NEW ELEC

MOTOR PROTECTION & CONTROL TECHNOLOGY

320 - 327 Series Motor Protection Relay...

A South African Company to be Proud of

ISO 9001:2008
Certificate Number : 8707QMS001

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www.newelec.co.za sales@newelec.co.za

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GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

About NewElec

NewElec designs and manufactures a wide range of superior electronic motor protection relays for both local and International markets. NewElec's goal, for the past 38 years, has been to exceed the expectations of every client by OFFERING quality products, outstanding customer service and greater value, thus optimizing system functionality and improved operational efficiency.

As experts in motor protection, NewElec is involved in every stage of the client's selection of the required protection relay offering ongoing functional and technical support. Our R&D division is continually designing the most up to date motor protection products to meet customer requirements.

NewElec's electronic motor protection relays can be found in refineries, mining, steel, petrochemical, pulp and paper, sugar mills, agriculture and material handling industries to name a few, both locally and internationally. The NewElec product range includes software programmable LV motor protection relays for process control applications, protection relays for LV and MV motors, relays for pump motor protection, as well as earth leakage protection relays.

NewElec is continually expanding and has recently installed a manufacturing division for its relay housings. This ensures that the final product meets NewElec's precise requirements.

With headquarters in Pretoria West, Gauteng, South Africa, NewElec was established in May 1978 and is accredited with ISO 9002.

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Why was it designed?

- *For the protection of TEFC S1 rated lightweight LV and MV metric motors with*
- *optimised core laminations, windings and reduced thermal overload capacity*
- *Protection settings during start-up allow for acceleration times for high inertia*
- *loads to full safe Hot and Cold stall times of the motor*
- *Thermal overload protection during normal running fixed IDMT hot curve*
- *allowing mechanical protection of driven load*
- *User-friendly descriptive calibration settings*
- *Indication LEDs for monitoring as well as fault indication*
- *Motor load indication via 4 to 20 mA output interface to PLC*
- *Comprehensive protection of system and motor in the event of fault*

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Feature Highlights

- *Overload protection even when used on long acceleration times*
- *Locked rotor protection timer adjustable in seconds (1 - 21 or 4 - 84)*
- *Selectable run stall (Jam) protection (150% - 300%)*
- *Non-volatile thermal memory calibrated in Starts / Hour (1 – 12)*
- *Thermal memory decay caters for running and standstill conditions*
- *Start per hour and programmed consecutive start attempt limitation*
- *Thermal overload auto / manual reset facility*
- *Adjustable unbalance current single-phasing protection (2% – 20%)*
- *Earth fault protection (10% In)*
- *Short-circuit protection (11 x Ie)*
- *Transfer of short-circuit and earth fault to back tripping relay*
- *Descriptive fault indication LEDs to assist maintenance personnel*

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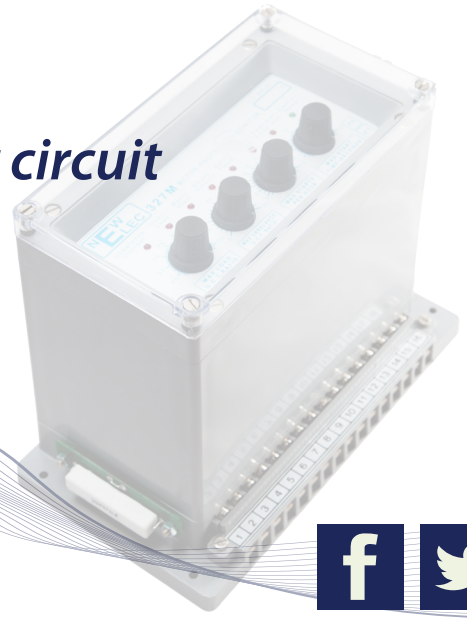
Benefits

- *Accurate overload protection during any phase of operation*
- *Unbalance current protection with VSD or soft starter*
- *Phase loss single-phasing protection*
- *Starts per hour limitation thermal protection*
- *Thermal overload protection for long starting times*
- *Earth fault protection with selectable stability resistor*
- *Short-circuit protection*
- *High-energy fault tripping transfer with time delay on contactor circuit*
- *Remote thermal / current indication meter*
- *Descriptive fault / level monitoring indication LEDs*
- *User-friendly calibration settings*



