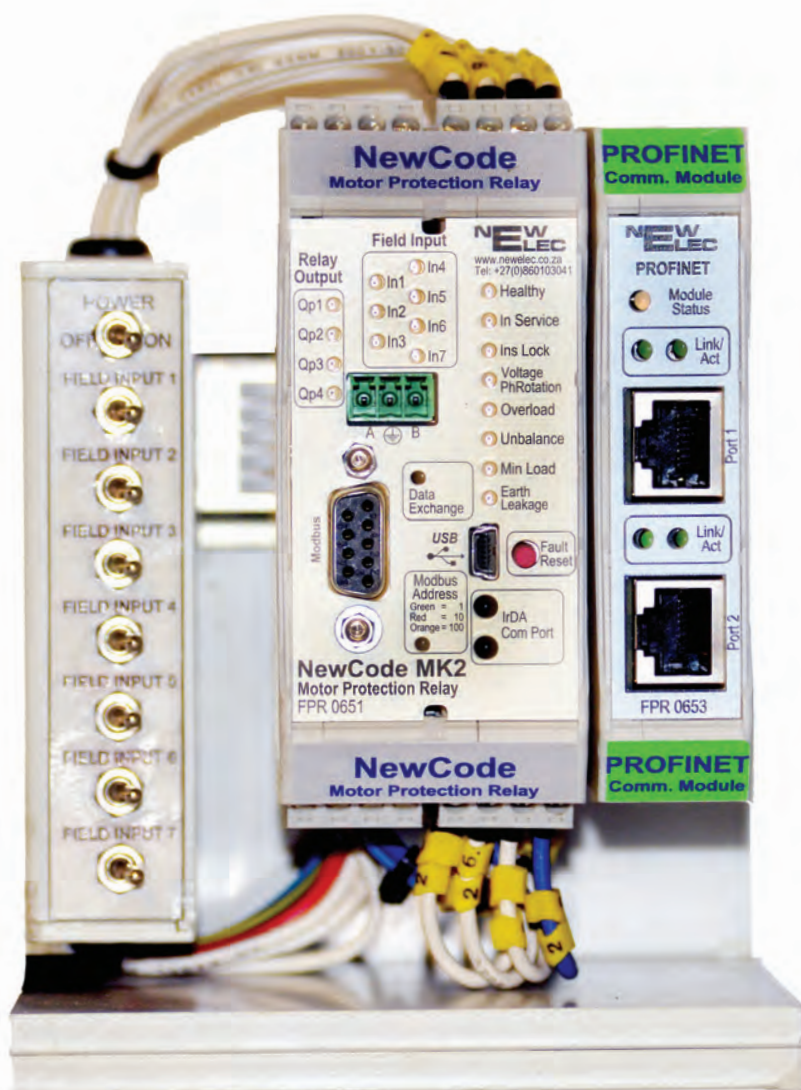


# NEW ELEC

MOTOR PROTECTION & CONTROL TECHNOLOGY

# NewCode Profinet



*A South African Company to be Proud of*

# A South African Company to be Proud of

## About

The NewCode Relay is an ISO 9001:2008 compliant, three-phase motor protection relay, designed and manufactured in South Africa. It is a micro-controller based precision instrument for three-phase induction motor protection with advanced control logic features as well as multiple motor starter control circuit configurations. The relay is designed for the low voltage motor protection market. The current transformers, including the core balance current transformers are external. Certain models cater for combined current and core balance current transformers, maximum flexibility is maintained by allowing separate C.B.C.T's with interposing current transformers with a software selectable, 1 to 10 amp secondary winding, Class 1, 5VA.

