

KPM60 Low-voltage motor protection controller



KPM60 series of low-voltage motor protection controller is suitable for control protection circuit that rated voltage 380V to 660V, rated current 5A to 500A , providing a sound protection and control measures, It could achieve motor network management by the communication method that based on a variety of bus, the controller application greatly improves the design and production efficiency, reducing the on-site commissioning and maintenance workload.

Function features

Comprehensive motor protection

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

Multiple start mode

- Protection mode
- 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

- Power Factor (Need to increase the voltage protection function)
- The maximum starting current
- Motor status
- Ground current
- Heat capacity
- Three-phase current
- Leakage current (need to add leakage protection function)
- Active/ Reactive power (need to increase the voltage protection function)
- Three-phase voltage (need to increase the voltage protection function)
- Active/ Reactive power (need to increase the voltage protection function)

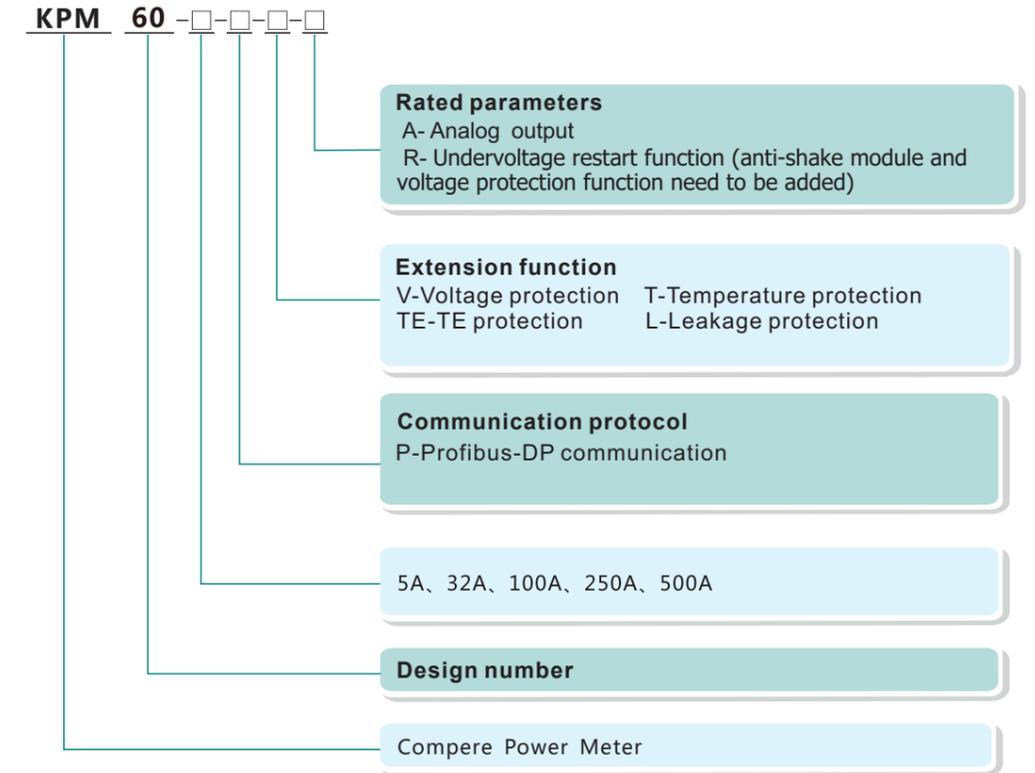
Maintain data

- Motor running time
- Motor starts times
- Motor tripping times

Diagnostic data

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

Standard of optional type

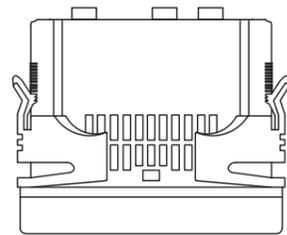
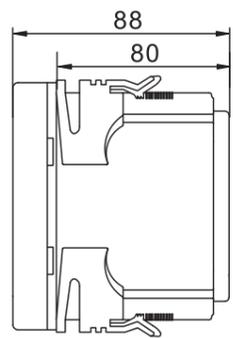
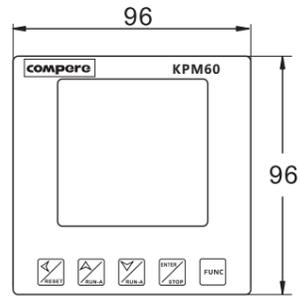


◆ Example : low-voltage motor protection controller with Rated current 100A RS485 communication, voltage protection, leakage protection and undervoltage start function.