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Typical Applications

Conveyor motor with soft start starter or DOL

Fan motors with extended run up time

Crusher motors

Compressor motors with cyclic loading

Ball Mill motors

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Specifications

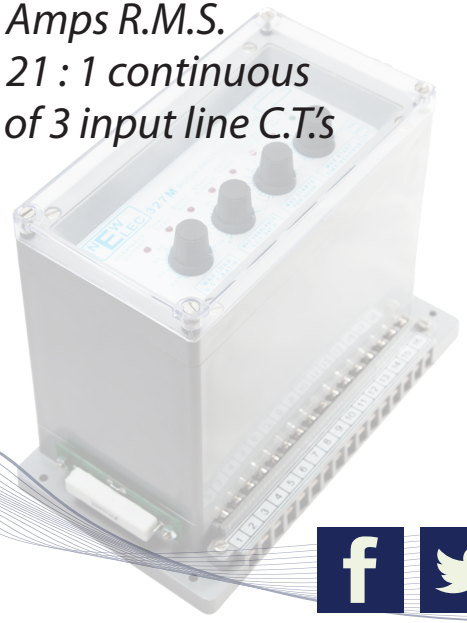
Input Current

Overload Capacity : 6 x Maximum Load Current setting cont.
: 8 x Maximum Load control setting for 5 min

Frequency Response : 42 to 66 Hz
± 7% : 1 to 1,2 (Ie)

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



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Specifications Contd.

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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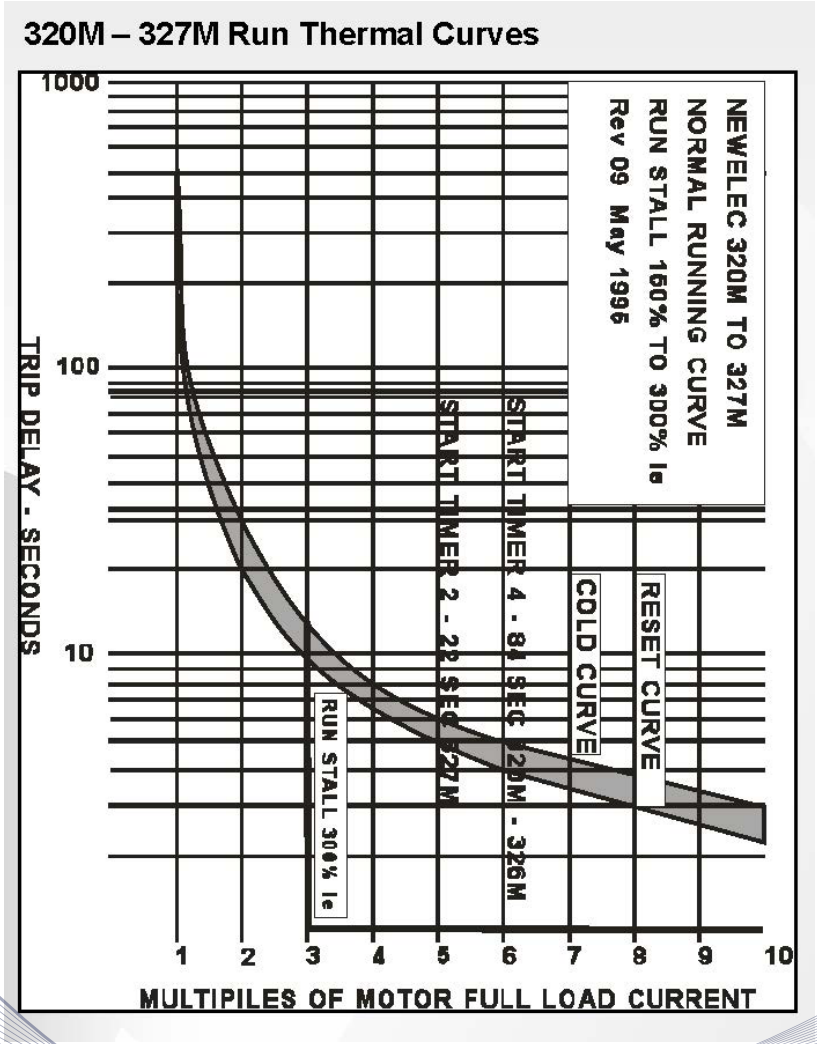
Specifications Contd.



