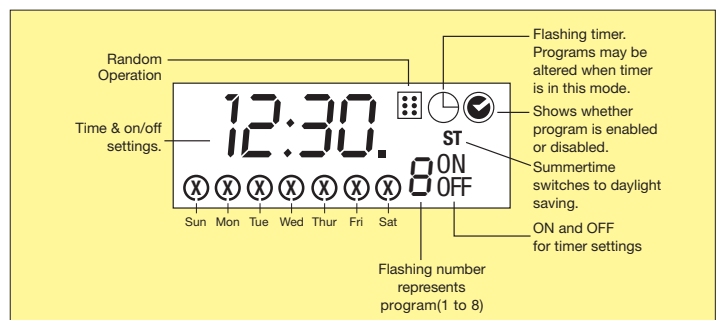*This procedure will erase the memory contents of the unit.*

Random Operation

Time & on/off settings.

12:30.
ST
ON
OFF

Ⓧ Ⓧ Ⓧ Ⓧ Ⓧ Ⓧ Ⓧ 8

Sun   Mon   Tue   Wed   Thur   Fri   Sat

Flashing timer. Programs may be altered when timer is in this mode.

Shows whether program is enabled or disabled.

Summertime switches to daylight saving.

ON and OFF for timer settings

Flashing number represents program(1 to 8)

Fig 2.

Installation
The XL770T & XL770TH is installed in the same way as a normal light switch. A wiring diagram is shown on page 4, (Fig 3).

Operating the time switch and setting the programs

Setting present day and time

In 'clock' mode, press the 'Set' key. A clock icon will appear at the top right. The timer is now in 'clock setting' mode. (If no key is pressed for 60 seconds, the timer will automatically revert to 'clock' mode.)

Clock setting mode

While the clock icon is flashing, press 'Day' until the present day is illuminated at the bottom of the display, 'Hrs' until the present hour appears (this is a 24 hour clock), then press 'Min' until the current time is reached. By pressing and holding either the 'Hrs' or 'Min' key, the digits will increment automatically, and similarly for the 'Day' key. The setting below represents 5.35pm on a Monday.
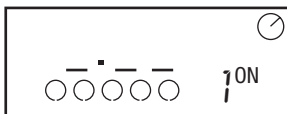

'Day' and 'time of day' display
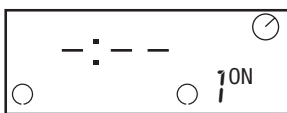
Setting the 'switching on' days

While in 'clock setting' mode, press 'set' once. The timer is now in 'program setting' mode. (If no key is pressed for 60 seconds, the timer will automatically revert to 'clock' mode.)

The display will show a flashing 1. This signifies that this is the first of 8 programs.

By continually pressing 'Day', different days will be illuminated at the bottom of the display. These indicate the days that the timer will operate. For instance the above display signifies the timer will come on during weekdays only (not weekends).

Pressing 'Day' once gives the following display:

This means that the timer is to operate during weekends only.

If 'Day' is pressed again all the days of the week will be displayed, meaning the timer is to operate everyday. The next press will highlight Su, then Mo, then Tu etc. Each progressive press will highlight another single day, the timer to operate on that day only.

Setting the 'switching on' time

With the 1 flashing, set the 'switching on' time for the first program by pressing the 'Hrs' and 'Min' keys.

This display shows that the timer will operate on Sunday only and the light/s will come on at 6.30pm.
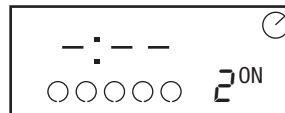
2

Setting the 'switching off' days and times

Having set the day/s of operation and the 'on' time, the 'off' time must be chosen, otherwise the light/s will stay on permanently from the 'switching on' time setting. After setting the 'on' time, press set again to enter the setting for program 1 'off' time. Please note that the program 1 'on' time will automatically be copied to the 'off' time to make setting easier.

Press the 'Hrs' and 'Min' keys as before to set the 'off' time. If, for instance, you wish the lights to turn off on Sunday (as in 'on' program) at, say, 23:15 hours (11.15pm), you must set the 'off' time as:

Press the 'Day' key to change the day you wish the lights to turn off. However, this cannot be done if you have selected a group of days, such as Monday to Friday.

When the program on/off time has been set properly, press the 'Set' key once. This will allow you to set the 'on' time for the next program.

Note 1: The same on/off times can be set every day or on selected days. These settings will occupy one program only.

If different on/off times are required on one night (say 3 different settings) then 3 programs would need to be utilised.

There are 8 programs in this timer which provide a maximum of 56 on/off settings per week.

Note 2: Say for example that you are installing the timer at 11.00am. You set the timer to turn on at 9.00am and off at 5.00pm. You will have to wait until 9.00am the next morning for the timer to turn on.

Press 'Set' after program 8 off time setting and the timer will go back to 'clock' mode and show the current time.

Disabling program(s)

If you wish to cancel a particular program you may press 'Man' when that 'on' or 'off' time is displayed in 'program setting' mode.

