

NEW ELEC

MOTOR PROTECTION & CONTROL TECHNOLOGY

N Series Flexible Protection for LV Motors



A South African Company to be Proud of

About

NewElec's N Series relays are designed to protect motors in various LV applications from 5 - 550A. If required, percentage calibration is available and the modular design permits door, chassis, or CT module block mounting.

The N Series relays provide user-selectable cold curves ranging from Class 2,5 to 32,5 on a single dial. The hot curve value is limited at 30% of the selected cold curve with full thermal memory and the preloading of the motor determining the thermal curve > hot < cold curve protecting the motor at any given time during operation.

A control panel selector switch for auto or manual overcurrent reset after cooling is available for unbalance current or single phasing protection, independent of load current > 20% I_e with a 5s delay to overcome transient network disturbances.

Earth leakage protection 250mA 0,1s for load currents < 800% I_e above which NH, NJ models block trip and NI, NK models provide separate output relay to trip MCCB or upstream device.

Full restoration of fault indication LEDs and thermal capacity LED bargraph on restoration of auxiliary power supply in the event of auxiliary power being removed after trip.

The NJ and NK relays are fitted with a 4 to 20mA loop to indicate % motor load current as well as having potential free contact outputs to indicate status of the control panel mounted fault indication LEDs enabling interfacing to PLC or other control circuits.

The N Series relays have user-friendly control panel legends and a 1 year warranty.

Protection Features

- Overload protection for cyclic and sustained overload conditions
- Earth leakage protection is available if required
- Phase unbalance and phase loss protection
- Locked rotor protection as well as jam or running stall protection
- Retentive fault indications even on loss of auxiliary power supply. (Nonvolatile memory)
- Local LED and remote relay fault indication is available
- Fail safe main trip relay operation
- Overcurrent test facility



Features	RELAYMODEL				
	NE	NH	NI	NJ	NK
Thermal overload protection (selectable Class 2,5 to 32,5)	●	●	●	●	●
Locked rotor protection	●	●	●	●	●
Jam protection (running stall)				●	●
Thermal memory	●	●	●	●	●
Phase unbalance / loss protection	●	●	●	●	●
250mA earth leakage protection with blocking intelligence if fault current exceeds 800% motor full load*		●		●	
250mA earth leakage protection with dedicated changeover contact for shunt tripping facility for MCCB irrespective of fault current level*			●		●
Interface facility to PLC % load current 4-20mA loop 4 potential free N.O. contacts for signalling purposes to remote control room in respect of overload, phase unbalance, earth leakage and thermal lockout - PLC reset facility (24-220V ac or dc)			● ● ●		● ● ●
Local reset facility	●	●	●	●	●
Remote reset facility	●	●	●	●	●
Thermal LED bar graph display	●	●	●	●	●
Fail safe with memorised thermal status of motor and trip fault condition	●	●	●	●	●
Output contacts MAIN trip consists of 2 changeover contacts for all fault conditions	●	●		●	
Output contacts MAIN trip consists of 1 changeover for; overload, unbalance, run stall, earth leakage and 1 changeover for shunt tripping MCCB			●		●

*This is to maintain Type 2 co-ordination ensuring that the main contactor is not used to interrupt a high-energy current which will exceed the contactor rupturing capacity.

Ordering Details

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

EXAMPLE: NJ/ 200/ 1/ F/S

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

Operating range : 85 to 120% of specified voltage

Burden : 3 VA

Frequency range : 45 to 65 Hz

Operating temp : -10°C 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)

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 : $\pm 3\%$ of rated current

Overload curve accuracy : $\pm 5\%$ 120% Ie to 800% Ie ; $\pm 10\%$ 105% Ie to 119% Ie

