PMC Series

Intelligent Protection Relay

CET has developed the PMC-550 series Low-Voltage (LV) Motor/Feeder Protection Relay to meet users' needs for low-voltage protection, control and metering, by combining CET's leading R&D capability, standardized production and manufacturing process, and mature automation operation and management experience.

LV Motor Protection Relay: PMC-550D, PMC-550D-H, PMC-550D-S, PMC-550A, PMC-550J-S, PMC-550J, PMC-550M-S2

LV Feeder Protection Relay: PMC-550F-2, PMC-550F-V, PMC-550F, PMC-550F-S2

Features

- Comprehensive protection for low-voltage motors and feeders
- High-accuracy analog monitoring and power metering
- Advanced programmable logic for complex protection or interlock control
- High-speed communications, supporting international standard communication protocols and configurable data point map
- Self-Diagnostics for Voltage/Current Sequence and Polarity
- Communication, Protection and Control Logic Debugging supported without applying additional supply
- Cost-effective, capable of replacing circuit breaker's control block, thermal relays, etc.
- Auto-Restart for prolonged undervoltage and Quick Restart for anti-voltage sag (resolution up to 10ms)
- Equipped with enhanced power supply with 30 seconds Ride-Through for supply interruption
- Various Logs recording motor running condition, protection, and DI/DO status change
- 1xType C port on the Front Panel for easy Commissioning
- Fully-enclosed metal enclosure (PMC-550J) for high EMC performance

Application

- Protection, measurement and control of LV feeders, sections or busbars and LV motor circuits with different capacities below 1kV
- Industrial-grade components with high anti-corrosion performance, which can be operated in harsh environment
- Suitable for installation in all kinds of LV distribution and control cabinets

LV Motor Protection Relay Features Comparison List

Features \ Model		PMC-550D	PMC-550D-H	PMC-550D-S	PMC-550A	PMC-550J-S	PMC-550J	PMC-550M-S2
Metering	3-Ø Current and Phase Angle	■	■	■	■	■	■	■
	3-Ø ULL and Phase Angle	■	■	■	■	■	■	■
	IN & IR	■	■	■	■	■	■	■
	kW/kvar	■	■	■	■	■	■	■
	Power Factor/Frequency	■	■	■	■	■	■	■
	Harmonics up to 31st	■	■	■	■	■	■	■
Energy	kWh/kvarh	■	■	■	■	■	■	■
Protection	Long Start	■	■	■	■	■	■	■
	Phase Current Loss/Imbalance	■	■	■	■	■	■	■
	Overcurrent/Thermal Overload	■	■	■	■	■	■	■
	Jam	■	■	■	■	■	■	■
	Short Circuit	■	■	■	■	■	■	■
	Overload	■	■	■	■	■	■	■
	Ground Fault	■	■	■	■	■	■	■
	Under Load	■	■	■	■	■	■	■
	Under Power	■	■	■	■	■	■	■
	Undervoltage/Overvoltage	■	■	■	■	■	■	■
	tE	■	■	■	■	■	■	■
	Interlock	■	■	■	■	■	■	■
	LOP Alarm	■	■	■	■	■	■	■
	Residual Current	■	■	■	*	■	■	*
	Thermal	*	*	N/A	■	■	N/A	N/A
	Phase Reversal	■	■	■	■	■	■	■
	Closed-loop Failure	■	■	■	■	■	■	■
	Insulation Test	*	*	N/A	N/A	N/A	N/A	N/A
Control	Quick Restart	■	■	■	■	■	■	■
	Undervoltage Restart	■	■	■	■	■	■	■
	Device Auto-Restart	■	■	■	■	■	■	■
	Start Control	■	■	N/A	N/A	■	■	N/A
	Direct-On-Line Start	■	■	■	■	■	■	■
	Reduced-Voltage Start	■	■	■	■	■	■	■
	FWD/REV, 2-speed Start	■	■	■	■	■	■	■
	VFD/Soft Starter	■	N/A	■	■	■	■	N/A
Comm.	No. of Comm. Ports	2/3*	2	1	2	1/2*	1	1
	Type C Port on Front Panel˜	■	■	■	■	■	■	■
	Modbus-RTU	■ (And TCP)	■	■	■	■	■	■
	PROFIBUS-DP	*	*	N/A	*	*	*	*
	PROFINET	*	N/A	N/A	N/A	N/A	N/A	N/A
I/O	DI	10/12*	6	6	11/9*	8	8/6*	6/4*
	DO	5/6*	4	4	6	5	5/4*	4/3*
	AO	1*	1*	1*	1*	1*	1*	1*
	Temperature	1/7*	6*	N/A	1*	1*/3*	N/A	N/A

Notes:

■ Supported

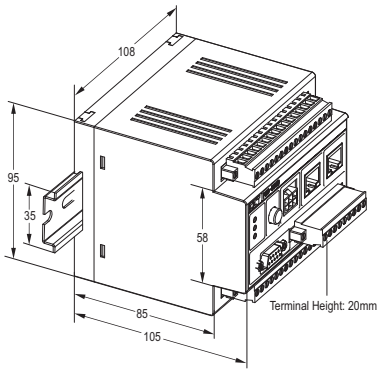
* Optional

N/A Not Applicable

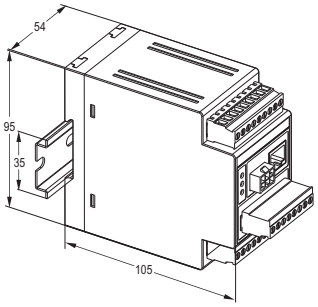
˜The type C port on the Front Panel supports Modbus RTU protocol through dedicated Type-C/RS-232 converter.

Dimensions and Installation

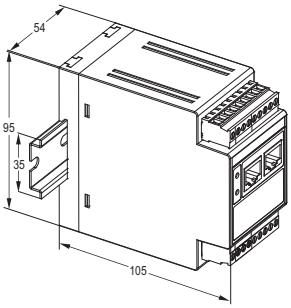
PMC-550D/550D-H/550D-S



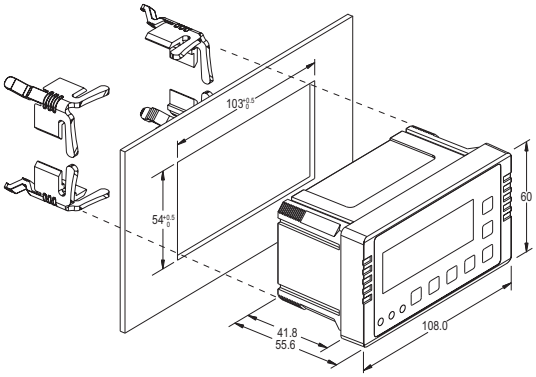
Main Unit (PMC-550D/550D-H)



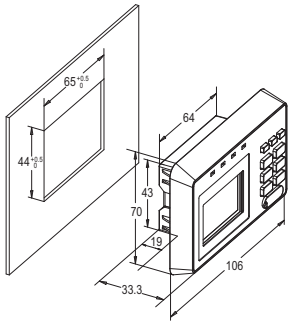
Main Unit (PMC-550D-S)



Expansion Module (PMC-550D/550D-H)

