NEW ELEC

MOTOR PROTECTION & CONTROL TECHNOLOGY

NK Motor Protection Relay…

A South African Company to be Proud of

ISO 9001:2008
ISOQAR QUALITY ASSURED ISO 9001
UKAS QUALITY MANAGEMENT 026
Certificate Number : 8707QMS001

Physical Address: 298 Soutter Street, Pretoria West
Tel: 083 454 6949, +27 12 327 1729 Fax: +27 (0)12 327 1733 Toll Assist: 0860 10 30 41
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?

To provide a multiple mounting option protection relay with all protection features required to protect S1 rated TEFC lightweight LV metric motors with optimised core laminations and windings and reduced thermal overload capacity as well as provide remote fault indication and analogue input for a PLC with respect to motor loading.

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Feature Highlights

- *Selectable thermal curves to match the safe Hot and Cold stall times of the motor*
- *Acceleration time for high inertia loads by selection of thermal curve*
- *Thermal memory designed to IEC 60255-8 (Class 5 to 30)*
- *Overload protection for cyclic and stable loads*
- *Unbalance current and single-phasing*
- *Running stall (jam) protection*
- *Earth leakage 0,250 amp 0,1 sec*
- *Earth leakage protection output relay enabling shunt trip of MCCB for high fault level*
- *Motor load indication via 4 to 20 mA output interface to PLC*
- *Independent potential free contact output of fault condition for interface to PLC*
- *Remote reset from PLC 24 to 220 volt AC/DC*
- *User-friendly descriptive calibration settings in seconds, amps or % C.T. ratio*
- *Descriptive Fault indication LEDs*
- *Thermal capacity LED bar graph indicator*
- *Load level indication LED I > Ie*

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Benefits

- *Accurate overload protection during any phase of operation*
- *Unbalance current protection with soft starter*
- *Phase loss single-phasing protection*
- *Thermal memory for excessive jogging or multiple start prevention*
- *Thermal overload protection for long starting times (Curve Class 5 – 30)*
- *Running stall*
- *Earth leakage protection 0,250 amp instantaneous*
- *Earth leakage protection with output relay for MCCB trip*
- *Control panel LED thermal indicator*
- *Descriptive fault indication LEDs*
- *User-friendly calibration settings*
- *Current range from 5 to 550 amp in 3 models control panel calibration in amps*
- *Current range from 10 to 110 % control panel calibration in % current transformer ratio*
- *Door, chassis or module mounting*
- *Compact design. Footprint (150 x 85 mm)*

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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

General motor protection requiring small footprint and Hot start < 10 Sec

Compressor motors with cyclic loading

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Specifications

INPUT CURRENT
From NewElec CTMB xxx / 1 / CBCT or separate suitably rated ring C.Ts

SECONDARY RATING
1 Amp (5 Amp on request)

NOMINAL OUTPUT
2,5 VA

ACCURACY CLASS
5 P 10 at 0,1 VA

OUTPUT RELAY

Contacts	*: 2 x Changeover*
Rating	*: 6 Amp at 250 Volt*
Isolation	*: 2 kV between circuits*
	: 1 kV across n.o contacts
Auxiliary supply	*: 110 or 220 Volt a.c*

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Specifications Contd.

Operating range	*: 85 to 120% of specified voltage*
Burden	*: 3 VA*
Frequency range	*: 45 to 65 Hz*
Operating temp	*: - 10° to + 50° C*

ISOLATION

2 kV between all separate circuits to IEC 255-5 Appendix A
1 kV across n.o contacts in accordance to IEC 255-5 Appendix A

OVERLOAD RESET DELAY

Two stage thermal memory matched to overload curve selection

IMPULSE WITHSTAND

Transient 5 kV to IEC 255-5 Appendix D

HIGH FREQUENCY DISTURBANCE

1 MHz modulated
400 Hz 1 kV to IEC 255-8
Appendix E (Class III)

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Specifications Contd.

