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Automatic Reclosing Device (ARD)

Focus on Smart Electricity


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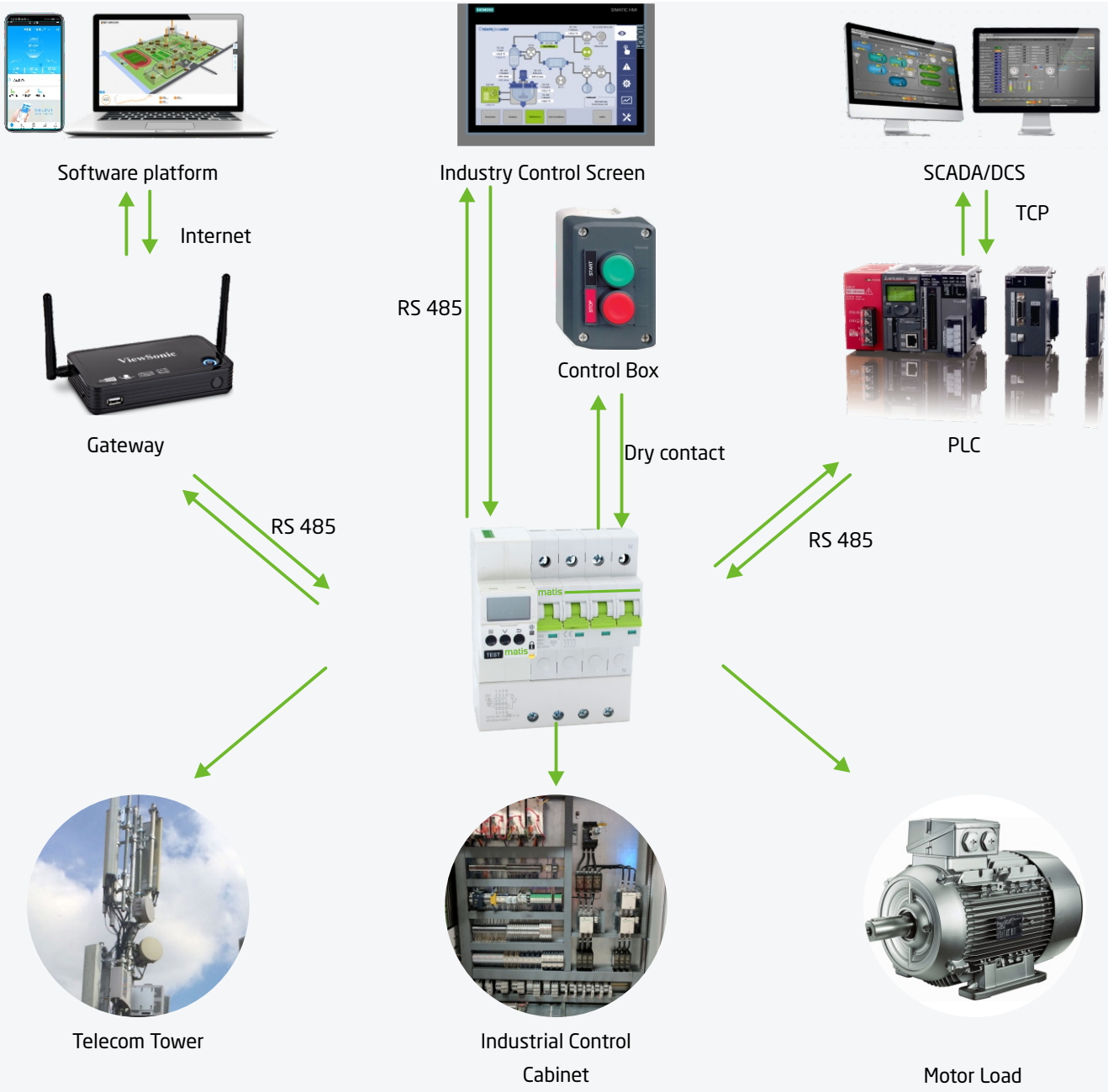
Smart RCBO with ARD MT61SR

Overview



MT61SR is a kind of smart breaker with earth leakage protection and automatic reclosing device. The circuit breaker is reclosed after an untimely tripping of the circuit breaker but only after an device and electrical circuit check. If a fault is found, the device sets itself on block condition and signals the fault by means of the front LED indicator. Furthermore, the device integrate mulit-protections, fault checking, auto-reclosing, and communication together in one. With integration into industry control system or SCADA system, it may realize remote control, voltage and leakage current monitoring, over/under voltage protection value and leakage current value and delay time setting, historic record and events checking.

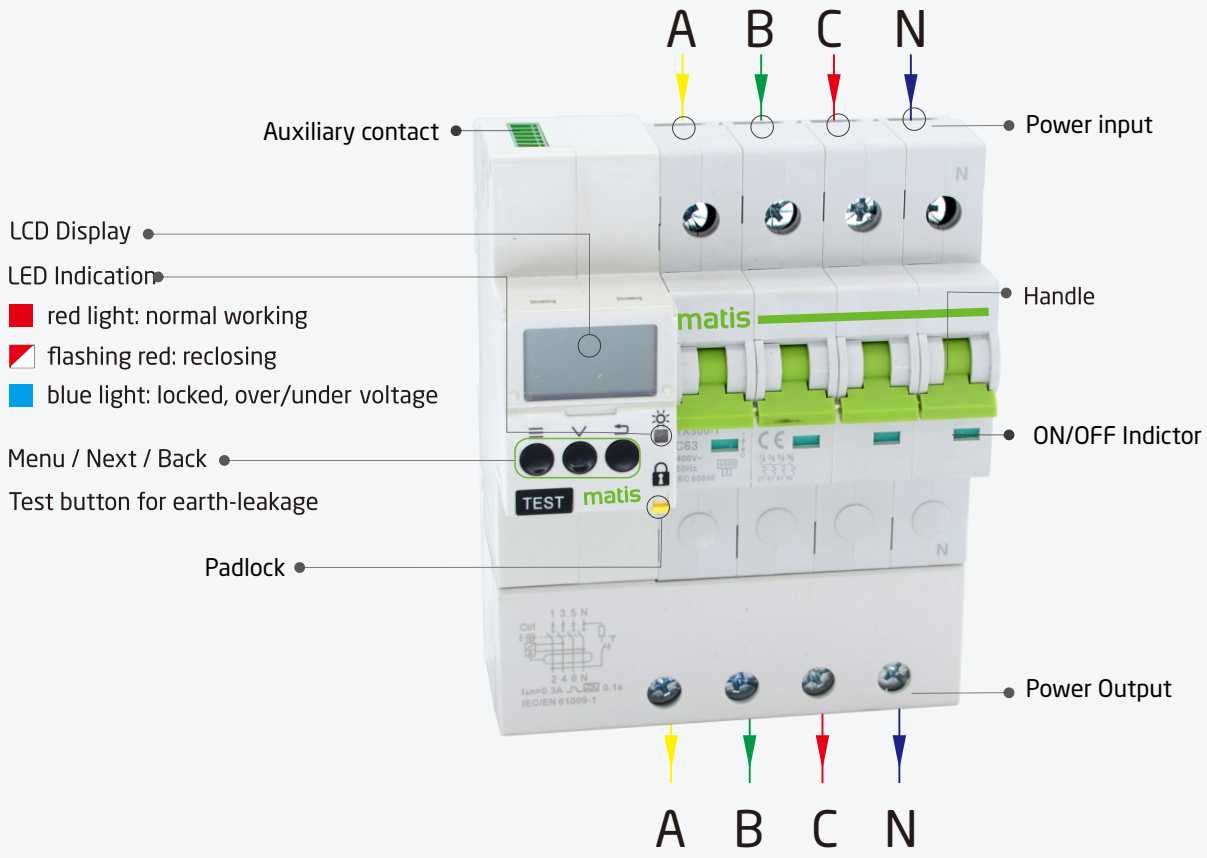
The MT61SR smart recloser can be used to carry out the following operations:

> Automatically reclosing

> Select a predefined reclosing program to ensure the safety and availability of installations, depending on the type of installation

> Padlock the automatic recloser

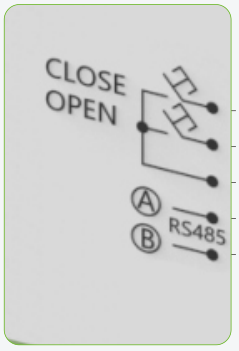
Appearance



No.11: output, auxiliary contact NC
No.10: output, auxiliary contact NO
No.9: output, Mutual terminal
No.8: remote warning, auxiliary contact NC
No.7: remote warning, auxiliary contact NO
No.6: mutual terminal for remote warning

Auxiliary contact

Dry contact

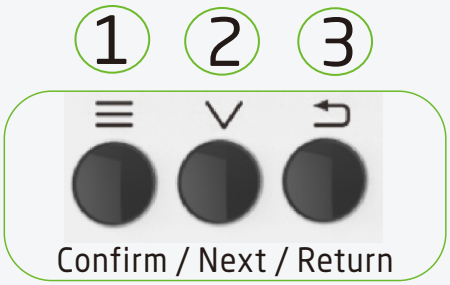


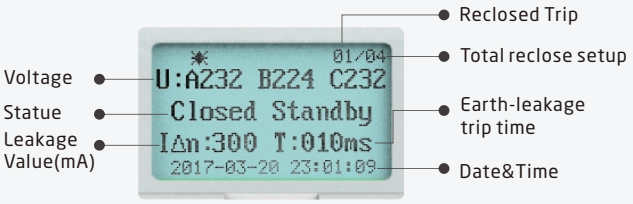
No.5: Close signal
No.4: Open signal
No.3:COM
No.2: RS485-A
No.1: RS485-B

Smart RCBO with ARD MT61SR

Appearance

Device Operation Instruction



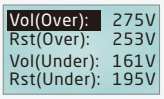


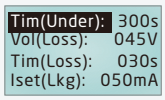
① Confirm --> Confirm

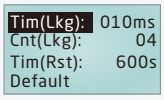
- Setting
- Records
- Info
- Back

① Setting --> --> Password --> (9988)

- Overvoltage regulation
- Low Voltage adjustment
- Low Voltage adjustment Recovery
- Low Voltage delay
- Without tension adjustment
- No Voltage without delay.
- Delay Earthing
- Reconnection Earth leakage
- To Reset delay







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① Records--> -->

- Automatic reclosing
- Manual Reconnection
- Mechanical Lock
- Lack of voltage delay
- Remote Lock
- Earth leakage Lockout
- Earth leakage delay

