

AIRFLOW PRESSURE SWITCH INSTALLATION INSTRUCTIONS

1. Mount the airflow switch on a flat surface ideally in a clean dry environment, but can be mounted externally. Mount the switch in vertical plane so that the nozzles are pointing down (as shown in fig.1).
2. Remove plastic cover from P2 - nozzle of airflow switch, both P1 + and P2 - are now open to atmosphere.
3. Mount nozzle in duct where positive air pressure is to be monitored, and well away from the fan to prevent turbulence (as shown in fig.2).
4. Connect the plastic tube between the nozzle and P2 - nozzle of the airflow switch. Please note this is because air flowing across the nozzle will suck air from the nozzle as a pitot tube.
5. Using a meter check the continuity between terminals 1 and 3 of the airflow switch with no airflow in the duct.
6. Turn the fan on and measure between terminals 1 and 3 of the airflow switch, adjust the switch until continuity is broken. if no switching action is obtained, try repositioning the nozzle to a position where a higher pressure is in the duct, and check the tube is not kinked. Avoid areas where turbulence may occur, ensure the nozzle is at a right angle to the airflow.
7. With the fan still on, check continuity between terminals 2 and 3 of airflow switch.
8. Turn off the fan and measure between terminals 2 and 3, there should be no continuity.
9. If unable to obtain a proper switch operation it may be necessary to fit a nozzle to the negative side of the duct as well, in which case P1 + connects to the fan outlet and P2 - to the fan inlet (as in fig.3).
10. To wire up switch for continuity when airflow is proven, use terminals 2 and 3.
11. Replace cover on airflow switch and use appropriate safety labels if mains voltage is switched.

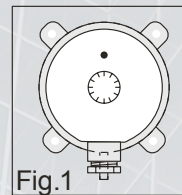


Fig.1

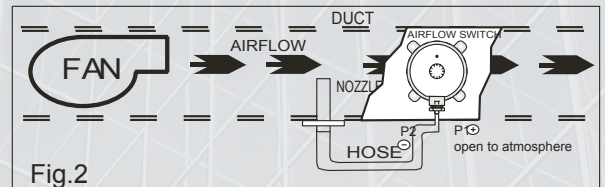


Fig.2

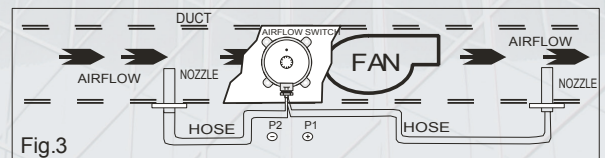


Fig.3

N.B. MAXIMUM VOLTAGE 250 VAC MAXIMUM CURRENT 1.5 A RESISTIVE

WARNING: SWITCH OFF POWER BEFORE REMOVING PLASTIC COVER.

The information provided in the literature is believed to be accurate (subject to change without notice), however, use of such information shall be entirely at user's own risk.

HIGH TEMPERATURE AIRFLOW SWITCH

KIT INCLUDES

- High temperature airflow switch
- Duct adaptors x 2
- Copper tube 1M

INSTALLATION INSTRUCTIONS

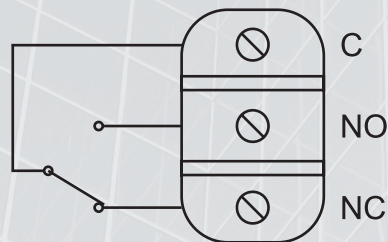
Mount the airflow switch vertically as shown in figure 1, Units can be mounted in other positions but may need a slightly higher pressure to operate.

Port + P1 Hi = High pressure - connect to fan discharge or high pressure side of filter.

Port - P2 Lo = Low pressure - connect to fan suction or low pressure side of filter.

The LP port can be left open for fan/air monitoring.

