

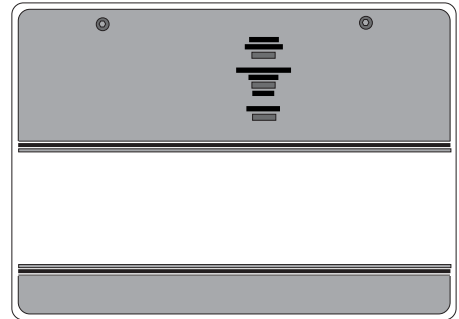
24V 1A REGULATED POWER SUPPLY UNIT

IMPORTANT: READ ALL OF THIS DOCUMENT CAREFULLY BEFORE INSTALLING THIS EQUIPMENT.

The BF375M is a general purpose mains to regulated 24V d.c. power supply unit (PSU) complete with on-board relay. It has three indicators (mains on, battery/power supply fault and output triggered).

Two inputs are provided (trigger and hold off). These can be used to control the internal relay switching the output voltage on or off. This and the PSU's sophisticated fault monitoring function makes the BF375M ideal for a host of applications.

Optional back-up batteries can be fitted to the PSU to maintain the output in the event of mains failure.



TYPICAL EXTRA LOW VOLTAGE CONNECTION DETAILS

Below are examples of three very basic circuits which will suit the needs of most users. It should be noted however that the BF375M is a very versatile control PSU and many additional and more sophisticated control scenarios can be implemented if required (see page three for details).

FIG 1: UNSWITCHED LOAD - use these connections to supply constant 24V d.c to a load.

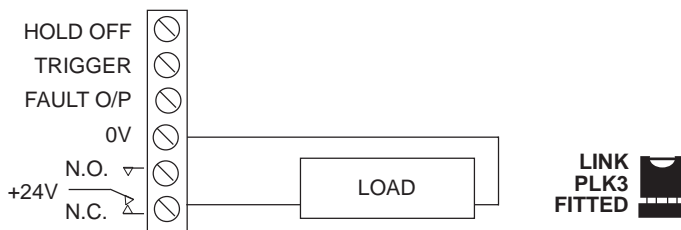


FIG 2: SWITCHED LOAD - use these connections to energize the load (e.g. rollerdoor shutter) via the BF375M's relay when external voltage is applied to its trigger input

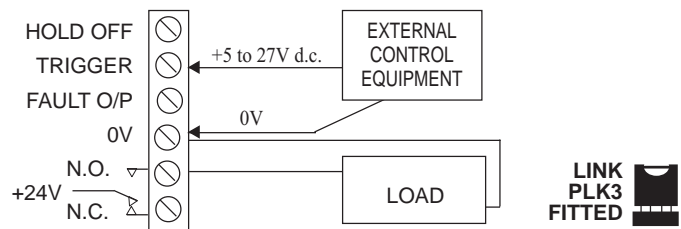
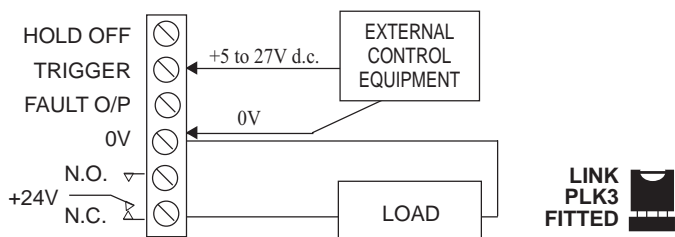


FIG 3 : SWITCHED LOAD - use these connections to de-energize the load (e.g. magnetic door holders) via the BF375M's relay when external voltage is applied to its trigger input



INSTALLATION

THIS EQUIPMENT MUST ONLY BE INSTALLED AND MAINTAINED BY A SUITABLY SKILLED AND TECHNICALLY COMPETENT PERSON. THIS EQUIPMENT MUST BE EARTHED.

The PSU must be sited internally with consideration given to the visibility of the indicators and any likelihood of tampering or vandalism of the equipment. All wiring must be undertaken with respect to the current edition of the IEE Wiring Regs, 16th Ed. (BS 7671 1993) or in accordance with the relevant national wiring rules. If the PSU is to be used as part of a fire alarm installation, the wiring must also comply with BS5839 Part 1.