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① Info --> -->

- Language:English / Spain/Chinese
- Addr : 001
- Baud : 9600

② Next --> Next

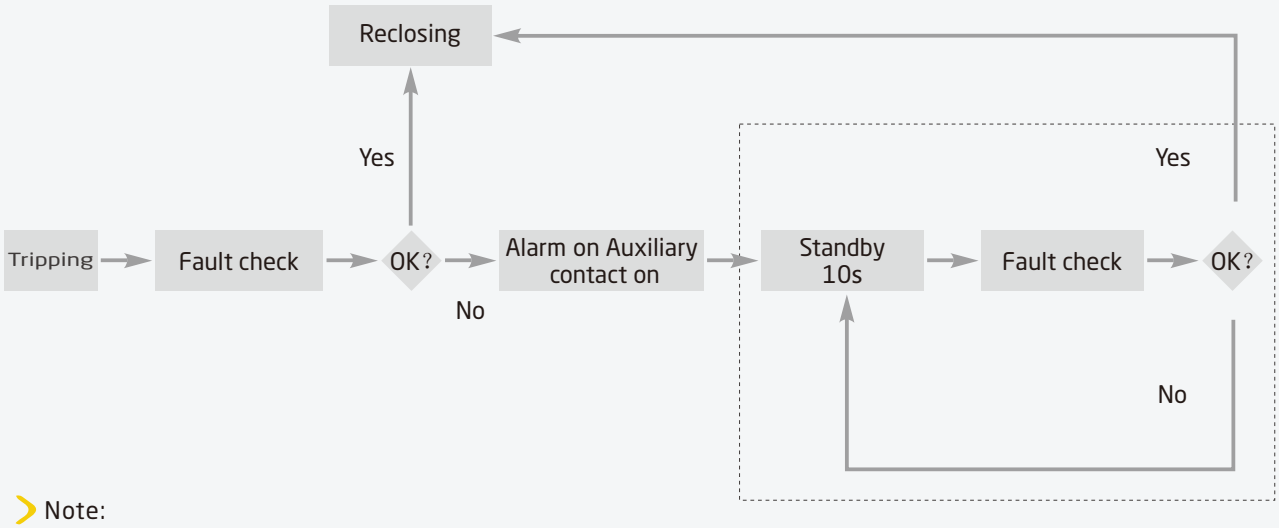
- Auto Close: 05054
- Power Off : 00033
- Manual : 00006
- Trips : 00028

③ Retun --> Retun

- Return to menu

Automatic Reclosing Function

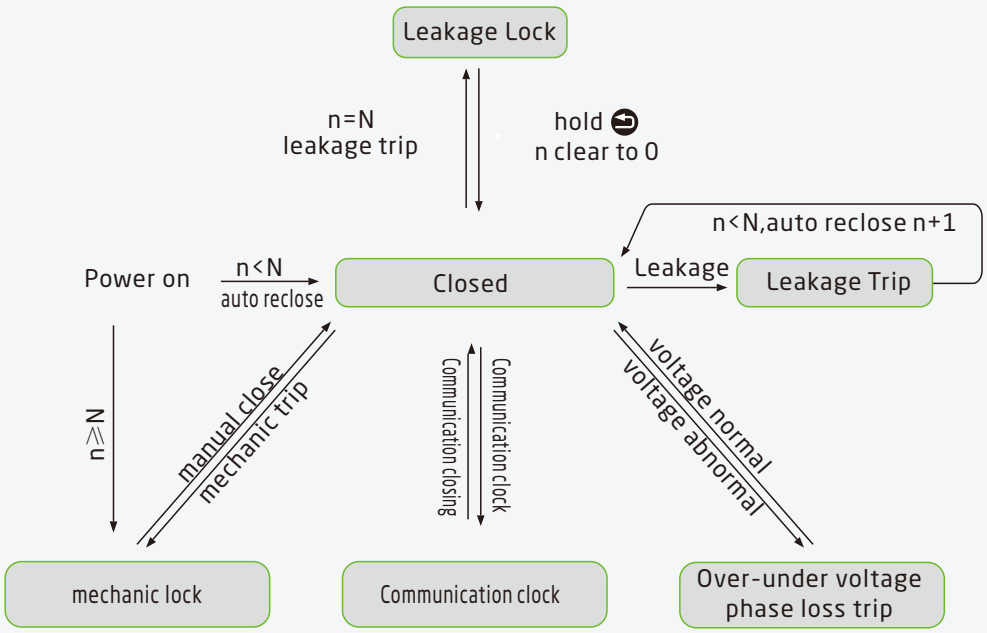
The circuit breaker can be reclosed after an untimely tripping of circuit breaker but only after fault check. The device will be reclose only when the result of the fault check is positive, the device goes into standby when fault check gives a negative result. If the result of the fault result is not positive for three time, the device will be blocked for maintenance .



Note:

- Fault check includes over-voltage, phase loss, neutral disconnection, short circuit, earth leakage.
- The device can be reclosed by default with the first interval of 1 minute, the second interval of 10 minutes, and the third interval of 15 minutes. The reclosed times and the delay time can be set through RS485.

Reclosing function diagram



Note:

- "n" mean reclosed trip, "N"means setup total reclose trips.
- Mechanical trips include manual trip,short circuit trip,overload trip.

Smart RCBO with ARD MT61SR

Features

Multi-functions integrated in one.
The device integrate multi-protections, auto-reclosing, manual reclosing, fault checking, monitor, voltage and earth leakage value setting, Alarm , events recorded communication together in one.

Multi-protection
The device includes the following protections: Overload, short circuit, earth leakage, overvoltage, undervoltage, phase loss and unbalance.

Remote control
The device can realize remote control with integration into PLC and SCADA system though RS485 or connection to gateway through Rs485.

Padlocker
The device has mechanical lock which can be locked when technicians make the load maintaince and electrical ciruict check on site to secure the circuit.

Real-time monitoring
The voltage and earth leakage value can be monitored and showed in the device in real-time.

Electrical data and time setting
The undervoltage protection value, undervoltage recovering value, undervoltage delay, overlotage protection value, overvoltage recover, voltage loss value, voltage loss time delay, leakage value, leakage time delay can be set in the device or platform

High current with compact size
The rated current is up to 125A and the width of one pole breaker is only 18mm.

Auto-reclosing
After untimely tripping of the circuit breaker, the device will be reclosed automatically, the auto-reclosing times and delay time by be set in LCD display screen of device.

LCD display screen
The electrical parameterand event record can be showed, configuration can be made and in LCD screen.

Communication and Protocol
Communication: RS485, Protocol: Modbus

Application

The automatic recloser increases the availability of installations which are unmonitored, isolated, difficult to access or demand high availability. In the case of transient faults (atmospheric disturbance, industrial over voltages, etc.), availability can be maintained without the need for operator intervention. All electrical installations that require full electrical service continuity in the event of unforeseen situations that can trip the RCCB as a result of causes unrelated to the electrical insulation.

Outdoor system

Application Cases

- Highway monitoring power box
- Pollution control stations
- Advertisement billboards
- Telecommunication tower
- Railway Road
- Public lights
- Minging
- Water pump station
- Traffic lights
- Outdoor lighting
- Sporting facilities
- Meteorological stations

Features

- Exposure to atmospheric disturbance
- Difficult accessibility of electrical circuit
- Insulation levels depending on weather conditions (temperature and humidity
- Presence of electronic power supplies
- Extensive damage due to blackout

Example pictures

Pump station

Railway distribution

Traffic lights

Sporting facility

Smart RCBO with ARD MT61SR

Application

Indoor systems

Application Cases

- Alarm system protection
- CCTV system protection
- Data processing centers
- Door and automatic gate protection
- Ice-cream shops
- Pumping systems
- Supermarkets
- Access monitoring system protection
- Garages
- Catering
- Industrial plants

Features

- Extensive damage due to blackout
- Need for guaranteed service continuity
- Sensitivity to disturbance induced by mains supply and by atmospheric conditions
- Strong presence of electronic power supplies
- Insulation levels depending on weather and operating conditions

Example pictures

Data processing center

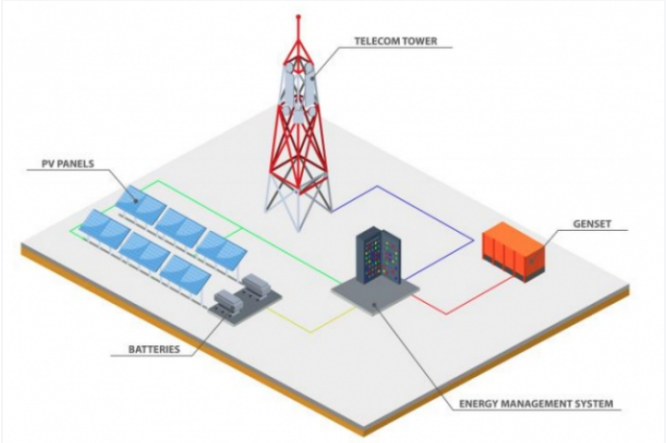
Cold storage

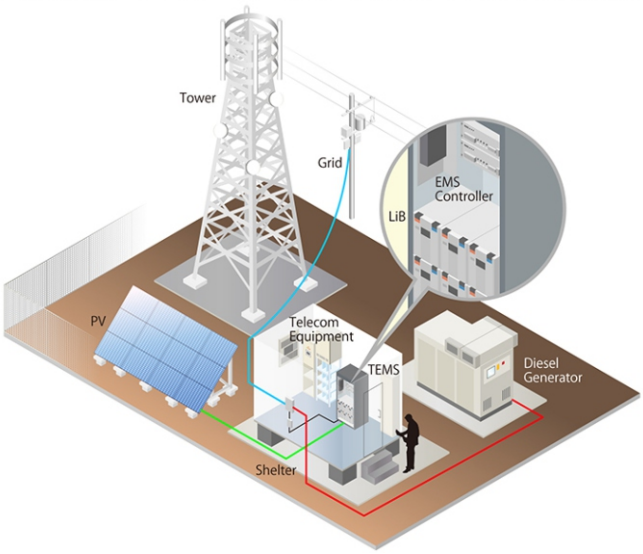
CCTV system protection

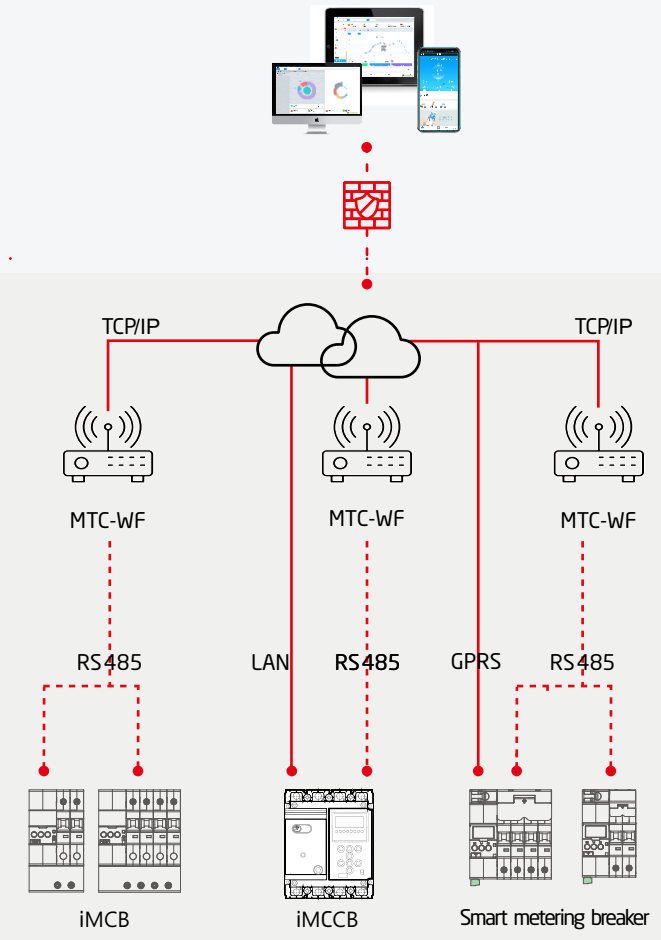
refrigerators

Application example

Telecom tower







Smart RCBO with ARD MT61SR

Instruction of Type code

	series code		S: single phase T: three phase		Rated current (40,63,80,100,125A)		Rated residual current (30,50,100,300mA)
MT	61	SR	S	C	63	A	30
Company code		Product code		Cure C,D		Rated current (40,63,80,100,125A)	