◆ 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

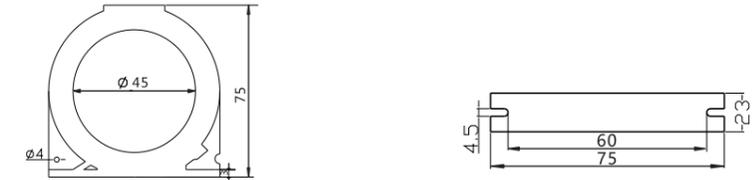
Product size **Technical Parameters**



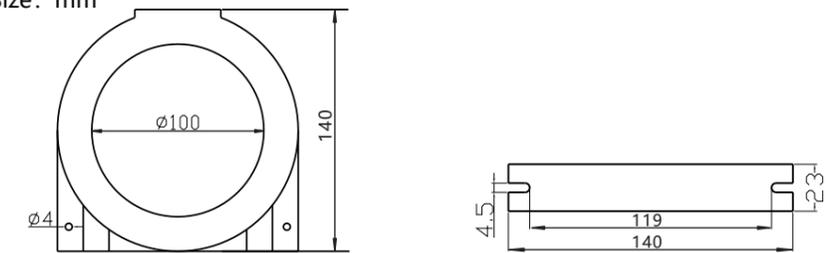
Working power source	Operating Voltage	AC85~265V/DC80~300V
	Rated power	<5VA
Input voltag	Rated voltage	380V-660V
	Frequency range	45~65Hz
Input current	Rated current	5A, 32A, 100A, 250A, 500A
	Frequency range	45~65Hz
Input Output	Switch value input	8-way passive main line contact DI input, internal 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°C~100°C
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)
Working environm ent	Impact voltage	5kV (Peak) , 1.2/50us (GB/T 13729)
	Operating temperature	-25°C~+70°C
	Relative humidity	5%~95% No condensation
Electrom agnetic Compati bility	Storage temperature	-30°C ~ +75°C
	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

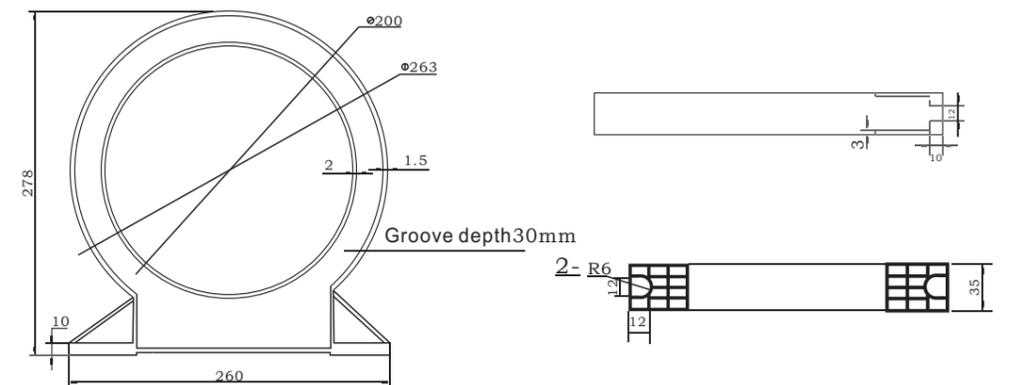
□ LD45(1000mA:0.5mA), the inner diameter of 45mm, suitable for the rated current of 100A motor
Size: mm



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

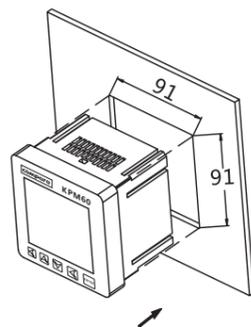


□ LD200(1000mA:0.5mA), the inner diameter of 200mm, suitable for the rated current of 250A motor
Size: mm



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.

