NEW ELEC

MOTOR PROTECTION & CONTROL TECHNOLOGY

KB Motor Protection Relay...

A South African Company to be Proud of

ISO 9001:2008
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

NEWELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41
www.newelec.co.za
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.

A South African Company to be Proud of

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Why was it designed?

To provide a modern microprocessor based protection relay for motor pumping applications that would traditionally have used thermal bimetal and undercurrent sensing devices to achieve the same end while retaining a small footprint.

This microprocessor based thermal overload relay designed to IEC 60255-8 provides superior:

- *Overload protection for cyclic and stable loads*
- *Unbalance current and single-phasing protection*
- *Minimum load (undercurrent) protection*
- *Locked rotor protection*

Single feed through primary 8 mm aperture covers range 1 to 25 amps after which secondary winding of interposing current transformer pass through the relay.

A South African Company to be Proud of

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Feature Highlights

- *Overload protection cyclic and sustained thermal curve Class 15 Cold – 5 Hot*
- *Thermal memory as per IEC 60255-8 with preloading*
- *Thermal memory decay caters for running and standstill conditions*
- *Auto / Manual reset selection (Auto change to manual after 3 trips in 1 hour)*
- *Locked rotor protection*
- *Unbalance current single phasing protection (30%)*
- *Underload protection with user-adjustable trip threshold (10% -100% I.e.)*
- *Fail-safe trip relay configuration indicates relay healthy*
- *Panel mounted latched trip LED diagnosis*

A South African Company to be Proud of

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Benefits

- *Accurate overload protection during any phase of operation*
- *Unbalance current protection*
- *Phase loss / single phasing protection*
- *Descriptive fault / level monitoring indication LEDs*
- *User-friendly calibration settings*
- *Compact design. Footprint (100 x 50 mm)*
- *Requires additional CTs for loads > 25 amps*
- *Current range from 0,1 to 200 amps in 7 models*
- *Uses standard 110 or 220 Volt a.c auxiliary power*

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Typical Applications

Pump motors requiring minimum load protection

Monitoring of pump motor impeller efficiency with minimum load

General motor protection requiring small footprint and Hot start < 5sec

Compressor motors with cyclic loading

Minimum load protection for V belt breakage trip

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Specifications

Input Converter

Class : Class 1
Rating : 0,1VA
Frequency Response : 40 to 66Hz

Overload Trip Delay Curves

Cold

$$T\,Trip = 15\,(35{,}49)\,Ln\left[\frac{(I/Ie)^2 - (Ip/Ie)2}{((I/Ie)^2 - 1)}\right]$$

Hot

$$T\,Trip = 5\,(35{,}49)\,Ln\left[\frac{(I/Ie)^2 - (Ip/Ie)2}{((I/Ie)^2 - 1)}\right]$$

Accuracy

: ± 5% 1,2 x Ie to 6 x Ie
: ± 10% 1,01 x Ie to 1,2 x Ie

Underload Detection

Range : 10 to 100% of Maximum Load Dial
Trip Delay : 1 to 10 seconds

A South African Company to be Proud of

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Specifications Contd.

Fault Indication

Operation	: Latch on trip
Resetting Fault Indication	: Latch

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 C III

Maximum Load Current Setting

Level Setting Accuracy	: ± 2%
Linearity	: ± 2%
Repeatability	: ± 1%
Detection Level	: ± 2%
Calibration	: Amps

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Specifications Contd.

Overload Thermal Lock-out Time to Recover 33% Capacity

Example shown for a 15 sec curve selection	: T reset = Curve [2.33 (35,49 x 2) 15 log (100/70)] - Motor Running

Main Trip Relay

	: 5 Amps 220V A.C.
Configuration	: 1 n/o + 1 n/c
Terminals	: n/c 7 and 8
	: n/o 9 and 10