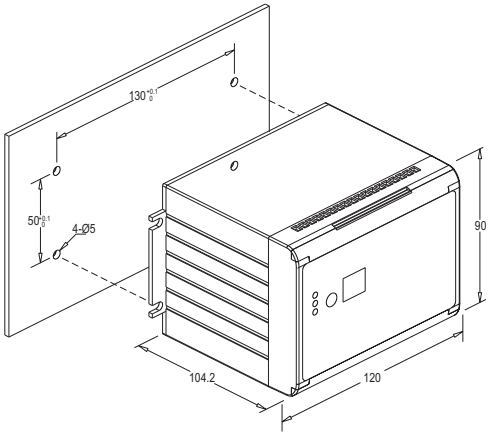


4-line Backlit LCD Display Module

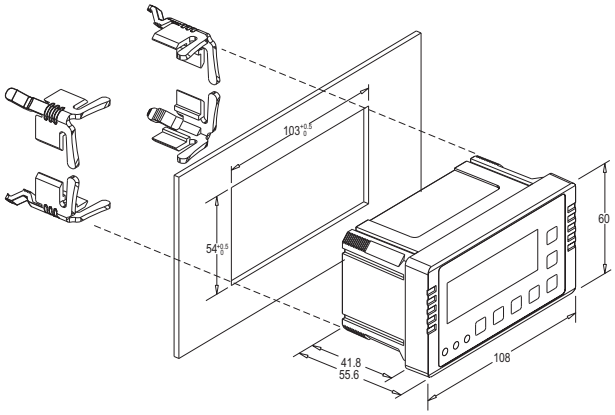


6-line Backlit LCD Display Module (PMC-550D/550D-S)

PMC-550A



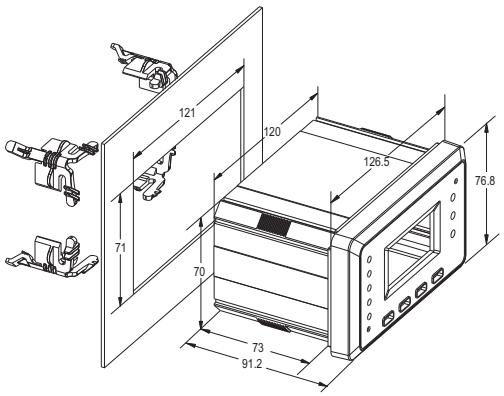
Main Unit



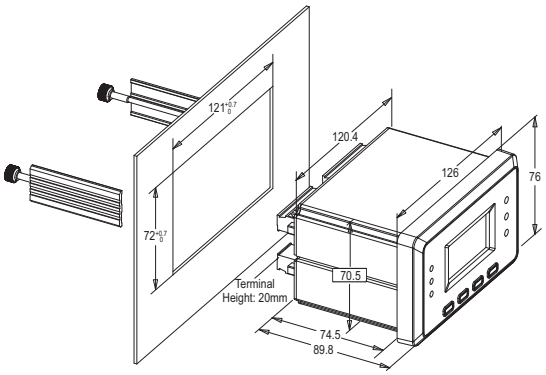
4-Line Backlit LCD Display Module

Unit: mm

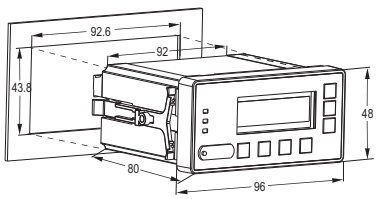
PMC-550J-S



PMC-550J



PMC-550M-S2



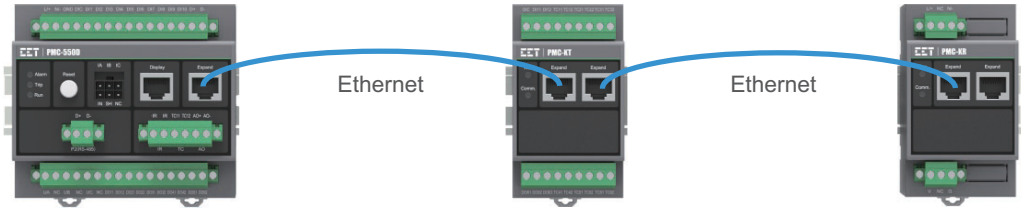
Unit: mm

PMC-550D LV Motor Protection Relay

The PMC-550D LV Motor Protection Relay supports various motor protection and start control functions, making it ideal for intelligent Motor Control Centers (MCCs). With the expansion modules for temperature and insulation monitoring, the PMC-550D can be used to monitor the temperature of the LV cabinet or the insulation of the motor winding to ground to ensure safe and stable operation.

The PMC-550D integrates advanced network communication technology with contactors, soft starters, circuit breakers to provide a specialized solution for control, protection and measurement for 400/690V LV motors.

Features



Main Unit

- Comprehensive protection/control functions
- Residual Current protection
- Quick Restart for Anti-voltage Sag
- Temp. protection for motor
- Programmable logic control
- Support PROFIBUS DP and stop motor if comm. interrupted
- 10xDI + 5xDO
- Various Logs for Operation, Maintenance and Management
- 35mm DIN Rail Mounting

Temp. Monitoring Module

- 6xNTC Input provide over temperature warning and alarm
- Connect to Main Unit via RJ45 connector
- Transmit metering, warning and alarm info. via Main Unit
- 2xDI + 1xDO
- 35mm DIN Rail Mounting

Insul. Monitoring Module

- Monitor insulation resistance against to the ground with 500/1000VDC voltage output
- Connect to Main Unit via RJ45 connector
- Transmit metering, warning and alarm info. via Main Unit
- 220VAC External Power Supply
- 35mm DIN Rail Mounting

Features

Protection	Long Start	Overvoltage	Emergency Stop
	Thermal Overload	Underload	Contactor Failure
	Jam	tE Time	ACB Trip Contactor
	Ground Fault	Overload (Definite-time)	Contactor Abnormal
	MTA Failure Alarm	Interlock	Thermal Overload Pre-alarm
	Phase Current Loss	Thermal (PTC/NTC)	Residual Current
	Current Imbalance	Loss of Phase Voltage	Negative Sequence Overcurrent
	Under Power	Phase Reversal	Start Block
	Short Circuit	Closed-loop Failure	TC (Over Temperature)
	Undervoltage	Contactor	Insulation

Control	Quick Restart for Anti-voltage Sag	Starter Function:
	Undervoltage Restart	Direct-On-Line, Reduced-Voltage
	Auto-Restart	Forward/Reverse, 2-Speed
	Start Control	VFD Start, Large-Motor Start

Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements
Basic Metering	Line Voltage (UAB,UBC, UCA) and Current (IA, IB, IC) per phase and average, Phase Angle, Neutral Current, Residual Current, Current Unbalance, U/I THD, TOHD and TEHD, kW Total, kvar Total, kVA Total and PF, Frequency, Total kWh Import/Export and Total kvarh Import/Export, TC1-TC6, Thermal Resistance, Insulation Resistance
Motor Monitoring & Statistics	64 time-stamped SOE logs and 64 time-stamped protection logs 64 latest motor start logs and 64 motor stop logs 16 latest Waveform Recorder logs
Self-check	Continuous internal self-check to verify hardware status after power on. If any fault is detected, the protection will be disabled, accompanied by the display of failure info. and the illumination of Alarm LED
Upgrade Online	Support online firmware upgrade for main unit and display module

Comm.

Standard optically isolated 2xRS-485 port
Optional 1xPROFIBUS DP port via DB9 or 3-pos. terminal block and 1xRS-485 Port
Optional 2x10/100BaseT Ethernet Port
Support Modbus RTU/TCP, PROFIBUS DP and SNTP
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Digital Input: Max. 12 channels
Relay Output: Max. 6 channels
Analog Output: 1 channel, 4-20mA programmable analog output

Applications

PMC-550D LV Motor Protection Relay is suitable for Electricity and Power, Petrochemical, Light Industry, Coal, Paper Making, Iron and Steel, Metallurgy and many other industries.