Technical Parameter

			MT61SR-sinple phase	MT61SR-Three phase
	Poles			
	Pictures			
Electric Features	Approvals:		CE,CCC	
	Standards		IEC50557, IEC61009	
	Rated voltage Ue	Vac	230	400
	Rated current In	A	16,20,25,32,40,50,63,80,100,125	
	Rated frequency	HZ	50/60	
	Mini. operating voltage	Vac	85% Ue	
	Max. operating voltage	Vac	110% Ue	
	Rated insulation voltage Ui	Vac	500	
	Rated breaking capacity	A	6000	
	Dielectric strength test voltage between pole and earth	V/Min	2500	
	Pollution degree		2	
	Rated residual current (I▵n)	mA	30,50,100,300	
	Type of associated residual current circuit breaker		A,AC	
	Thermo-magnetic release characteristic		C	5-10In
			D	10-20In
	Trips time		<0.2	
	Over/under voltage Protection		270/170+-5	
Mechanical features	Electrical life	s	5000	
	Mechanical life	Vac	10000	
	Protection degree	times	IP20	
	Width in Din modules	times	72	108
	Reference temperature for setting of thermal element	°C	30	
	Ambient temperature (with daily average<=35 .C)	°C	-25---+55	
	Storage temperature	°C	-40---+70	
Functions	Protection		Overload	
			Short Circuit	Residual current
			Auto Reclose	Phase loss
			Over/Under voltage	Phase unbalance
	Characteristic set up		Over/under voltage Action time	
			Over/under voltage value	
			Reclose trips & time	
			Time setup/Language	
	Measurement & Monitor		Voltage	
			Earth leakage	
	Communiction port		RS485	
	Others		Event reord and checkup	

Ordering information

Pictures	Curve	Phase	Residual current(mA)	Type	Rated current In (A)	Type Code	No. of Modules (1 module=18mm)	Weight. (g)
	c	Single Phase	30	A	16	MT61-SRSC16A30	4 (72mm)	570
					20	MT61-SRSC20A30		
					25	MT61-SRSC25A30		
					32	MT61-SRSC32A30		
					40	MT61-SRSC40A30		
					50	MT61-SRSC50A30		
					63	MT61-SRSC63A30		
					80	MT61-SRSC80A30		
					100	MT61-SRSC100A30		
					125	MT61-SRSC125A30		
	c	Single Phase	100	A	16	MT61-SRSC16A100	4 (72mm)	570
					20	MT61-SRSC20A100		
					25	MT61-SRSC25A100		
					32	MT61-SRSC32A100		
					40	MT61-SRSC40A100		
					50	MT61-SRSC50A100		
					63	MT61-SRSC63A100		
					80	MT61-SRSC80A100		
					100	MT61-SRSC100A100		
					125	MT61-SRSC125A100		
	c	Single Phase	300	A	16	MT61-SRSC16A300	4 (72mm)	570
					20	MT61-SRSC20A300		
					25	MT61-SRSC25A300		
					32	MT61-SRSC32A300		
					40	MT61-SRSC40A300		
					50	MT61-SRSC50A300		
					63	MT61-SRSC63A300		
					80	MT61-SRSC80A300		
					100	MT61-SRSC100A300		
					125	MT61-SRSC125A300		
	C	Three Phase	30	A	16	MT61-SRTC16A30	6 (108mm)	921
					20	MT61-SRTC20A30		
					25	MT61-SRTC25A30		
					32	MT61-SRTC32A30		
					40	MT61-SRTC40A30		
					50	MT61-SRTC50A30		
					63	MT61-SRTC63A30		
					80	MT61-SRTC80A30		
					100	MT61-SRTC125A30		
					125	MT61-SRTC100A30		
	C	Three Phase	100	A	16	MT61-SRTC16A100	6 (108mm)	921
					20	MT61-SRTC20A100		
					25	MT61-SRTC25A100		
					32	MT61-SRTC32A100		
					40	MT61-SRTC40A100		
					50	MT61-SRTC50A100		
					63	MT61-SRTC63A100		
					80	MT61-SRTC80A100		
					100	MT61-SRTC100A100		
					125	MT61-SRTC12A100		
	C	Three Phase	300	AC	16	MT61-SRTC16AC300	6 (108mm)	921
					20	MT61-SRTC20AC300		
					25	MT61-SRTC25AC300		
					32	MT61-SRTC32AC300		
					40	MT61-SRTC40AC300		
					50	MT61-SRTC50AC300		
					63	MT61-SRTC63AC300		
					80	MT61-SRTC80AC300		
					100	MT61-SRTC100AC300		
					125	MT61-SRTC125AC300		

Magnetic release

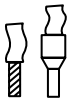
An electromagnet with plunger ensures instantaneous tripping in case of short circuit. The IEC60898 distinguishes three different types: B, C, D

Standard	Curve	Start Status	Test current	Test Request	Tripping time	Applications	Ambient Temperature for Test
IEC60898	B	Cold	3In	No trip	t≤ 0.1s	Only for resistive loads such as: Electrical heating water heating stoves	30°C
		Cold	5In	Trip	t < 0.1s		
	C	Cold	5In	No trip	t≤ 0.1s	Usual loads such as: Lighting Socket outlets small motor	
		Cold	10In	Trip	t < 0.1s		
	D	Cold	10In	No trip	t≤ 0.1s	Control and protection of circuits having important transient inrush currents(large motors)	
		Cold	14In	Trip	t < 0.1s		

Thermal release

The release is initiated by a bimetal strip in case of overload, the standard defines the range of release for specific overload value
Referece ambient temperature is 30°C

Standard	Start Status	Test current	Test Request	Tripping time	Ambient Temp
IEC60898	Cold	1.13In	No Trip	T>= 1h(In<=63A)	30°C
				T>=2h(In>63A)	
	Hot	1.45In	Trip	T<1h(In<=63A)	
				T<<2h(In>63A)	
	Cold	2.55In	Trip	1s<t<60s(In<=32A)	
				1s<t<120s(In>32A)	

Screw size	Rated torque	Ultimate torque	National standard	Hard line	Cord or hoop terminal
					
1~25	2.5 Nm	5.1 Nm	2.0 Nm	1-25mm^2	1-16mm^2
32~80	3.5 Nm	5.6 Nm	3.5 Nm	1-35mm^2	1-25mm^2

Detectable wave form

> Type AC ⎓ : For which tripping is ensured for residual sinusoidal alternating currents, whether suddenly applied or slowly rising.

> TypeA ⎓ : For which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether suddenly applied or slowly rising.

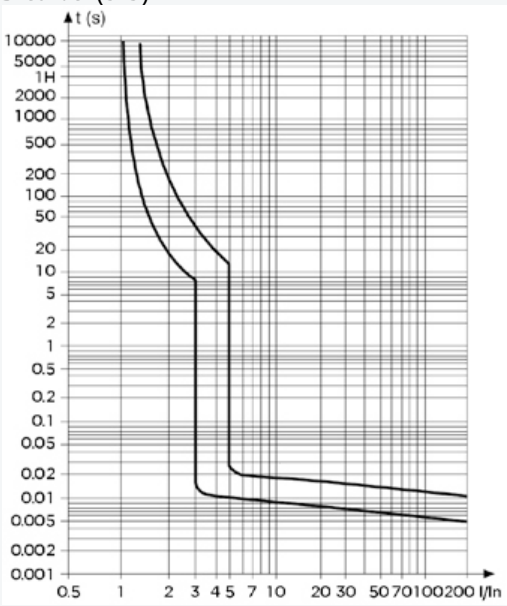
Tripping sensitivity

> 30mA -additional protection against direct contact.

100mA- Co-ordinated with the earth system according to the formula < 50/R, to provide protection against indirect contacts.
300mA- Protection against indirect contact, as well as fire hazard.

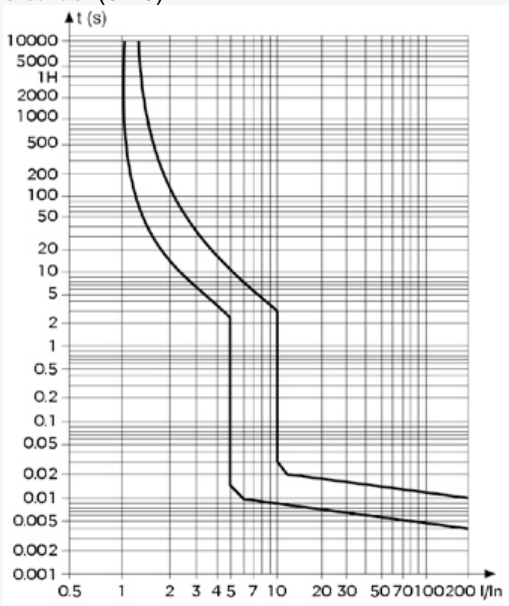
Tripping characteristic curves

B-curve: (3-5) In



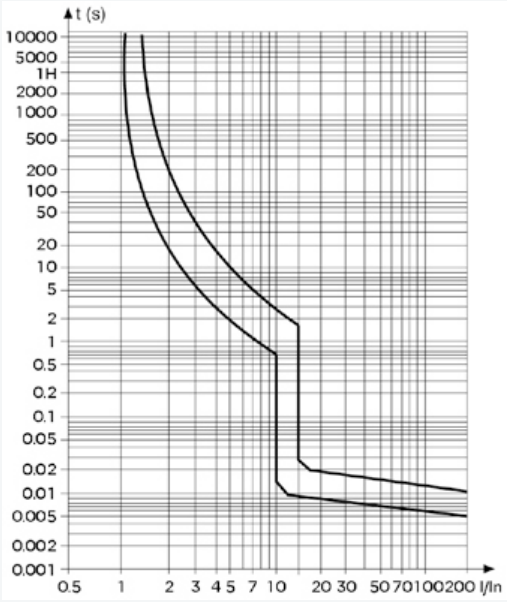
B type trip curve

C-curve: (5-10) In

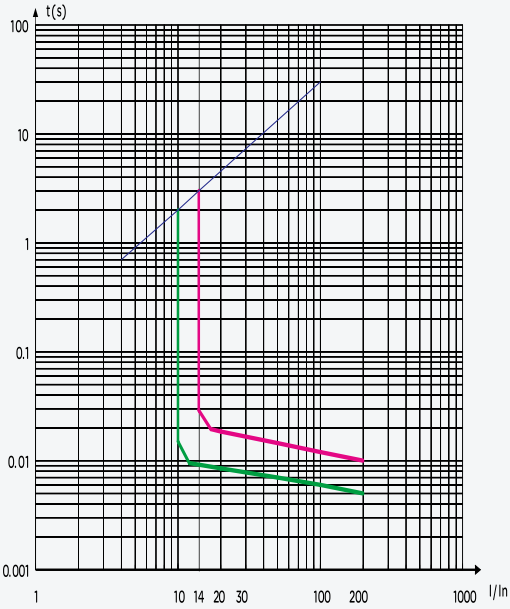


C type trip curve

D-curve: (10-14) In



D type trip curve



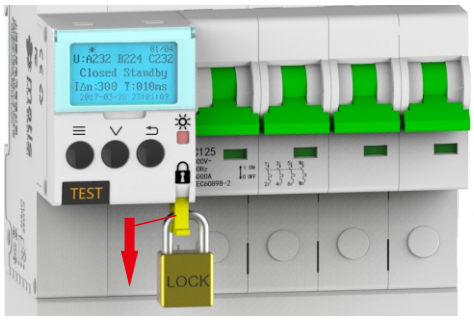
Magnetic trip diagram

Smart RCBO with ARD MT61SR

Installation

> This device must be installed by professional electrician.

> Pull out the safety lock before installation to avoid electric shock.