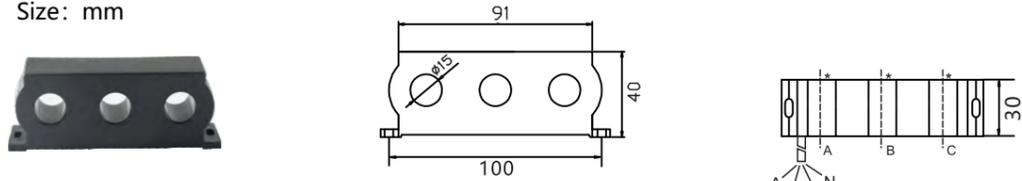
Installation instructions



Acquisition unit

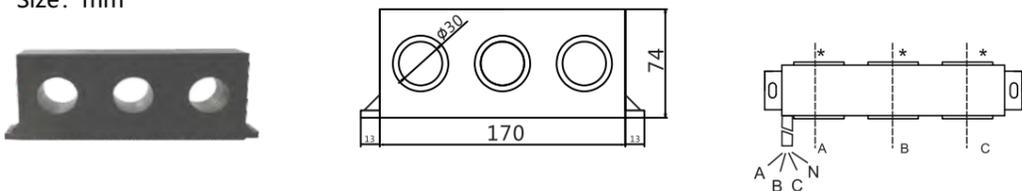
Current ratings are 5A, 32A and 100A current harvesting module specifications

Size: mm



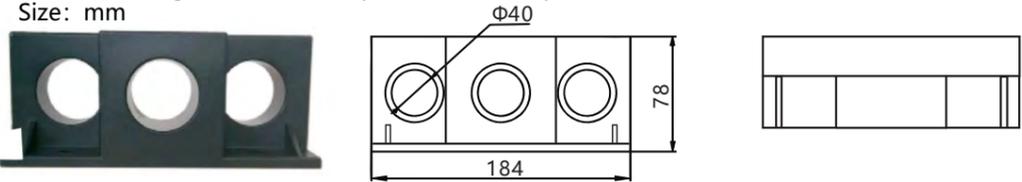
Current Rating 250A current acquisition module specifications

Size: mm



Current Rating 500A current acquisition module specifications

Size: mm

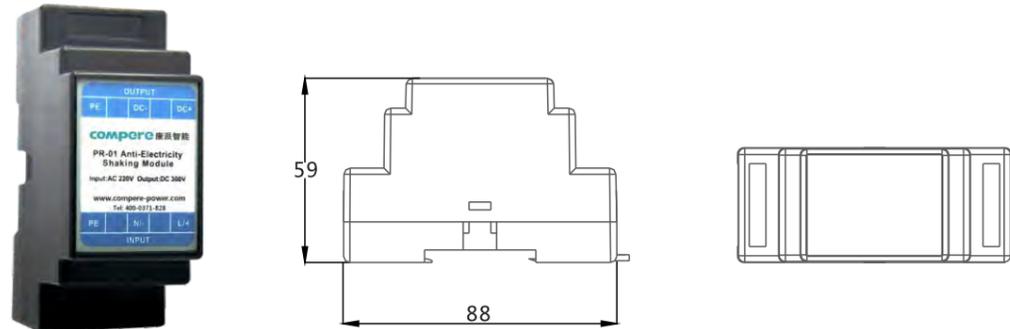


Note: The secondary lateral line length of the current acquisition unit is standard 1 meter