PMC-550D-H LV Motor Protection Relay

PMC-550D-H LV Motor Protection Relay is CET's latest offer for 400/690V motor protection market. In addition to the motor protection, metering, control and communication feature, it also support Anti-voltage Sag with Quick Restart or Hold-on schemes to meet multiple requirements. With the expansion modules for temperature and insulation monitoring, the PMC-550D-H can be used to monitor the temperature of the LV cabinet or the insulation of the motor winding to ground to ensure safe and stable operation.

Anti-Voltage Sag

Quick Restart Scheme	Pre-close the DO for start when a voltage disturbance occurs. When power is restored after the fault, the contactor is immediately energized to ensure motor recovery.
Hold-on Scheme	Switch to internal DC power (with power storage component) to maintain the contactor in closed position, preventing it from releasing due to power loss. After the disturbance ends and the power supply is restored, the relay switches back to external AC power.

Features

Protection	Long Start	Overvoltage	Contactor Failure
	Thermal Overload	Underload	ACB Trip Contactor
	Jam	tE Time	Contactor Abnormal
	Ground Fault	Overload (Definite-time)	Thermal Overload Pre-alarm
	MTA Failure Alarm	Interlock	Residual Current
	Phase Current Loss	Loss of Phase Voltage	Negative Sequence Overcurrent
	Current Imbalance	Phase Reversal	Start Block
	Under Power	Closed-loop Failure	TC (Over Temperature)
	Short Circuit	Contactor	Insulation
	Undervoltage	Emergency Stop	
Control	Quick Restart or Hold-on schemes for Anti-voltage Sag Undervoltage Restart Auto-restart Start Control Starter Function: Direct-On-Line, Reduced-Voltage, Forward/Reverse, 2-speed		

Features

Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements
Basic Metering	Line Voltage (UAB,UBC, UCA) and Current (IA, IB, IC) per phase and average, Phase Angle, Neutral Current, Residual Current, U/I THD, TOHD and TEHD, kW Total, kvar Total, kVA Total and PF, Frequency, Total kWh Import/Export and Total kvarh Import/Export, TC1-TC6, Thermal Resistance
Motor Monitoring & Statistics	64 time-stamped SOE logs and 64 time-stamped protection logs 64 latest motor start logs and 64 latest motor stop logs
WFR Analysis	16 Waveform Recorder logs triggered by motor start, protection active and manual trigger
Self-check	Continuous internal self-check to verify hardware status after power on. If any fault is detected, the protection will be disabled, accompanied by the display of failure info. and the illumination of Alarm LED
Motor Maintenance	Provide real-time status information, fault analysis, and rich daily motor maintenance management information, which makes it easy to understand the operation of the motor, count production efficiency, track the operating life of the contactor, and assist managers in achieving more economical and reasonable maintenance management

Comm.

Standard optically isolated 2xRS-485 port
Optional 1xPROFIBUS DP port via DB9 or 3-pos. terminal block and 1xRS-485 Port
Support Modbus RTU, PROFIBUS DP
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Digital Input: Max. 8 channels
Relay Output: Max. 5 channels
Analog Output: 1 channel, 4-20mA programmable analog output

Applications

PMC-550D-H LV Motor Protection Relay is suitable for Electricity and Power, Petrochemical, Light Industry, Coal, Paper Making, Iron and Steel, Metallurgy and many other industries.

PMC-550D-S
LV Motor Protection Relay

PMC-550D-S LV Motor Protection Relay integrates various motor protection and start control functions, which is ideal for intelligent Motor Control Centers (MCCs). It is suitable for many industries such as Electric Power, Petrochemical and so on.

Features

Protection	Long Start	Undervoltage	Contactor
	Thermal Overload	Overvoltage	Emergency Stop
	Jam	Underload	Contactor Failure
	Ground Fault	tE Time	ACB Trip Contactor
	MTA Failure Alarm	Overload (Definite-time)	Contactor Abnormal
	Phase Current Loss	Interlock	Thermal Overload Pre-alarm
	Current Imbalance	Loss of Phase Voltage	Residual Current
	Under Power	Phase Reversal	Negative Sequence Overcurrent
	Short Circuit	Closed-loop Failure	

Control	Quick Restart for Anti-voltage Sag Undervoltage Restart Auto-restart	Starter functions: Direct-on-line, Reduced-voltage, Forward/Reverse, 2-speed, VFD start, Large-motor Start
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements	
Comm./ Prot./ Control Logic Test	Keep the protective motor running without interruption and simultaneously verify the relay's communication connectivity and Protection function	
Self-defined Modbus Map	Support a self-configured Modbus Map to read data from non-consecutive register addresses in a single transaction	
Motor Maintenance	Provide real-time status information, fault analysis, and rich daily motor maintenance management information, which makes it easy to understand the operation of the motor, count production efficiency, track the operating life of the contactor, and assist managers in achieving more economical and reasonable maintenance management	
Motor Monitoring & Statistics	64 time-stamped SOE logs and 64 time-stamped protection logs 64 latest motor start logs and 64 latest motor stop logs	

Comm.

Standard optically isolated 1xRS-485 port (Modbus RTU)
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Digital Input: Max. 6 channels
Relay Output: Max. 4 channels
Analog Output: 1channel, 4-20mA programmable analog output

PMC-550A LV Motor Protection Relay

PMC-550A LV Motor Protection Relay provides comprehensive operation monitoring, equipment management and maintenance, as well as fault diagnosis with Modbus/PROFIBUS DP protocol supported, which is ideal for Motor Control Center (MCC), the power plant's Electrical Monitoring System (EMS) and Distributed Control System (DCS).

Features

Protection	Long Start Thermal Overload Jam Ground Fault Phase Current Loss Current Imbalance Under Power Short Circuit Undervoltage Overvoltage Underload	tE Time Overload (Definite-time) Interlock Thermal (PTC/NTC) Loss of Phase Voltage Phase Reversal Closed-loop Failure Contactor Protection Emergency Stop Thermal Overload Pre-alarm Residual Current
Control	Quick Restart for Anti-voltage Sag Undervoltage Restart Auto-restart Starter Function: Direct-on-line, Reduced-voltage, Forward/Reverse, 2-speed, VFD start, Large-motor start	
Basic Metering	Line Voltage (UAB,UBC, UCA) and Current (IA, IB, IC) per phase and average, Phase Angle, Neutral Current, Residual Current, Current Unbalance, Per-phase/Total kW, kvar, kVA and PF, Frequency, Total kWh/kvarh Import, Thermal Resistance, Thermal Reset Time	
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements	

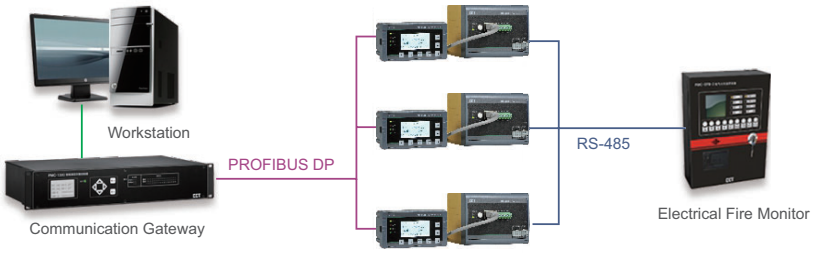
Features

Electrical Fire Monitoring Model

PMC-550A optionally supports Electrical Fire Monitoring model.
Support two independent connections to the Electrical Fire Monitor (via Display Module) and the LV motor protection system (via Main Unit).