CONNECTION DETAILS



 ADJUSTING SCREW
INCREASE

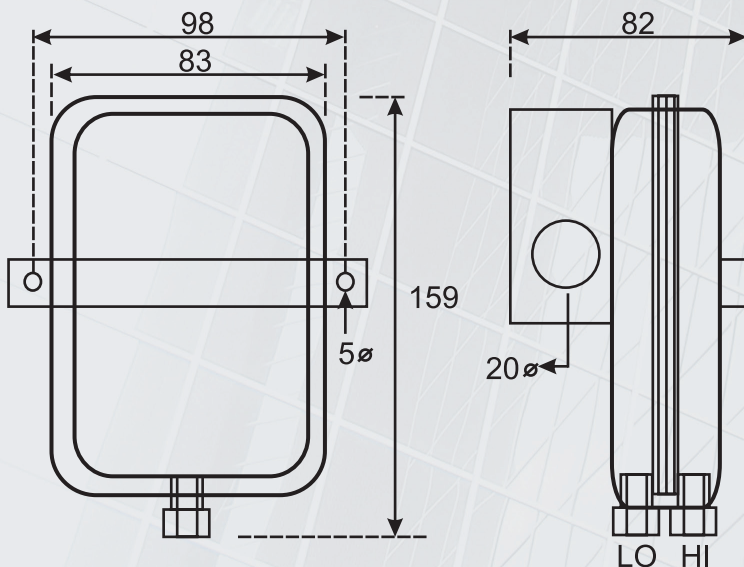


FIGURE 1

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3 PORT VALVE ACTUATOR

FEATURES

- 0-10V modulating control
- Manual override for valve functional check
- Direction of rotation selector

FUNCTIONAL RELIABILITY

The actuator has no limit switches and is overload-proof. Its stops automatically when it reaches the actuator end stop.

WIRING DETAILS

TRD24-SR & TR24-SR



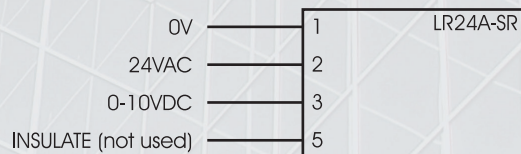
EASY FUNCTIONAL CHECK

A functional check of valve operation is simplicity itself: the gearing can be disengaged by simply pressing a pushbutton or lever on top of the case, while the pushbutton remains depressed, the valve can be operated by hand.

SIMPLE INSTALLATION

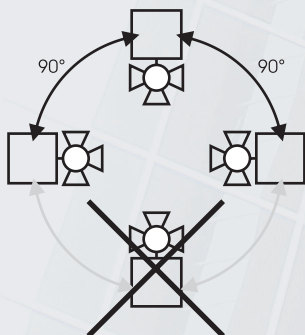
The actuator is mounted directly onto the ball valve using only one screw, the actuator can be mounted in any one of the four 90° steps.

LR24A-SR



INSTALLATION

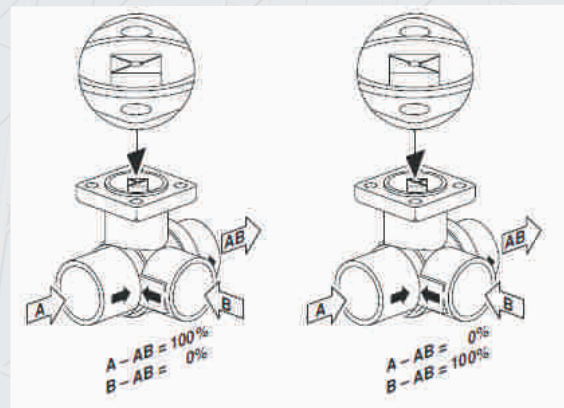
The valve may be mounted either vertically or horizontally. It is not permissible to mount the valve with the stem pointing downwards.



DIRECTION OF FLOW

The direction of flow, specified by an arrow on the housing, is to be complied with since otherwise the ball valve can be damaged.

Please ensure that the ball is in the correct position.



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ELECTRIC HEATER ELEMENT

CONTROLS

A suitable control system should be installed which must include a timer to **keep the fan running for a period of 2 minutes after the heater has been switched off**, This is incorporated within the control panel.

If a speed controller is being fitted, it **MUST NOT** allow the fan to be turned off independently of the control, nor must it allow the airflow volume to **FALL BELOW** that stated on the heater nameplate.

