

# Electronic Motor Protection Relay

## NewElec 100M Series



The 100M Series electronic motor protection relay is a compact relay ideally suited for fitting into gate-end boxes for protecting underground coal cutting machinery and transformers.

Warning LEDs indicate when the respective threshold settings are exceeded. In the event of a trip, the respective LED and the main trip relay LED are latched in order to assist maintenance personnel in identifying the cause for the trip.

Available in ampere callibration from 5 to 360A, split over three ampere ranges, or in percentage callibration. Selectable motor starting curves from 2 to 10s as well as a thermal envelope that exactly accomodates the duty design parameters of the motor are available. This is achieved by selecting thermal lock-out periods ranging from 30s (120 stop - starts per hour) to 10 minutes (6 stop - starts per hour).

The main trip relay comprises 1 n/o and 1 n/c contact. The short circuit protection trip contact is a dedicated n/o designed to operate a shunt trip on a back-up circuit breaker.

### Features Include:

- Thermal Overload Protection
- Locked Rotor Protection
- Starting Stall Protection
- Unbalanced Current Protection
- Single Phasing Protection
- Short Circuit Protection
- Starts per Hour Limitation
- LED status Indication

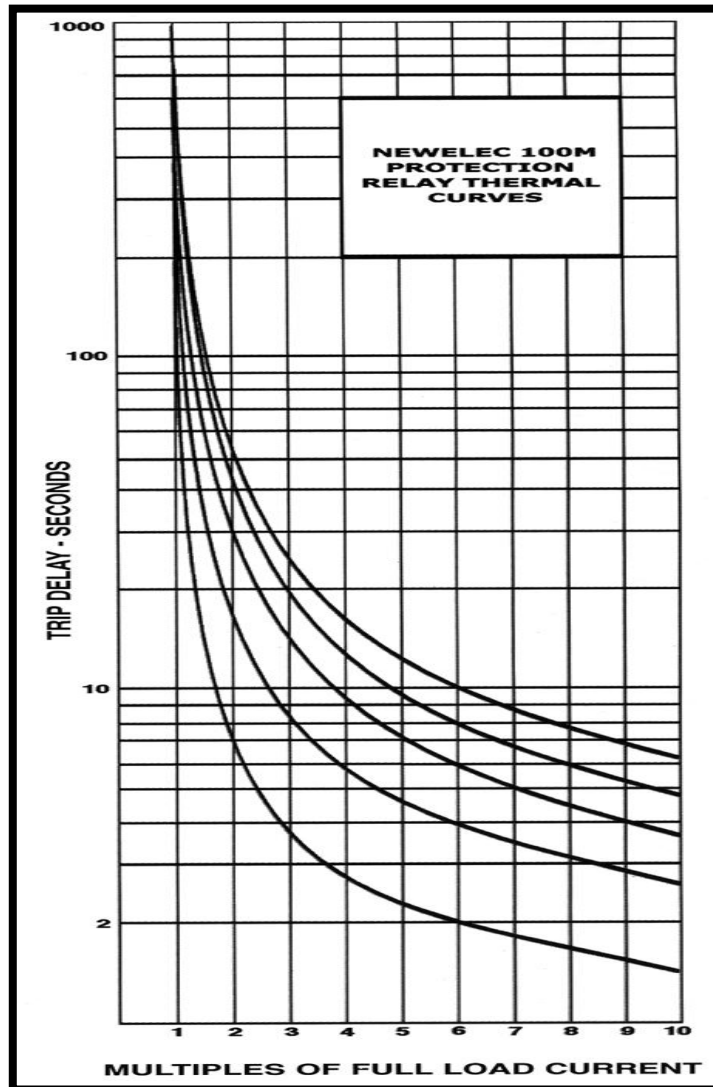
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### Ordering Details

C.T. Ratio	Setting Range	Code	Control Supply	Starts per hour
xxx:1	5 - 120%	0	012 - 12V A.C.	6 - 10 Min
100:	5 - 120A	1	110 - 110V A.C.	12 - 5 Min
200:	10 - 240A	2	220 - 220V A.C.	18 - 3 Min 30sec
300:1	30 - 360A	3		120 - 30 sec