> Manual pull the handle to OFF, the device should not auto reclose, then, push the handle to ON

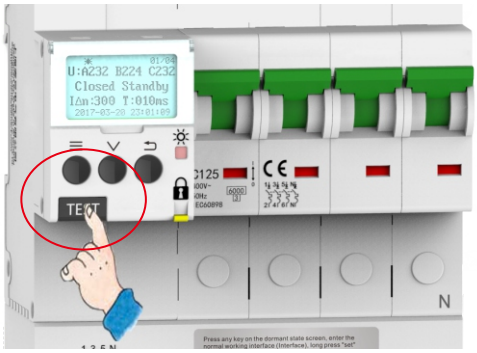
> *Screw tightly all terminal screws*

> *release safety lock to return inside*

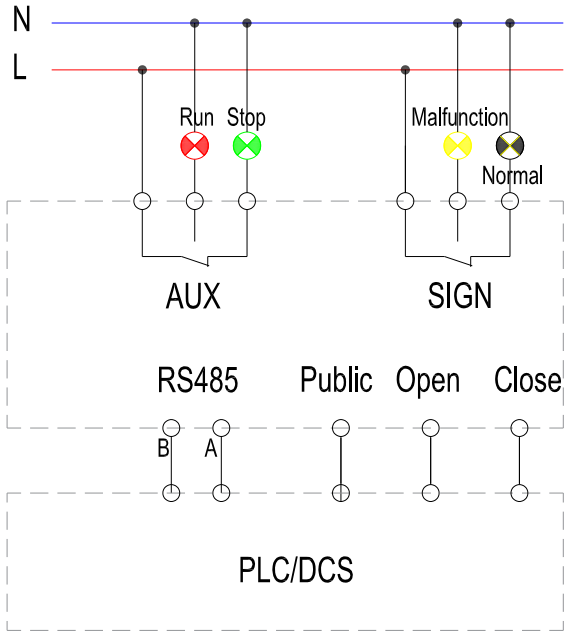
> *Manually switch on the handle once.*

> Screw tightly all terminals, and release to pull in the safety lock. Press and hold return button ⊃ for 3 seconds, the device will start work.

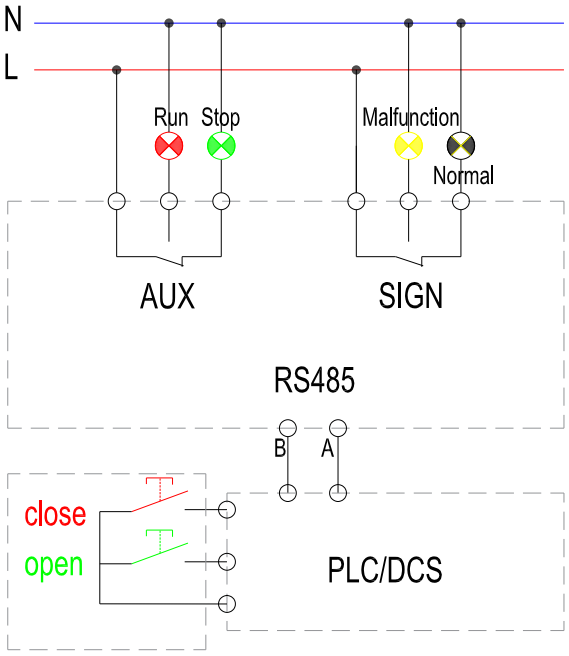
> Press "TEST" earth leakage button, the device will auto reclose after setup time.



Connection Diagram

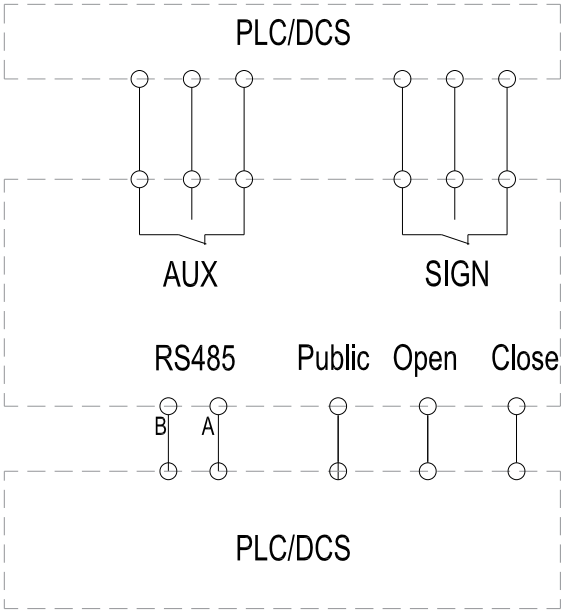


Dry contact, PLC, DCS control and output

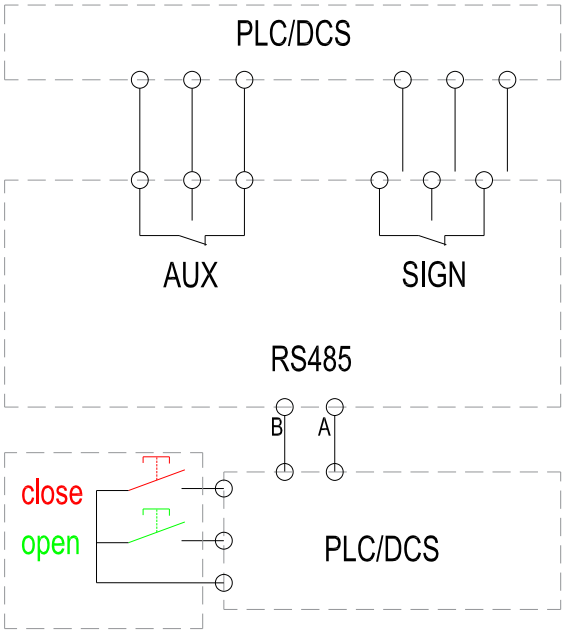


Dry contact, PLC, DCS control and output

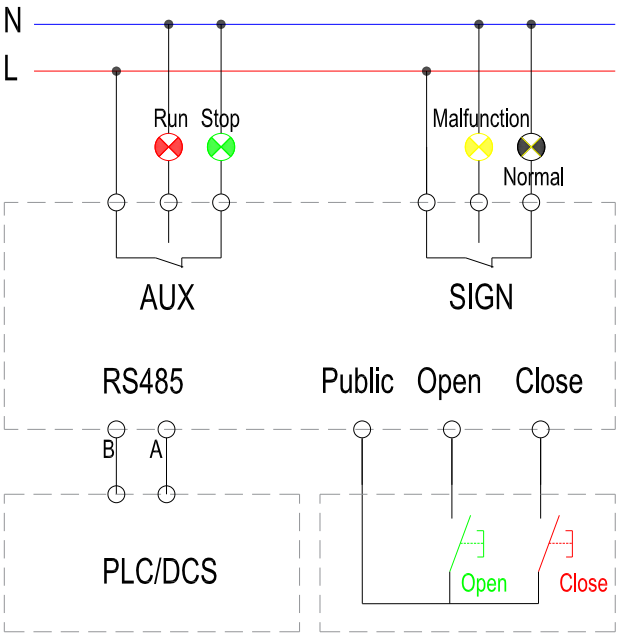
Connection Diagram



Dry contact, PLC, DCS control and output

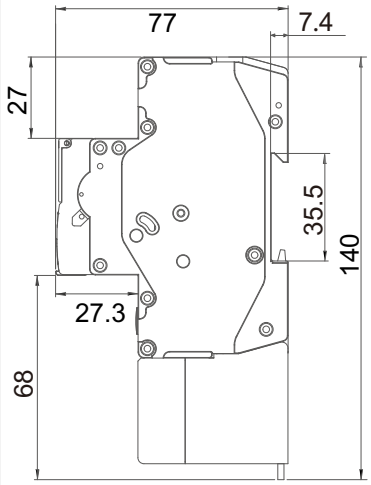


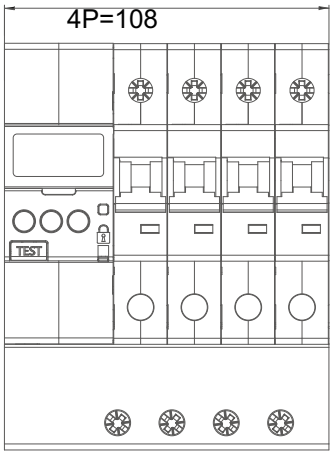
Dry contact, PLC, DCS control and output