Underload Detection

Range	: 10 to 100% of Maximum Load Dial
Trip Delay	: 1 to 10 seconds

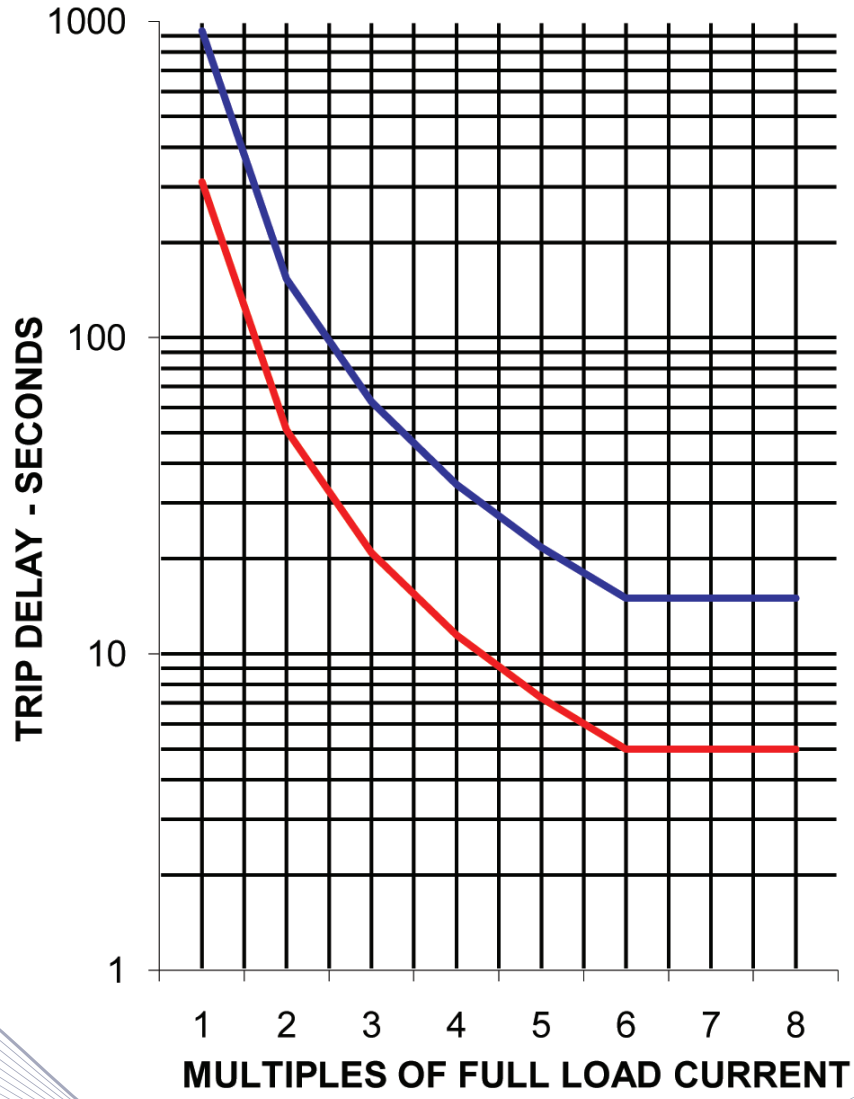
NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists



Specifications Contd.

Restart Timer

User-selectable range : *Manual only, 10 sec, 2 min, 10 min, 20 min, 30 min, 45 min, 1 hr, 3 hrs OR 6 hrs delay*

Example shown for a 15 sec curve selection : *T reset = Curve [2.33 (35,49 x 4) 15 log (100/70)] - Motor Stand-still*

Auto Reset Limiter

Auto Reset limited to only 3 times per hour

Running Stall Protection

Detection Level : *300% of Maximum Load Dial Setting with a 1s Trip Delay*

A South African Company to be Proud of

NEWELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

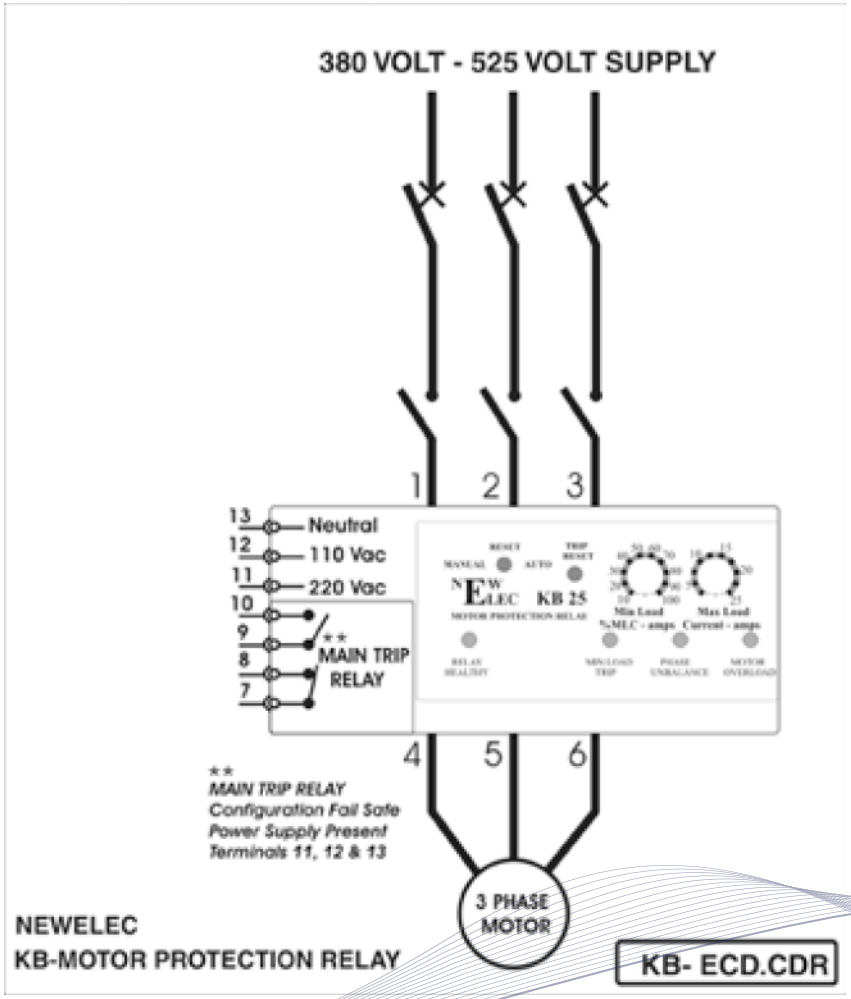
+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Electrical Connection Diagram



