

## KPM60 Low-voltage motor protection controller



The KPM60F split-type motor protection controller is suitable for industrial applications to protect motors. It significantly simplifies the secondary control and protection circuits of the motor by providing protection, control, measurement, and fault management functions. It offers comprehensive protection and control measures, and its network-based communication with various buses enables networked management of the motor.

KPM60F adopts a modular design, which is small and compact, and easy to install. It can be used in low-voltage control terminal cabinets and 1/2 module or larger drawer cabinets for DIN rail installation, and is suitable for applications in coal mines, petrochemical plants, metallurgy, and power industries.

### Function features

#### Comprehensive motor protection

- Ground protection
- Phase failure protection
- TE time protection
- Under-power protection
- Overvoltage protection
- Undervoltage protection
- Temperature protection
- Stall protection
- Leakage Protection
- Phase sequence protection
- Current imbalance protection
- External fault protection
- Overload protection
- Underload protection
- Blocking protection
- Start overtime protection
- Contactor sectional current protection
- Power factor protection
- Low voltage restart protection
- PT/CT ratio programmable

#### Flexible start function

- Protection mode
- Star / Triangle start
- Direct start mode
- Bidirectional reversible start

#### Communication function

- Modbus-RTU
- Profibus-DP

#### Control method

- Monitoring center remote control
- Operation panel control
- External input control (Such as: button)

#### Perfect management function

- Use different operating, maintenance and diagnostic data to help users understand possible faults and prevent them with preventative measures. In the case of failure, rapid diagnosis, positioning and correct the problem.

#### Monitoring data

- Motor status
- Three phase current
- Max starting current
- Ground current
- Heat capacity
- Leakage current (add leakage protection function)
- Active / Reactive power
- Three-phase voltage
- Power factor
- Active / Reactive energy