## Protection Features:

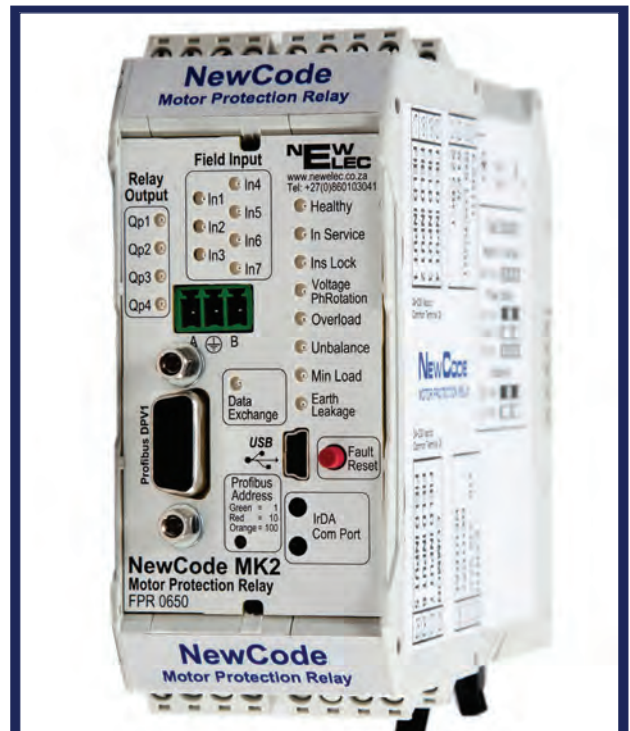
- Thermal Overload
- Locked Rotor
- Running Stall – Jam
- Vectorial Stall - Start Stall
- Unbalanced Current
- Single Phasing
- Minimum Load – Underload - Dry Run
- Earth Leakage
- Earth Fault
- Short-circuit
- Starts per Hour Limitation
- Overvoltage – Undervoltage
- Phase Rotation
- Over Frequency – Under Frequency
- Main-Circuit Insulation Failure Lock-Out

## Management Features:

- Power Factor Measurement
- Power Consumption Measurement
- Statistical Data
- 1400 Event Records with time and date stamp
- 35 Last Fault Records with time and date stamp

## Configurable Automation Features:

- Timers
- Real Time Clock (24 Hour)
- Starter Controller Logic
- Logic Function Blocks
- 7 Field Inputs
- Motor Parameter Calculator
- 4 Programmable Outputs
- 3 Phase Recorder
- On-board Simulator for Training / Commissioning
- Multiple Communication Protocols



The NewCode relay is fully configurable with the aid of frontend software or a man machine interface unit (MMI). Event records can also be downloaded with the aid of the laptop for further analysis. All the settings can be password protected. The relay has an onboard database where time and date stamped records are kept. Two types of records are kept namely fault records (35 last faults) and event records (1400 events). In the case of event records, the user has limited access rights (read only).

The front-end also has a data recorder and a spectrum analyser which could be used to analyse motor performance and supplied power quality respectively. The spectrum analyser can detect harmonics up to the 9th harmonic on any of the three phase currents.

The relay detects earth leakage currents with the aid of the external core balance current transformer and is configurable to operate in inverse definite minimum time (IDMT) or instantaneous definite time (IDT) mode. A unique feature is added to the relay in the form of simulation. This function could be used for personnel training or relay functionality testing.

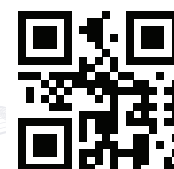
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Physical Address: 298 Soutter Street, Pretoria West

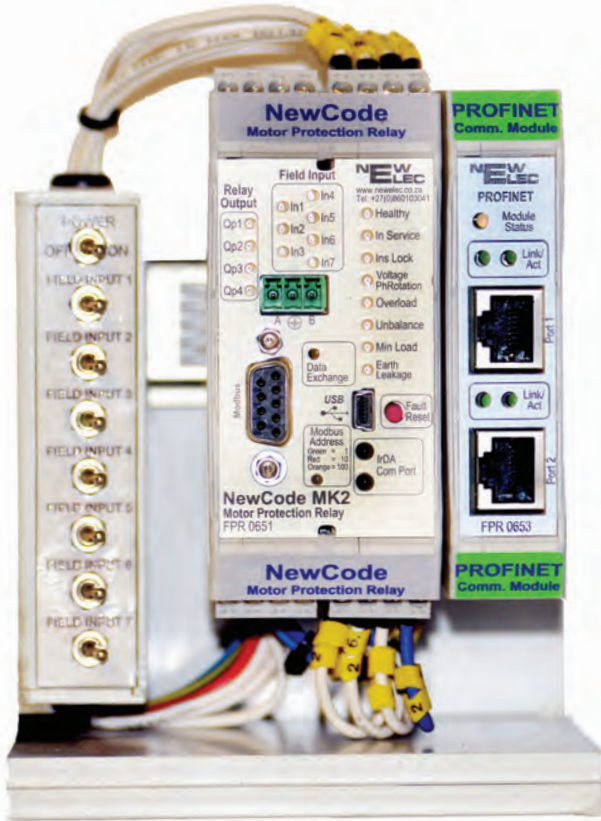
Tel: 083 454 6949, +27 12 327 1729 Fax: +27 (0)12 327 1733 Toll Assist: 0860 10 30 41

