Westmaster Overload Relay
Installation & Servicing Instructions

STANDARD RELAY

General

Triple pole adjustable thermal overload and single phasing protective relay for full load mot or currents up to 40 amps. Relay has three heated bi-metal elements actuating a spring loaded trip mechanism with electrically separate N/O and N/C contacts for connect ion in the control circuit.

The relay is available in two versions,
"Stop-Reset" or " Reset" only.

"Stop-Reset" Red push.
"Reset" only Black push.

Standard Specifications

Relay is designed to comply with BS EN60947, IEC 947, BS4941, and IEC 292 requirements.

Ranges

Unit supplied in fourteen current ranges and a circular calibration dial scaled in amperes, enables the relay to be manually set to the motor full load current within the unit range.

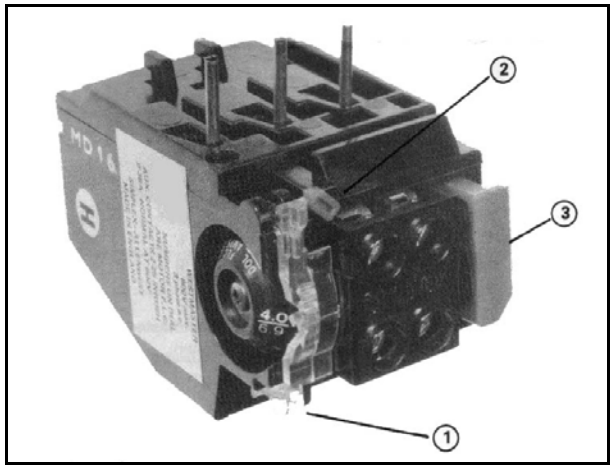

Fig. 1 – Standard Unit

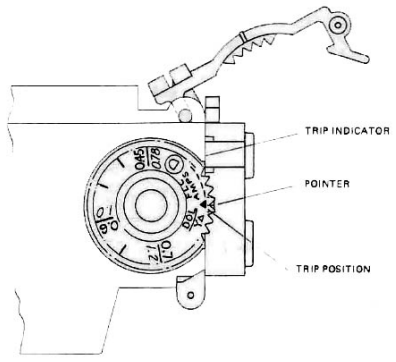

Fig. 2 – Calibration Dial Detail

Overload Protection

At 105 per cent of set current tripping will not occur in less than two hours starting from the cold state.
When current is subsequently raised to 120 per cent of setting, relay will trip less than two hours later.

Phase Failure Protection

Design of heater elements and differential trip mechanism ensures that relay will trip under phase failure conditions in accordance with BS EN60947.

Ambient Temperature Compensation

This feature enables relay to be used in ambient temperatures within the range - 20°C to +70°C.

Hand / Auto Resetting

Relay is provided with selector permitting either hand or automatic resetting after tripping due to overload.

For hand resetting an insulated reset push is provided.

Adjustments (See Figures 1 and 2)

To check tripping mechanism, rotate calibration dial clockwise until the triangular mark on the dial is adjacent to the pointer. At this position the trip indicator will be visible in the window.
The calibration dial is printed with both direct on line and star delta (phase connected relays) full load currents.
Rotate dial to correspond to the full load cur rent of the motor.
The dial cover (1) will retain this setting when clipped into position and may be sealed to prevent tampering.
The relay is supplied with the "Hand / Auto" selector (2) in the hand position. Relay contacts will then only reclose after tripping, when the "Stop/Reset" push (3) is manually depressed. Turn selector to "Auto" position if relay contacts are to reclose automatically when relay has cooled after tripping.

Wiring Diagram (Figure 3)

Connect 3 phase supply to terminals 1, 3, & 5 of adaptor or contactor. Outgoing motor cables connect to terminals 2, 4, & 6 of relay. Connect operating coil of relevant contactor in series with normally closed contact of overload relay, terminals 95 & 96. If alarm signal circuit is required when relay trips, connect to normally open contact, terminals 97 & 98.