OVERLOAD WITHSTAND RATINGS

10 x rated current	: Continuous
100 x rated current	: 1s
Burden	: < 0,1 VA
Current setting range	: 10 to 110% In
Calibration	: Amperes R.M.S
Response	: Filtered peak value output 3
phase rectifier	
Current detection level	: 102% of set value (Ie)
Current operation level	: 104% of set value (Ie)
Repeatability	: 1% of detection level
Current setting accuracy	: +- 3% of rated current
Overload curve accuracy	: +- 5% 120% Ie to 800% Ie
	: +- 10% 105% Ie to 119% Ie

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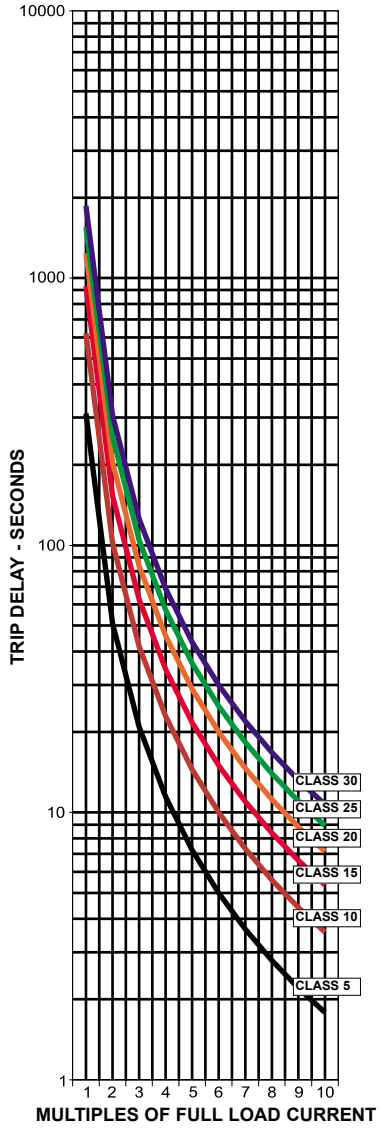

Specifications Contd.

EARTH LEAKAGE

Level	: 250mA
Trip delay	: 100ms
Operation	: Block Iact > 800% Ie for NH and NJ

OPERATION

Level (I2)	: 30% Iact
Trip Delay	: 5s
Operation	: Block I_{act} < 20% Ie

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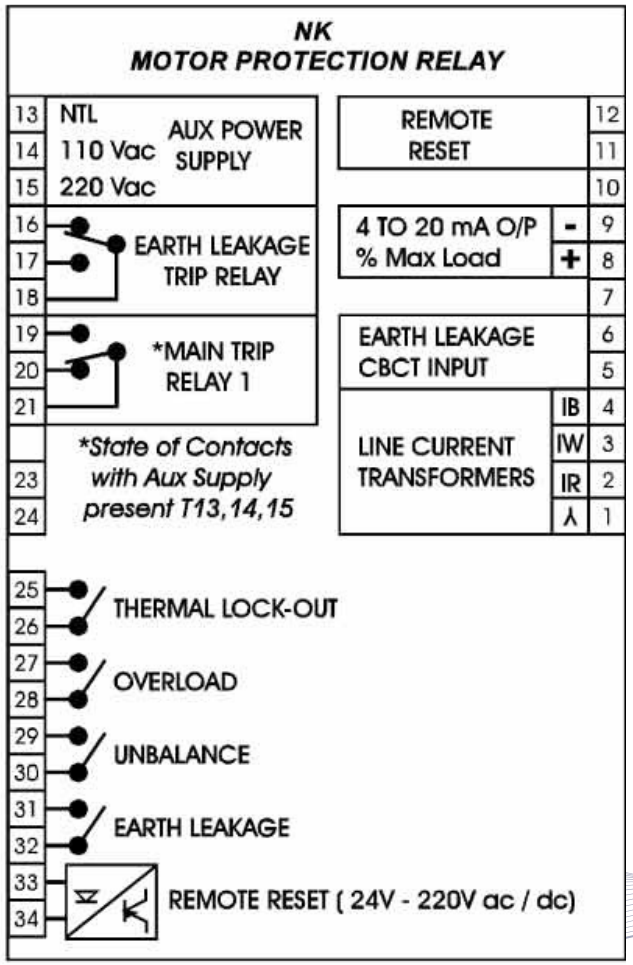
Electrical Connection Diagram