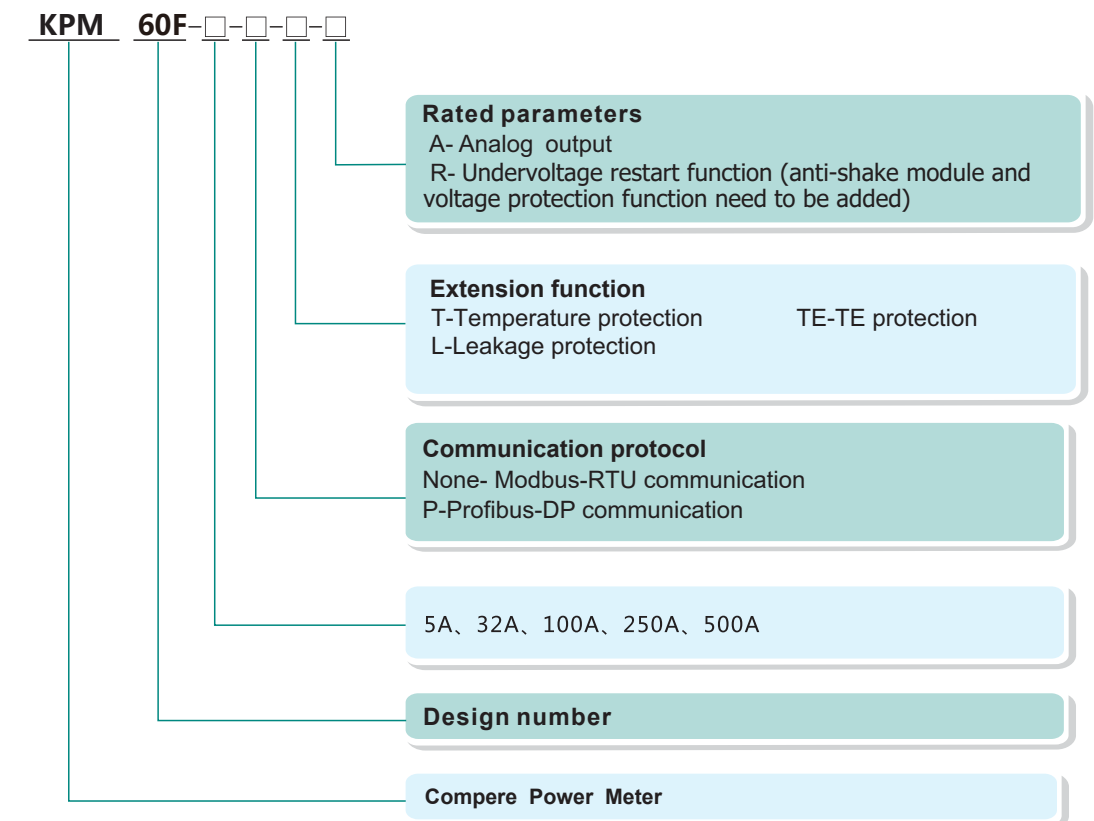
#### Maintain data

- Motor running time
- Motor start time
- Motor trip time

#### Diagnostic data

- Self-test information
- Current/ Auxiliary contact feed back error
- Motor fault alarm information
- Running cool down time
- Motor fault trip information

### Standard of optional type

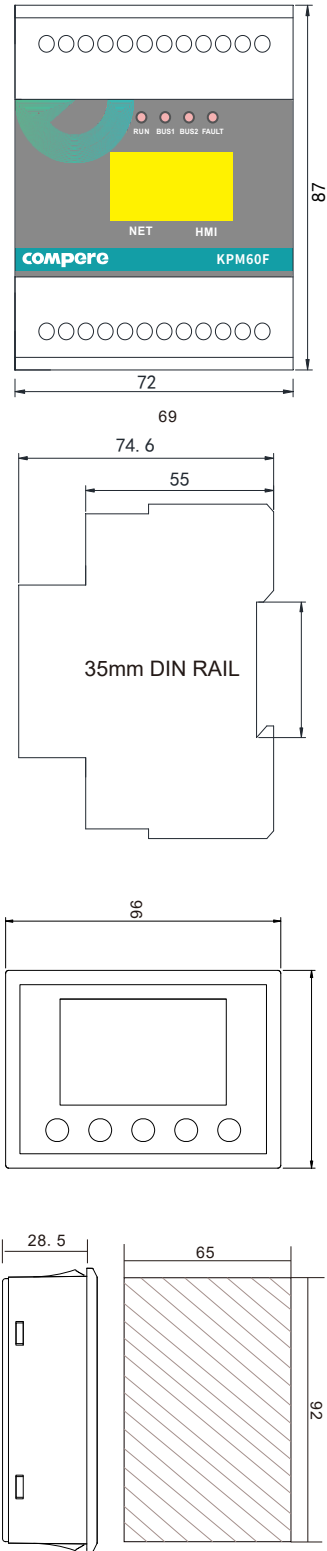


◆ **Selection Notes:** Each KPM60F requires at least one control unit, one display module, and one set of current transformers. The display module has a built-in LCD screen and 5 buttons, which can display field power grid parameters, modify protection settings, modify system parameters, and query fault records. It can also control the start, stop, and fault reset of the power supply as needed.

◆ **Remarks :** For 380V motor rated power and controller selection

|                                         |          |        |        |        |         |
|-----------------------------------------|----------|--------|--------|--------|---------|
| Motor rated power ( KW )                | 0.25-2.2 | 1.5-15 | 5.5-45 | 45-132 | 200-250 |
| Controller rated current specifications | 5A       | 32A    | 100A   | 250A   | 500A    |