- 1xResidual Current
- 4xTC Input
- LED/Buzzer Alarm triggered by Electrical Fire event
- DO Operation triggered by alarm

PMC-550A's Connection Diagram for Electrical Fire Monitoring



Comm.

Standard optically isolated 2xRS-485 port
Optional 2xPROFIBUS DP port or 1xPROFIBUS DP +1xRS-485 port
Support Modbus RTU and PROFIBUS DP
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Digital Input: 11 channels (standard) or 9 channels (optional)
Relay Output: 6 channels
Analog Output: 1 channel, 4-20mA programmable analog output

PMC-550J-S LV Motor Protection Relay

PMC-550J-S LV Motor Protection Relay cooperates with contactors, soft starters, circuit breakers and other equipments to provide a comprehensive solution for LV AC motor circuits with protection, control, measurement, metering and communication. The relay replaces time relays, intermediate relays, auxiliary relays and many other additional components, making it an ideal choice for intelligent Motor Control Centers.

Features

Protection	Long Start	Overvoltage	Emergency Stop
	Thermal Overload	Underload	Contactor Failure
	Jam	tE Time	ACB Trip Contactor
	Ground Fault	Overload (Definite-time)	Contactor Abnormal
	MTA Failure Alarm	Interlock	Thermal Overload Pre-alarm
	Phase Current Loss	Thermal (PTC/NTC)	Residual Current
	Current Imbalance	Loss of Phase Voltage	Negative Sequence Overcurrent
	Under Power	Phase Reversal	Start Block
	Short Circuit	Closed-loop Failure	TC (Over Temperature)
	Undervoltage	Contactor	

Control	Quick Restart for Anti-voltage Sag
	Undervoltage Restart
	Auto-restart
	Starter Function: Direct-on-line, Reduced-voltage, Forward/Reverse, 2-speed, VFD start, Large-motor start

Features

Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements
Basic Metering	Line Voltage (UAB,UBC, UCA) and Current (IA, IB, IC) per phase and average, Phase Angle, Neutral Current, Residual Current, Current Unbalance, kW Total, kvar Total, kVA Total and PF, Frequency, Total kWh/kvarh Import,TC1-TC3
Motor Maintenance	Provide real-time status information, fault analysis, and rich daily motor maintenance management information, which makes it easy to understand the operation of the motor, count production efficiency, track the operating life of the contactor, and assist managers in achieving more economical and reasonable maintenance management
Electrical Fire Monitoring	1xIresidual Input 1 (Standard) or 3 (optional) TC Input
Recorders	64 time-stamped SOE logs, 64 time-stamped protection logs, 64 latest motor start logs and 64 latest motor stop logs, 16 Waveform Recorder logs, 10000 Data Recorder logs
Self-check	Continuous internal self-check to verify hardware status after power on. If any fault is detected, the protection will be disabled, accompanied by the display of failure info. and the illumination of Alarm LED
Wiring Diagnostic	Support Wiring Diagnostic for Voltage/Current Sequence and Polarity
Upgrade Online	Support online firmware upgrade for main unit and display module

Comm.

Standard optically isolated 2xRS-485 port
Optional 1xPROFIBUS DP + 1xRS-485 port / 1xRS-485 port
Support Modbus RTU, PROFIBUS DP
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Digital Input: Max. 8 channels
Relay Output: Max. 5 channels
Analog Output: 1 channel, 4-20mA programmable analog output

Applications

PMC-550J-S LV Motor Protection Relay is suitable for Electricity and Power, Petrochemical, Light Industry, Coal, Paper Making, Iron and Steel, Metallurgy and many other industries.

PMC-550J
LV Motor Protection Relay

PMC-550J LV Motor Protection Relay comes standard with an RS-485 port and an optional PROFIBUS port. It can be integrated into Intelligent Motor Control Centers (MCCs) and power plants' Electrical Monitoring and Management System. It is applicable to many industries such as Petrochemical, Manufacturing and Power. It also offers anti-corrosion models to adapt to the harsh environment.

Features

Protection	Long Start Phase Current Loss Thermal Overload Jam Short Circuit Contactor Overload (Definite-time) Ground Fault	Current Imbalance MTA Failure Alarm Contactor Failure ACB Trip Contactor Underload Under Power Undervoltage Overvoltage	tE Time Interlock Residual Current Phase Reversal Closed-loop Failure Start Block Contactor Abnormal
Control	Quick Restart for Anti-voltage Sag Undervoltage Restart Auto-Restart Start Control	Starter Function: Direct-On-Line, Reduced-Voltage Forward/Reverse, 2-Speed VFD Start, Large-Motor Start	
Basic Metering	Per phase Line Voltage (UAB,UBC, UCA) and Current (IA, IB, IC), Phase Angle, Neutral Current, Residual Current, Current Unbalance, kW Total, kvar Total, kVA Total and PF, Frequency, Total kWh/kvarh Import		
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements		

Comm.

Standard optically isolated 1xRS-485 port (Modbus RTU) and 1xPROFIBUS DP port (PROFIBUS DP)
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Digital Input: 8 channels (standard), or 6 channels (optional)
Relay Output: 5 channels (standard) or 4 channels (optional)
Analog Output: 1 channel, 4-20mA programmable analog output

PMC-550M-S2
LV Motor Protection Relay

PMC-550M-S2 integrates motor protection and control functions in a compact size for smaller distribution cabinets and more flexible installation. It features a Type - C debugging port on Front Panel, enabling convenient and fast online data reading. The PMC-550M-S2 is applicable to various industries including Rail Transit, Power, Petrochemical, etc.

Features

Protection	Long Start	Undervoltage	Contactor
	Thermal Overload	Overvoltage	Emergency Stop
	Jam	Underload	Contactor Failure
	Ground Fault	tE Time	ACB Trip Contactor
	MTA Failure Alarm	Overload (Definite-time)	Contactor Abnormal
	Phase Current Loss	Interlock	Thermal Overload Pre-alarm
	Current Imbalance	Loss of Phase Voltage	Residual Current
	Under Power	Phase Reversal	Negative Sequence Overcurrent
	Short Circuit	Closed-loop Failure	

Control	Quick Restart for Anti-voltage Sag Undervoltage Restart Auto-restart	Starter Function: Direct-On-Line, Reduced-Voltage Forward/Reverse, 2-Speed VFD Start, Large-Motor Start

Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements
Comm./ Prot./ Control Logic Test	Keep the protective motor running without interruption and simultaneously verify the relay's communication connectivity and Protection function
Self-defined Modbus Map	Support a self-configured Modbus Map to read data from non-consecutive register addresses in a single transaction
Motor Maintenance	Provide real-time status information, fault analysis, and rich daily motor maintenance management information, which makes it easy to understand the operation of the motor, count production efficiency, track the operating life of the contactor, and assist managers in achieving more economical and reasonable maintenance management
Motor Monitoring & Statistics	64 time-stamped SOE logs and 64 time-stamped protection logs 64 latest motor start logs and 64 latest motor stop logs

Comm.