PR-01 Anti SwayElectrical Module

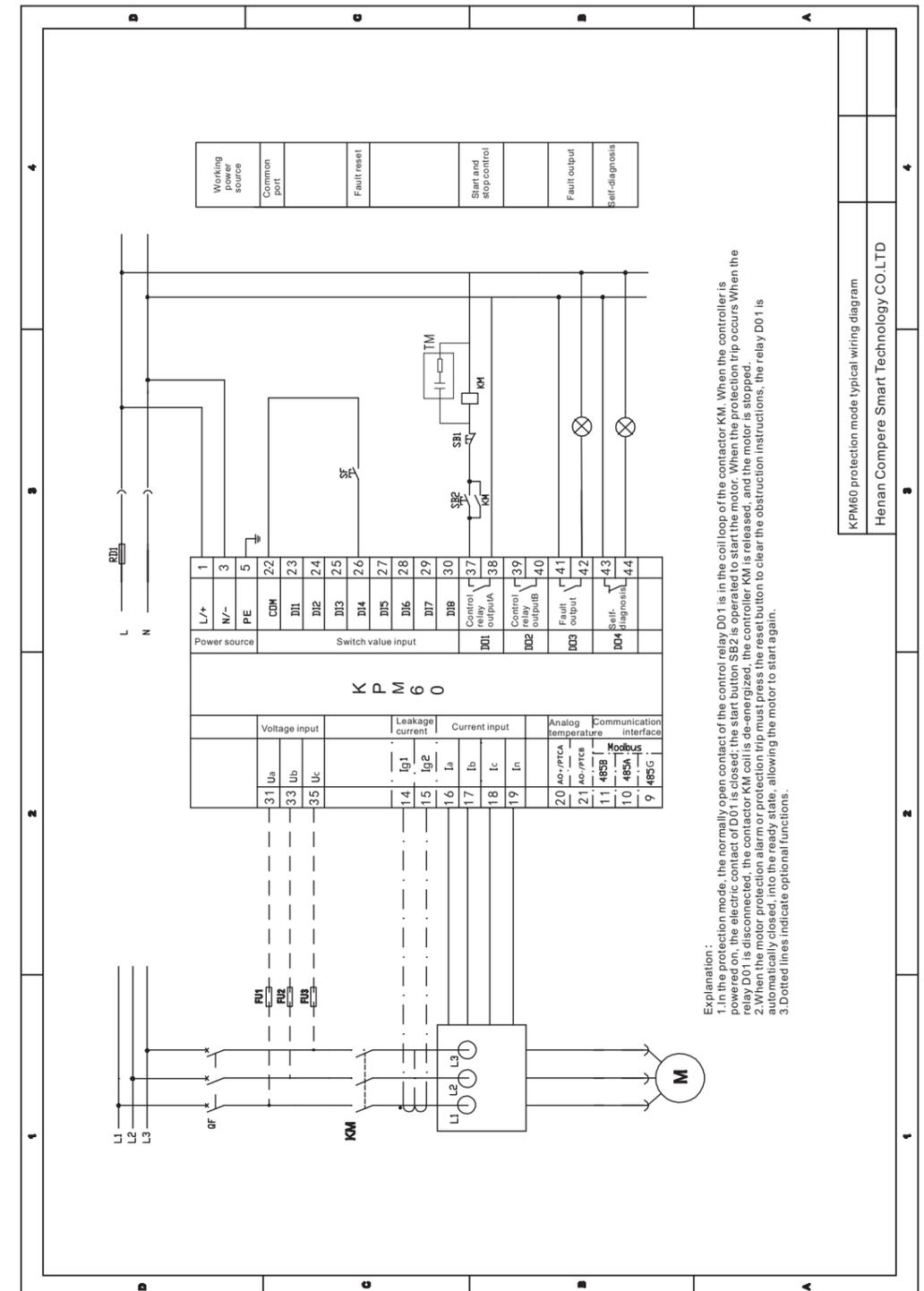
PR-01 anti sway electrical module support for AC 176V-310V, all external power loss conditions, to maintain the controller 3-6s work for undervoltage restart function.

