NewCode Profinet

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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.
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

NC 50 - CTMB