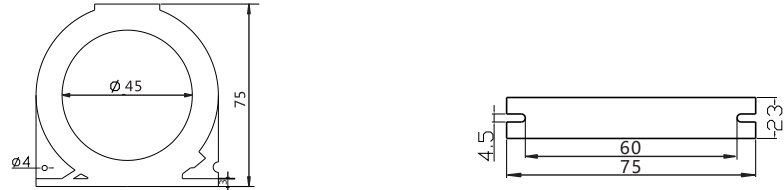
Product size Technical Parameters



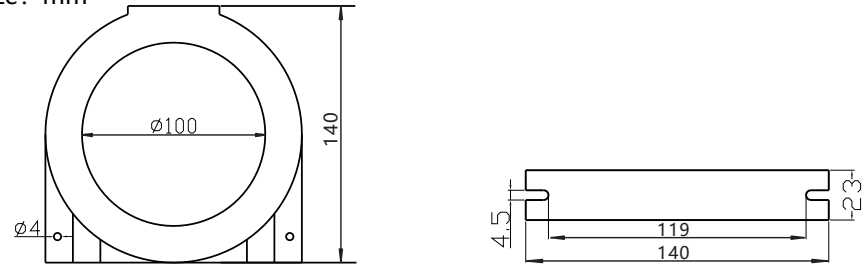
|                                 |                                         |                                                                              |
|---------------------------------|-----------------------------------------|------------------------------------------------------------------------------|
| Working power source            | Operating Voltage                       | 85-305VAC/70-430VDC                                                          |
|                                 | Rated power                             | <5VA                                                                         |
| Input voltag                    | Rated voltage                           | 380V-660V                                                                    |
|                                 | Frequency range                         | 45~65Hz                                                                      |
| Input current                   | Rated current                           | 5A, 32A, 100A, 250A, 500A                                                    |
|                                 | Frequency range                         | 45~65Hz                                                                      |
| Input Output                    | Switch value input                      | 8-way passive main line contact DI input, internal supply DC24V power source |
|                                 | Relay output                            | 4-way DO output, Contact capacity 250VAC/5A, 30VDC/5A                        |
|                                 | Analog output                           | Output range 4~20mA, Programmable                                            |
|                                 | Temperature input                       | Measure range 0℃~100℃                                                        |
| Measure ment accuracy           | Current                                 | ±1.0%(10%Ie~120%Ie)                                                          |
|                                 | Leakage current                         | ±1.0%(5%Ise~100%Ise)                                                         |
|                                 | Voltage                                 | ±0.5%(20%Ue~150%Ue)                                                          |
|                                 | Frequency                               | ±0.02Hz(45Hz~65Hz)                                                           |
|                                 | Power factor                            | ±1.0%(-1~1)                                                                  |
|                                 | Energy                                  | ±2.0%                                                                        |
|                                 | Power                                   | ±2.0%                                                                        |
| Communi cation                  | Communication interface                 | RS485 Photoelectric isolation interface                                      |
|                                 | Communication protocol                  | Modbus-RTU,1200~38400bps Profibus-DP,9600~12Mbps                             |
| Electrical insulation           | Power frequency withstand voltage       | AC2kV/min~1mA Input-output-power source ( GB/T 13729 )                       |
|                                 | Insulation resistance                   | >50MΩ (GB/T 13729)                                                           |
|                                 | Impact voltage                          | 5kV ( Peak ) , 1.2/50us ( GB/T 13729 )                                       |
| Working environm ent            | Operating temperature                   | -25℃~+70℃                                                                    |
|                                 | Relative humidity                       | 5%~95% No condensation                                                       |
|                                 | Storage temperature                     | -30℃ ~ +75℃                                                                  |
| Electrom agnetic Compati bility | Surge (impact) immunity                 | GB/T 17626.5-2008,Level3,IEC61000-4-2, level 4                               |
|                                 | Fast pulse group immunity               | GB/T 17626.4-2008,Level3,IEC61000-4-5, level 4                               |
|                                 | Electrostatic discharge immunity        | GB/T 17626.2-2006,Level3,IEC61000-4-4, level 4                               |
|                                 | Power frequency magnetic field immunity | GB/T 17626.8-2006,Level3,IEC61000-4-8, level 4                               |

Typical wiring

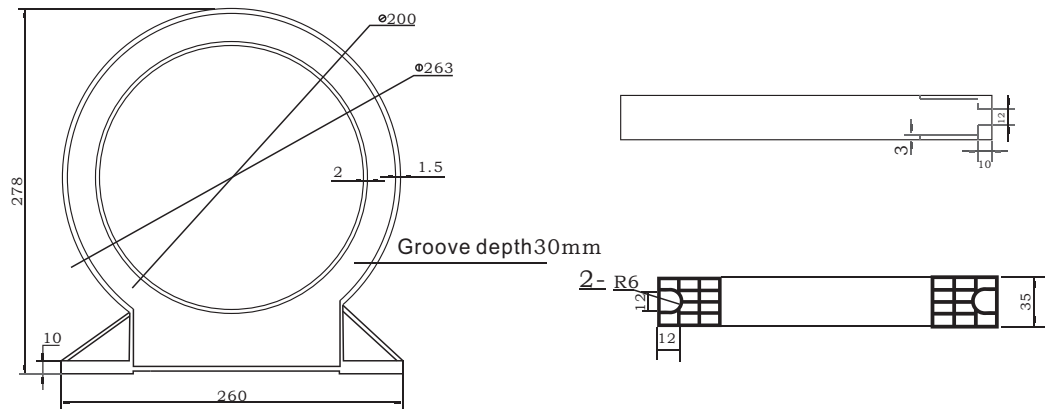
LD45(1000mA:0.5mA), the inner diameter of 45mm, suitable for the rated current of 100A motor  
Size: mm



