

NewElec 320 series



The 320 - 327M Series of electronic motor protection relays provide comprehensive protection required by motors running constantly at full load and occasionally beyond their limitations. Motors driving crushers, ball mills or high inertia loads especially with long run-up starting times are ideal applications.

Thermal overload protection, running stall and jam protection, earth fault and short circuit protection along with selectable start attempt limitations are features of the relay. A built in motor load current transducer is useful for indicating the % motor load through the 4-20mA Loop.

Available in Amp calibration range from 0,8A to 1680A split over 7 Amperage selection bands. Also available in a % calibration with the maximum load setting expressed as the full load current divided by the C.T. ratio and multiplied by 100.

Features Include:

- Thermal Overload Protection
- Locked Rotor Protection
- Running Stall Protection – Jam Protection
- Unbalanced Current Protection
- Single Phasing Protection
- Earth Leakage Protection
- Earth Fault Protection
- Short Circuit Protection
- Starts per Hour Limitation
- 4-20mA Loop output

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Ordering Information

C.T. Ratio	Recommended Range (Amps)	Code	Mounting Code	Control Supply	Running Stall	C.T.
20:1	0,8 to 12	0			A: 3 x M.L.C.	
50:1	13 to 30	1		110: 110V AC 5VA		
100:1	31 to 80	2	Flush : F		B: 2,5 x M.L.C.	1: 1A Sec
200:1	80 to 160	3				
500:1	160 to 400	4	Chassis: C		C: 2 x M.L.C.	
1000:1	400 to 800	5		220: 220V AC 5VA		5: 5A Sec
2000:1	800 to 1680	6			D: 1,5 x M.L.C.	
Xxx:1	30% to 115%	7				

Example: NewElec 32 3 M F 220 A 1

Code:F
G
H
I
J
K
L
M
N
O
P**Options**

Immediate overload warning (Option I, O and P disallowed)
Earth Fault
Short Circuit
Transfer options G and H to auxiliary relay (option F and O disallowed) with 1 s delay on main trip relay
100ms trip time for options G and H (if not selected, 1 s delay will be selected)
Thermal memory override facility
Motor Load and thermal memory analogue indication meter (29m or 39m)
Auto-manual overload trip reset facility
Programmed limitation of start attempts (1, 2 or 3)
Phase unbalanced alarm - trip function disabled (option I, O and P disallowed)
Slave auxiliary relay with main trip relay (option I, O and P disallowed)

Example: NewElec 32 3 M F 220 A 1 G H K

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Technical Information

Product Specifications

Input Converter

Overload Capacity	: 6 x Maximum Load Current setting cont. : 8 x Maximum Load control setting for 5 min
Frequency Response	: 42 to 66 Hz

Unbalance Current Sensor

Level Setting Accuracy	: ± 4%
Linearity	: ± 4%
Repeatability	: ± 1%
Detection Level	: ± 1%
Calibration	: Amps R.M.S.
Range	: 2 to 20% continuous
Trip delay	: 5 sec

Start Per Hour Limiter

Level Setting Accuracy	: ± 4%
Linearity	: ± 4%
Repeatability	: ± 1%
Calibration	: Starts per hour
Range	: 1 to 12 per hour

Short Circuit Sensor

Tripping Level	: 10,5 to 11,2 x max load dial setting
Tripping delay	: 100ms

Overload Trip Delay Curves

* See NewElec 320M Series running curve

Accuracy	: ± 5% for 125 to 1100% overload : ± 10% for 102 to 124% overload : ± 1% for 101% overload
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Maximum Load Current Setting

Level Setting Accuracy	: ± 4%
Linearity	: ± 4%
Repeatability	: ± 1%
Detection Level	: ± 1%
Calibration	: Amps R.M.S.
Range	: 21 : 1 continuous
Response	: Related to average of :3 input line C.T.'s

Start Timer

Start Detection	: Inrush Current to rise from 10% to 101% of max load current dial setting within 1s
Start Range	: 4 to 84s
Automatic transfer from Start to running curve	: Occurs when input current falls below max load current dial setting.

Earth Fault Sensor

Tripping Level	: 10% of motor running load
Tripping Delay	: 100ms

Reset Lockout Time on Overload Trip

Monitor control power on	: Lockout Time (Min)
Starts per hour calibration	: (60 / (Ns)) Min ± 5%
Selected (Ns)	
Monitor Control Power Off	: 25 min ±15%