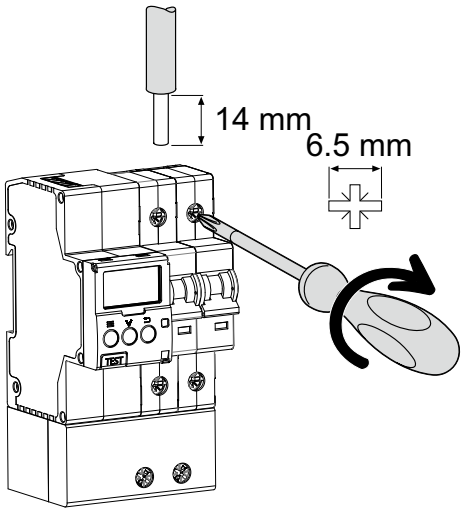


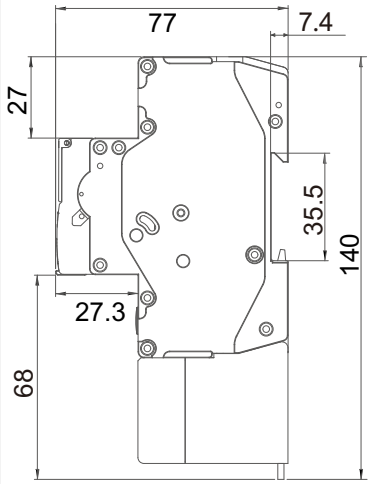
Dry contact control and output

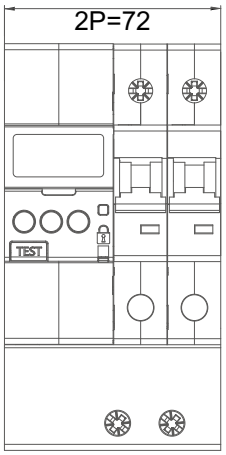
Outline and installation dimensions

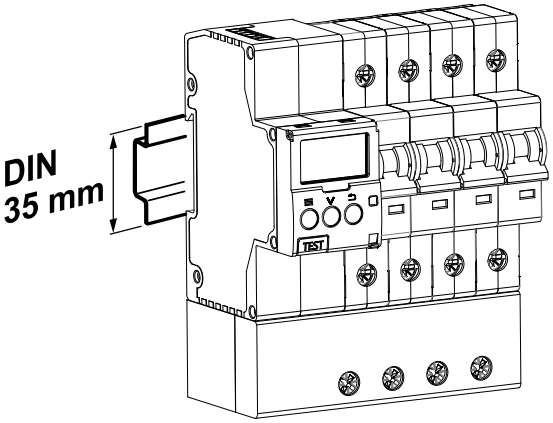




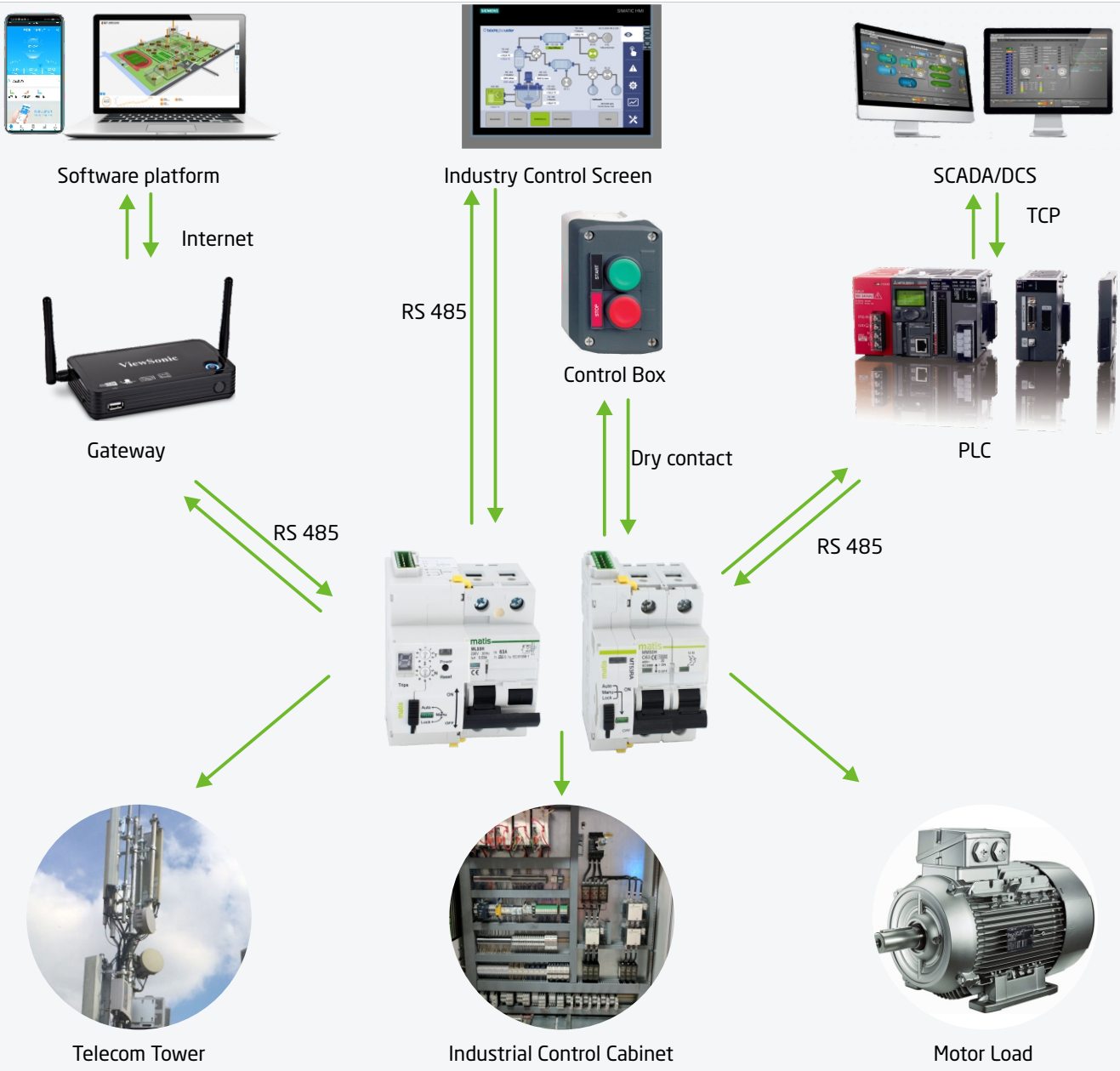








Overview



The MT51&MT53 automatic recloser are designed to automatically reclose the associated protective device after it has tripped.

> The insulation reclosing mode is used in the case of high-sensitivity protection functions, so that the unit is only reclosed when the error that tripped it is resolved.

> The timed reclosing mode is adopted in the case of lower sensitivities in electrical complex installations, in order to guarantee the continuity of the electric supply.

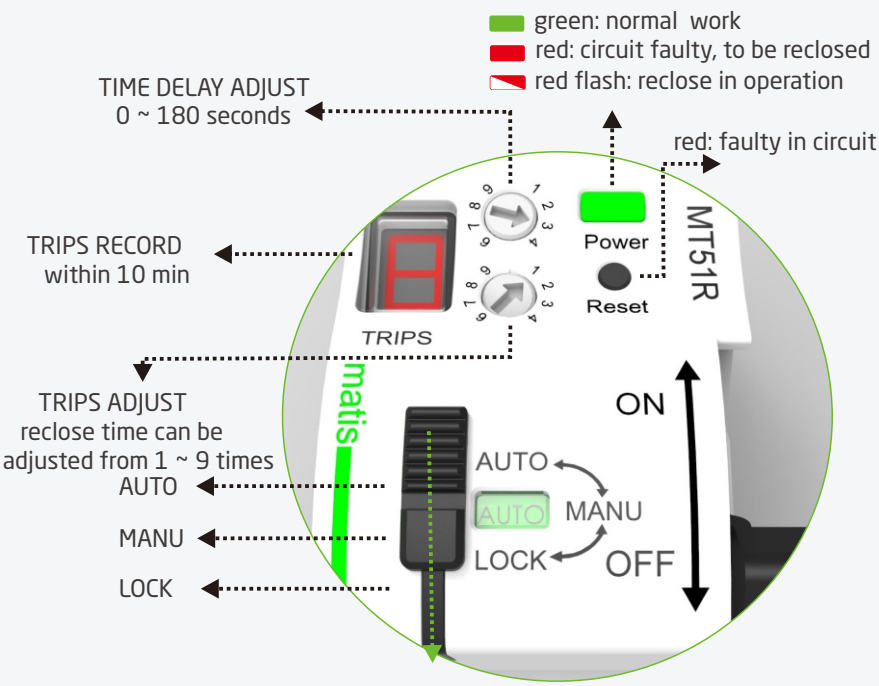
> The unit has a locking system that determines the operation in manual or automatic mode(reclosing system enabled).

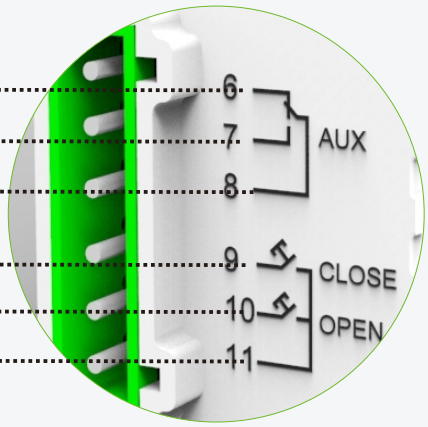
The MT51RA/SA and MT53RA/SA automatic recloser devices are used in conjunction with MCB MM50H,RCBO MR50-32,RCBO50-40, RCCB ML50H.

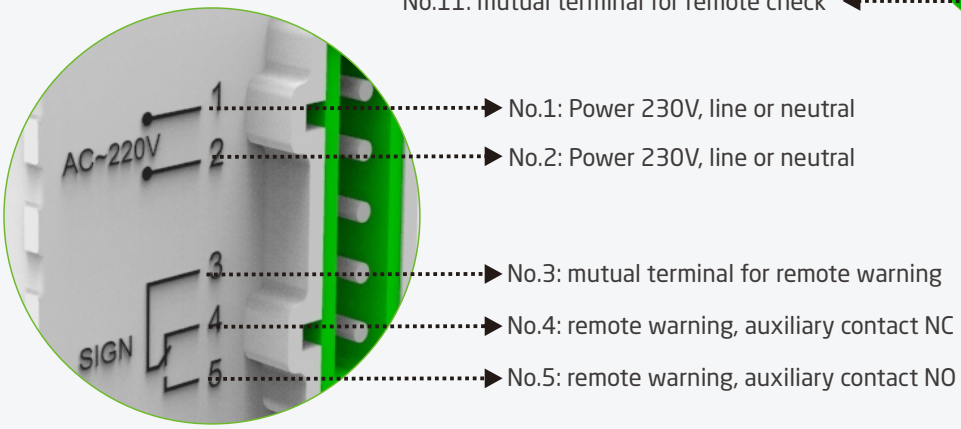
The MT51RB/SB automatic recloser device is used in conjunction with Acti9 range MCB, RCCB, RCBO from Schneider.