LD100(1000mA:0.5mA), the inner diameter of 100mm, suitable for the rated current of 100A~250A motor  
Size: mm



LD200(1000mA:0.5mA), the inner diameter of 200mm, suitable for the rated current over 250A motor  
Size: mm

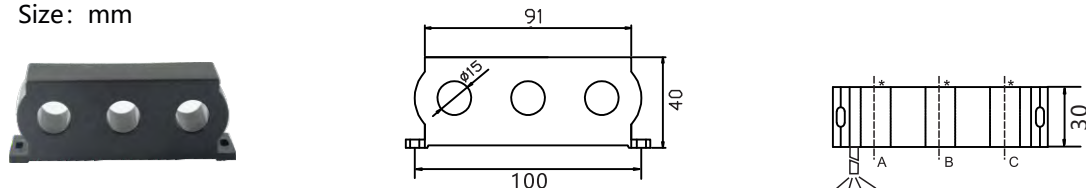


Note: 1. The standard wire length of the leakage current transformer secondary line is 1m.  
2. The model selection should be based on the cable size.

## Acquisition unit

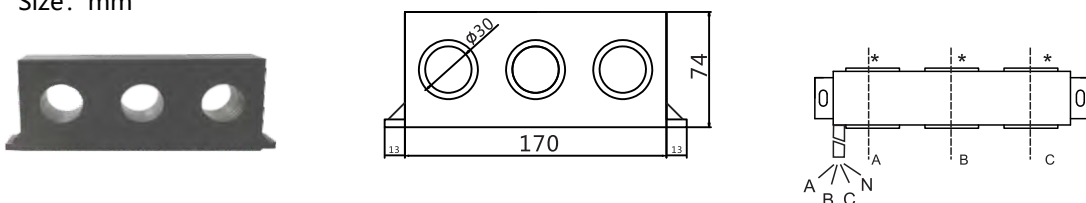
□ Current ratings are 5A, 32A and 100A current harvesting module specifications

Size: mm



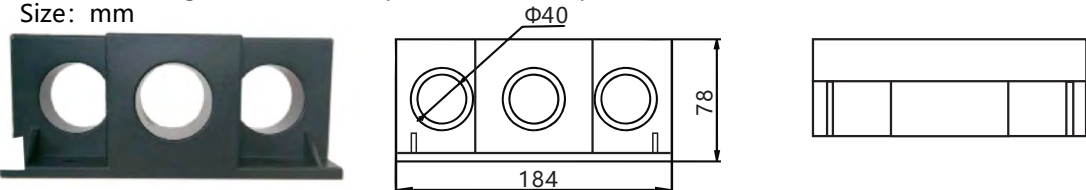
□ Current Rating 250A current acquisition module specifications

Size: mm



□ Current Rating 500A current acquisition module specifications

Size: mm

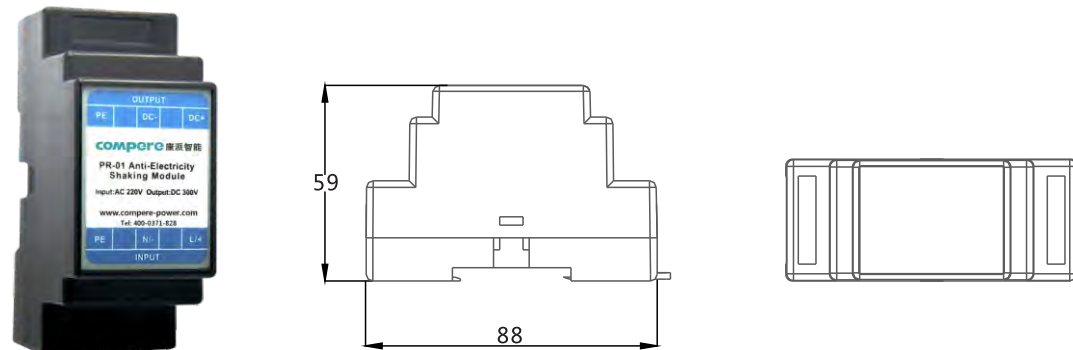


Note: The secondary lateral line length of the current acquisition unit is standard 1 meter