Main Trip Relay

	: 5 Amps 220Volt A.C.
Configuration	: 1-Form C Common, n/o, n/c

Auxiliary Relay Contacts

Ratings	: 5 Amps 220Volt A.C.
Configuration	: 1-Form C Common, n/o, n/c

Environmental Specifications

Reference Standards IEC 255

Isolation N/O Contact

1KV for 1 minute To IEC 255-5C

Impulse Withstand

5KV To IEC 255-4 EIII

Isolation Separate Contacts

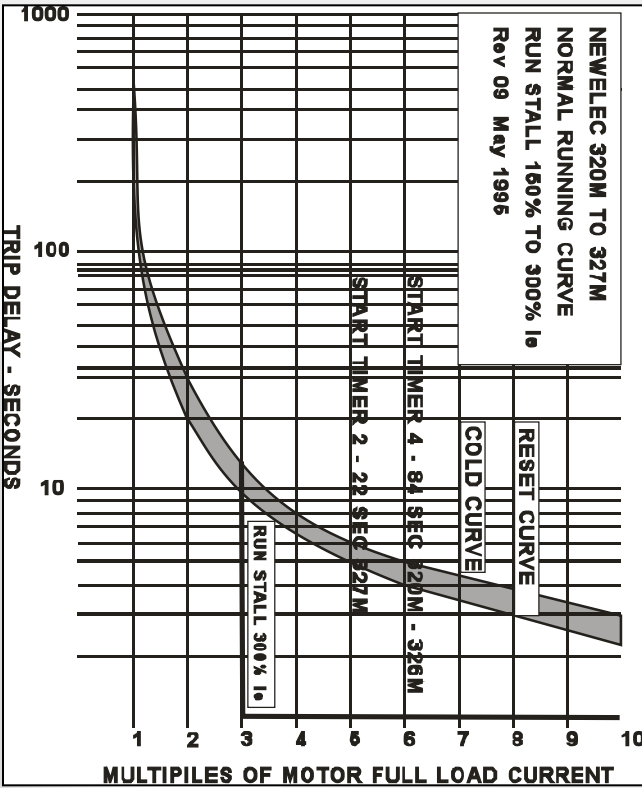
1KV for 1 minute To IEC 255-5C

High Frequency

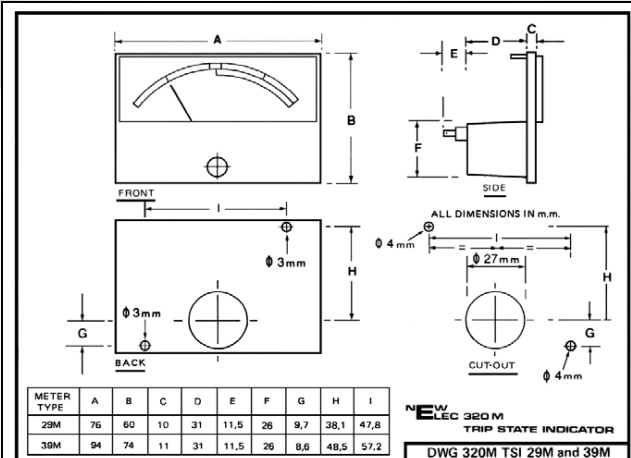
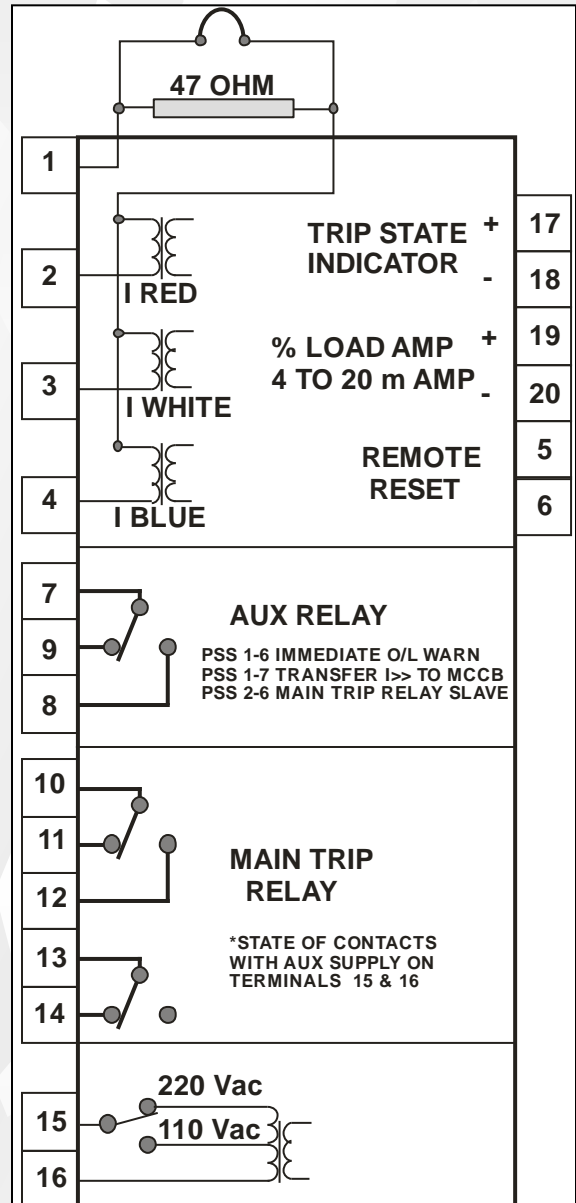
To IEC 255-4 EIII

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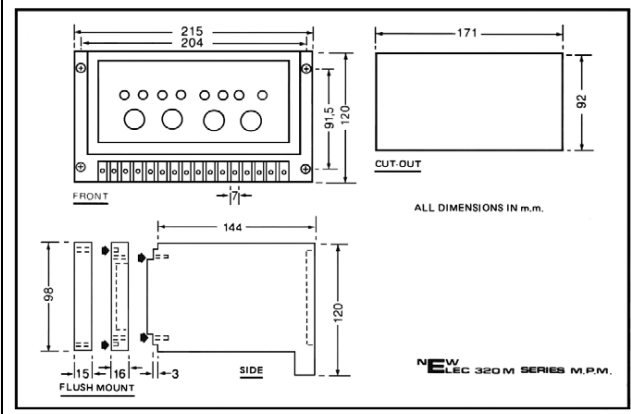
320M – 327M Run Thermal Curves



320M Series Wiring Diagram



NEWELEC 320M-ECD.CDR 320M - 327M RELAY



320M – 327M Dimensional Diagram