Auto Recloser MT51 & MT53

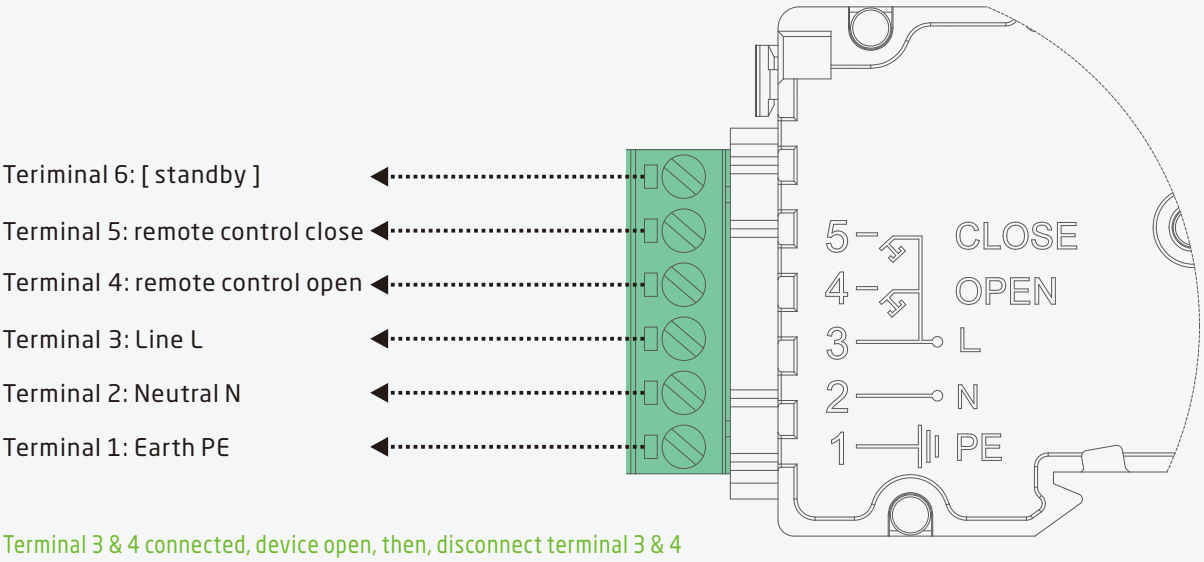
Appearance of MT51



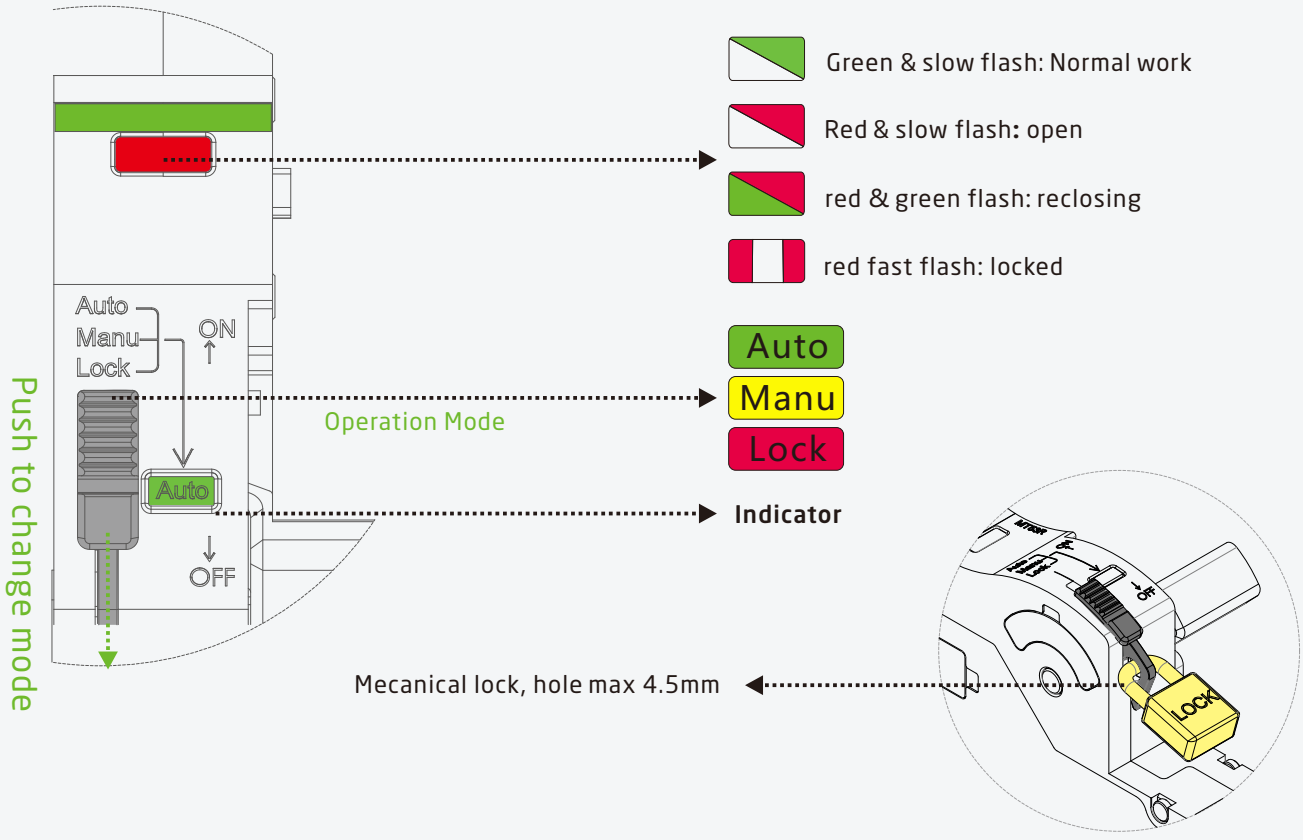




Appearance of MT53



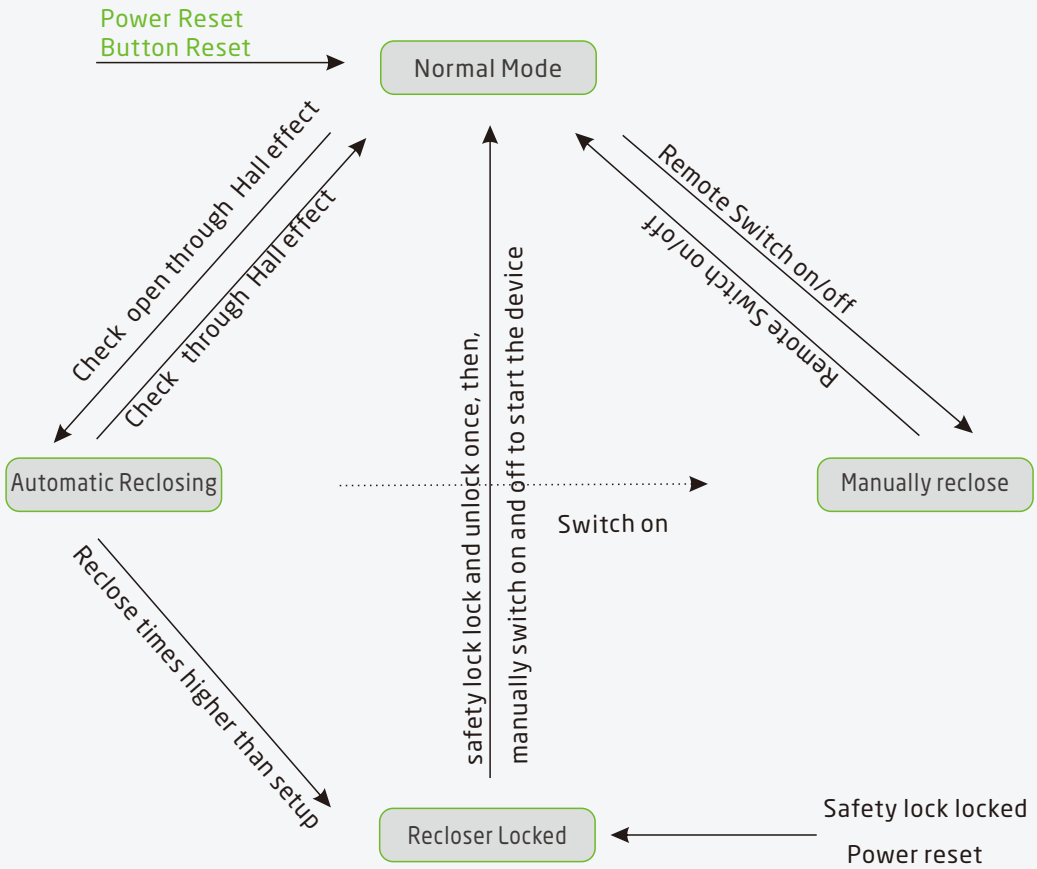
Terminal 3 & 4 connected, device open, then, disconnect terminal 3 & 4
Terminal 3 & 5 connected, device close, then, disconnect terminal 3 & 5



Auto Recloser MT51 & MT53

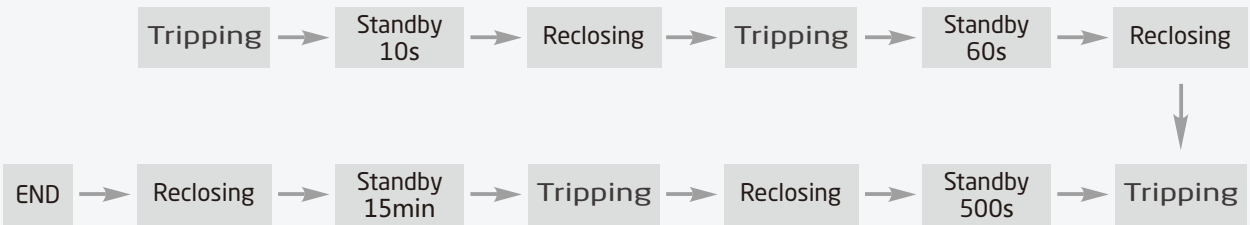
Automatic Reclosing Function

Reclosing diagram for MT51



- Reclosing time and Reclosing times can be set

Reclosing function diagram for MT53



- Trip cause : Fault check includes over-voltage, phase loss, neutral disconnection, short circuit, earth leakage.

Features

Mt51

- Remote reclosing of iC65 MCB, RCBO,RCCB of Acti 9 Range from Schneider and MCB MM50H,RCBO MR50-32, RCBO50-40, RCCB ML50H
- Remote control of iC65 MCB, RCBO,RCCB through PLC or platform with RS485 connection
- Remote control of iC65 MCB, RCBO,RCCB through dry contact connection
- Reclosing times and delay time can be set up and adjusted as per request.
- Reclose itself if there is no faulty, and it may output the signal to remote terminals if there is faulty,
- Padlocking to secure the circuit and assure the safety of people when maintainance
- Together with MCB,RCBO and RCCB, it may offer overload, short circuit and earth leakeage protection.
- Local control via the handle
- Communication: RS 485
- With remote auxiliary contact NO & NC

Mt53

- Remote reclosing of MCB MM50H,RCBO MR50-32, RCBO50-40, RCCB ML50H
  Remote control of MCB, RCBO,RCCB through PLC or platform with RS485 connection
- Remote control of MCB, RCBO,RCCB through dry contact connection
- Reclose itself if there is no faulty, and it may output the signal to remote terminals if there is faulty,Padlocking to secure the circuit and assure the safety of people when maintainance
- Together with MCB,RCBO and RCCB, it may offer overload, short circuit and earth leakeage protection.
  Local control via the handle
- Compact module with 18mm only.
- With remote auxiliary contact NO & NC

Auto Recloser MT51 & MT53

Application

All electrical installations that require full electrical service continuity in the event of unforeseen situations that can trip the RCCB as a result of causes unrelated to the electrical insulation.

Outdoor system

Application Cases

- Highway monitoring power box
- Pollution control stations
- Advertisement billboards
- Telecommunication tower
- Railway Road
- Public lights
- Minging
- Water pump station
- Traffic lights
- Outdoor lighting
- Sporting facilities
- Meteorological stations

Features

- Exposure to atmospheric disturbance
- Difficult accessibility of electrical circuit
- Insulation levels depending on weather conditions (temperature and humidity
- Presence of electronic power supplies
- Extensive damage due to blackout

Example pictures

Railway distribution

Telecom tower

Advertising hoardings

meteorological stations

Application

Indoor systems

Application Cases

- Alarm system protection
- CCTV system protection
- Data processing centers
- Door and automatic gate protection
- Ice-cream shops
- Pumping systems
- Supermarkets
- Access monitoring system protection
- Garages
- Catering
- Industrial plants

Features

- Extensive damage due to blackout
- Need for guaranteed service continuity
- Sensitivity to disturbance induced by mains supply and by atmospheric conditions
- Strong presence of electronic power supplies
- Insulation levels depending on weather and operating conditions

Example pictures

Data processing center

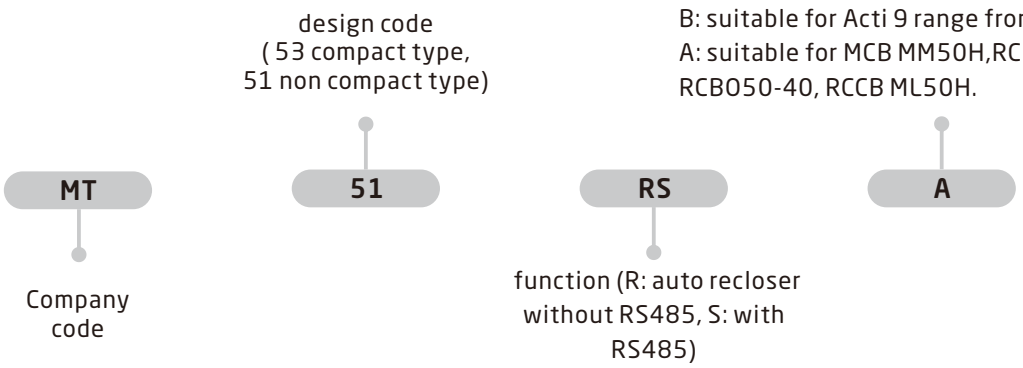
Cold storage

CCTV system protection

refrigerators

Auto Recloser MT51 & MT53

Instruction of Type code



Ordering information

Electrical Features	Model		MT51RB/SB	MT51RA/SA	MT53RA
	Pictures				
	Rated voltage Ue	Vac	230		
	Rated frequency	Hz	50/60		
	Power consumption	VA	3		<1.5
	Standby power	W	0.5		-
	Insulation voltage Ui	Vac	4000V/min		
	Trip time	s	<0.1		<=1.5
	Trips	Times	Reclose adjustable (times): 0,1,2,3, 4, 5, 6, 7, 8, 9		3
	Time delay	s	0, 10, 20, 30, 45, 60, 90, 120, 150, 180 (adjustable)		10,60,300
	Reclosing time	s	-		<=3
	Reset system (ISPDT):		rated current 5A (250VAC) resistant load.		
	Pollution degree		2		
Mechnical features	Width	mm	36		18
	Electrical life	times	10000		10000
	Mechanical life	times	20000		
	Protection degree		IP20		
	Reference temperature for setting of thermal elecment	°C	30		
	Ambient temperature	°C	-25---+55		
	Storage temperature	°C	-40---+70		
Installation	Humidity	°C	95%		
	Terminal connection type		Cable		
	Terminal size top/bottom for cable	mm2	1x25,2x25		
	Tightening torque	N*m	4		
	Mounting		On Din rail En60715(35mm) by means of fast clip device		
	Connection		From top to bottom		
Communication port			Remote auxiliary contacts NO & NC RS485 communication port	Remote auxiliary contacts NO & NC RS485 commumication port	Remote auxiliary contacts NO & NC
Compatiable Device			iC65 MCB, RCBO,RCCB of Acti 9 Range from Schneider	MCB MM50H,RCBO MR50-32, RCBO50-40, RCCB ML50H	