TESTING

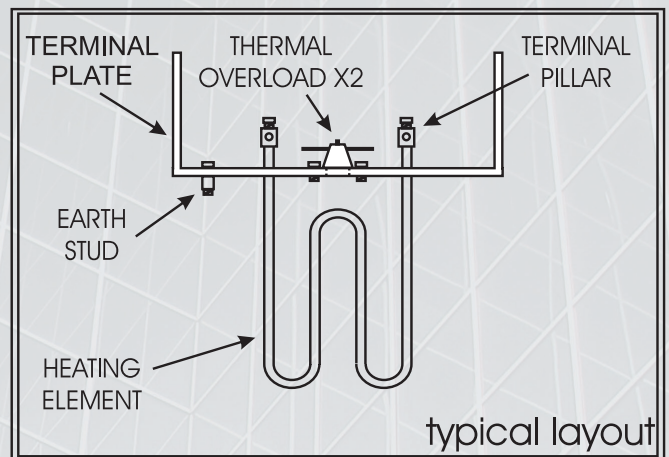
Elements should be tested prior to connecting.

Elements stored in damp conditions may require drying out to achieve the correct insulation levels. Contact the supplier in case of any uncertainty.

CONNECTION DETAILS

ELECTRIC HEATERS MUST BE WIRED AND INSTALLED IN ACCORDANCE WITH THE FOLLOWING DIAGRAMS AND INSTRUCTIONS.

1. The electrical supply to the heater should be either 1phase or 3phase (with separate neutral), refer to nameplate for clarification.
2. Electrical cables should be of a high temperature, insulated type (i.e. Silicone rubber or fibreglass) and be installed in accordance with current IEE regulations.
3. The heater should be fitted with a manual reset, thermal overload which will break the contacts when the duct temperature exceeds 130°, this should be wired in series with an airflow switch and the operating coil of the heater control circuit.
4. Ensure a suitable earth connection is made to the terminal provided.
5. The element studs are fitted with terminal pillars and care should be taken not to over tighten and cause damage to the elements.
6. Always fit an isolator maintenance of the heater.



Where * = any number of additional steps

IMPORTANT: 3PHASE THYRISTOR CONTROLLED HEATER DOES NOT REQUIRE A NEUTRAL CABLE TO BE FITTED.



IF IN DOUBT ASK ADVICE FROM YOUR HEATER SUPPLIER

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NM230 / LM230 DAMPER ACTUATOR

FEATURES

- For dampers up to approx. 1.5m² (NM230), up to approx. 1.0m² (LM230)
- Power open / close
- Available with auxiliary switch (NM/LM230A-S)
- Direction of rotation selector switch
- IP54 housing (bottom cable entry position)

IMPROVED FUNCTIONAL SAFETY

The damper actuator has no limit switches and is overload-proof. Its stops automatically when it reaches the damper or actuator end stop.

EASY FUNCTIONAL CHECK

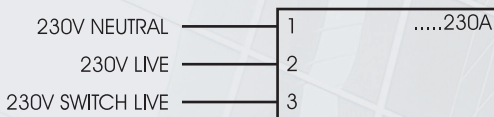
A functional check of damper operation is simplicity itself: the gearing can be disengaged by simply pressing a pushbutton on top of the case, while the pushbutton remains depressed, the damper can be operated by hand.

SIMPLE INSTALLATION

The damper actuator is fitted with a universal spindle clamp for quick and easy mounting directly on the damper spindle. The actuator is supplied with an anti-rotational strap for fixing it in position.