Example            10 3 M 012 18

### Thermal Curves



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### Technical Information

#### Product Specifications

##### Input Converter

Overload capacity	: 6 x $I_n$ 5 min
	: 12 x $I_n$ 30 s
Frequency Response	: 42 to 66 Hz

##### Overload Trip Delay Curves

Accuracy	: $\pm 5\%$ 1,2-10 x $I_e$
	: $\pm 10\%$ 1,01-1,2 x $I_e$

##### Control Supply

12, 110 or 220Volt A.C.	: 90 to 115% of specified voltage
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##### Short Circuit Sensor

Tripping Level	: 7,5 to 12 x $I_e$
Accuracy	: $\pm 8\%$
Back Tripping relay trip delay	: 100ms
Main Tripping relay trip delay	: 2s

##### Maximum Unbalance Sensor

Maximum level setting	: 20% of $I_e$ (M.F.L.)
Trip Delay	: 5 seconds

##### Maximum Load Current Sensor

Level Setting Accuracy	: $\pm 4\%$
Linearity	: $\pm 4\%$
Repeatability	: $\pm 1\%$
Detection Level	: $\pm 1\%$
Calibration	: Optional, Amp or % of $I_n$
Range	: 5 to 120% $I_n$

##### Main Trip and Short Circuit Tripping Relay

Current rating	: 5Amp 220V A.C.
Configuration	: 2 Form C (CM n/o n/c)
Insulation coil to contacts	: 2kV 1 minute
Insulation across open contacts	: 1kV 1 minute
Insulation between separate contacts	: 2kV 1 minute

##### Overload Thermal Lock Out Times

6 Starts per hour	: 10 minutes
12 Starts per hour	: 5 minutes
18 Starts per hour	: 3,5 minutes
120 Starts per hour	: 30 seconds
Accuracy	: $\pm 5\%$

#### Environmental Specifications

##### Reference Standards IEC 255

##### Isolation N/O contact

1kV for 1 minute To IEC 255-5 C

##### Impulse Withstand

5kV To IEC 255-4 EIII

##### Isolation Separate Contacts

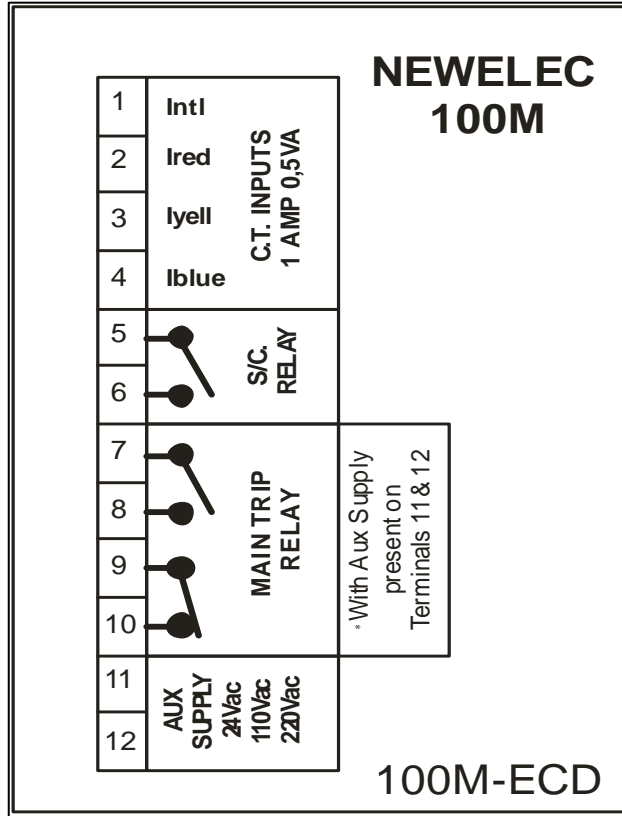
1kV for 1 minute To IEC 255-5 C

##### High Frequency

IEC 255-4 EIII

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### Electrical Wiring Diagram



### Dimensional Diagram