Ordering information

MT51&MT53

Pictures	Number of poles	Type code		Type Code	Weight Unit: g
	Suitable for suitable for Acti 9 range from Schneider	With RS485	MT51SB	2 (36mm)	145
		Without RS485	MT51RB	2 (36mm)	
	suitable for MCB MM50H,RCBO MR50-32, RCBO50-40, RCCB ML50H	With RS485	MT51SA	2 (36mm)	
		Without RS485	MT51RA	2 (36mm)	
		Without RS485	MT53RA	1 (18mm)	97

MT51SA+RCCB ML50H

Pictures	Pole	Current(A)	Type	Residual Current(mA)	Type Code	Numbers of Modules	Weight Unit: g
	2P	40	A	30	MT51SA+ML50H240A30	4 (72mm)	145
		63	A	30	MT51SA+ML50H263A30	4 (72mm)	
		40	AC	30	MT51SA+ML50H240AC30	4 (72mm)	
		63	AC	30	MT51SA+ML50H263AC30	4 (72mm)	
	4P	40	A	30	MT51BRS+ML50H440A30	6 (108mm)	145
		63	A	30	MT51SA+ML50H463A30	6 (108mm)	
		40	AC	30	MT51SA+ML50H440AC30	6(108mm)	
		63	AC	30	MT51SA+ML50H463AC30	6 (108mm)	
	2P	40	B	30	MT51SA+ML50H240B30	4 (72mm)	145
		63	B	30	MT51SA+ML50H263B30	4 (72mm)	
	4P	40	B	30	MT51SA+ML50H440B30	6(108mm)	145
		63	B	30	MT51SA+ML50H463B30	6 (108mm)	

MT51RA+MCB MM50H

Pictures	Pole	Current(A)	Residual Current(mA)	Type Code	Numbers of Modules	Weight Unit: g
	2P	20	C	MT51RA+MM50H2C20	4 (72mm)	
		32	C	MT51RA+MM50H2C20	4 (72mm)	
		63	C	MT51RA+MM50H2C20	4 (72mm)	
	4P	20	C	MT51RA+MM50H4C20	6 (108mm)	
		32	C	MT51RA+MM50H4C20	6 (108mm)	
		63	C	MT51RA+MM50H4C20	6 (108mm)	

Auto Recloser MT51 & MT53

Ordering information

MT51SA+RCCB ML50H

Pictures	Pole	Current(A)	Type	Residual Current(mA)	Type Code	Numbers of Modules	Weight Unit: g
	2P	40	A	30	MT51SA+MR50H240A30	4(72mm)	375
		63	A	30	MT51SA+MR50H263A30	4 (72mm)	
		40	AC	30	MT51SA+MR50H240AC30	4 (72mm)	
		63	AC	30	MT51SA+MR50H263AC30	4(72mm)	
	4P	40	A	30	MT51SA+MR50H440A30	6 (108mm)	503
		63	A	30	MT51SA+MR50H463A30	6 (108mm)	
		40	AC	30	MT51SA+MR50H440AC30	6 (108mm)	
		63	AC	30	MT51SA+MR50H463AC30	6 (108mm)	

MT53RA+RCCB ML50H

Pictures	Pole	Current(A)	Type	Residual Current(mA)	Type Code	Numbers of Modules	Weight Unit: g
	2P	40	A	30	MT53RA+ML50H240A30	4 (72mm)	375
		63	A	30	MT53RA+ML50H263A30	4 (72mm)	
		40	AC	30	MT53RA+ML50H240AC30	4 (72mm)	
		63	AC	30	MT53RA+ML50H263AC30	4 (72mm)	
	4P	40	A	30	MT53RA+ML50H440A30	5 (90mm)	503
		63	A	30	MT53RA+ML50H463A30	5 (90mm)	
		40	AC	30	MT53RA+ML50H440AC30	5 (90mm)	
		63	AC	30	MT53RA+ML50H463AC30	5 (90mm)	
	2P	40	B	30	MT53RA+ML50H240B30	3 (54mm)	375
		63	B	30	MT53RA+ML50H263B30	3 (54mm)	
	4P	40	B	30	MT53RA+ML50H440B30	5 (108mm)	503
		63	B	30	MT53RA+ML50H463B30	5 (108mm)	

Ordering information

MT51SA+MCB MM50H

Pictures	Pole	Residual Current (mA)	Type	Type Code	Numbers of Modules	Weight Unit: g
	1P+N	30	A	MT53RA+MR501N20A30	2(72mm)	210
		30	A	MT53RA+MR501N32A30	2(72mm)	
	1P+N	30	AC	MT53RA+MR501N20AC30	2(72mm)	
		30	AC	MT53RA+MR501N32AC30	2(72mm)	

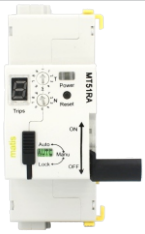
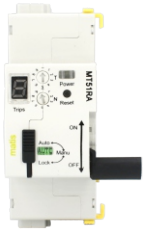
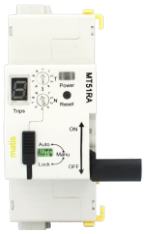
MT53RA+MCB MM50H

Pictures	Pole	Current(A)	Residual Current(mA)	Type Code	Numbers of Modules	Weight Unit: g
	2P	20	C	MT53RA+MM50H2C20	3(54mm)	330
		32	C	MT53RA+MM50H2C32	3 (54mm)	
		63	C	MT53RA+MM50H2C63	3 (54mm)	
	4P	20	C	MT53RA+MM50H4C20	5(90mm)	571
		32	C	MT53RA+MM50H4C32	5(90mm)	
		63	C	MT53RA+MM50H4C63	5(90mm)	

Auto Recloser MT51 & MT53

With Schneider Acti 9 MCB RCCD RCBO

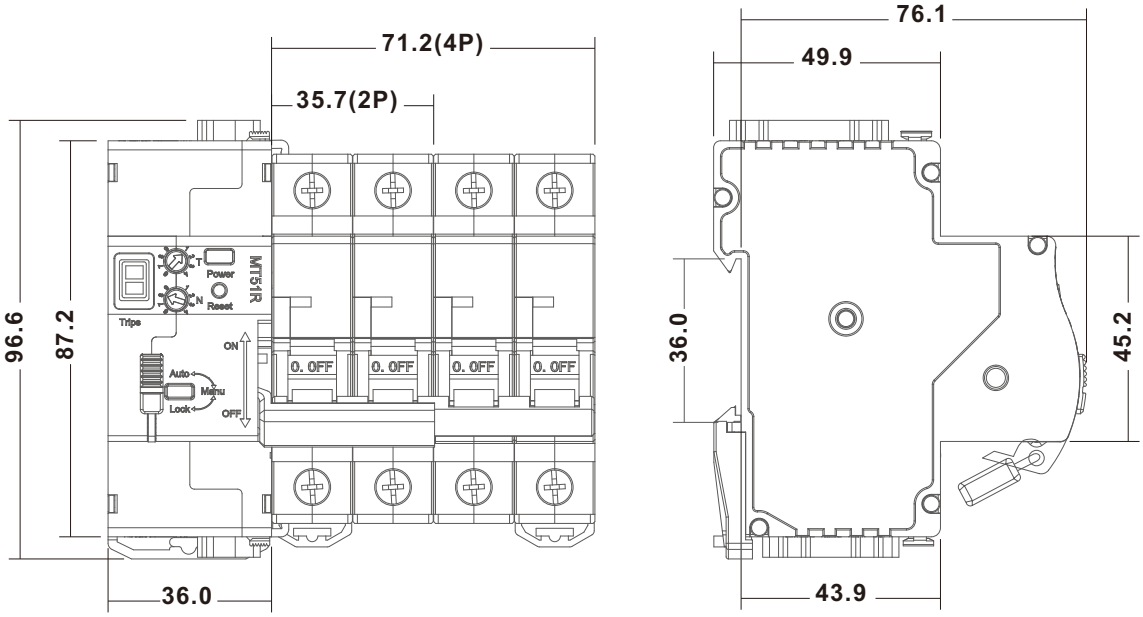
MT51A SB/RB+Acti 9;

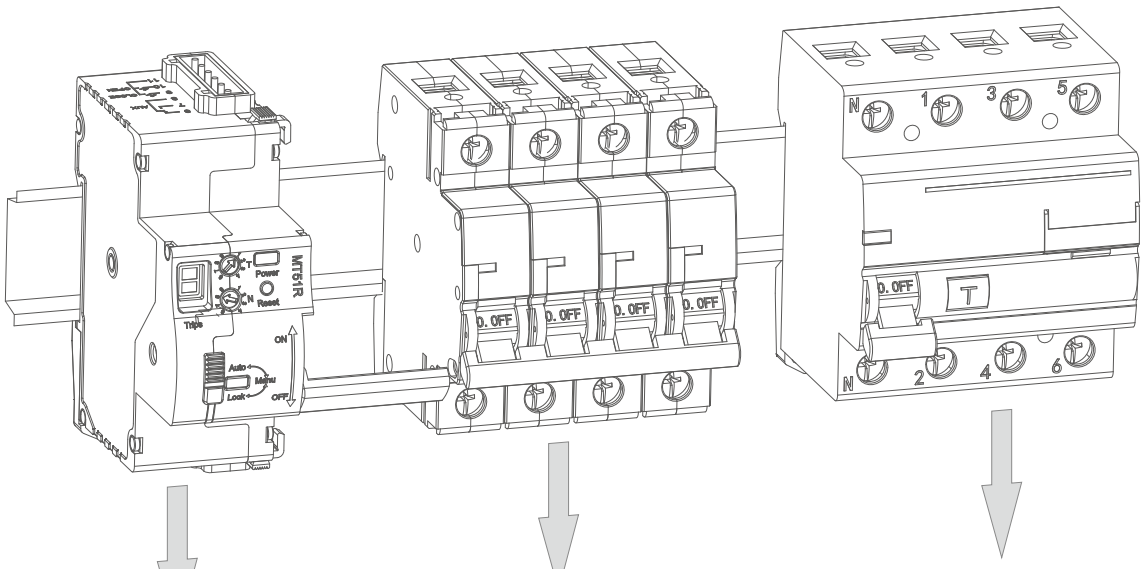
	+		and		
MT51SB/RB		iC65-4P		Vigi iC65 4P	
	+		and		
MT51SB/RB		iC65-2P		Vigi iC65 2P	
	+		and		
MT51SB/RB		iC65-1P		Vigi iC65 1P+N	
	+		and		
MT51SB/RB		iDPN		Vigi for iDPN	
	+		or		
MT51SB/RB		iID-2P		iID-4P	
	+		or		
MT51SB/RB		iDPN Vigi		iDPNa/iDPNN Vigi+	