Size: mm

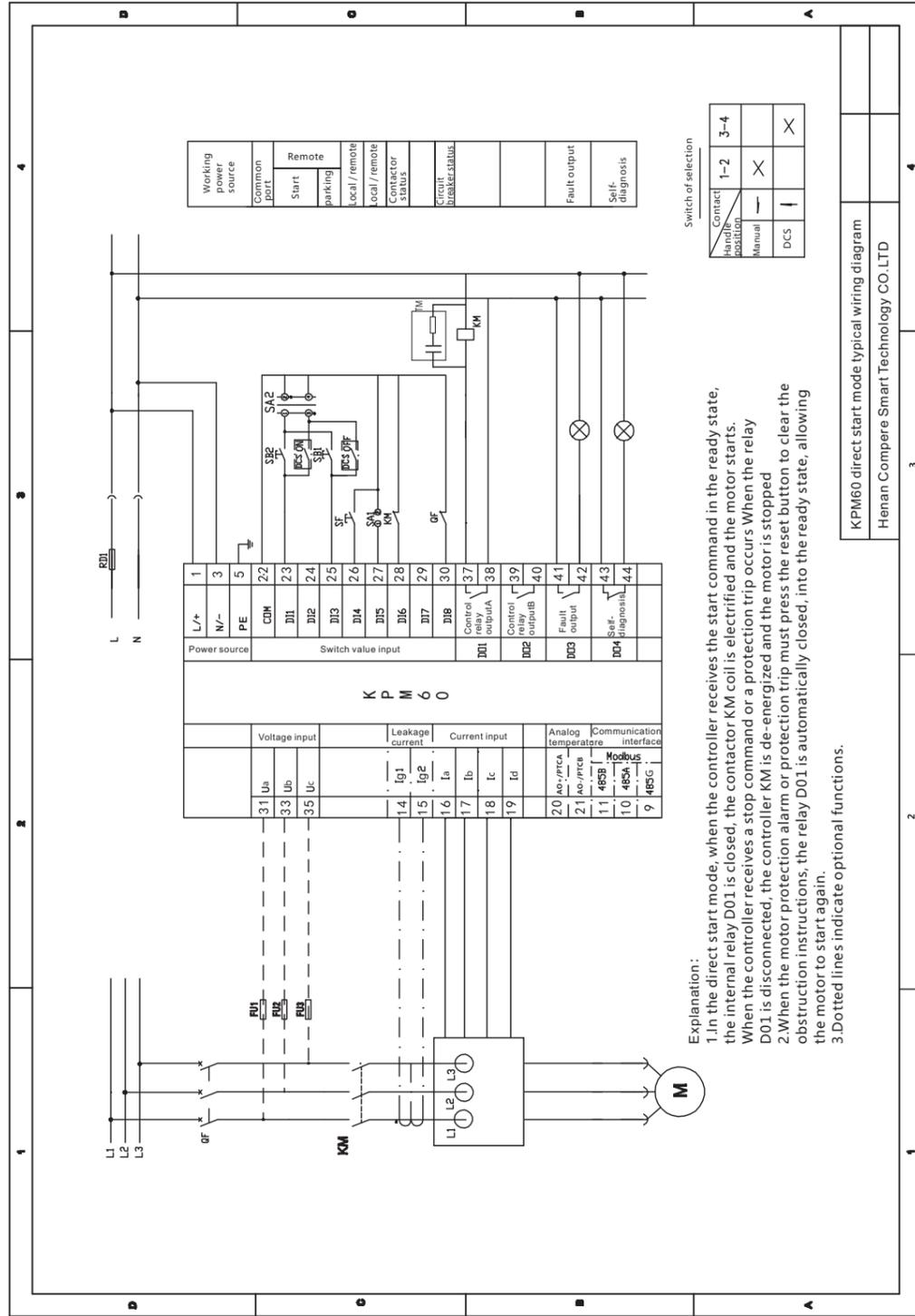


Typical wiring

KPM60 protection mode typical wiring diagram



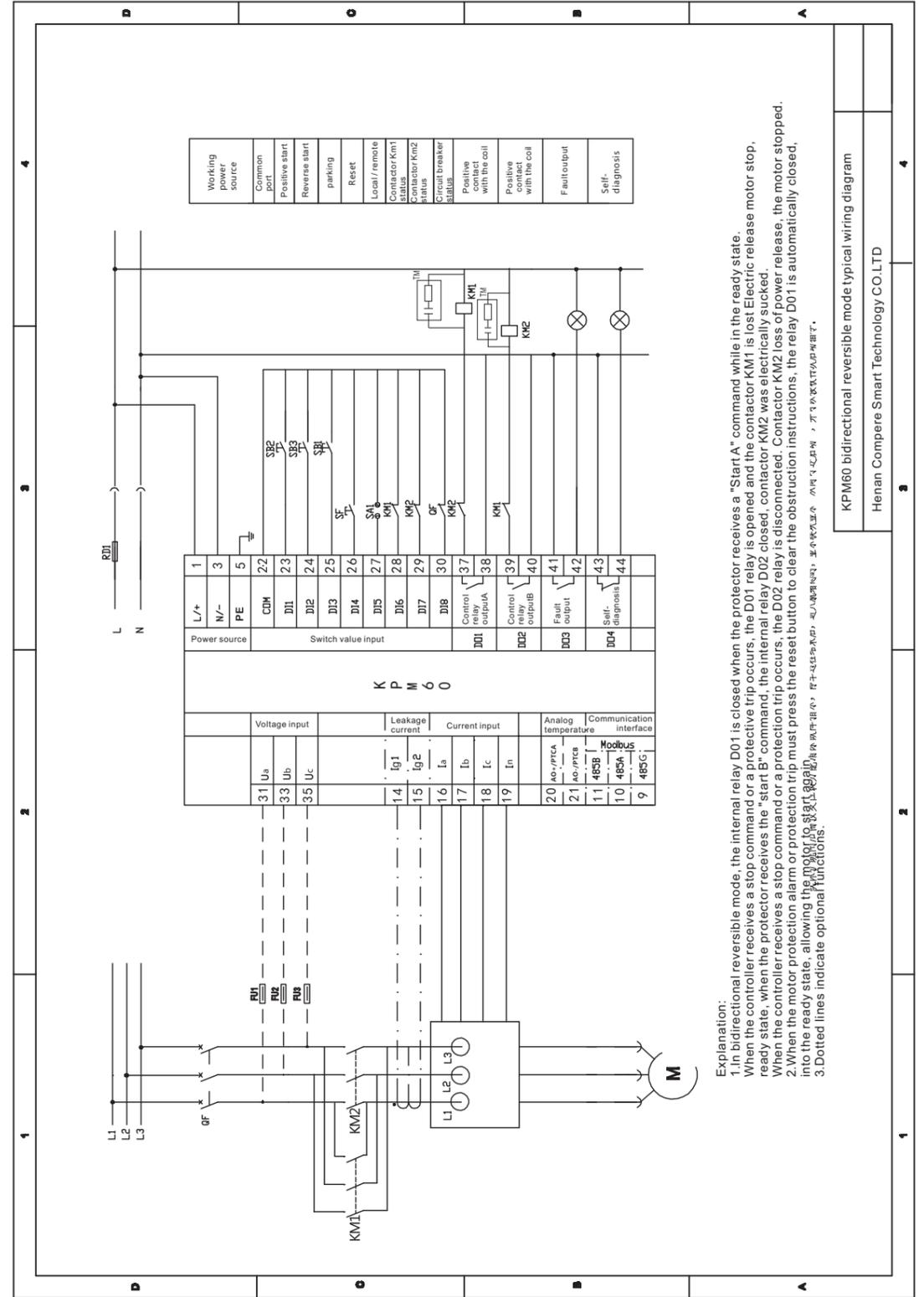
KPM60 direct start mode typical wiring diagram



Explanation:

- In the direct start mode, when the controller receives the start command in the ready state, the internal relay D01 is closed, the contactor KM coil is electrified and the motor starts. When the controller receives a stop command or a protection trip occurs, the relay D01 is disconnected, the controller KM is de-energized and the motor is stopped.
- When the motor protection alarm or protection trip must press the reset button to clear the obstruction instructions, the relay D01 is automatically closed, into the ready state, allowing the motor to start again.
- Dotted lines indicate optional functions.

KPM60 bidirectional reversible mode typical wiring diagram



Explanation:

- In bidirectional reversible mode, the internal relay D01 is closed when the protector receives a "Start A" command while in the ready state. When the controller receives a stop command or a protective trip occurs, the D01 relay is opened and the contactor KM1 is lost. Electric release motor stop, ready state, when the protector receives the "start B" command, the internal relay D02 closed, contactor KM2 was electrically sucked. When the controller receives a stop command or a protection trip occurs, the D02 relay is disconnected, Contactor KM2 loss of power release, the motor stopped.
- When the motor protection alarm or protection trip must press the reset button to clear the obstruction instructions, the relay D01 is automatically closed, into the ready state, allowing the motor to start again.
- Dotted lines indicate optional functions.