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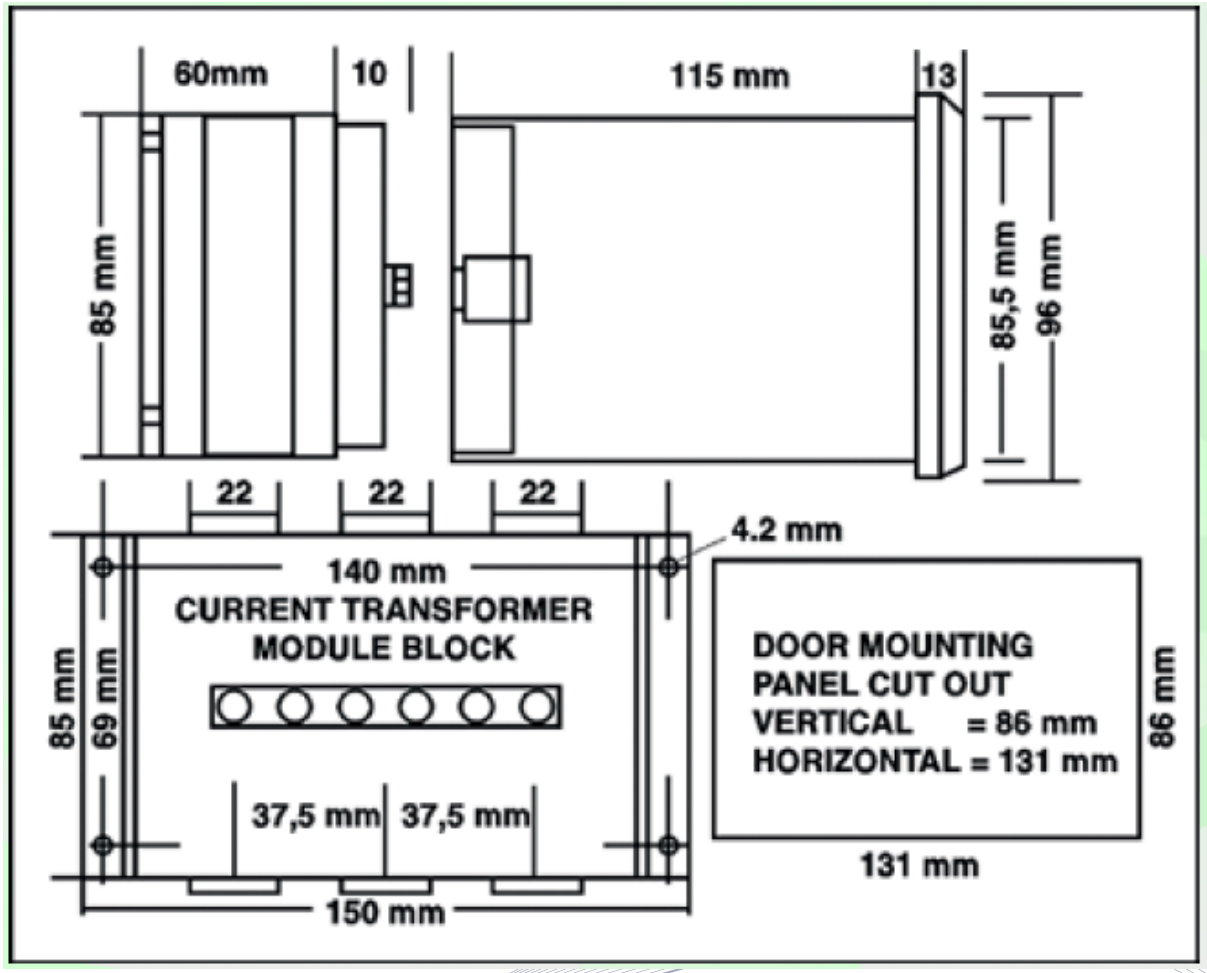
Dimensional Diagram