WIRING DETAILS

NM230A / LM230A



NM230A-S / LM230A-S



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PRESSURE TRANSDUCER

DF-1141-0010

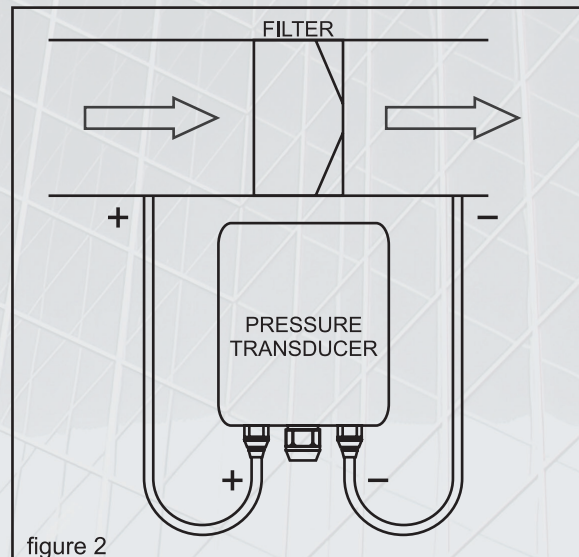
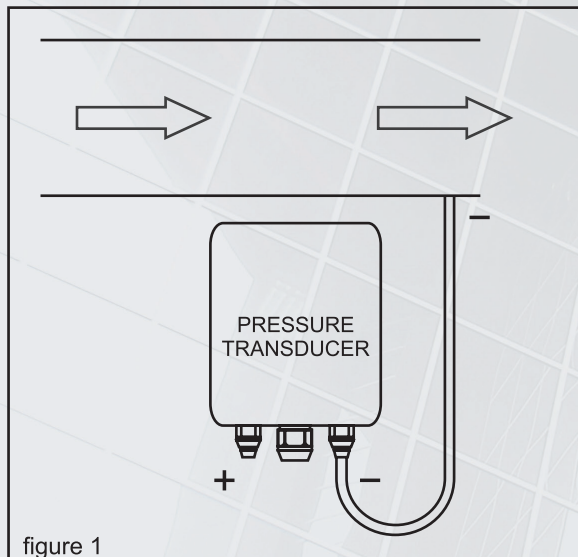
FEATURES

- Multi pressure range (dip switch selectable)
- 24V ac/dc supply
- 0-10V output
- IP65 enclosure (bottom cable entry)

APPLICATION

For airflow pressure monitoring the "+" nozzle must be open to atmosphere and the "-" nozzle connected to the duct (see figure 1).

For filter monitoring the "+" nozzle must be fitted to the duct before the filter, and the "-" nozzle connected to the duct after the filter (see figure 2).



WIRING DETAILS

24V AC/DC INPUT	<input type="checkbox"/>	1
0-10V DC OUTPUT	<input type="checkbox"/>	2
0V	<input type="checkbox"/>	3
NOT USED	<input type="checkbox"/>	4

DIP SWITCHES



PRESSURE RANGE	SW 1	SW 2
0.....100Pa	OFF	OFF
0.....300Pa	ON	OFF
0.....500Pa	OFF	ON
0.....1000Pa	ON	ON

MEASURING RANGE MODE	SW 3
Unidirectional (0..MR+)	OFF
Bidirectional (MR-....MR+)	ON

OUTPUT ATTENUATION	SW 4
Magnitude respectively interval adjustable	
Big (10s)	OFF
Small (1s)	ON

ZERO POINT CALIBRATION	SW 6
Pushbutton (Auto zero)	OFF
Potentiometer (Offset)	ON

*SW 5 is not assigned

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Specialist Control Panels HEATING & VENTILATION

PIR SENSOR SLW360

FEATURES

- 360° Sensor
- Run on timer 5 seconds to 18 minutes
- Up to 6 metres detection zone

LOCATION

For optimum performance the sensor should be positioned at a height of 2.5m where possible, the sensor is more sensitive to movement across its field of vision that directly towards it, therefore position the unit so that the sensor looks across the likely approach path. Avoid positioning the sensor where any sources of heat is in the detection area.

TIME DELAY

The time setting controls how long the switch contacts remain closed after activation and all motion ceases. The minimum set time (fully anti-clockwise) is approximately 5 seconds, whilst the maximum time (fully clockwise) is approximately 18 minutes. Set the control to the desired setting between these limits.

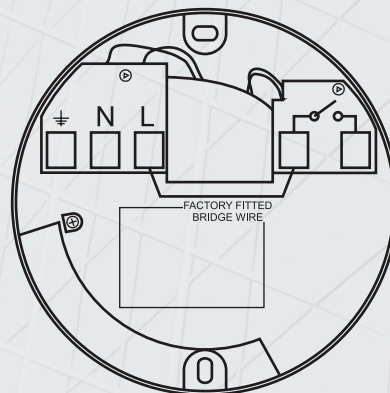
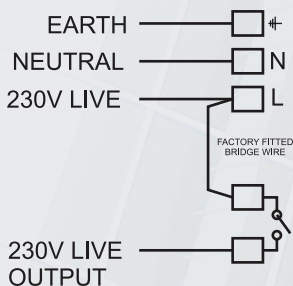
LIGHT SENSITIVITY

For the sensor to work in lit area, the light sensitivity setting should be turned fully clockwise.