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

Maximum Load Current Setting

Level Setting Accuracy	: ± 4%
Linearity	: ± 4%
Repeatability	: ± 1%
Detection Level	: ± 1%
Calibration	: Amps R.M.S.
Range	: 21 : 1 continuous
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Specifications Contd.

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	: Occurs when input current

Start to running curve 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 Selected (Ns)	: (60 / (Ns)) Min ± 5%
Monitor Control Power Off	: 25 min ±15%

Auxiliary Relay Contacts

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

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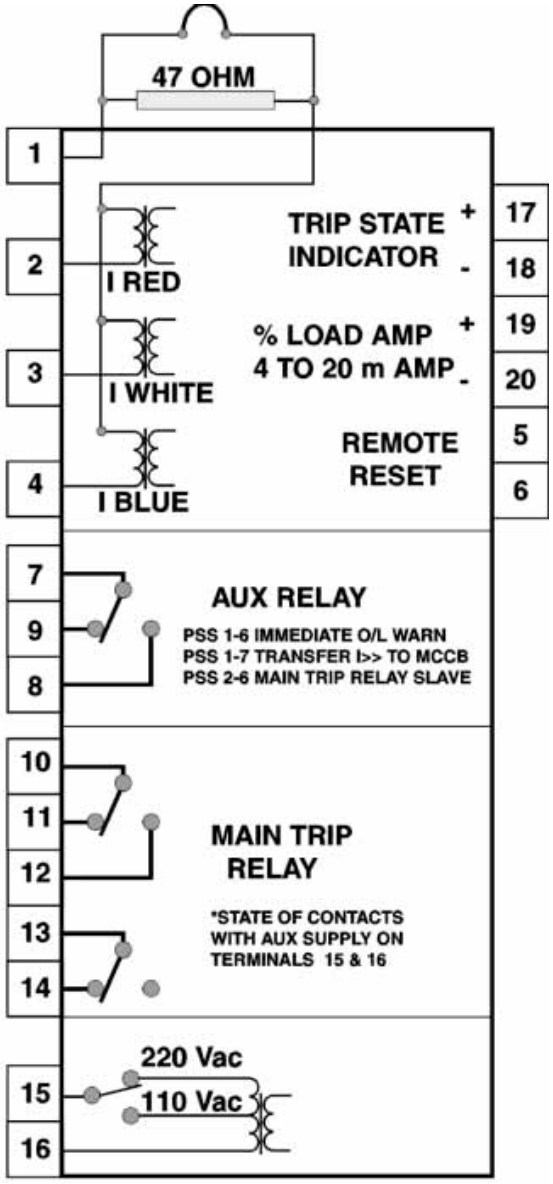
Electrical Connection Diagram