By doing this the black '⊙' icon appears on the top right of the screen, which disables that time command.

If, for instance, the timer was programmed to switch on at 19:30 on Wednesday and turn off at 23:15, then by displaying the 'on' time (19:30) and pressing 'Man', the '⊙' icon would appear and the lights would not switch on. Alternatively, if the turn-off time of 23:15 was displayed and the 'Man' key pressed, the result would be that the light would not switch off at 23:15 and would remain on until the next switch-off time occurred.

To resume normal operation, view the time which had previously been cancelled and press the 'Man' key again. The '⊙' icon should disappear, and the program will be reinstated.

Using manual override

There are two ways to override the timer:

1. Turn the MAN/AUTO switch to the MAN position.This allows the adjacent switch to operate as a normal light switch. In this mode, the words ON and OFF on the LCD display will not necessarily reflect the state of the light.

2. Press the 'Man' key (under the Excel cover). This will toggle the light on and off. The words ON and OFF on the LCD display will show the state of the light. If the word is flashing, this means that normal programs have been overridden until such time as the 'Man' key is pressed again.

Placing in 'Random mode'

Random mode switches the light/s on and off in a random fashion, giving an appearance of the house being lived in. Random switching is unpredictable, but the time the lights are on will be between 10 minutes and 30 minutes.

Random mode is set by pressing the 'Hrs' button for 3 sec. It is denoted by the following icon on the display:

When random mode is set, random ON/OFF switching will only occur between the ON/OFF times in the 8 programs. If no programs are set, no random switching will occur.

To exit random mode, press and hold the 'Hrs' button for 3 sec.

Reading the program

In 'clock' mode, press the 'Set' key until the clock face icon appears as a flashing sign at the top right of the display.

Continue to press 'Set' and the display will show ON/OFF times and step from program 1 to 8.

Pressing 'Set' further, the timer will then revert to 'clock' mode.

Daylight saving time adjustment

In 'clock' mode, press and hold the 'Min' key for 3 seconds. 'ST' will appear on the display.

Press 'Hrs' key once to decrement the hour by 1 (-1).
Press 'Hrs' key again to increment the hour by 2 (+2).
Press 'Hrs' key again to decrement the hour by 1 (-1).
Press 'Hrs' key again to decrement the hour by 1 (-1).
Press 'Hrs' key again to increment the hour by 2 (+2).
ie. the adjustment pattern is: -1, +2, -1, -1, +2, -1,...

When the adjustment has been made press 'Min' key to confirm the setting and return to run mode. This will advance or retreat all the time settings.
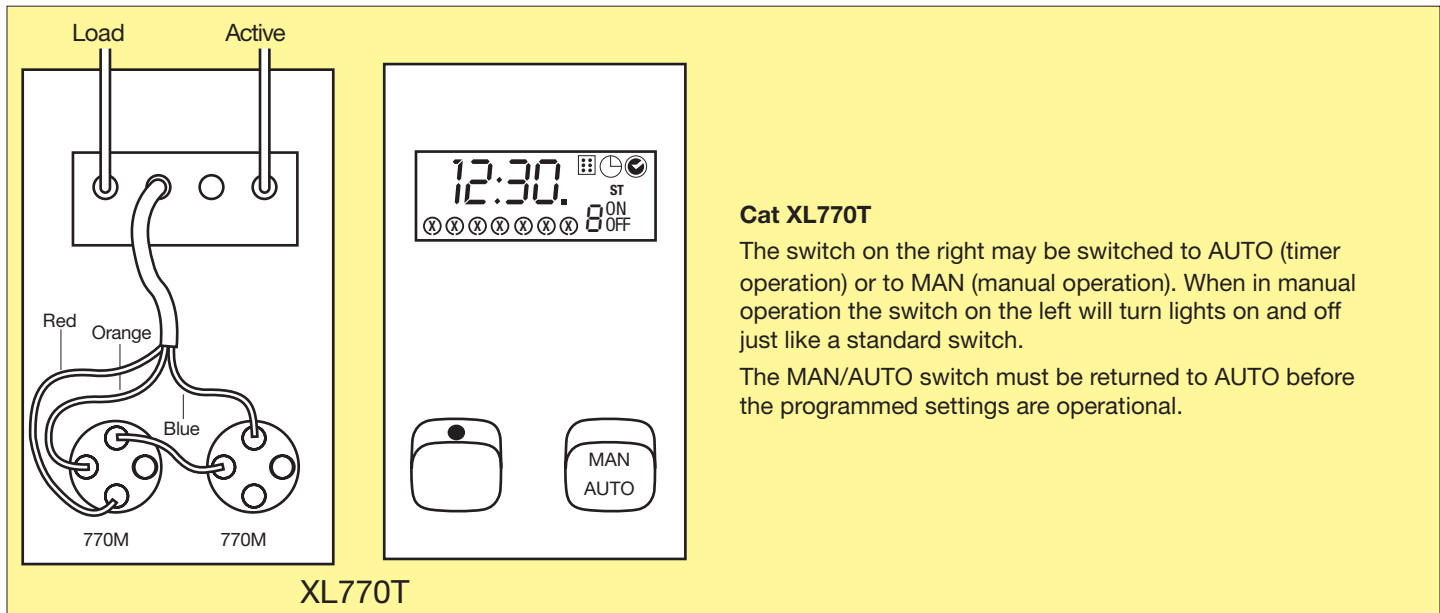

One Touch countdown timer

This feature can be used to switch the lights on for 10, 20, 30, 40 or 50 minutes.