Standard optically isolated 1xRS-485 port (Modbus RTU)
Type C port on Display Module for commissioning test via smartphone or PC

Input/Output

Max. 6xDI channels, 4xDO channels and 1xAnalog Output channel

LV Feeder Protection Relay Features Comparison List

Features / Model		PMC-550F-2	PMC-550F-V	PMC-550F	PMC-550F-S2
Metering	3-Ø Current	■	■	■	■
	3-Ø Current Phase Angle	■	■	■	■
	IN	■	■	■	■
	IR	■	■	■	■
	Current Unbalance	■	■	■	■
	3-Ø ULN	■	■	N/A	N/A
	ULN Phase Angle	■	■	N/A	N/A
	3-Ø ULL	■	■	■	■
	kW/kvar	■	■	■	■
	Power Factor	■	■	■	■
	Frequency	■	■	■	■
	Harmonics up to 31st	■	■	■	■
Energy	kWh/kvarh	■	■	■	■
Protection	Instantaneous Overcurrent	■	■	■	■
	Time Overcurrent	■	■	■	■
	Overcurrent	■	■	■	■
	IDMT Overcurrent	■	■	■	■
	Overload	■	■	■	■
	Neutral Overcurrent/ Ground Fault	■ (Meas./Cal.)	■ (Cal.)	■ (Cal.)	■ (Cal.)
	IDMT Neutral Overcurrent	■	■	N/A	■
	Negative Sequence	■	■	■	■
	Switch-Onto-Fault	■	■	■	■
	Current Imbalance	■	■	■	■
	Undervoltage	■	■	■	■
	Overvoltage	■	■	■	■
	Residual Current	*	*	■	*
Control	SOE	128	128	128	128
	Waveform Recorder	16	16	16	16
	Run/Trip/Alarm LED	■	■	■	■
	Loss of Phase Voltage	■	■	■	■
	CB Spring Energy Storage Monitoring	■	■	■	■
	Control Circuit Monitoring	■	■	■	■
Comm.	Type C Port	■	■	■	N/A
	Modbus RTU	■	■	■	■
	PROFIBUS DP	*	*	N/A	N/A
I/O	DI	8	8	6*/8*	6
	DO	6	5	5*/4*	4
	AO	1	1	1	1
	Temperature	N/A	1*/3*	N/A	N/A
Electrical Fire Monitoring	IR Monitoring	N/A	*	N/A	N/A
	Temperature Monitoring	N/A	■	N/A	N/A

Notes:

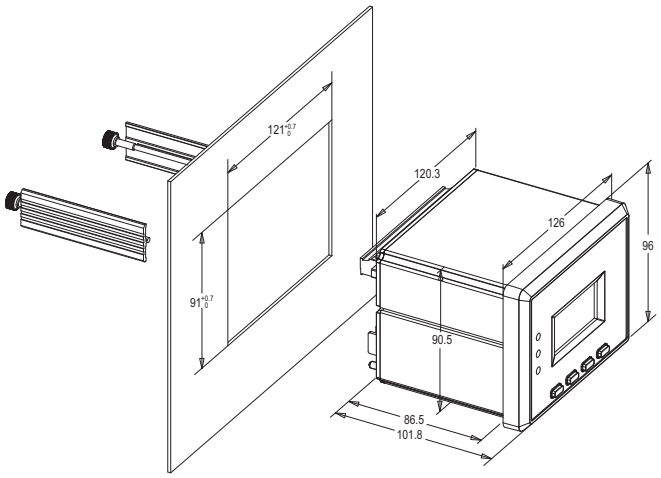
■ Supported

* Optional

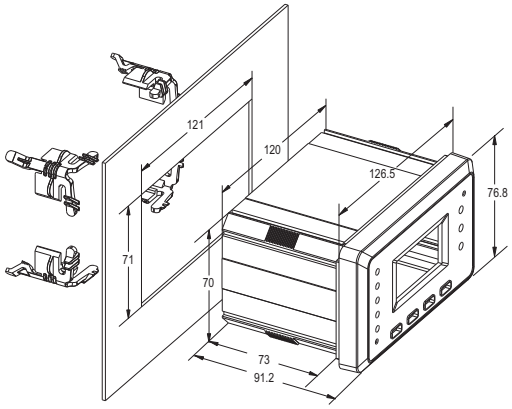
N/A Not Applicable

Dimensions and Installation

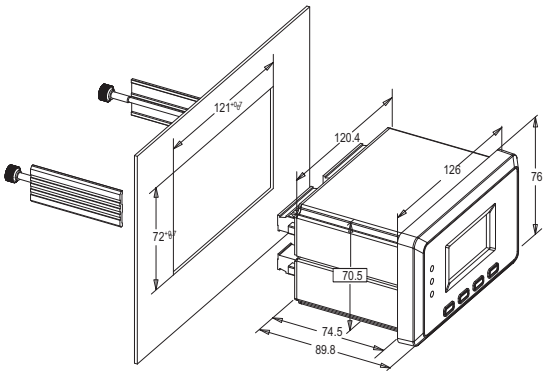
PMC-550F-2



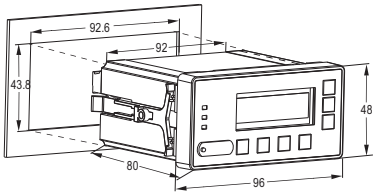
PMC-550F-V



PMC-550F



PMC-550F-S2



Unit: mm

PMC-550F-2
LV Feeder Protection Relay

PMC-550F-2 can be equipped with RS-485 and PROFIBUS DP ports, which makes it easy to connect to the Power Supply and Distribution Monitoring systems, providing comprehensive protection and monitoring of the Low-Voltage power system.

Features

Protection	Instantaneous Overcurrent	Negative Sequence (2-stage)
	Time Overcurrent	Switch-Onto-Fault (SOTF)
	Overcurrent (3-stage)	Current Imbalance
	IDMT (Inverse Definite Minimum Time) Overcurrent	Loss of Phase Voltage
	Overload	Undervoltage (3-stage)
	Neutral Overcurrent (3-stage)	Overvoltage
	IDMT Neutral Overcurrent	Residual Current
Metering & Monitoring	3-phase Current and phase Angle, Neutral Current, Residual Current, Current Unbalance	
	3-phase ULL and phase Angle, kW/kvar/PF Total, Frequency	
	Total kWh Import/Export, Total kvarh Import/Export	
	16 latest Waveform Log recording 3-phase ULN and Current, IN/IR as well as DI/DO status	
	64 SOE events time-stamped to ±1ms resolution	
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements	

Comm.

Standard optically isolated 2xRS-485 port or optional 1xPROSIBUS DP + 1xRS-485 port
Modbus RTU and PROFIBUS DP protocol

Input/Output

Digital Input: 8 channels
Relay Output: 6 channels
Analog Output: 1 channel, 4-20mA programmable output

PMC-550F-V
LV Feeder Protection Relay

PMC-550F-V integrates advanced network communication technology and cooperates with circuit breakers to provide a set of comprehensive solutions integrating protection, control, measurement and communication for LV feeders, replacing a variety of auxiliary components like relays, meters, and transmitters. It is applicable to many industries, including Power, Petrochemical, Metallurgy, Manufacturing, Light industry and Coal.

