



# Repeat Cycle Timer Switch - 3 wire



Excel series: XLTX770/3

Standard series: TX770/3, TX770/3RC

### Specification: (at 25°C)

Contact status:	Normally open or normally closed. (See Special Note over page)
Connection type:	3 wire (neutral required)
Supply voltage:	230-240Vac±10%
Frequency:	50Hz
Max current:	10A
Max load:	2400W (incandescent) 2400VA (fluorescent)
Min load:	5W
Operating temperature range	0 to +50°C
Cycle timer ranges:	seconds per 15 seconds seconds per minute seconds per 5 minutes seconds per 15 minutes minutes per hour minutes per 4 hours minutes per 12 hours minutes per 24 hours
Factory setting:	10 seconds per minute
Approval No:	CS7243N

### Repeat Cycle Timer:

The HPM TX770/3 series Repeat Cycle Timers are designed to supply power to a load for a preset time, then turn off for a preset time and repeat the cycle continuously. They can be easily programmed for switching cycles from seconds per 15 seconds up to minutes per 24 hours. Applications include watering / reticulation systems, pool filters and the control of air conditioning or heaters which may only be needed on an intermittent basis. Provision is made for multiple switching from several locations for greater versatility.

The unit uses 50Hz mains frequency as the timing reference so as to ensure accurate repeatable intervals. The units have two timing modes, normally open and normally closed, as described. (See Special Note, over page).

### Choosing 'on' time and 'cycle duration'.

You can choose to have the cycle repeat itself every 15 seconds, every 1 minute, every 5 minutes, every 15 minutes, every hour, every 4 hours, every 12 hours or every 24 hours.

Example: You wish an exhaust fan to switch on for 3 minutes every 15 minutes; or a pool motor (pump) to switch on for 1 hour in every 4 hours.

You now need to choose two things: 1) the length of 'on' time and 2) the cycling period. The 'on' time is entered into the device in Mode 1 (see over page). There are a choice of eight cycling periods, which of course need to be longer than the 'on' time (or a continuous 'on' time will result). The cycling period can be chosen in Mode 2.(see over page).

### Typical Applications

NOTE: Power factor correction capacitors can be connected downstream of TX770 series contacts.

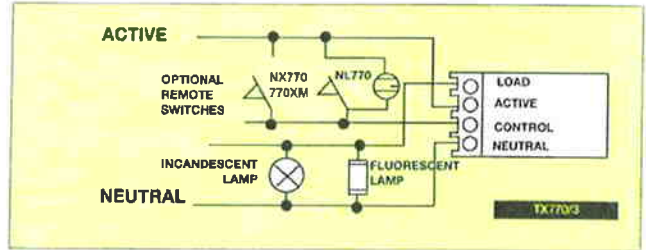


Fig 1. Wiring diagram for special application.

Note: Cat NL770 or Cat 770XM can replace all switches including intermediate switches, for multi-way circuit using existing wires.

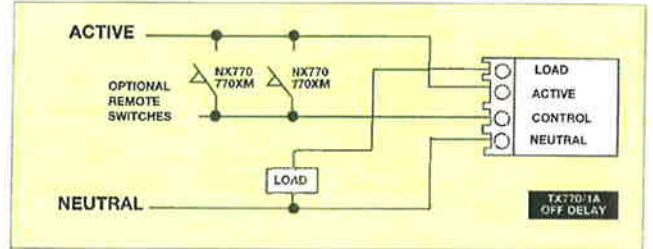


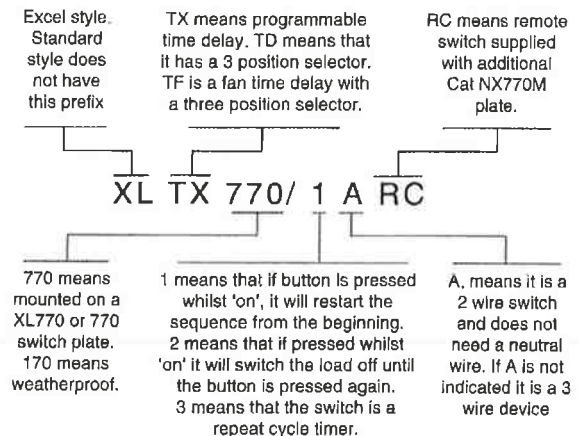
Fig 2: Turning load 'off' for timed period every 4 hrs.

Example: Load is an air conditioner which is required to be turned off for 5 mins every 4 hrs to allow for self cleaning. Mech 770XM provides for manual switch off and re-start at the beginning of each cycle.

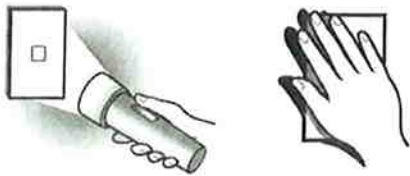
### INSTALLATION NOTES

- 1) The maximum recommended length of the control wire to remote push buttons is 100m.
- 2) Power factor correction capacitors can be connected down stream of TX770 series contacts.