A South African Company to be Proud of

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

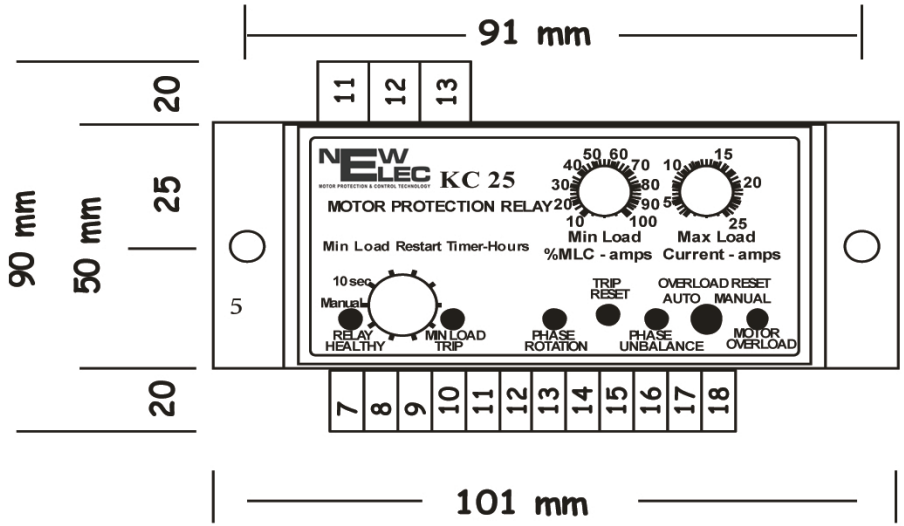
+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

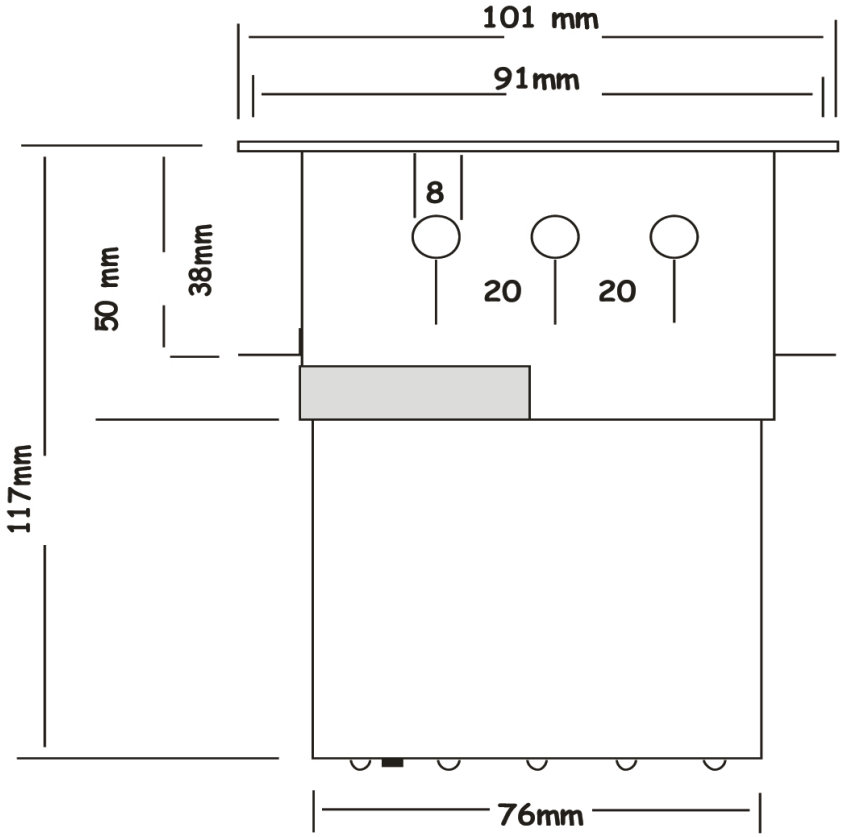
Innovative solutions from South Africa's Leading Motor Protection Specialists