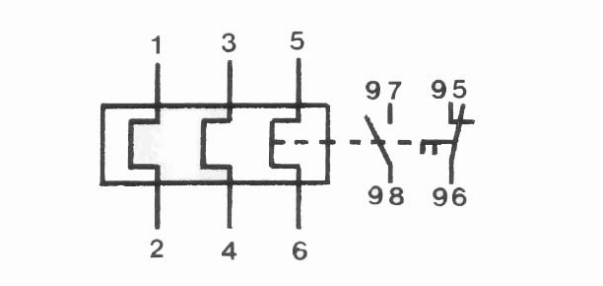

Fig. 3 – Wiring Diagram

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Switch Ratings

Hand Reset	Auto Reset & Alarm
650V a.c. 0.5A	650V a.c. 0.15A
440V a.c. 1.0A	440V a.c. 0.25A
250V a.c. 2.0A	250V a.c . 0.50A
110V a.c . 4.0A	110V a.c . 1.0A
48V a.c. 6.0A	48V a.c . 2.0A
500V d.c. 20W	250V d.c. 20W

Recommended Cable Sizes

Up to 10A	1.5mm^2
10 - 20A	2.5mm^2
20 - 27A	4.0mm^2
27 - 37A	6.0mm^2
37 - 40A	10.0mm^2

Short Circuit Protection

Relay is self protecting up to eight times normal full load current.
For fault protection a circuit breaker or fuses of adequate breaking capacity should form part of the installation.
A 'Westmaster' overload relay and a correctly selected Short Circuit Protective Device will provide type "2" co-ordination to BS EN60947/IEC 947 or type " C" co-ordination to BS 4941/IEC 292.

Short Circuit Co-ordination			
Heater Range (A)	Full Load (A)	Recommended HBC Fuse (A)	
		Motor Circuit Protection Type	Industrial Type
0.14 - 0.2	0.14 - 0.2		2
0.2 - 0.3	0.2 - 0.3		2
0.3 - 0.45	0.3 - 0.45		2
	0.45 - 0.5		2
0.45 - 0.7	0.51 - 0.7		4
0.7 - 1.1	0.7 - 1.0		4
	1.1 - 1.6		6
1.1 - 1.8	1.61 - 1.8		10
1.8 - 2.7	1.8 - 2.7		10
	2.7 - 3.5		10
2.7 - 4.0	3.51 - 4.0		16
	4.0 - 6.0		16
4.0 - 7.0	6.1 - 7.0		20
	7.1 - 8.0		20
	8.1 -10.0	20M25	25
7.0 -10.5	10.1 -10.5	20M32	32
	10.5 -14.0	20M32	32
10.5 -16.0	14.1 -16.0	32M40	40
	16.1 -17.0	32M40	40
16.0 -22.0	17.1 -22.0	32M50	50
	22.1 -23.0	32M50	50
	23.1 -30.0	32M63	63
22.0 -32.0	30.1 -32.0	63M80	80
32.0 -40.0	32.1 -40.0	63M80	80

Connecting to Westmaster Contactors UA11 & UA22
(See Figure 4)

Cut stab connectors (4) to length indicated on cutting template supplied. Engage hooks (5) on relay cover into recesses of contactor moulding. Attach stab connectors (4) to contactor terminals 2, 4, & 6 with connectors on left hand side of terminal screws and under clamps. Tighten screws securely.

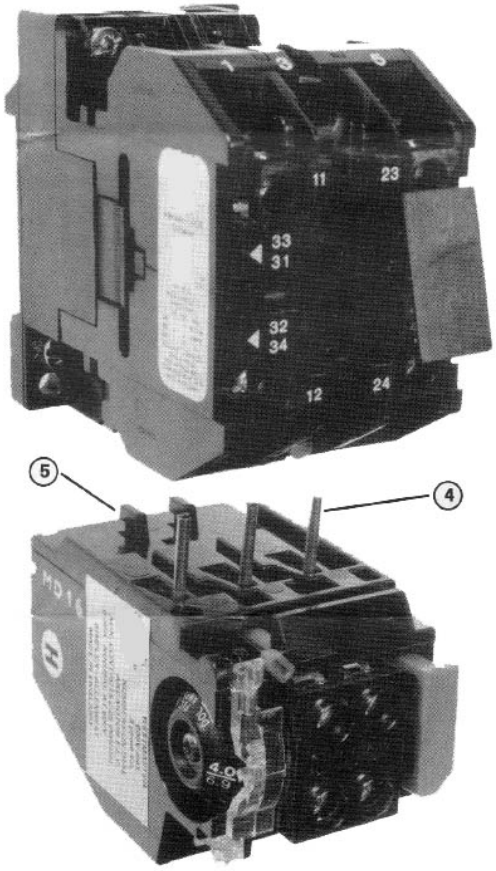

Fig. 4 – Connecting to Westmaster Contactors UA11 & UA22
(UA11 Illustrated)

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Separate Panel or DIN Rail Mounting
(See Figure 5)

Order separate mounting adaptor Code U-4125155 and attach standard relay as follows.