EARTH LEAKAGE

Level : 250mA

Trip Delay : 100ms Operation : Block Iact > 800% Ie for NH & NJ

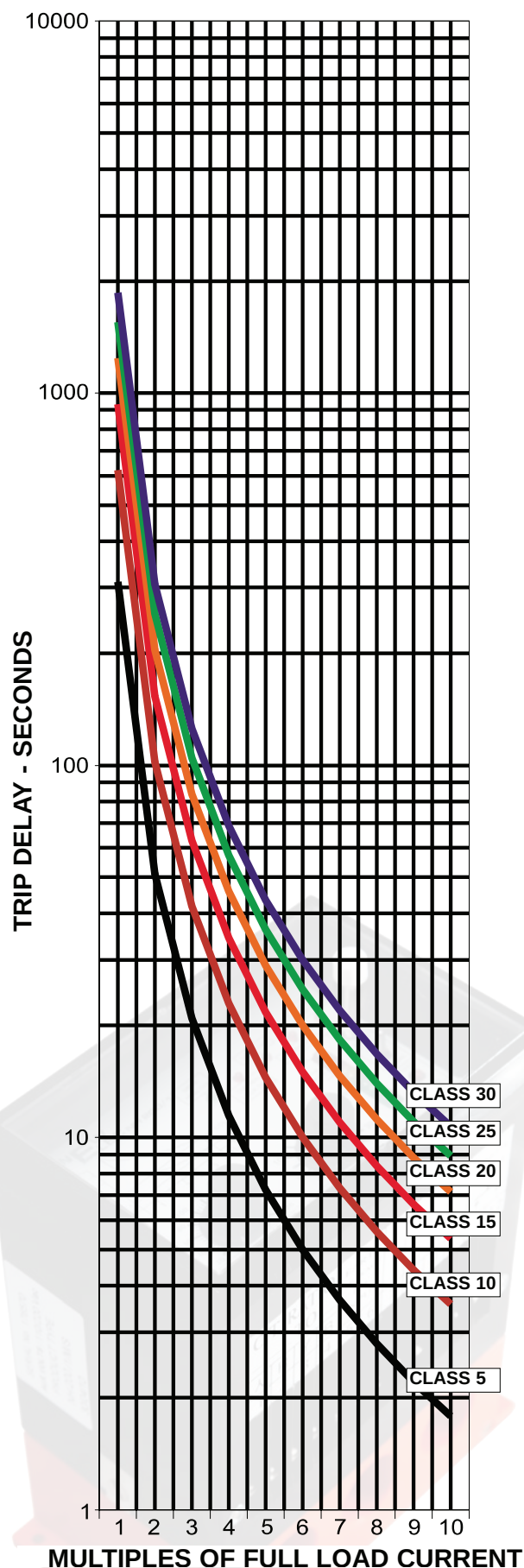
UNBALANCE

Level (I2) : 30% Iact

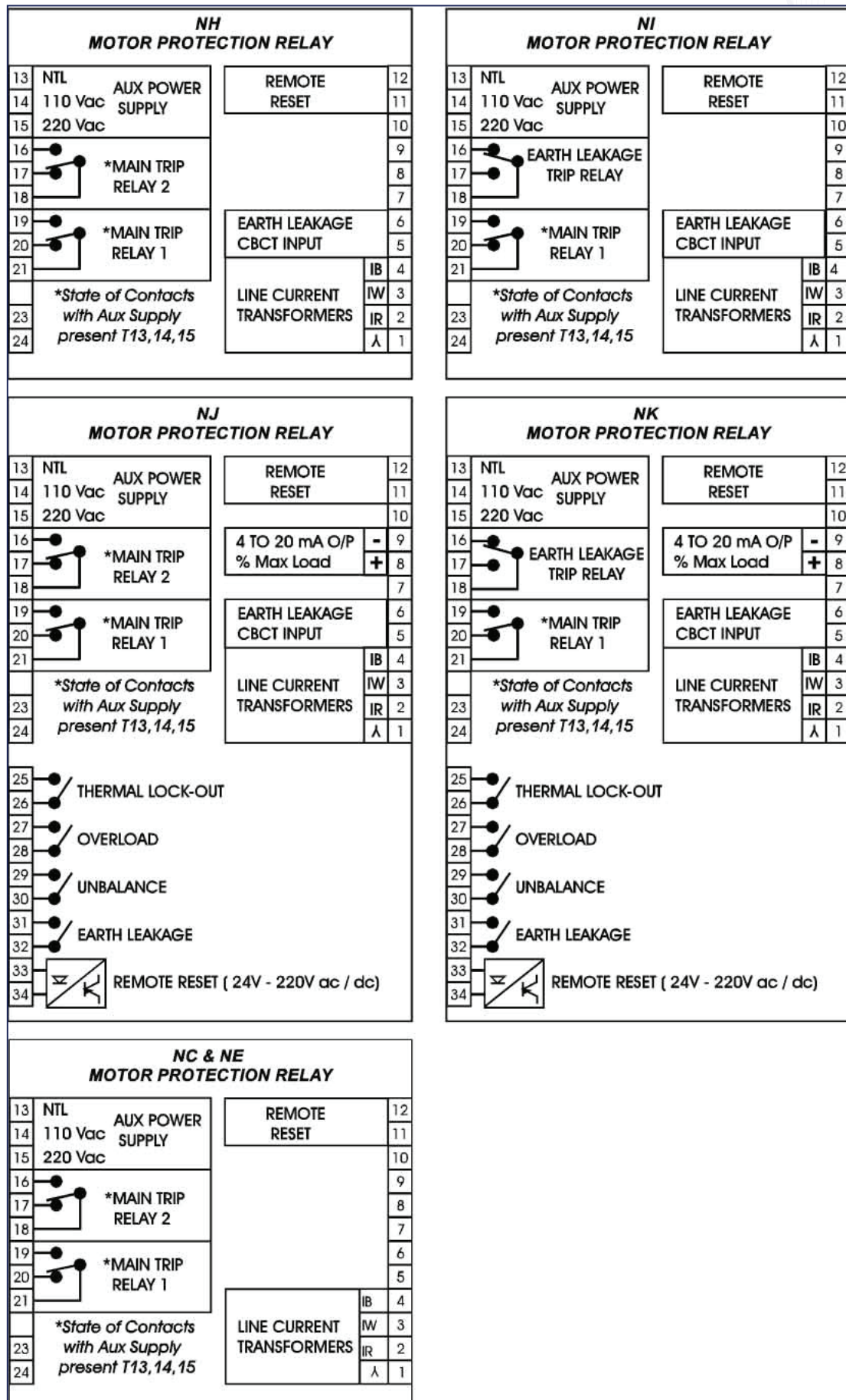
Trip Delay : 5s

Operation : Block Iact < 20% Ie

NH-NI-NJ- NK RELAY THERMAL CURVES



Electrical Connection Diagrams





MOTOR PROTECTION & CONTROL TECHNOLOGY

Physical Address:

298 Soutter Street,
Pretoria West

Tel: +27 12 327 1729

Fax: +27 (0)12 327 1733

Toll Assist: 0860 10 30 41

www.newelec.co.za

sales@newelec.co.za

N Series

Flexible Protection for LV Motors

