

# INTEGRATED MOTOR RELAYS

## RMI3 P01 AND RMI3 P02

Units RMI3 P01 and RMI3 P02 are designed for controlling of switching and protection of three-phase asynchronous squirrel-cage electric motors. They are equipped with circuits for the evaluation of motor currents and supply voltage. They contain circuits of protections which are used with mining machinery in the premises with danger of explosion of methane and coal dust excluding premises with high risk of SNM3 methane explosion. This type of relay enables measuring of temperature and motor rpm. Measured quantities are processed by a microprocessor. On the basis of measured quantities and set parameters the microprocessor performs controlling operations by means of contact relays.

The measured quantities, failure states and parameter setting are displayed by means of a terminal or industrial computer. The terminal enables communication using a CAN bus-bar with one RMI, an industrial computer can communicate via bus-bar RS485 with up to 16 RMI devices. Controlling and inspection operation of RMI is not dependent on the communication above. Parameters and failure states are stored even though the supply feeding is off.

### Technical description:

The device enables supply feeding of an electric motor with drive change-over.

RMI3 P01 is determined for electric motors up to 1140 VAC. RMI3 P02 is determined for voltage over 1140V.


The product complies to the technical requirements for equipment determined for use at premises with danger of explosion according to Directive 94/9/EC (NV 176/1997 Sb.). It can be used in all mining premises with danger of methane and coal dust explosion except for premises with high risk of SNM 3 methane explosion.

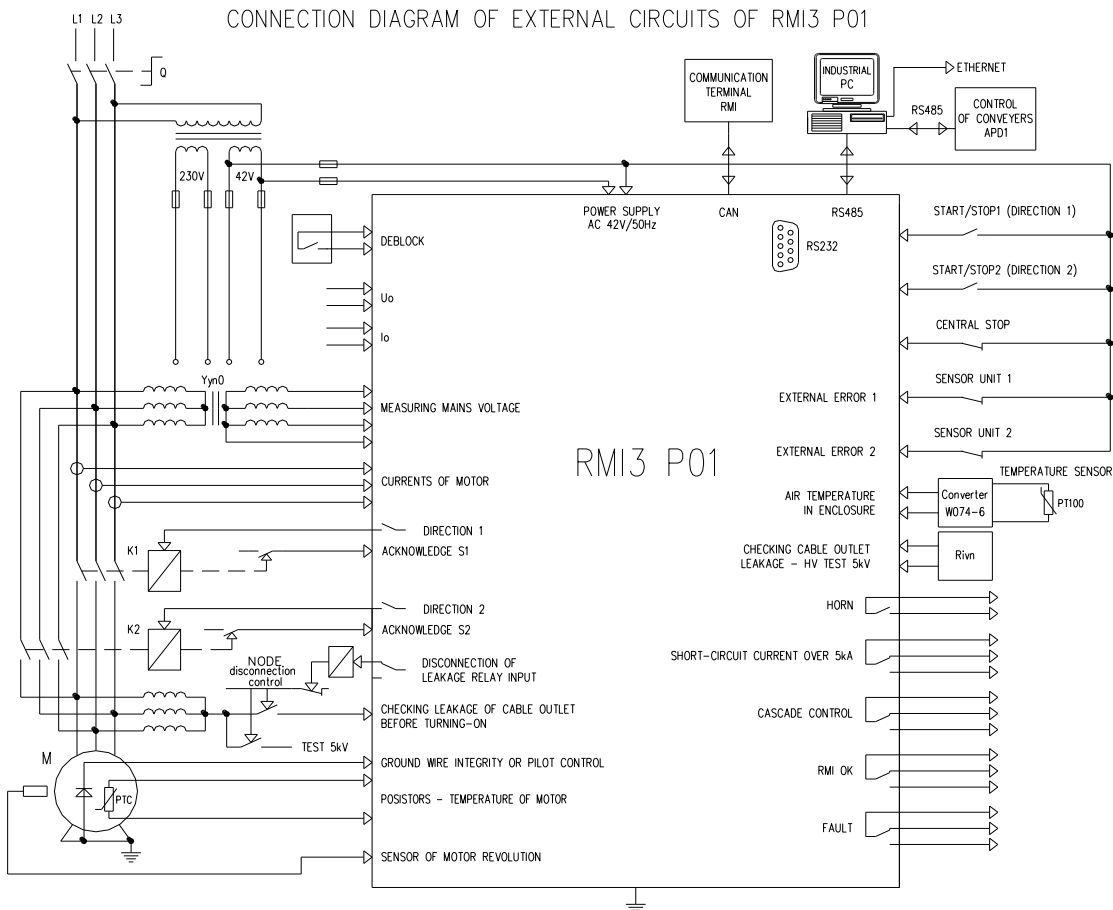
### Device properties:

- trigger for short-circuit and overload
- evaluation of limit values of supply voltage, current imbalances, rpm, phase drop-out
- check of insulation of electric motor prior to on switching
- circuit for inspection of grounding conductor
- circuit for checking of temperature of electric motor by means of thermistor
- continuous measuring of currents, supply voltage, insulation state, ground conductor state, temperature of electric motor, rpm
- emission of a warning signal prior to motor starting
- synergy with automatic control of conveyor transport APD1 of producer Hansen-Electric, spol. s r.o. Opava
- enables cascade wiring of several contactor sets
- enables communication with a remote workplace (e.g. IPC) by means of series interface RS485



**Basic technical data:**

Nominal supply voltage of electric motor for RMI3 P01: .....400/500/660/1000/1140 VAC, 50 Hz  
 Nominal supply voltage of electric motor for RMI3 P02: .....3300 VAC, 50 Hz; 4160 VAC, 60Hz  
 Nominal supply voltage RMI3: .....42V/50-60Hz, +20%, -40%  
 Range of motor nominal currents: .....5 to 1 200A  
 Max. short-circuit current: .....12 000A  
 Range for tripping of electric motor earth leakage relay: ..... RMI3 P01: 20-150kOhm, RMI3 P02: 45-450 kOhm  
 Range for tripping of earth loop relay: .....0 to 200 Ohm  
 Range for tripping of temperature relay of electric motors - posistors: .....0 to 15 kOhm  
 Protection from methane explosion with circuits of earth leakage relay, earth loop relay and electric motor temperature relay  IM2 Ex Ib I



**Dimensional drawing:**