## PR-01 Anti SwayElectrical Module

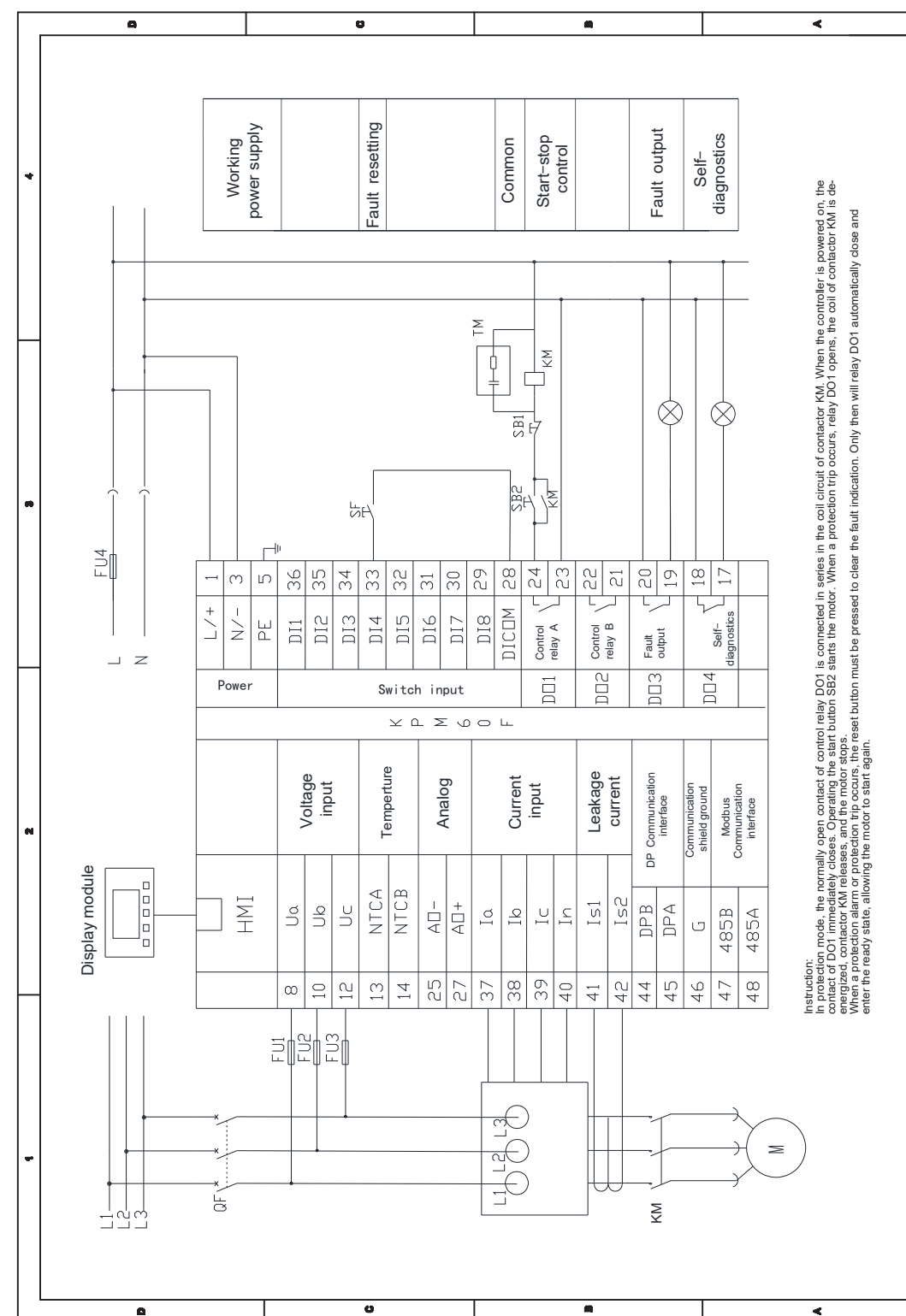
PR-01 anti sway electrical module support for AC 176V-310V, all external power loss conditions, to maintain the controller 3-6s work for undervoltage restart function.