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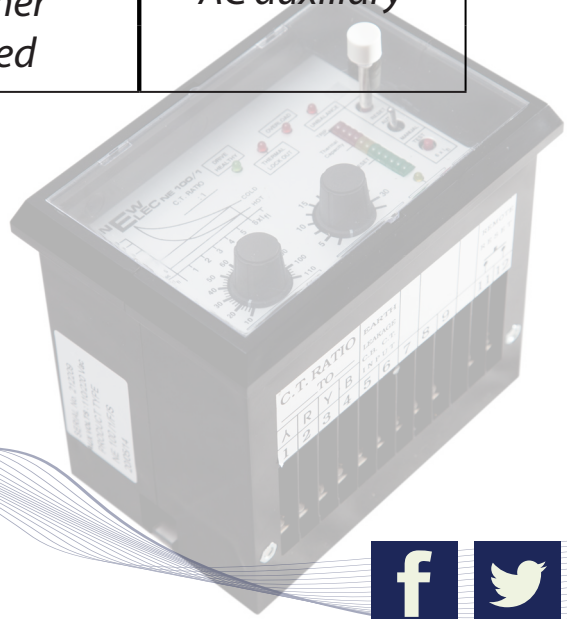
Ordering Information

MODEL	CURRENTRANGE	CURRENT TRANSFORMER SECONDARY	MOUNTING CONFIGURATION	S = User selectable
NK	050 = 5 to 55 Amp	1 AMP or 5 AMP	F = flush door mounting	110 or 220V AC auxiliary
	200 = 20 to 220Amp		C = chassis mounting	
	500 = 50 to 550Amp		M = current transformer module mounted	
	100 = %calibration			

EXAMPLE: NK/ 200/ 1/ F/S



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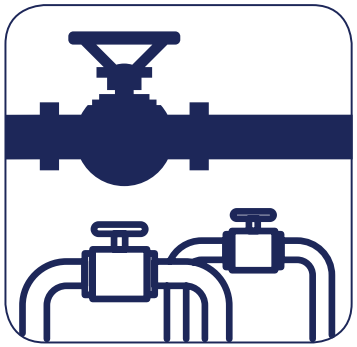
Applications particularly well suited for use in conjunction with the NewElec range of electronic motor protection relays.

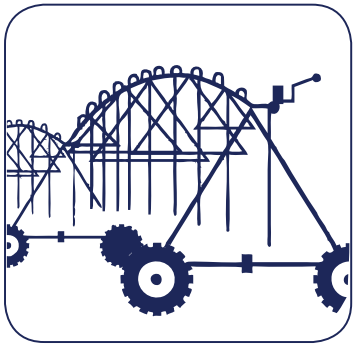
Mining



Water Affairs

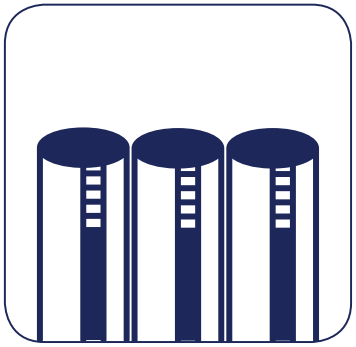
Petro Chemical

Refineries



Agriculture

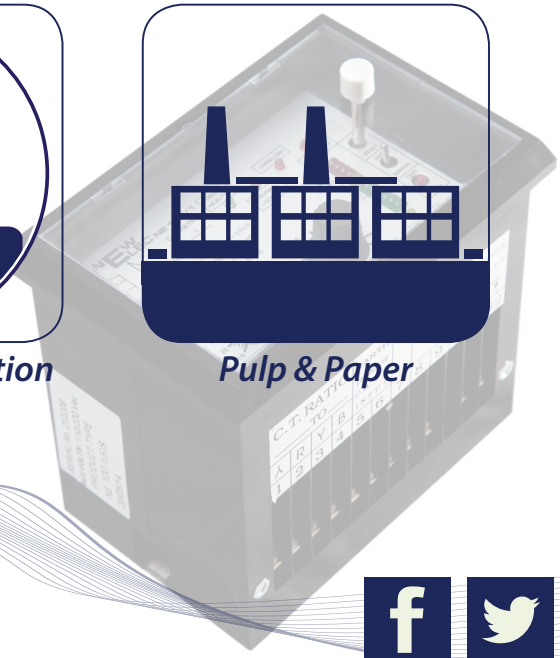
Material Handling



Mills

Cable Theft Detection

Pulp & Paper



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