

ELD Earth Leakage Detector Units

A range of versatile and economical earth leakage detection relays, designed to protect electrical equipment and wiring from earth fault currents. The units are typically used in conjunction with a circuit breaker or contactor.

IMPORTANT: this unit is not suitable for use as a personnel protection device against direct contact with a high voltage supply.

The electronic current detection circuitry combines a stable amplification of the transformer output with an ability to give high sensitivity and fast operating speeds. Detection of an earth fault results in the energisation and latching of the unit's single pole change-over relay. The unit is reset by momentarily removing the auxiliary power supply.

Protection from excessive fault current and supply transients is fitted as standard, as is filtering to allow use with chopped waveform and variable drive applications.

Each ELD is housed in a robust, glass filled nylon case. An aperture in the casing allows the installation cabling to be passed through the integral core balance transformer. Alternatively, where larger diameter cabling is used, the ELD can be configured for use with our range of remote core balance transformers (see separate information).

The ELD can be supplied with a range of fixed or variable trip current or trip time options. Units fitted with variable current or time settings are adjusted via screwdriver potentiometers, recessed into the front fascia. A 'test' facility is also provided in the form of a push button: this is fitted either to the unit's front Facia, or supplied loose for optional remote connection.

Electrical connection on standard units is by a colour coded, 6 way flying lead. Terminal block connectors are available as an option. The ELD can be physically mounted on a front panel or back-plate using two 3mm threaded inserts. An optional mounting assembly (part no. EMA) is also available for front access back-plate mounting.

Standard units include:

- ELD2** Basic unit, with 20mS typical trip time. Fast response to earth leakage faults.
- ELD4** As ELD2, but with longer (fixed) trip delays, 80mS to 5 secs. Prevents nuisance tripping in motor protection circuits and allows time discrimination in distribution networks.
- ELD5** As ELD4, but with an adjustable trip delay. Available in various time ranges up to 2 seconds.

With options:—

- 'VS' Adjustable trip current (via front facia potentiometer.)
- 'HT' High temperature specification (to +60°C ambient).
- 'TB' Screw terminal connectors instead of flying leads.
- 'RC' Special calibration and 1m wiring for use with remote CTs (trip currents 125mA and above only).

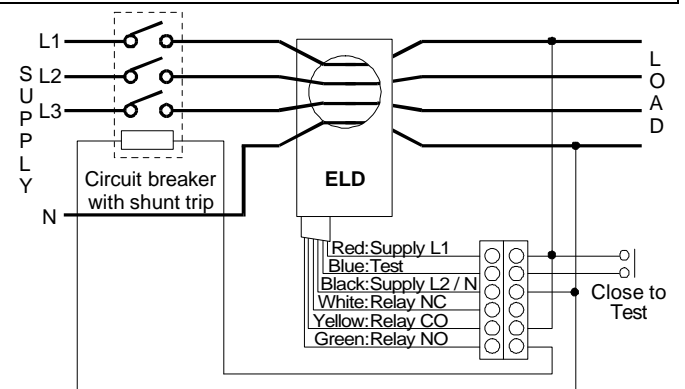
Variations on our standard units and options are also available: please call with your requirements.



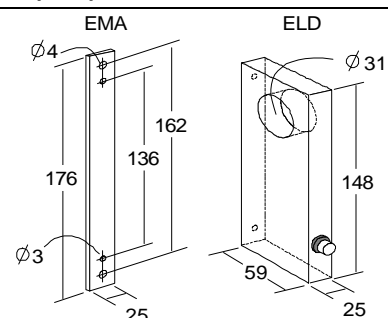
Product Specification

Power supply:	
operating voltages (ranges) <i>(all for 50/60Hz.)</i>	110V AC (100 – 120 V) 230 V AC (200 – 250 V) 415 V AC (380 – 440 V)
power consumption	< 100mA
Control:	
trip level	fixed and variable, 10mA to 30A
Relay output:	
	<i>(ratings for resistive load)</i> SPCO contacts, rated 3A @ 250V AC/30V DC, 1A @ 440V AC
Physical:	
operating temperature	standard unit: –25 to +40°C 'HT' spec.: –25 to +60°C
weight (with EMA)	approx. 330 g

Typical connection (standard unit + circuit breaker)



Dimensions (mm)



How to order:-

Specify model number:-

UNIT TYPE: e.g. '2' for ELD2

POWER SUPPLY VOLTAGE:

C = 110 VAC (100 - 120V)
 D = 230 VAC (200 - 250V)
 Y = 415 VAC (380 - 440V)

TRIP CURRENT: Note: Maximum trip current on standard units is 10A
 Minimum trip current on RC option units is 125mA

fixed trip current

00	5mA	10	75mA	20	600mA	30	5.0A	40	20.0A
01	10 mA	11	80mA	21	750mA	31	5.2A	41	30.0A
02	15mA	12	90mA	22	800mA	32	6.0A	42	40.0A
03	20 mA	13	100mA	23	1.0A	33	7.0A	43	50.0A
04	25mA	14	125mA	24	1.2A	34	7.8A	44	60.0A
05	30 mA	15	150mA	25	1.5A	35	8.0A		
06	40mA	16	200mA	26	2.0A	36	9.0A		
07	50mA	17	250mA	27	2.5A	37	10.0A		
08	60 mA	18	300mA	28	3.0A	38	12.0A		
09	70mA	19	500mA	29	4.0A	39	15.0A		

variable trip current ('VS' option)

70	3 - 30mA	81	0.5 - 5A
71	6 - 60mA	83	1 - 10A
72	10 - 100mA	85	3 - 30A
73	30 - 300mA	88	24 - 240A
74	50 - 500mA	89	40 - 160A
75	0.125 - 1A	90	80 - 320A
76	0.125 - 2A	93	12.5 - 100A

REMOTE (CORE BALANCE TRANSFORMER) COIL OPTION:

Leave blank if unit is to be used without remote CT (trip currents 10 Amps and below)
 Specify 'R' if unit is to be used with a remote CT ('RC' option, only available for trip currents 125mA and above)

INPUT FREQUENCY:

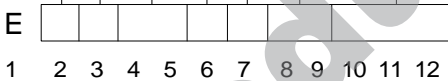
G = 50Hz.
 H = 60Hz.
 J = 400Hz.

TIME DELAY:

<u>ELD4 only: fixed delay</u>		<u>ELD5 only: adjustable delay</u>	
02	80 mS	09	500mS
03	100 mS	10	1.0 S
04	150 mS	11	2.0 S
05	200 mS	12	3.0 S
06	250 mS	13	4.0 S
07	300 mS	14	5.0 S
08	400 mS		
50	0.02 - 0.2 S		
51	0.02 - 1.0 S		
52	0.02 - 2.0 S		
58	0.4 - 1.0 S		
59	0.4 - 2.0 S		

OPTIONS: (enter the following letters as applicable):

- 'R' RT option: no 'test' button on front of unit (ELD2 & 4 only), button (model ERTB) supplied loose
- 'T' TB option: terminal block connector instead of flying leads
- 'H' HT option: 'high temperature' specification



Accessories:-

Stock number	Model	Description
76.70.1088	EMA	Mounting assembly for ELD series.
various	Remote CTs	A range of remote core balance transformers, enabling specially calibrated ('RC' option) ELD units to be used with larger diameter cables. Available in a range of sizes: please see bulletin ms5776 for full details.
76.70.1095	ERTB	Additional remote test button



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