### Understanding the function of the switch by its catalogue number.



**WARNING**  
Do not megger test. Megger testing may damage unit.



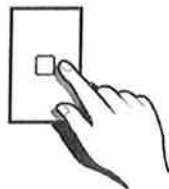
### How to program:

The heart of this time delay switch is a photo electric cell which is influenced, in the programming mode, by changes of light intensity. For instance in a semi dark indoor situation, a torch being flashed at the switch will programme it. Outdoors or in brighter areas it may be the opposite. Your hand or a box placed over the switch and removed in approximately 2 second intervals will also put the switch into the program mode required to set the 'time on'. Either way the switch should be subject to approximately 2 seconds on, 2 seconds off. **Let's call the 'on' periods - 'flashes'.**



### 15 minutes to set the program.

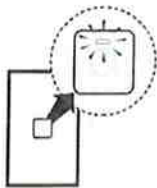
Setting the unit into program mode can only be done within 15 minutes of the unit receiving power. So it may be required to switch the circuit off from the MCB for a few seconds and then switch the MCB back on. *You now have 15 minutes to set the programme.*



### Mode 1 - Choosing the 'ON' Period.

Firstly you need to choose the 'time on' that you require. Say for instance you were programming a urinal and the decision was to have an 'on' period of 10 seconds per 15 minutes.

The number 10 would need to be entered in Mode 1. (See table for maximum settings).

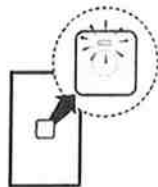


### How do you get into Mode 1? Easy!

Subject the unit to 3 flashes. You will know if you are in Mode 1 because the switch will show a constant green light plus a flashing red one. If you see these lights you are in Mode 1.

Now you need to press the button 10 times. (The 'on time'. But because we are choosing a 15 minute cycle it must be, in this particular case, seconds. 10 seconds after you have entered the number, the relay will turn on for 4 seconds to verify the setting. The press button will also show a green neon with red flashes which continue for 90 seconds.

### Now you need to get into Mode 2 to choose the cycling period.



The example that we spoke of before was 10 seconds in a 15 minute cycle.

To get into Mode 2 - caption, subject the unit to 6 flashes. You will know if the switch is in Mode 2 because it will show a constant red light and a flashing green one (the opposite to Mode 1). You now need to choose the cycling period that you want.

To do this press the button one or more times depending on the 'time per cycle' that you wish to enter. In this particular case we want 15 minutes ( 10 seconds every 15 minutes). Press the button 4 times. (See table above).

10 seconds after the last press, the unit will automatically save the new timing and turn the relay on for 4 seconds, then off again. It will also flash the new setting for 90 seconds.

The next press will commence the timing cycles from the beginning of the 'on' period.

This table shows the number of presses, in Mode 2, to set the required cycle time.

Time On (Set in Mode 1)	Max Settings (Mode 1)	Cycle Period (Set in Mode 2)	No. of Presses (For Mode 2)
xx secs	14	15 secs	1
xx secs	59	1 min	2
xx secs	149	5 mins	3
xx secs	224	15 mins	4
xx mins	59	1 hr	5
xx mins	239	4 hrs	6
xx mins	239	12 hrs	7
xx mins	239	24 hrs	8

### Operation:

- When the unit has been programmed previously and the information you are inputting is to replace the previous program, this is done automatically with the first press of the button (in either program mode) because it deletes earlier information.
- When power is applied to the unit, the repeat cycle timing begins automatically, starting with the 'on' period if the unit is programmed in the 'on' mode (factory supplied) or the 'off' period if the unit is programmed in the 'off' mode. (See Special Note below).
- The push button on the plate or remote push button enables the user to terminate the present state and restart the repeat cycle timer from zero time.

### Programming Notes:

- The units are factory set in Mode 1 at 10. if this number is satisfactory, you then proceed straight to Mode 2.
- After entering either program mode, pressing the button once or more will override the previous setting and cannot be reversed.
- After entering either program mode, and not pressing the button, the unit will time out after 1 minute and no setting will be changed.
- All new program settings are **permanently stored in a non-volatile memory**, immune to power failure. There is no need for back-up batteries.
- The units may be programmed on the bench prior to going on-site if more convenient.

### Special Note to enable 'off mode' delay:

On the last press during programming in mode 2, hold down button for 10 seconds until relay turns on. 'Off mode' delay effectively turns the unit into normally closed operation where the load is off for the 'on time duration' and 'on' for the remaining cycle times.

### Warranty

HPM TX770 series Time Delays are warranted as here and after appears, against faulty material and/or workmanship for a period of one year from date of purchase.

The obligation of the manufacturer, under this warranty, is limited to servicing and replacing defective parts when the unit is returned to HPM Industries, or the distributors in your state, freight pre-paid.

This warranty becomes void on any unit which has been tampered with or damaged by accident, short circuited, loaded beyond rating or damaged otherwise by improper operation.

The warranty is also conditional on installation by a licensed electrical contractor.

All other warranties, whether expressed or implied, and whether arising by operation of law or otherwise are hereby excluded.

HPM Industries Pty. Ltd.



Cat XLTX770/3, TX770/3 & TX770/3RC

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