Size: mm

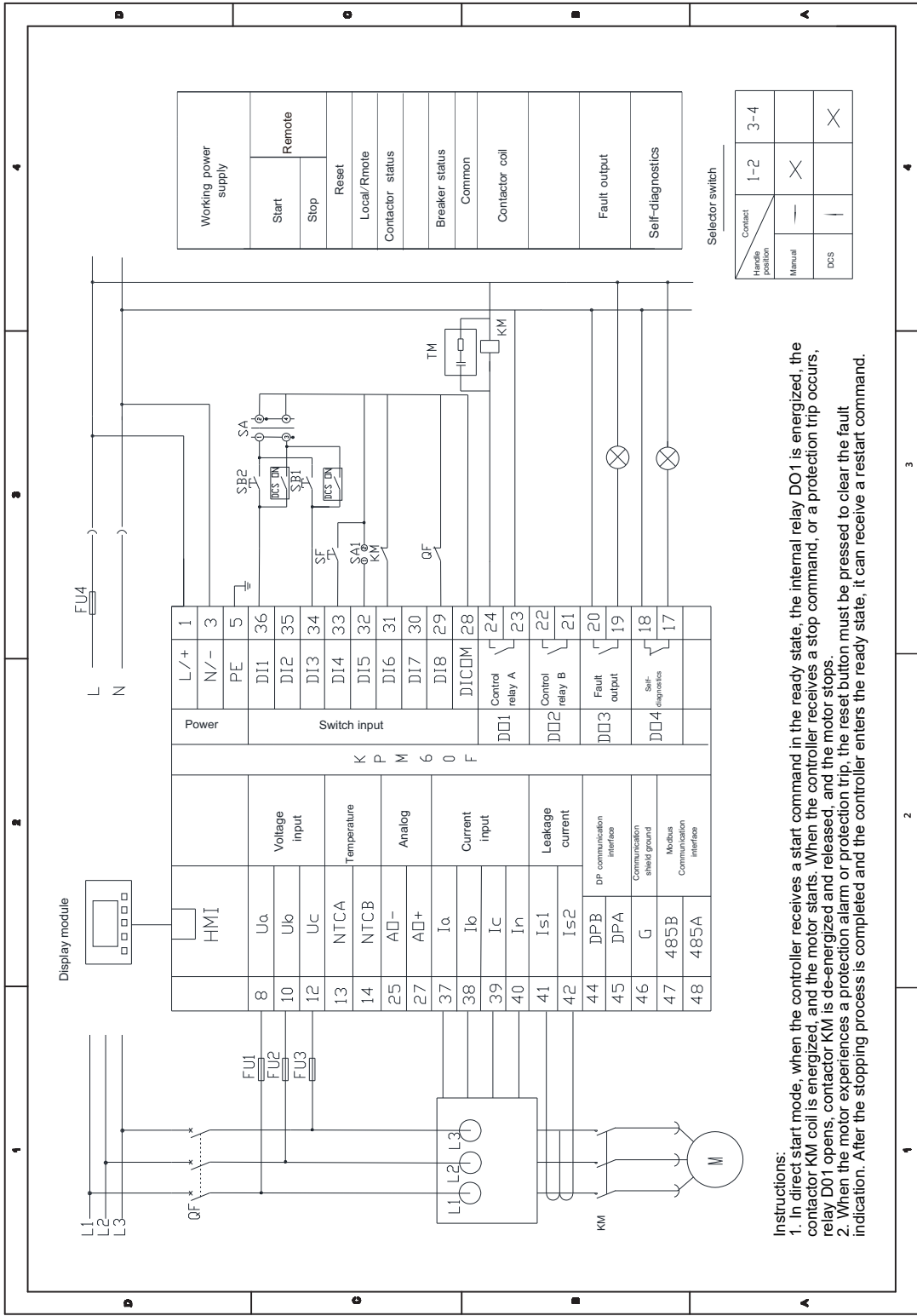


## Typical wiring

KPM60F protection mode typical wiring diagram



KPM60F direct start mode typical wiring diagram



KPM60F bidirectional reversible mode typical wiring diagram