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





# NEWCODE PROFINET



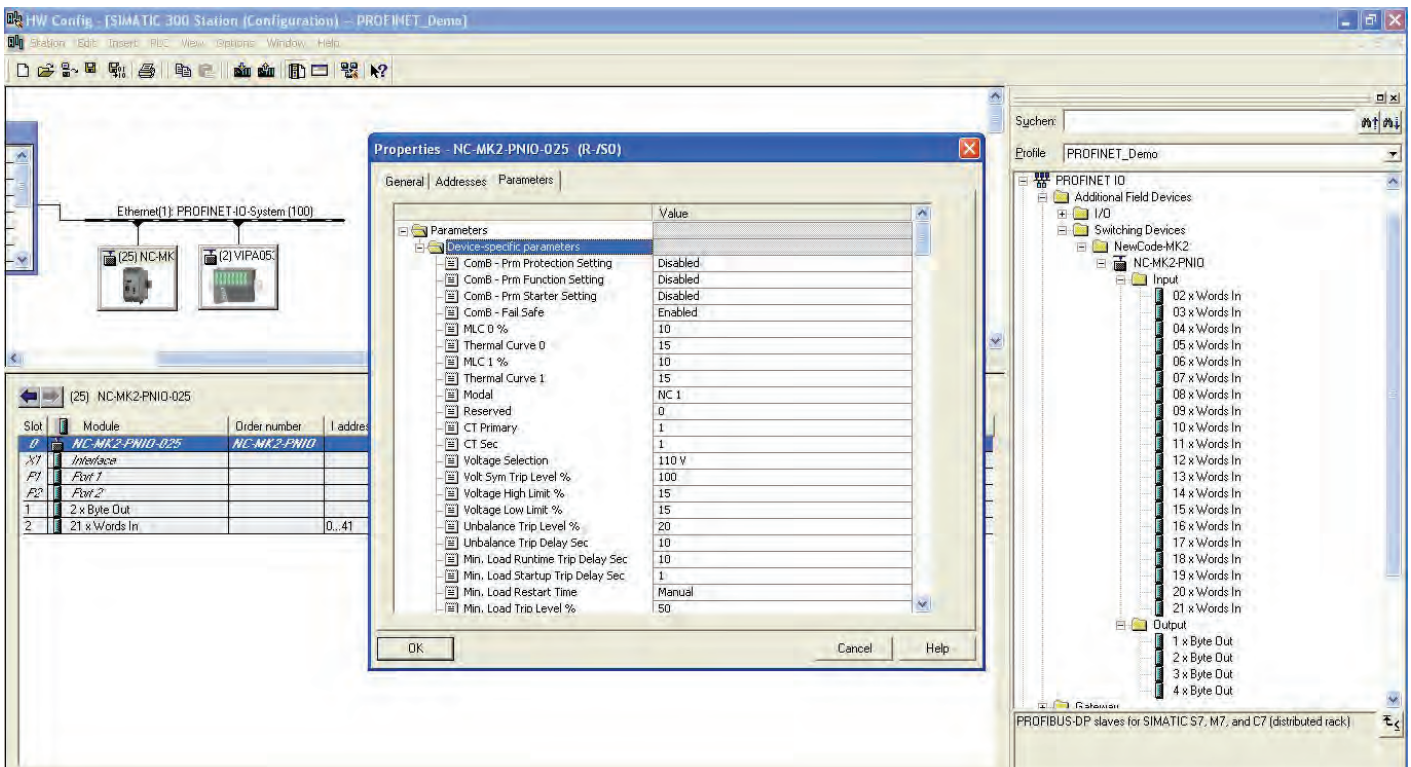
## PROFINET Cyclic Message Structure:

- 1 to 4 Cyclic Out (From PLC) bytes to NewCode
- 1 to 2 bytes are bit configurable in the NewCode.
- 2 to 4 are used to drive the 4 to 20mA outputs.
- 4 to 21 Cyclic In (To PLC) words selectable.
- 2 Word messages bits are configurable.

## PROFINET:

- Acyclic communication same as old F880 structure to ease data table upgrade.
- Can be used in star, ring or line network topology.
- NewCode real time clock synchronization for
- Event and fault time stamping in NewCode relay FRAM.

## PROFINET Configuration



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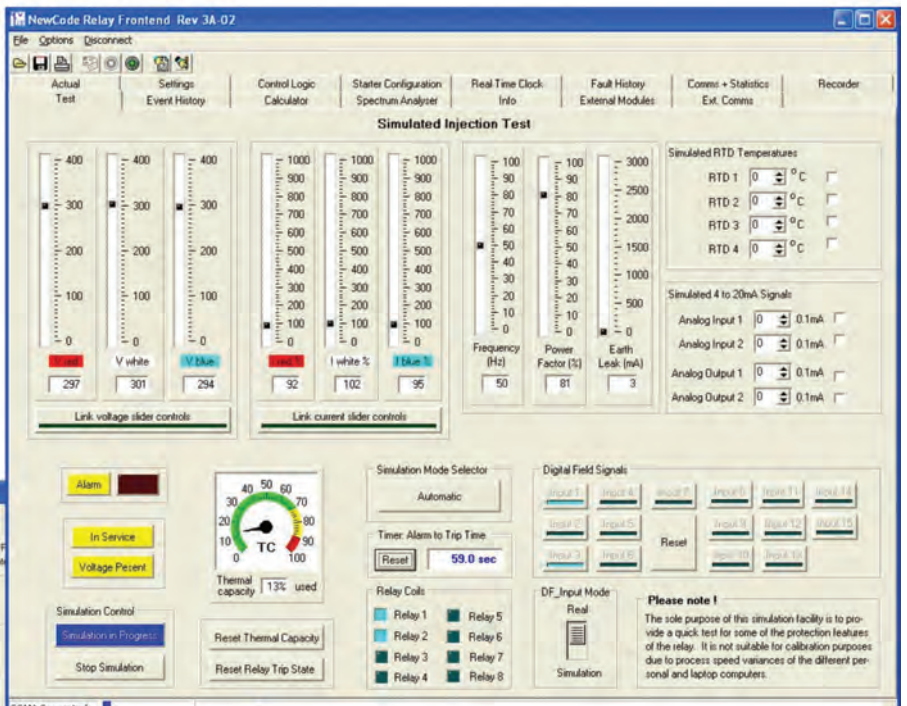




# PROFINET Variable Table, PROFINET Test Tab and NewCode Setup

**VAT 1 - PROFIBET\_DemoSMTAC 300 Station...**

Address	Symbol	Display format	Status value	Modify value
1	~"Vr"	DEC	297	
2	~"Vw"	DEC	301	
3	~"Vb"	DEC	294	
4	~"Vr Level %"	DEC	92	
5	~"Vw Level %"	DEC	102	
6	~"Vb Level %"	DEC	95	
7	~"Vr Phase"	DEC	314	
8	~"Vw Phase"	DEC	301	
9	~"Vb Phase"	DEC	294	
10	~"Vr Unbalance"	DEC	8	
11	~"Vw Unbalance"	DEC	98	
12	~"Vb Unbalance"	DEC	3	
13	~"Power Cosφ"	DEC	81	
14	~"Frequency"	DEC	50	
15	~"Real Power Counter"	DEC	2044	
16	~"Trip Flag A"	DEC	29000_0000_0000_0000	
17	~"Trip Flag B"	DEC	29000_0000_0000_0000	
18	~"Trip Flag C"	DEC	29000_0000_0000_0000	