Cut stab connectors (4) to length indicated on cutting template supplied. Slacken stab connector screws (7) on adaptor to fullest extent. Engage hooks (5) on relay cover into opening of adaptor and attach stab connectors to terminals with connectors on left hand side of screws. Tighten screws securely.

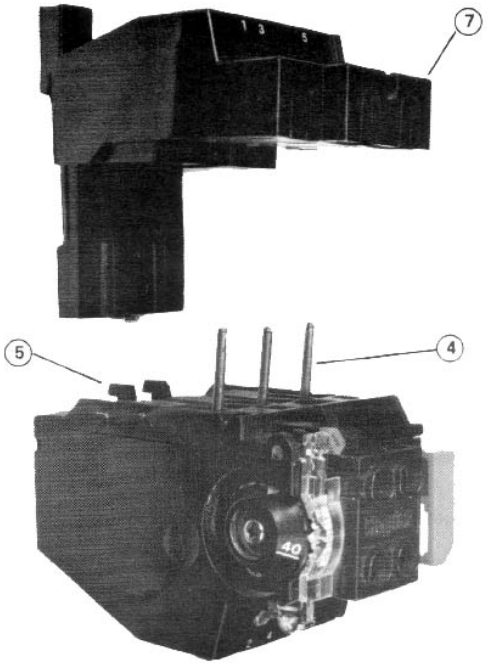
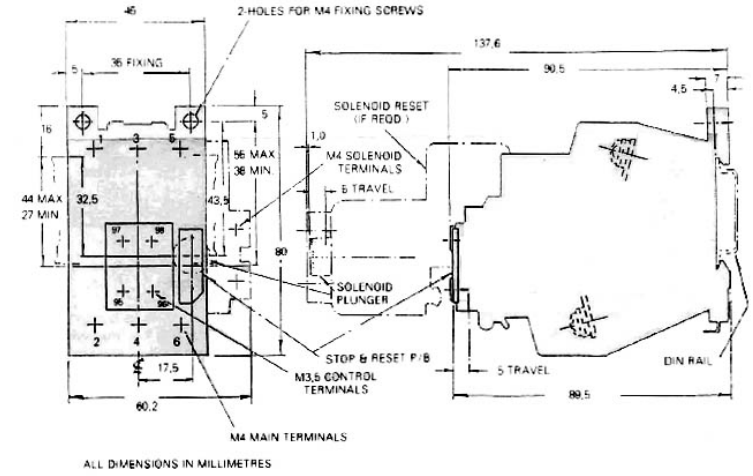
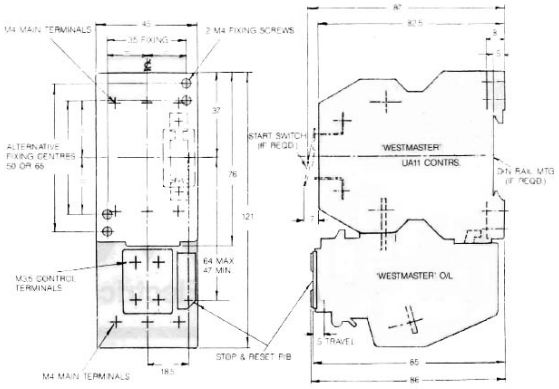