The general requirement for the connection of mains to the PSU is fixed wiring using three core cable not less than 0.75mm², fed from an isolating switched fuse spur (or a similar disconnection device) fused at 3A. A plug and socket must not be used.

Take the power supply out of its box and undo the two front panel retaining screws with the key supplied. Hinge the front panel down through 90 degrees and remove the earth connection. Locate the connector plug (PL1) on the main printed circuit board and firmly pull it off the board. Gently spring the lid over the two hinge bosses and lift the front panel off. Keep the front panel in a safe, dust free place.

Fix the base of the PSU securely to the wall using the mounting holes provided (indicated by the ⊙ symbol in Fig 4 below). Assess the condition and construction of the wall and use a suitable No.8 or 4mm screw fixing. Any dust created during the fixing process must be kept out of the power supply, and great care should be taken to avoid damaging wiring or components.

All wiring should be carefully planned before starting the job. Ensure all low voltage wiring is segregated away from the mains wiring as shown in Fig 4.. The mains wires must be connected to the mains terminal block only with live, neutral and earth being connected to the L, N and E terminals respectively..

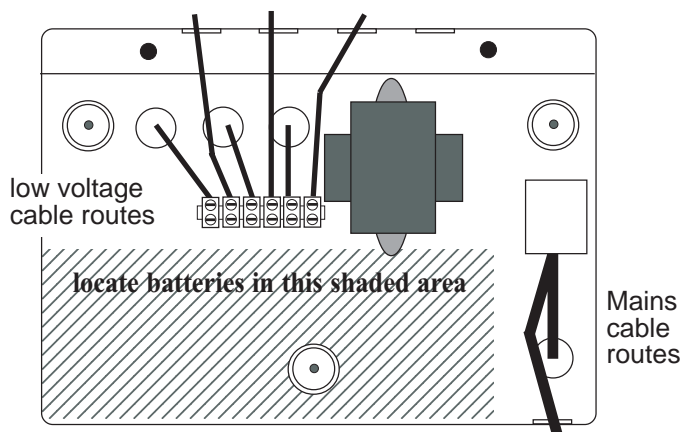
Any knockouts removed (indicated by the ○ symbol in Fig 4), must be filled with good quality cable glands.

All wiring coming into the enclosure must be adequately insulated with PVC, Neoprene or other fire retardant material and be suitably rated for the application.

DO NOT USE AN INSULATION TESTER ON ANY CABLES WHILST THEY ARE CONNECTED TO THE PSU AS THE TEST VOLTAGE **WILL** DESTROY THE PSU.

Replace the front panel and connect the main wiring connector PL1 and the EARTH WIRE.

FIG 4: BF375M INTERNAL VIEW & WIRING ROUTES



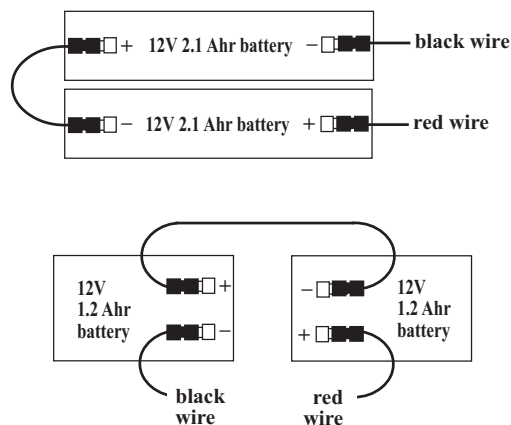
FITTING BACK-UP BATTERIES

Two good quality 12V valve regulated lead acid batteries (VRLA) are required for the battery backup supply. These should be connected in series (as illustrated on the right) using the link wire supplied in the accessory pack. The capacity of the batteries used will be dependant on the required stand-by time.

The BF375M's quiescent current is 15mA maximum*. 1.2Ahr batteries will typically give 36 hours standby whilst 2.1 Ahr batteries will give approximately 80 hours.