T = TIME SETTING
L = LIGHT SETTING

WIRING DETAILS



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CARBON DIOXIDE ROOM SENSOR

RC02

FEATURES

- Self-calibrating
- 0-10V output
- Wall mounted
- IP30 Housing

GETTING STARTED

After switching on the device, a self-test and tempering period follows. This procedure take 3-5 minutes, depending on the ambient conditions.

During this time the output voltage differs from the actual measured value.

WIRING DETAILS

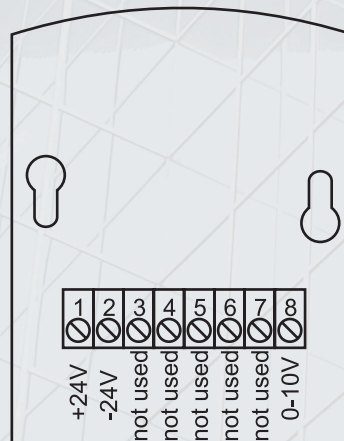
Terminal 1 = +24V AC / DC supply

Terminal 2 = -24V AC / DC supply

Terminal 8 = 0-10V output

DESCRIPTION

The RC02 sensor is a self-calibrating microprocessor-controlled CO2 measuring instrument used for the detection of CO2 content in air within a range of 0 ppm to 2000 ppm CO2. Measuring signals are converted into standard signals of 0-10V. The CO2 content of air is determined by a NDIR sensor. The sensor calibrates itself at an interval of 7 days, to ensure this function, the device needs to be supplied with fresh air (CO2 content 300 - 400 ppm) for at least 10 minutes during each 7 day period. For self-calibration the device memorises the minimum value measured during the 7 day period, after this 7 days the minimum value is standardised to 350 ppm CO2 and the output signal is corrected accordingly. The maximum amount of correction is limited to 40 ppm per interval.