Features

Protection	Instantaneous Overcurrent	Ground Fault	Overvoltage	Under Power
	Time Overcurrent	Overload	Loss of Phase Voltage	Reverse Power
	Overcurrent (3-stage)	MTA Failure Alarm	CB Spring Energy	Thermal
	Neutral Overcurrent (2-stage)	Switch-Onto-Fault	Storage Monitoring	
	IDMT Overcurrent	Current Imbalance	Control Circuit Monitoring	
	Interlock	Undervoltage		
Opt. Electrical Fire Monitoring	1 x Residual Current Input 1 or 3 x TC Input			
Comm./ Prot./ Control Logic Test	Keep the protective feeder running without interruption and simultaneously verify the relay's communication connectivity and protection function			
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements			
Metering	3-phase Current/ULL and phase Angle, Neutral Current, Residual Current, Current Unbalance kW/kvar/PF Total, Frequency ,Total kWh Import/Export, Total kvarh Import/Export			
Monitoring	Provide real-time measurement, DI/DO status, tripping times, closed times, protection logs Remote operate the circuit breaker via DO operation			
Log	64 SOE Logs, 64 Device Logs, 16 Waveform Logs, 10000 Data Recorder Logs			
Self-check	Continuous internal self-check to verify hardware status after power on. If any fault is detected, the protection will be disabled, accompanied by the display of failure info. and the illumination of Alarm LED			
Wiring Diagnostic	Support Wiring Diagnostic for Voltage/Current Sequence and Polarity			
Upgrade Online	Support online firmware upgrade for main unit and display module			

Comm.

1 (standard) or 2 (optional) optical isolated RS-485 port (Modbus RTU and PROFIBUS DP)

Type C port (Modbus RTU) for setup, retrieving data and online upgrade via PC

Input/Output

Digital Input: 8 channels Relay Output: 5 channels

Analog Output: 1 channel, 4-20mA programmable

PMC-550F
LV Feeder Protection Relay

PMC-550F comes standard with an RS-485 port, which makes it easy to connect to the LV power automation system, providing comprehensive protection and monitoring, and simplifying maintenance and management.

Features

Protection	Instantaneous Overcurrent	Undervoltage (3-stage)
	Time Overcurrent	Overvoltage
	Overcurrent (3-stage)	MTA Failure Alarm
	Neutral Overcurrent (3-stage)	Residual Current (2-stage)
	Overload	IDMT (Inverse Definite Minimum Time) Overcurrent
	Switch-Onto-Fault	Under Power
	Current Imbalance	Reverse Power
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements	
Metering & Maintenance	3-phase Current/ULN and Phase Angle, 3-phase ULL, Neutral Current, Residual Current, Current Unbalance, kW/kvar/PF Total, Frequency, Total kWh/kvarh Loss of Phase Voltage alarm, Self-defined alarm 128 SOE events time-stamped to ±1ms resolution Circuit Breaker Spring Energy Storage Monitoring, Control Circuit Monitoring Voltage/Current Phase Adjustment	

Comm.

Standard optically isolated 1xRS-485 port (Modbus RTU)
Type C port (Modbus RTU) for setup, retrieving data and online upgrade via PC

Input/Output

Digital Input: 8 channels (standard) or 6 channels (optional)
Relay Output: 4 channels (standard) or 5 channels (optional)
Analog Output: 1 channel, 4-20mA programmable

PMC-550F-S2
LV Feeder Protection Relay

PMC-550F-S2 provides a set of comprehensive solutions integrating protection, control, measurement and communication for LV feeders. It is applicable to many industries, including Power, Petrochemical, Metallurgy, Manufacturing, Light industry and Coal.

Features

Protection	Instantaneous Overcurrent	Neutral Overcurrent	Under Frequency
	Time Overcurrent	IDMT Neutral Overcurrent	Over Frequency
	Overcurrent	Under Power	Loss of Phase Voltage
	Ground Fault	Reverse Power	Spring Energy Storage Monitoring
	Overload	MTA Failure Alarm	Control Circuit Monitoring
	Switch-Onto-Fault	Current Imbalance	Interlock
	IDMT Overcurrent	Undervoltage	Residual Current
	Negative Sequence Overcurrent	Overvoltage	
Programmable Logic Control	Support FBD programmable language, graphical editing and downloading through the supporting software PMC-Designer, enabling the quick and flexible implementation of logic functions to meet various on-site application requirements		
Comm./ Prot. Control Logic Test	Keep the protective feeder running without interruption and simultaneously verify the relay's communication connectivity and protection function		
Self-defined Modbus Map	Support a self-configured Modbus Map to read data from non-consecutive register addresses in a single transaction		
Maintenance	Running status, closed times, tripping times, DI/DO status, SOE Log, WFR log		
Recorder	128 SOE events time-stamped to ±1ms resolution		

Comm.

1xStandard optically isolated RS-485 port (Modbus RTU)
1xType C port (Modbus RTU) for commissioning via PC

Input/Output

Digital Input: 8 channels
Relay Output: 5 channels
Analog Output: Optional 1 channel, 4-20mA programmable

PMC-KHD
Anti-Voltage Sag Unit

PMC-KHD Anti-Voltage Sag Unit supports hold-on scheme and delayed under-voltage restart with internal energy-storage components to keep the contactor closed, and effectively prevent the equipment shutdown accidents caused by voltage sag events.

Features

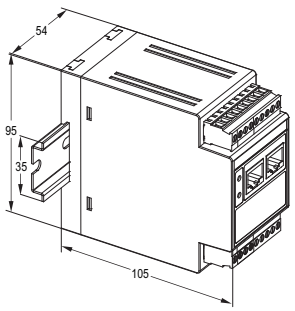
- Support hold-on scheme and undervoltage restart
- Disturbance capture with resolution up to 1.667ms
- Switching time from external AC to internal DC less than 200us, ensuring the contactor remain closed
- Supercapacitor energy storage features larger capacity, faster charge - discharge speed, and longer lifespan
- Supports an Energy-Saving operation mode to reduce the power consumption of control circuit
- Type C port for commissioning, supporting multiple methods for convenience and efficiency
- Adapt to different contactor capacities without setting the resistance
- Suitable for AC contactors and electronic type energy-saving contactors
- Excellent EMC performance with surge immunity level IV

Hold-on Scheme	With the internal energy storage element, when Voltage Sag is detected, switch to the internal DC output to keep the contactor closed during the voltage sag
Delayed Undervolt. Restart	Set restart priority for the motors. Prioritize the restart of important motors while secondary motors can be started with a short preset time delay
Metering/Proct.	3-phase ULL and Phase Angle, Undervoltage/Overvoltage protection
Logs	64 SOE Logs, 64 Device Logs, 16 Waveform Logs

Comm.

1xStandard optically isolated RS-485 port (Modbus RTU)
1xType C port (Modbus RTU) for commissioning via PC

Dimensions and Installation



Unit: mm

IMM100
Insulation Monitor

The IMM100 monitors ground insulation resistance for 380V/690V/1140V AC motors. It can activate insulation monitoring manually, remotely, or automatically when the motor is off. It supports warning and alarm functions, outputs signals, and locks out the motor closing via contacts to prevent electrical accidents caused by insulation issues.

Features

- Support independent insulation monitoring, with selectable start modes as Manual, Auto and Remote
- Warning and alarm function, generating Alarms and locking out the motor closing
- 500 logs for insulation monitoring
- Standard Dot-matrix LCD display and optional display module
- Enhanced Power Supply with ride-through capability

Insulation Monitoring	Adopt the DC injection measurement method. When the rated voltage 500V/1000VDC is applied, the device will monitor the insulation resistance between the motor windings and the ground. The insulation resistance value can be read via LCD, Bluetooth module, optional display module, and communication. The insulation monitoring function can be activated automatically after detecting that the motor has stopped. It can also be activated manually or remotely. The insulation monitoring results are stored by means of recording.
Warning/Alarm	Configurable warning/alarm threshold. If the insulation resistance value is lower than the warning threshold, the warning indicator is lit. When the resistance value is less than the alarm threshold, the Alarm indicator will turn on, and the motor closing will be locked through hard contacts.
Measurement	Busbar Residual Voltage, Insulation Resistance
Logs	500xInsulation Monitoring Log 64xPolarization Index Log 64xInsulation Absorption Ratio Log 64xSelf-diagnostic and Operation Log

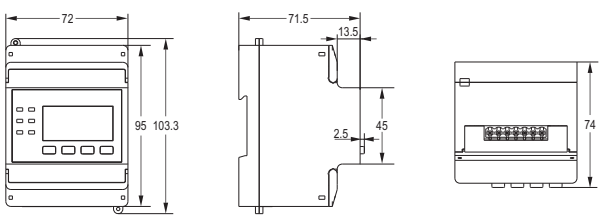
Comm.