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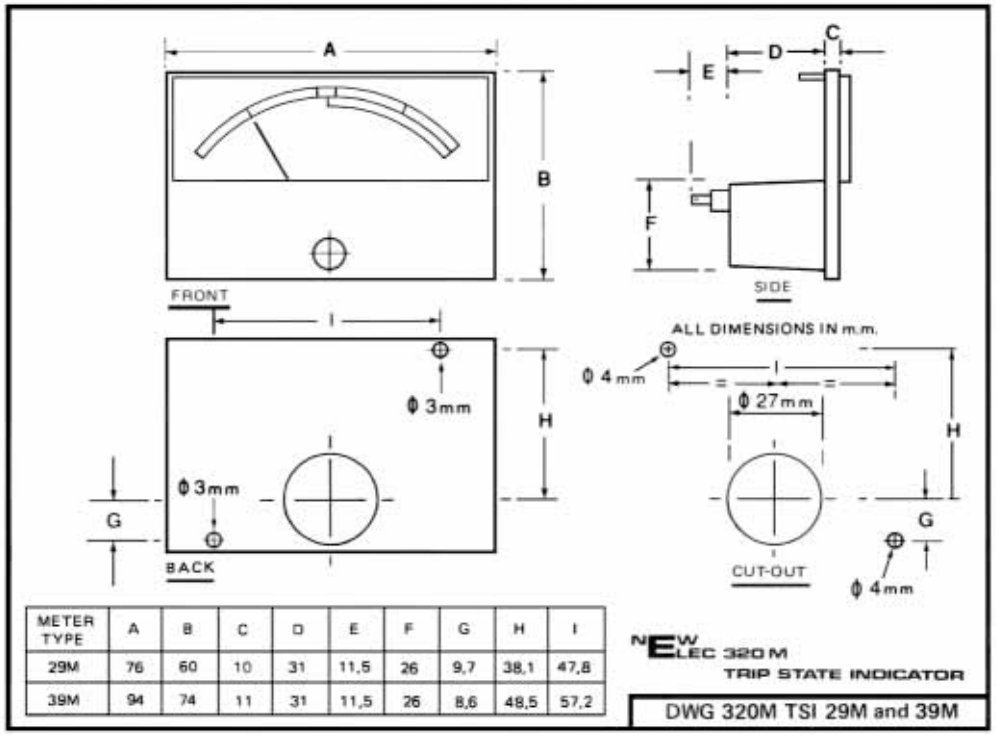
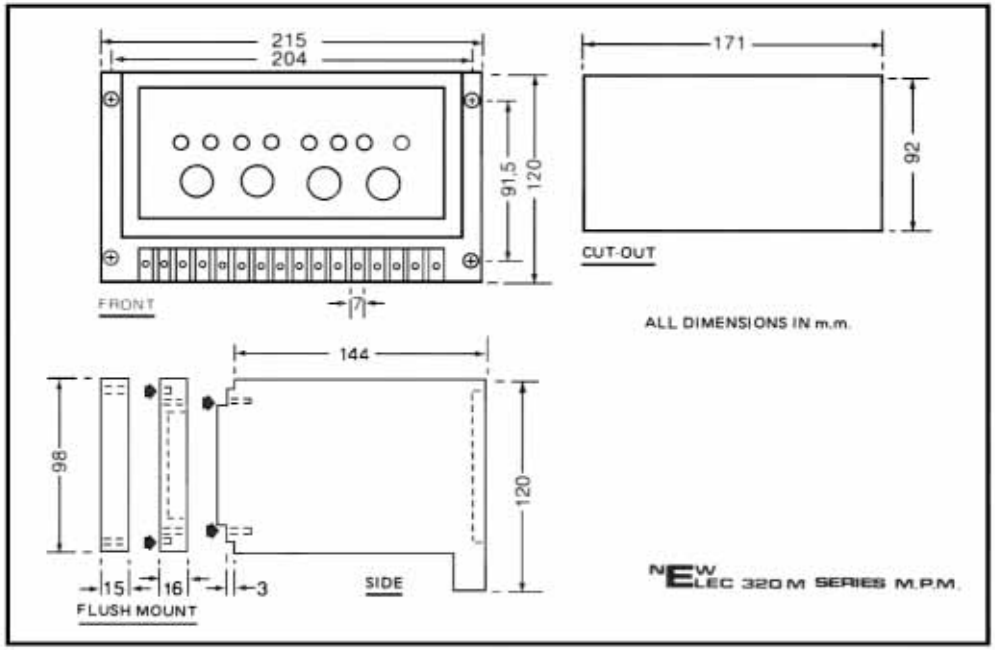
Dimensional Diagram



METER TYPE	A	B	C	D	E	F	G	H	I
29M	76	60	10	31	11,5	26	9,7	38,1	47,8
39M	94	74	11	31	11,5	26	8,6	48,5	57,2

NEW ELEC 320 M
TRIP STATE INDICATOR

DWG 320M TSI 29M and 39M



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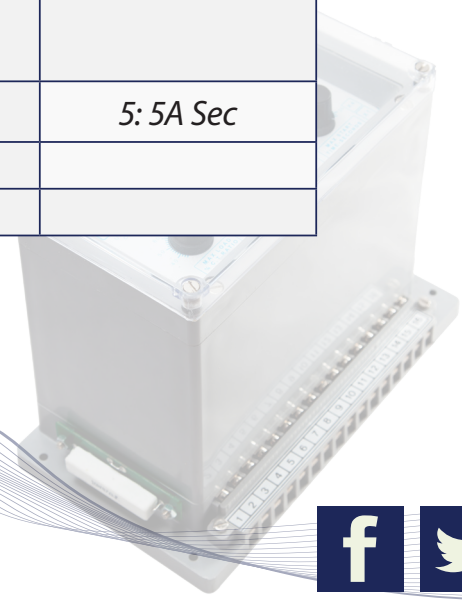
Ordering Information