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CARBON DIOXIDE DUCT SENSOR

A/CO2-010-D

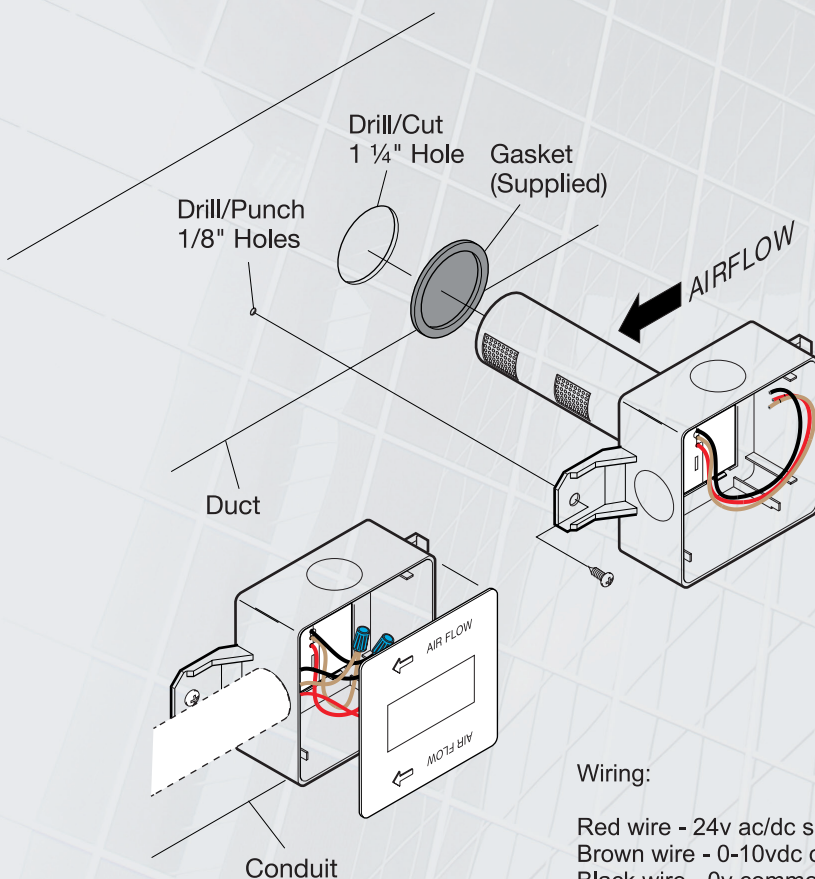
FEATURES

- Self-calibrating
- 0-10V output
- Simple installation (mounting hardware included)
- IP30 Housing

INSTALLATION & WIRING

DESCRIPTION

The A/CO2-010D sensor is a self-calibrating CO2 measuring instrument used for the detection of CO2 content in air within a range of 0 ppm to 2000 ppm CO2. Measuring signals are converted into standard signals of 0-10V. The sensor offers ABC logic™ software for self correction of a drift to better than ±20 ppm per year. The system is virtually free of maintenance and typically has a lifetime of more than 10 years.



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TM-619 DIGITAL TIMER

GENERAL INFORMATION

This Panel-Mount Digital Timer is equipped with a replaceable Lithium CR2032 battery.

It has a 24 hour clock format.

The Timer is designed with up to 6 possible ON/OFF events programs per day.

The Timer provides 15 combinations of daily programs (see Fig.1)

PROGRAMMING THE TIMER

A. Functional description of buttons on panel.

1. MANUAL: To select ON, AUTO or OFF
2. CLOCK: To adjust current day and time
3. TIMER: Programs review & setting programs
4. DAY: To adjust day of the week
5. HOUR: To adjust the hour
6. MIN: To adjust the minute
7. P : Reset Timer's settings
8. LED: To indicate ON/OFF status

B. Adjusting the clock

Press and hold CLOCK and then press DAY key, HOUR key, and MIN key to adjust the clock.

C. Programming the Timer

1. Press TIMER key, the screen will show

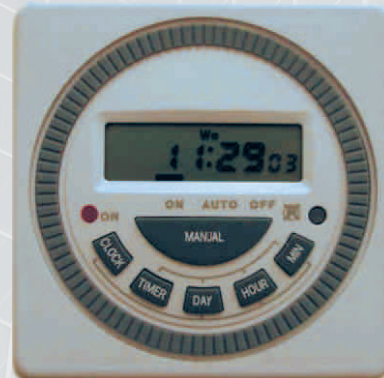
1^{ON}--:--__

2. Press DAY key to select on of the 15 combinations of days of the week (see Fig.1). Continue to press the DAY key unit the required selection is shown on the display.

3. Press HOUR key and MIN key to set hour and minute for 1on.
4. After setting 1on press TIMER key again. The screen will show

1^{OFF}--:--__

5. Press DAY key to select the days of the week combination.



1.	MO	TU	WE	TH	FR	SA	SU
2.	MO						
3.		TU					
4.			WE				
5.				TH			
6.					FR		
7.						SA	
8.							SU
9.	MO	TU	WE	TH	FR		
10.						SA	SU
11.	MO	TU	WE	TH	FR	SA	
12.	MO	TU	WE				
13.				TH	FR	SA	
14.	MO		WE		FR		
15.		TU		TH		SA	

FIG. 1

NOTE: The days of the week combination for each ON/OFF program must be consistent.

6. Repeat the programming procedure to step 3 to set the hour and minute for 1OFF.

7. When setting of 1on and 1off is complete press TIMER key. Screen will show

2^{ON}--:--__

8. Repeat the programming procedure above to complete all the required ON/OFF event periods.

9. When all ON/OFF periods have been set press CLOCK key to activate the timer.

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TM-619 DIGITAL TIMER

D. To review program settings

press TIMER key to scroll through each of the ON/OFF events.

E. To use the Override function

The override function is only effective when the Timer is running in AUTO mode.