Verify the connections before you make them. Incorrect connection will blow the battery fuse (F2) and MAY DAMAGE THE PSU. Ensure link PLK1 (battery monitor link) is fitted on the PCB. This ensures that the PSU's battery monitoring circuit is working and its indicator light will illuminate if there is a fault. If back-up batteries are not required, link PLK1 must be removed from the PCB.

* Quiescent current is calculated for the following condition: Mains supply failed, Battery/Power Supply fault light lit, output relay not activated and no load current supplied until the full output of 1A is supplied for 30 minutes at the end of the stand-by period. Any additional loading that increases the quiescent current must be considered when calculating the standby time.



SUPPLY OUTPUTS

Dependent on the position of link PLK2 and the status of the BF375M's two inputs, the control relay switches the nominal 24V to the normally closed (N.C.) or normally open (N.O.) outputs, as described in the table below:-

LINK PLK2 POSITION	RELAY NOT ACTIVE		RELAY ACTIVE		SUMMARY
	N.C. OUTPUT	N.O. OUTPUT	N.C. OUTPUT	N.O. OUTPUT	
A  B	ON	OFF	OFF	ON	N.C. output switches <u>off</u> when relay active. N.O. output switches <u>on</u> when relay active
A  B	ON	OFF	ON	ON	N.C. output permanently <u>on</u> . N.O. output switches <u>on</u> when relay active
A  B	ON	ON	OFF	ON	N.C. output switches <u>off</u> when relay active. N.O. output permanently <u>on</u> .

INPUTS

TRIGGER INPUT

This input requires a positive voltage of +5 to +27 Vd.c. with respect to 0V to trigger the relay. When this voltage is applied, the BF375M's trigger indicator is lit and the relay is energised. (See figs 2 & 3 on page 1 for circuit wiring)

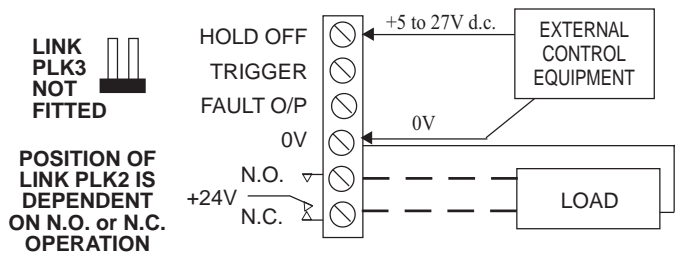
HOLD OFF

This optional input is designed for use on failsafe systems.

It requires a constant positive voltage of +5 to +27 Vd.c. with respect to 0V (typically obtained from a control panel such as a fire alarm panel).

This voltage **MUST** be applied to **PREVENT** the relay from energising. When the hold off voltage is removed, the BF375M's trigger indicator is lit and the relay is energised. See diagram (right).

FIG 5: EXTERNAL HOLD OFF



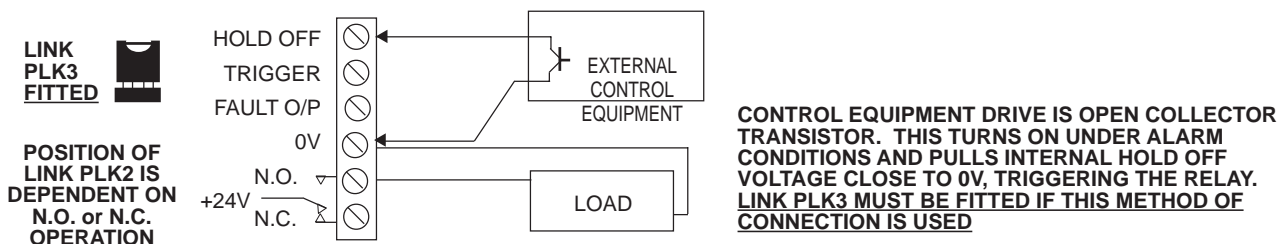
If the hold off input is not used, link PLK3 must be fitted so that the hold off voltage is provided internally (this is the factory default setting).