To activate the countdown timer hold down 'Day' key for 2 seconds. The display will show 10:00 with ON symbol showing. Repeatedly pressing the 'Day' key will increment the timer value in steps of 10 minutes, until the maximum of 50:00 is reached. The countdown will begin immediately.

When countdown is operating all preset programs or the random function will be temporarily suspended.

The countdown feature can be cancelled at any time by pressing the 'Man' key.

Wiring diagrams

Load   Active

Red   Orange
Blue

770M   770M

XL770T

12:30.
ST
ON
OFF

MAN
AUTO

Fig 3.

Cat XL770T

The switch on the right may be switched to AUTO (timer operation) or to MAN (manual operation). When in manual operation the switch on the left will turn lights on and off just like a standard switch.

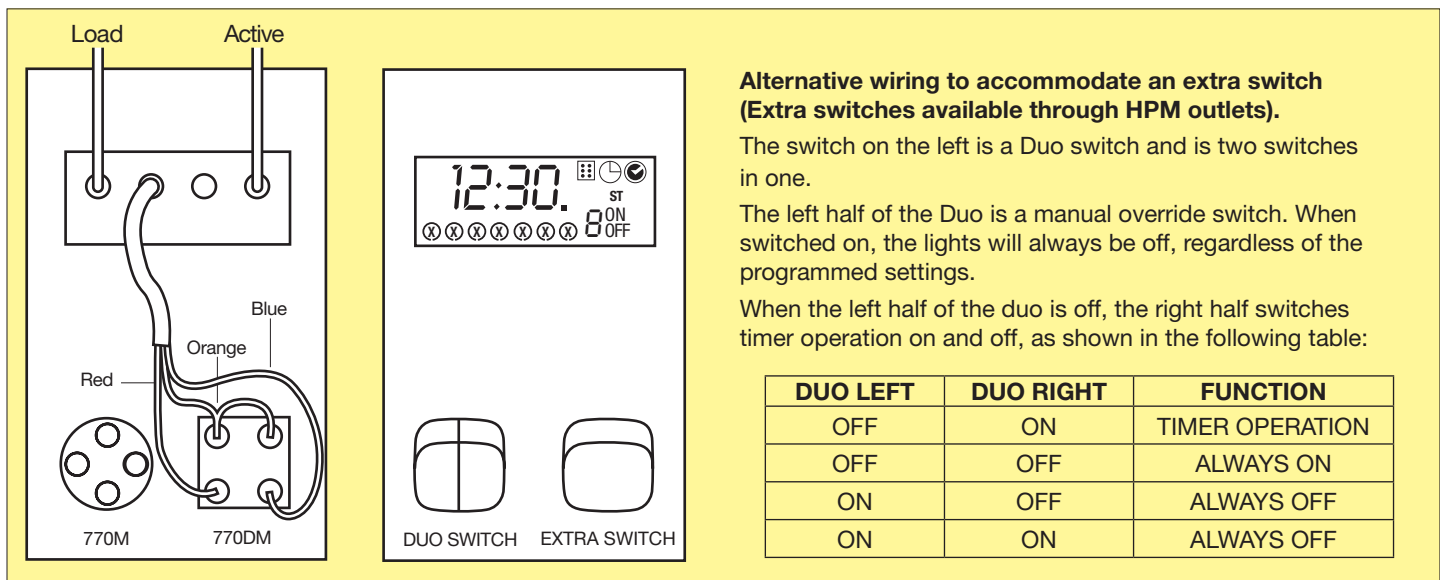The MAN/AUTO switch must be returned to AUTO before the programmed settings are operational.

Load   Active

Blue
Orange
Red

770M   770DM

12:30.
ST
ON
OFF

DUO SWITCH   EXTRA SWITCH

Fig 4.

Alternative wiring to accommodate an extra switch (Extra switches available through HPM outlets).

The switch on the left is a Duo switch and is two switches in one.

The left half of the Duo is a manual override switch. When switched on, the lights will always be off, regardless of the programmed settings.

When the left half of the duo is off, the right half switches timer operation on and off, as shown in the following table:

DUO LEFT	DUO RIGHT	FUNCTION
OFF	ON	TIMER OPERATION
OFF	OFF	ALWAYS ON
ON	OFF	ALWAYS OFF
ON	ON	ALWAYS OFF

Note: Back-up battery

The back-up battery ensures that programmed information is not lost in the event of a power failure. The battery has a life of approximately 6 years. After this 6 year period, the back-up facility may cease to function.

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