Fig. 5 – Separate Panel or DIN Rail Mounting



Outline of Westmaster Overload Relay DIN Rail or Separate Panel Mounted



Outline of Westmaster Overload Relay mounted on UA11 Contactor

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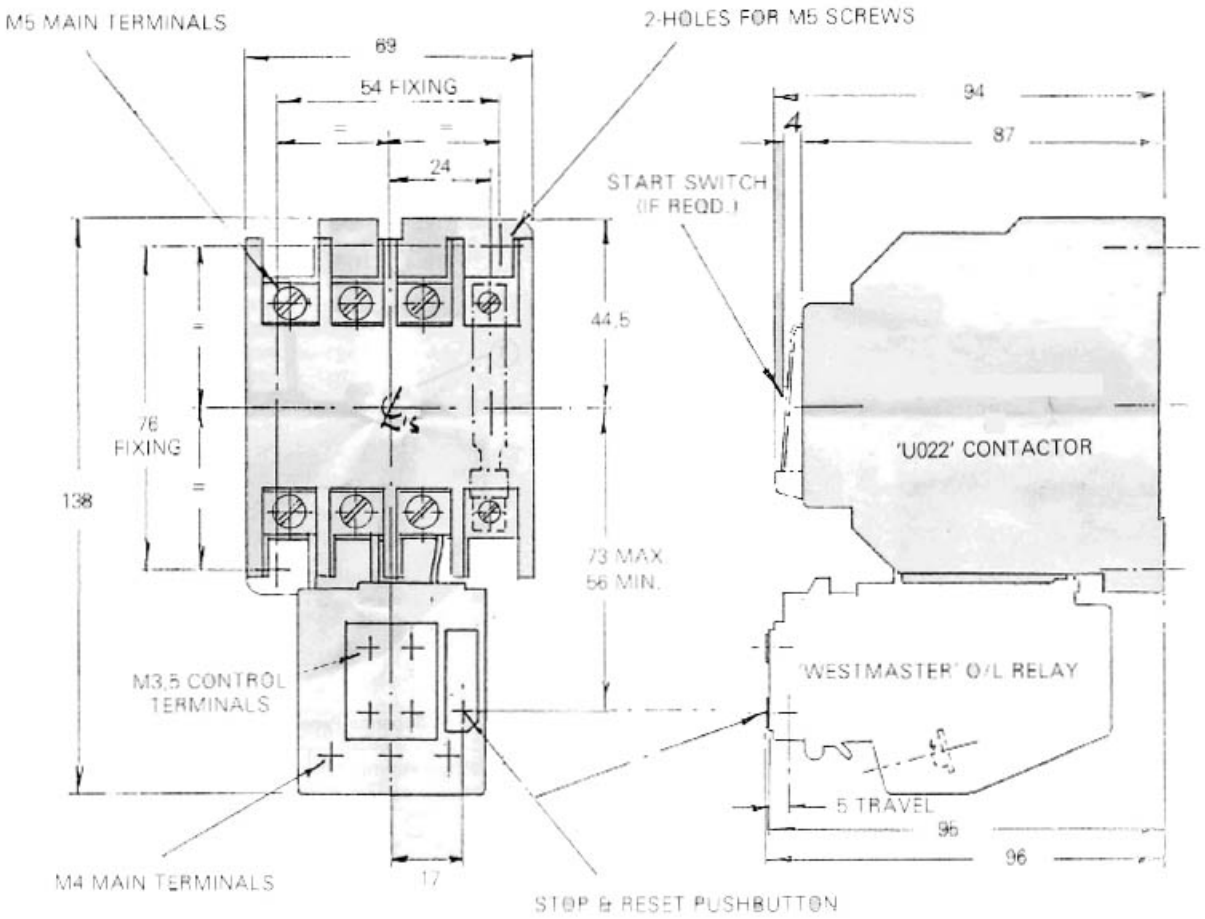

Westmaster Overload mounted on UA22 Contactor

HEALTH AND SAFETY AT WORK ETC, ACT 1974

STATEMENT TO PURCHASERS AND PROSPECTIVE PURCHASERS

Section 6 of this Act provides that manufacturers, designers, importers or suppliers of articles for use at work have a duty to ensure, so far as is reasonably practicable, that the articles will be safe and without risk to health when properly used. An article is not regarded as being 'properly used' if it is used without regard to any relevant information or advice relating to its use made available by the manufacturer, designer, importer or supplier.

Information on the design, construction and installation of our products to ensure that so far as is reasonably practicable they are safe and without risk to health when properly used may be found in:

- Relevant British Standards Specifications and Codes of Practice.
- Regulations for Electrical Installations (published by the Institution of Electrical Engineers),
- Catalogues and product leaflets of the Company.
- Or may be obtained by specific requests to the Company.

It is important that the products concerned should be installed, commissioned and maintained by, or under the supervision of, competent persons in accordance with good engineering practice and:

- IEE Regulations for Electrical Installations.
- Codes of Practice.
- Statutory requirements.
- Any instructions specifically advised by the Company and, where appropriate, with particular reference to information marked on the product.

In accordance with the provisions of the Act, you are therefore requested to take such steps as are necessary to ensure that any appropriate information relevant to our products is made available by you to anyone concerned.

These notes assume throughout that the product is disconnected from the supply. It is essential that this is done before any work is carried out.

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