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		5: 5A Sec
2000:1	800 to 1680	6		AC 5VA	D: 1,5 x	
Xxx:1	30% to 115%	7			M.L.C.	



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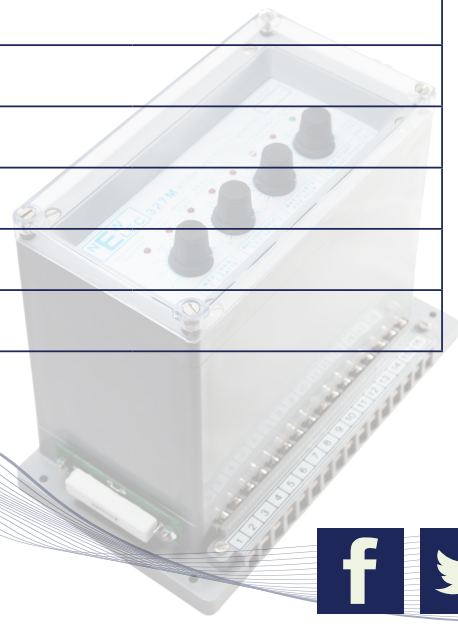
Ordering Information

Example:	*NewElec 32 3 M F 220 A 1*
Code:	*Options*
F	*Immediate overload warning (Option I, O and P disallowed)*
G	*Earth Fault*
H	*Short Circuit*
I	*Transfer options G and H to auxiliary relay (option F and O disallowed) with 1 s delay on main trip relay*
J	*100ms trip time for options G and H(if not selected, 1 s delay will be selected)*
K	*Thermal memory override facility*
L	*Motor Load and thermal memory analogue indication meter (29m or 39m)*
M	*Auto-manual overload trip reset facility*
N	*Programmed limitation of start attempts (1, 2 or 3)*
O	*Phase unbalanced alarm - trip function disabled (option I, O and P disallowed)*
P	*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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We provide a 1 year renewable guarantee

We repair products out of guarantee for 50% of their list price and renew the guarantee

Local support

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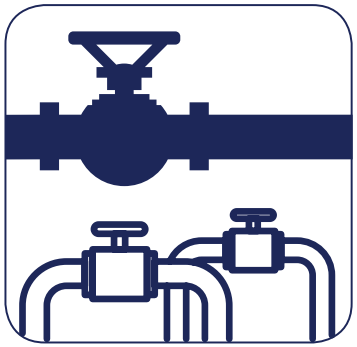
Applications particularly well suited for use in conjunction with the NewElec range of electronic motor protection relays.

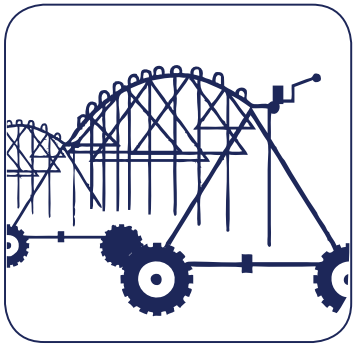
Mining



Water Affairs

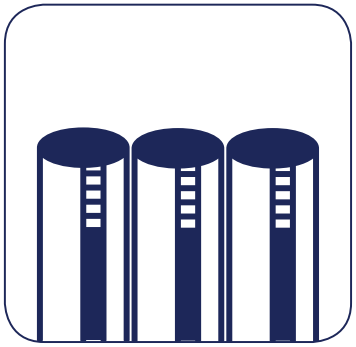
Petro Chemical

Refineries



Agriculture

Material Handling



Mills

Cable Theft Detection

Pulp & Paper

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