1xStandard optically isolated RS-485 port (Modbus RTU)
Bluetooth for commissioning via Smartphone and RJ45 port for communication with PC

Input/Output

Relay Output: 3 channels
DI: 3 channels (internally wetted @ 24VDC)

Dimensions



Unit: mm

PMC-MTA

PMC-550 series relay can be used with the dedicated external phase current sensor PMC-MTA, which can be selected based on motor capacity. When using PMC-MTA, the motor's primary current passes through the center and the PMC-MTA's leads connect to the PMC-550 series.

PMC-MTA Ordering Information

Model	Motor Power	Motor Rated Current	Aperture	MTA Type
PMC-MTA-1A	≤ 0.4kW	0.1-1.2 A	10mm	3-P Moulded Case
PMC-MTA-5A	0.4~2.2kW	0.5-6.0 A	10mm	3-P Moulded Case
PMC-MTA-25A	2.2~12.5kW	2.5-30.0 A	20mm	3-P Moulded Case
PMC-MTA-100A	12.5~50.0kW	20.0-120.0 A	30mm	3-P Moulded Case
PMC-MTA-300A	50.0~150kW	60.0-360.0 A	30mm	3-P Moulded Case
PMC-MTA-400A-T	120~200kW	80.0-480.0A	55mm	1-P Moulded Case
PMC-MTA-800A-T	160~400kW	160.0-960.0A	75mm	1-P Moulded Case

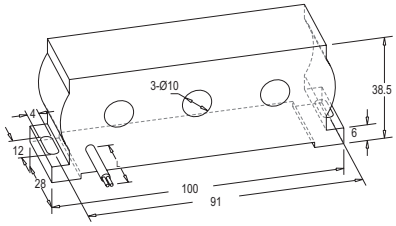
PMC-MTA Accessories

Product Code	Application Range
3-P MTA Special Cable	3-Moulded Case MTA for PMC-550A/J/J-S/F/F-V and PMC-550 series
1-P MTA Special Cable	1-P Moulded Case MTA for PMC-550A/J/J-S/F/F-V and PMC-550 series
3-P MTA Special Cable	3-Moulded Case MTA for PMC-550M-S2/F-S2
1-P MTA Special Cable	1-Moulded Case MTA for PMC-550M-S2/F-S2

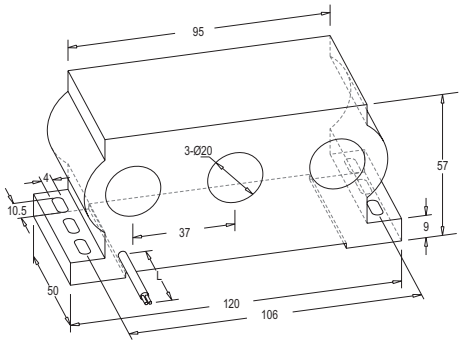
Notes:

1. The Motor Power mentioned is based on a 380V system. For other voltages, please use a suitable multiplier based on the actual system voltage.
2. For 3-phase Current measuring, 3xPMC-MTA-400A-T/PMC-MTA-800A-T are needed.

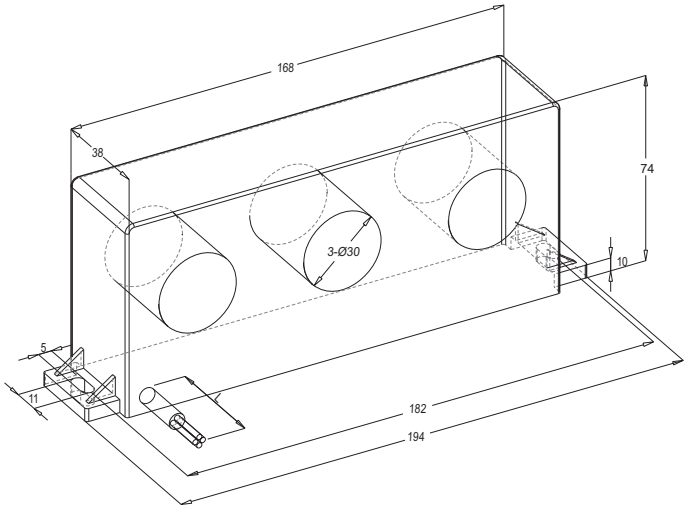
Dimensions



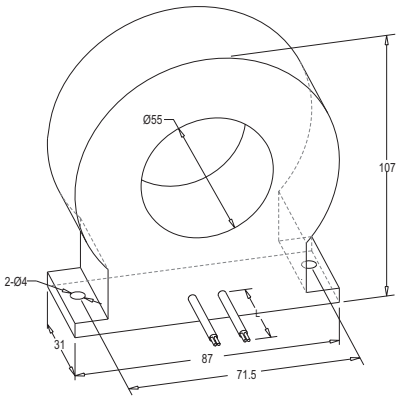
PMC-MTA-1A/5A



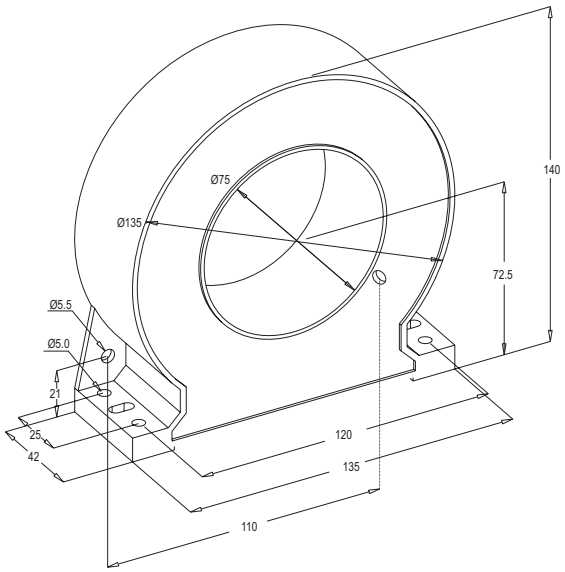
PMC-MTA-25A



PMC-MTA-100A/300A



PMC-MTA-400A-T



PMC-MTA-800A-T

Unit: mm

PMC-MIN

Zero Sequence Current Transducer

PMC-MIN zero-sequence current sensor has a primary rating of 5A or 1A and a secondary rating of 1V. It is used with standard zero-sequence current transformers (e.g., 200A/5A or 200A/1A). The secondary wires of the transformer pass through the PMC-MIN from the polarity end to the non-polarity end.

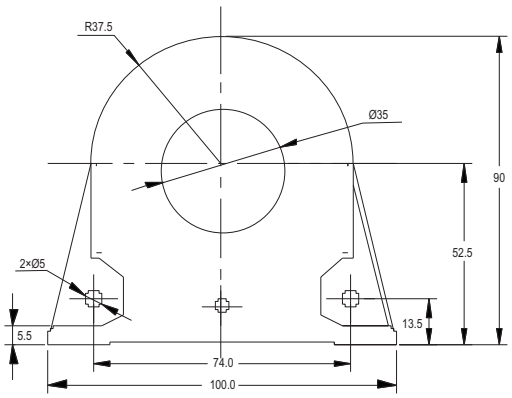
The PMC-MIN is compatible with PMC-550J and PMC-550A.