**NewCode Relay Frontend Rev 3A.02**

File Options Disconnect

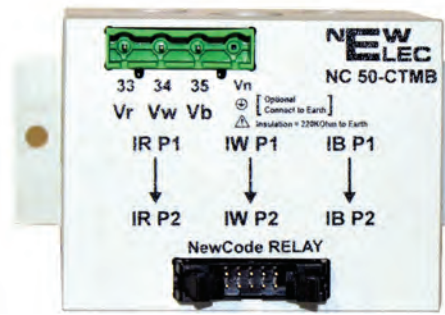
Actual Test Settings Event History Control Logic Calculator Starter Configuration Spectrum Analyzer Real Time Clock Info

**External Communication Module - From Relay**

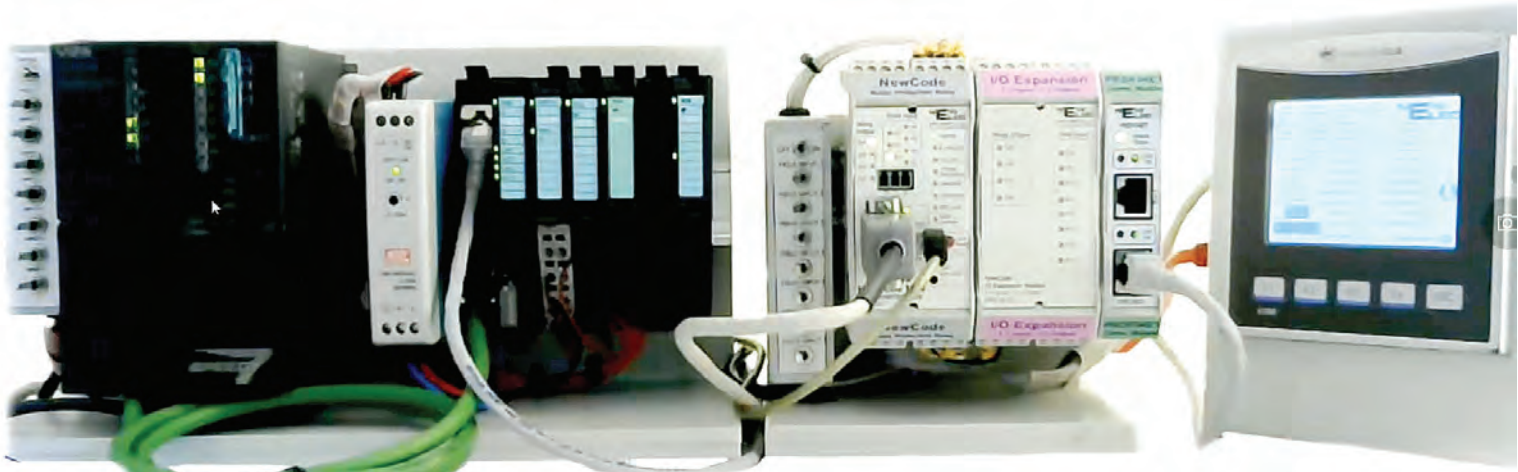
Comm Type: PROFIBET Read settings from relay Transient settings to relay

PROFINET Device Number: 25 Must also be equal to the last IP address!!

Assigns to PLC	Word 01	Cycle Word In A	Cycle Word In B
Word 01	Cycle Word In A	Word 02	Cycle Word In B
Word 02	TC_Low_Rest	Word 03	TC_Low_Rest
Word 03	Load_Level_Per	Word 04	Load_Level_Per
Word 04	Test_Level_Per	Word 05	Test_Level_Per
Word 05	White_Level_Per	Word 06	White_Level_Per
Word 06	Blue_Level_Per	Word 07	Blue_Level_Per
Word 07	Voltage_Line_Level	Word 08	Voltage_Line_Level
Word 08	Vr_Level	Word 09	Vr_Level
Word 09	Vw_Level	Word 10	Vw_Level
Word 10	Vb_Level	Word 11	Vb_Level



NC 50 - CTMB



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