Temporary override

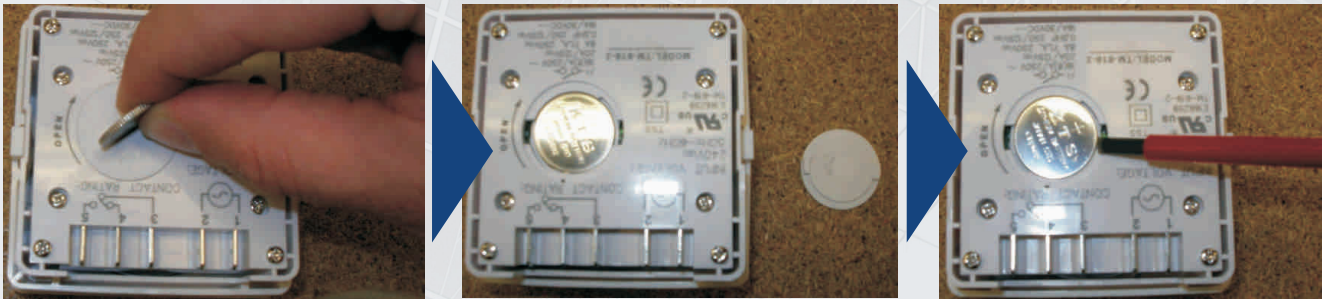
1. When the Timer's output status is On press the MANUAL key to change from AUTO to OFF. The Timer's output status will turn to OFF and all programs will be overridden. Press MANUAL again to switch the Timer's

status AUTO. The Timers output will remain OFF until the next program event call for ON. The Timer will then resume its automatic operation.

2. When the Timer's output status is OFF press the MANUAL key to change from AUTO to ON. The Timer's output status will turn to ON and all programs will be overridden. Press MANUAL again to switch the Timer's status to AUTO. The Timer's output will remain ON until the next program event calls for OFF. The Timer will then resume its automatic operation.

TO REPLACE TIMER'S BATTERY

LITHIUM CR2032

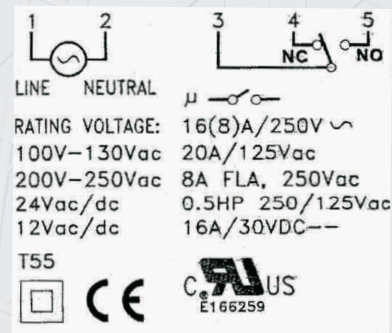


For voltage and electrical rating information please refer to the markings on the back of the Timer.

See the back of the Timer for proper wire connections.

Timer may need to be connected to a power source in order to set the program.

WIRING DIAGRAM



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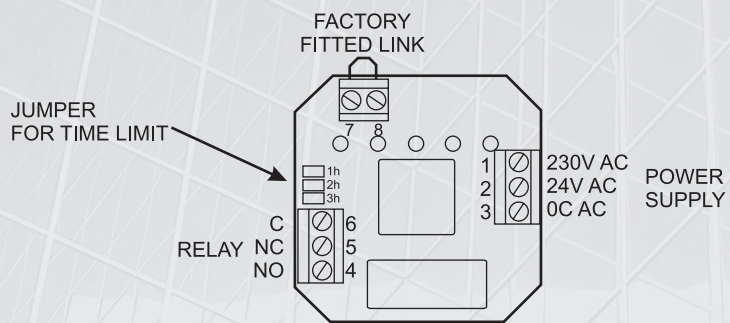
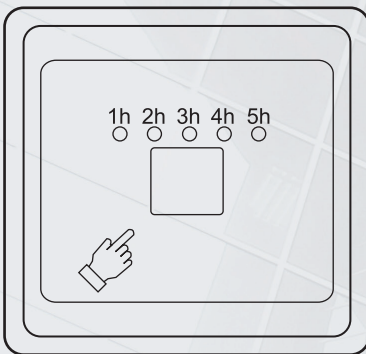
Specialist Control Panels
HEATING & VENTILATION

ELECTRONIC TIMER LAP 5-V

The timer can be used in many applications to provide time override or extension to a controlled process.

As the button is pushed and released the number of hours registered increases until the device turns back

to the off condition. When the timer shows a time period is on, the relay contact will be energised until the time period has passed, then the relay will de-energise. Holding the button in for more than 3 seconds will cancel any set period. The maximum period can be limited by jumper positioning.



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