OTHER APPLICATIONS & CIRCUIT WIRING EXAMPLES

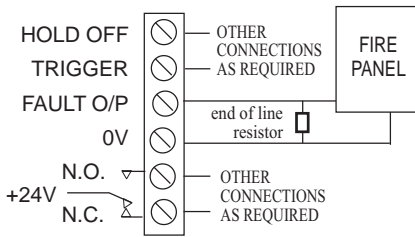
SWITCHING THE RELAY USING EQUIPMENT WITH AN OPEN COLLECTOR OUTPUT

In addition to the methods shown above, it is possible to switch the PSU's relay using control equipment that has an open collector output (as found on certain makes of fire alarm panels). The open collector output should be connected to the PSU's hold off input as shown in fig 6.

FIG 6: SWITCHING THE RELAY VIA AN OPEN COLLECTOR OUTPUT

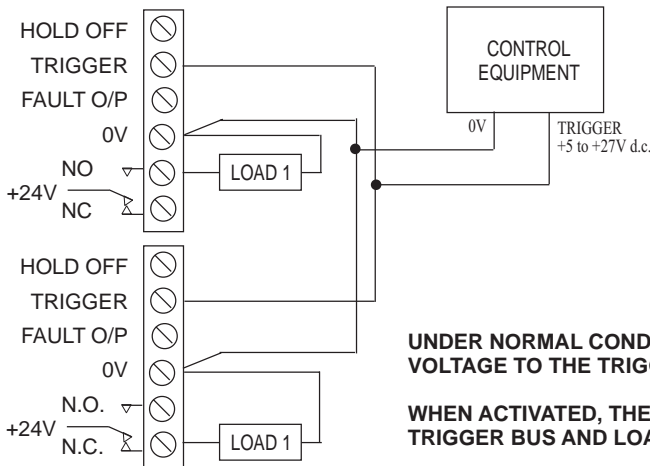


EXAMPLE OF FAULT WIRING



IF A PSU FAULT OCCURS THEN THE FAULT OUTPUT TURNS ON, CONSUMES CURRENT AND CREATES A SHORT CIRCUIT FAULT WHICH IS RELAYED BACK TO THE FIRE PANEL

EXAMPLE OF CHANGEOVER PSUs WITH TRIGGER CONTROL



UNDER NORMAL CONDITIONS THE CONTROL UNIT DOES NOT SUPPLY A VOLTAGE TO THE TRIGGER INPUTS.

WHEN ACTIVATED, THE CONTROL UNIT SUPPLIES A VOLTAGE TO THE TRIGGER BUS AND LOAD 1 TURNS ON, LOAD 2 TURNS OFF

TECHNICAL SPECIFICATION

MAINS SUPPLY VOLTAGE	230V a.c. \pm 10% 50/60 Hz
OUTPUT	1A @ Total +27V d.c. (100mV ripple) continuously rated @ 240V input.
MAINS SUPPLY MONITORED FOR FAILURE	YES
BATTERIES MONITORED FOR DISCONNECTION / FAILURE	YES
FUSES MONITORED FOR FAILURE	YES
FAULT MONITOR	Type: Open Collector Normally Off Max. off voltage: +27V d.c. Max. Current: 50mA when on
CONTROL INPUTS	Trigger: +5-27V d.c. Max Current 1mA Hold Off: +5-27V d.c. Max Current 1mA Voltages with respect to 0V.
MAXIMUM LENGTH OF CONTROL CABLE	500m
FUSES (to be compliant with IEC EN60127 Pt2)	Mains Terminal Block: 400mA T 250V 20mm Output fuse (F1): 1A F 20mm Battery fuse (F2): 1A F 20mm
DIMENSIONS / WEIGHT	Enclosure (W x H x D): 271 x 200 x 70mm Battery Volume (W x H x D): 170 x 70 x 65mm Weight without batteries: 2.3Kg

No responsibility can be accepted by the manufacturers or distributors of this product for any misinterpretation of an instruction or guidance note or for the compliance of the system as a whole. These instructions are general and cannot be considered to cover every aspect of an installation. The manufacturers policy is one of continuous improvement and we reserve the right to make changes to product specifications at our discretion and without prior notice. E&OE