Dimensional Diagram



KC-DIM.CDR

NEWELEC KC
MOTOR PROTECTION RELAY



A South African Company to be Proud of

NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41

www.newelec.co.za

GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

Ordering Information

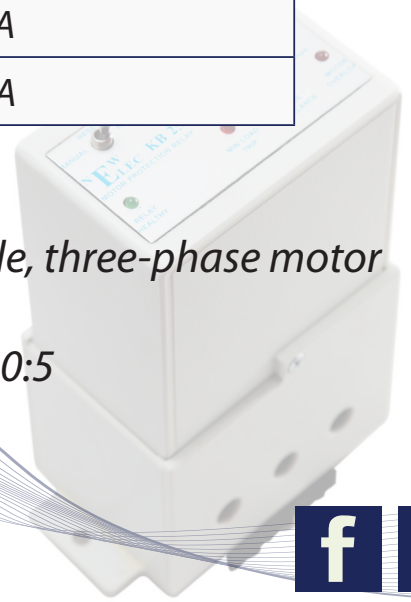
Model or relay type	Current setting range	Interposing secondary current transformer ratio where required
KB 1	0,1 to 1 Amp	Not required
KB 5	0,5 to 5 Amp	Not required
KB 10	1 to 10 Amp	Not required
KB 25	2,5 to 25 Amp	Not required
KB 50	5 to 50 Amp	50:5 Class 12,5 VA
KB 100	10 to 100 Amp	100:5 Class 12,5 VA
KB 200	25 to 200 Amp	200:5 Class 12,5 VA

Example 1

Protection for 3kW 380V three-phase motor
Motor full load = 6,5A
Suggestion: KB10 / 380V

Example 2

Protection for 132kW 525V 4-pole, three-phase motor
Motor full load = 175A
Suggestion: KB200 / 525 / 200:5



NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41
www.newelec.co.za
GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

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

A South African Company to be Proud of

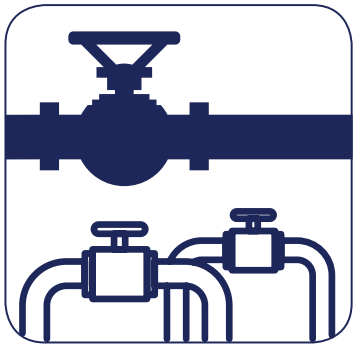
NEW ELEC
MOTOR PROTECTION & CONTROL TECHNOLOGY

+27 12 327 1729
Toll Assist: 0860 10 30 41
www.newelec.co.za
GPS Coordinates:
-25.752984, 28.162957

Innovative solutions from South Africa's Leading Motor Protection Specialists

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

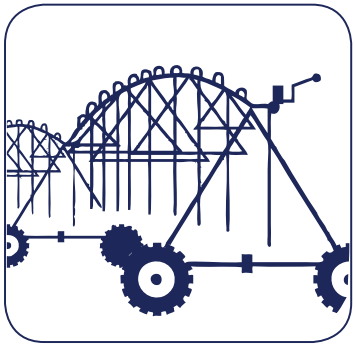
Mining



Water Affairs

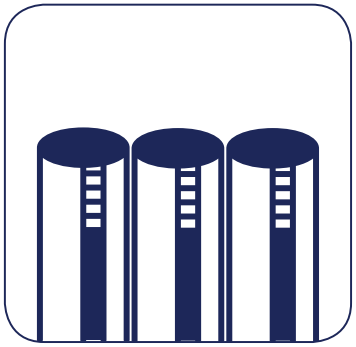
Petro Chemical

Refineries



Agriculture

Material Handling



Mills

Cable Theft Detection

Pulp & Paper

A South African Company to be Proud of