PMC-MIN Ordering Information

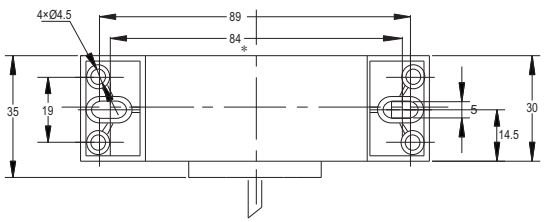
Model	Motor Power	Secondary Rating	Aperture
PMC-MIN-1A	All	1.0A	35mm
PMC-MIN-5A	All	5.0A	35mm

Note:
The primary rating of the zero-sequence sensor is either 5A or 1A while the secondary rating is 1V. The PMC-MIN is designed to work with standard zero sequence current transformer with ratings such as 200A/5A or 200A/1A. The secondary output of standard zero sequence CT should be fed through the PMC-MIN to produce the desired voltage output for the PMC-550J/A relay.

Dimensions



Front View



Bottom View

Unit: mm

PMC-MIR

Residual Current Transducer

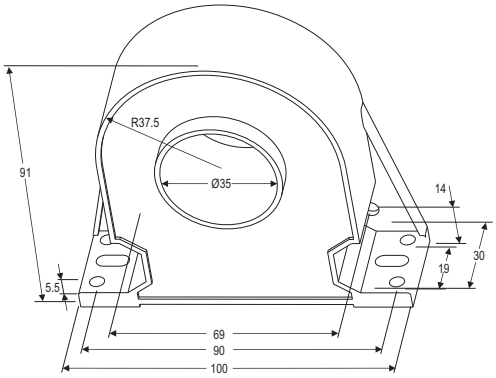
The PMC-550 series devices can be used with the solid-core residual current sensor PMC-MIR, which is selected based on motor capacity. The motor's primary phase and neutral currents (IA, IB, IC and IN) pass through the PMC-MIR, except the PE wire. The PMC-MIR's leads connect to the PMC-550 via a dedicated terminal.

PMC-MIR Ordering Information

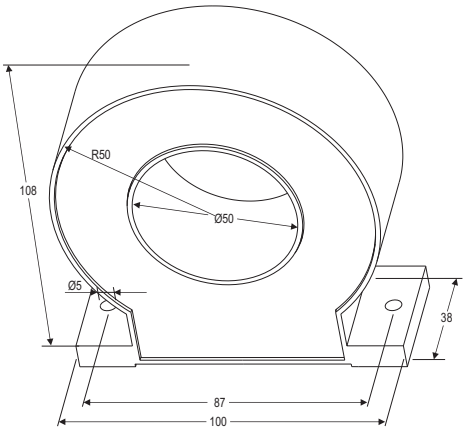
Residual Current Transducer for Cable			
Model	Aperture	Phase Current	Motor Power
PMC-MIR-35	35mm	0-63A	0.55kW-7.5kW
PMC-MIR-50	50mm	63A-125A	7.5kW-22kW
PMC-MIR-75	75mm	125A-250A	22kW-150kW
PMC-MIR-120	120mm	250A-1000A	>150kW
Residual Current Transducer for Busbar			
Model	Aperture (mm)		External Dimension (mm)
PMC-MIR-265*103	265×103		307x211x60

Note: The specified motor power is based on a 380V system. For other voltage systems, please use a suitable multiplier based on the actual system voltage.

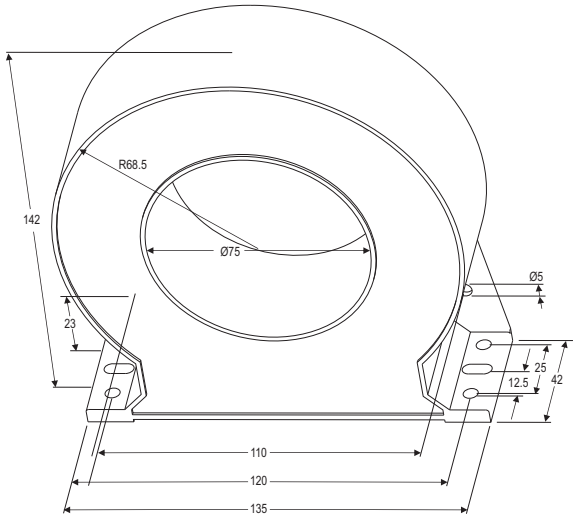
Dimensions



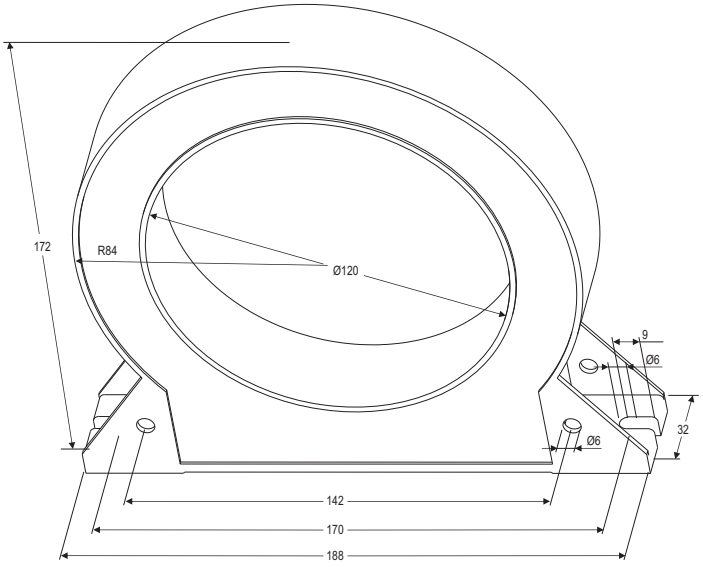
PMC-MIR-35



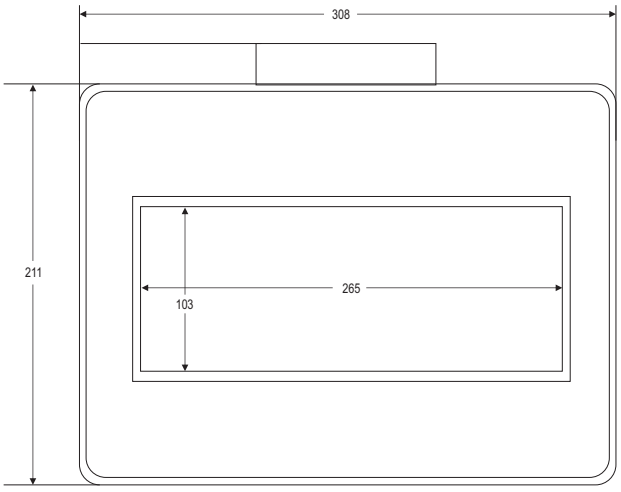
PMC-MIR-50



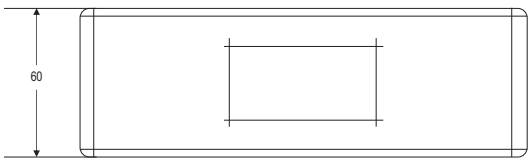
PMC-MIR-75



PMC-MIR-120



Front View



Bottom View

PMC-MIR-265*103

Unit: mm