Outline and installation dimensions

MT51

Dimension (Unit: mm)
Installation: DIN rail, DIN35mm





MT 51 Auto Recloser

MM50H MCB

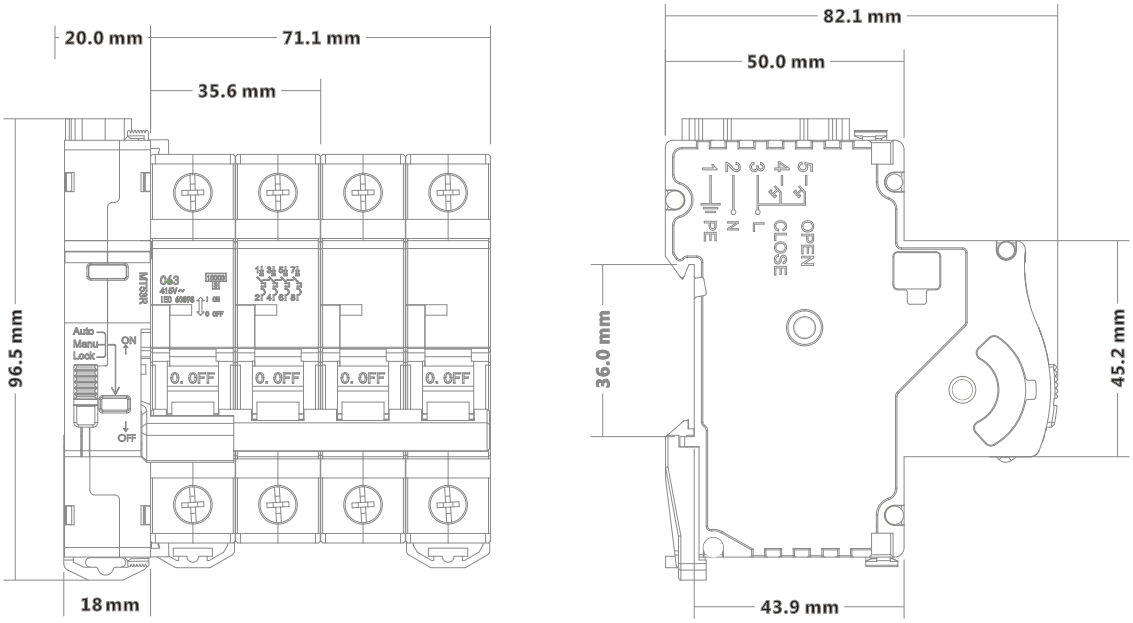
ML50H MRO50H RCD 1P RCBO

Auto Recloser MT51 & MT53

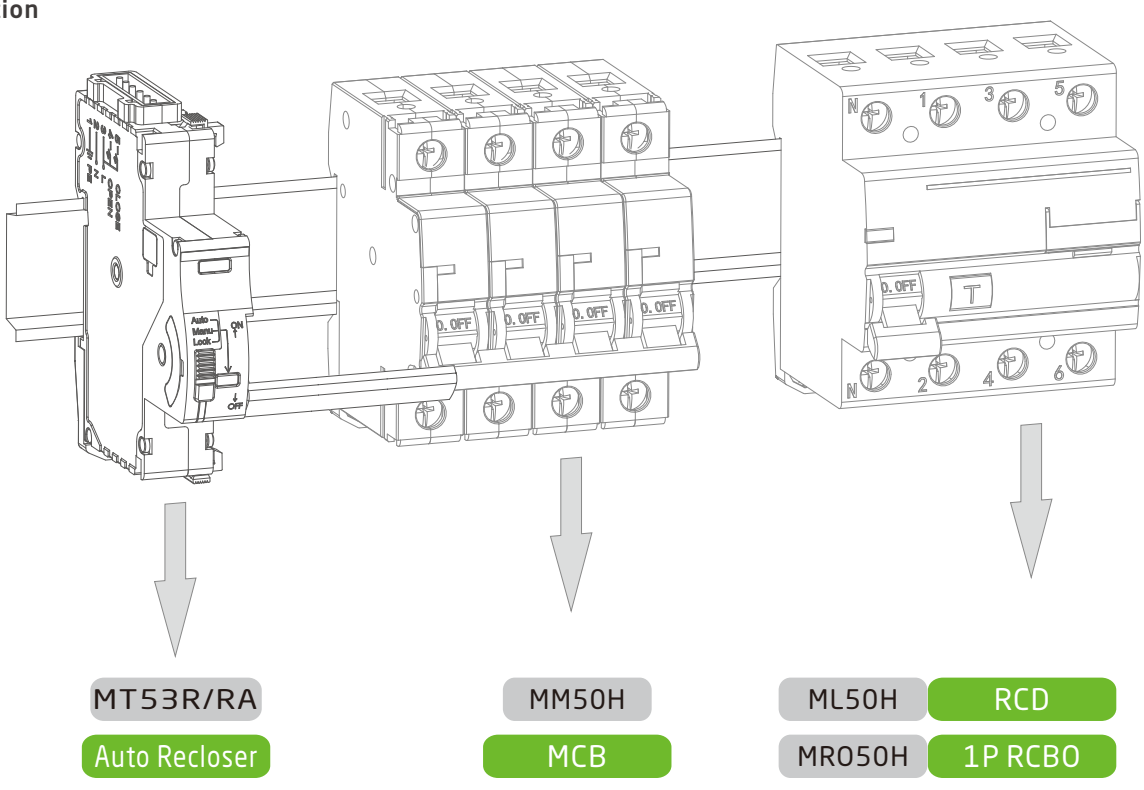
Outline and installation dimensions

MT53

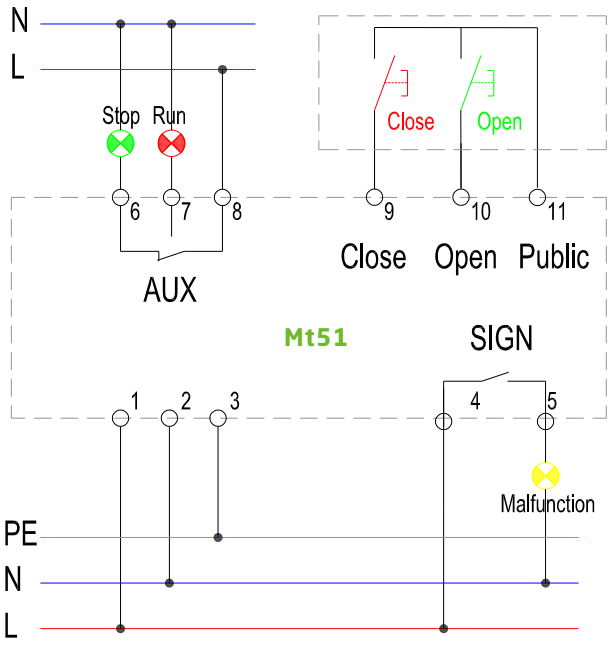
Dimension (Unit: mm)
Installation: DIN rail, DIN35mm



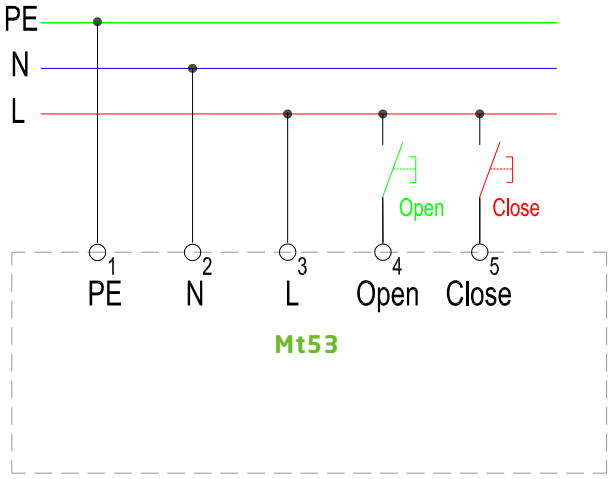
installation



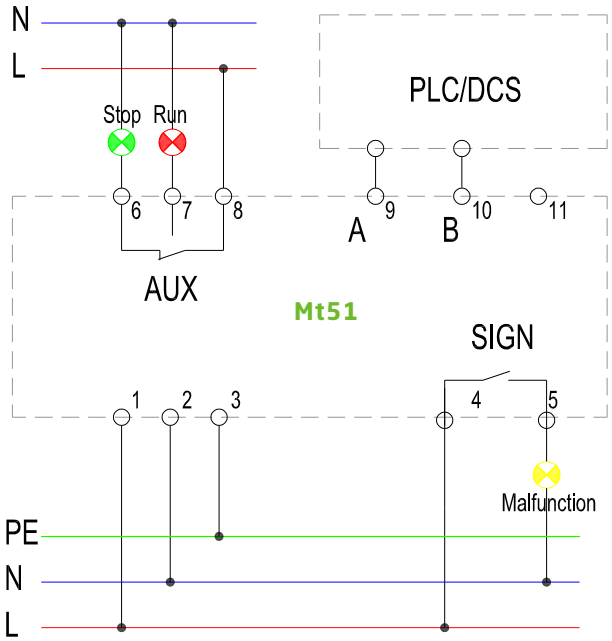
Connection diagram



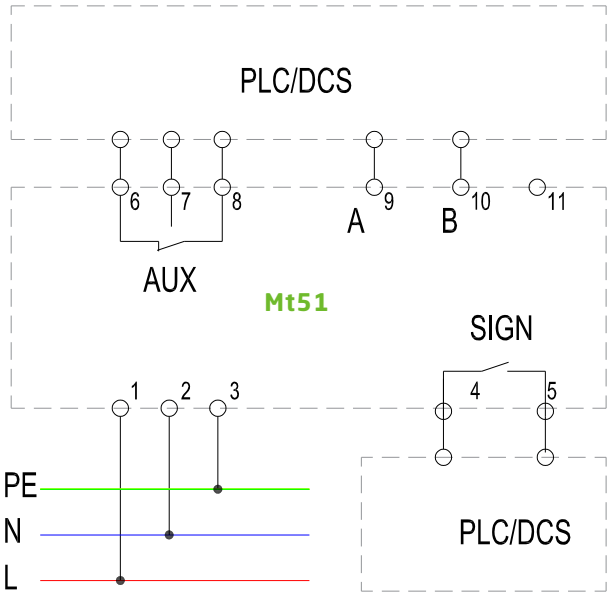
Dry contact
control and output
Mt51



Dry contact
control and output
Mt53



Dry contact, PLC, DCS
control and output
Mt51



PLC, DCS
control and output
Mt51

Photovoltaic & Meter Recloser MT66

Overview

MT66-PV automatic reclosing breaker is designed for distributed grid-connected PV system specially, it can monitor the real-time voltage of power from PV, the device will switch opening with a certain delay time automatically when overvoltage or undervoltage happens in power from PV and reclose automatically when the voltage come to normal status, and trips with a certain delay time automatically when there is no-voltage. The device is not only being used for distributed Grid-connected PV system, but also used for residential and commercial buildling as overvoltage and undervoltage protector.

MT66-PM automatic reclosing breaker is designed for prepaid power meter as external breaker with communication and remote control. The breaker may be closed or opened through power meter management system according to the electricity account status of customers. If the eletricity account is less than a certain amount, the utility will switch off the breaker and cut power remotely.

Features

MT66PV/PM

- Minimum space requirement: Small size, the control module is just 18mm
- Muli-functions: auto-opening in overvoltage, auto-closing in undervoltage, auto-closing in no-voltage,
- auto-reclosing in normal voltage and remote control High action time: Closing time is less than 2 second,
- opening time is less than 0.6 second
- Very simple installation: All devices are mounted in 35mm Rail very easily.
- High Life: The mechanical life reach 20000 times
- High current: there are two frames and the rated current is up to 125A.
- High reliability: It is driven internally and simultaneously with full reliability and long life.
- Easy wiring: Power supplied internally and wiring connection is completely the same as tranditional MCB.

Control features for MT66-PV

- This device include two control modes: auto-control mode and manual-control mode. It may be setup in the device like above picture.
- Auto mode: Auto-opening when overvoltage, undervoltage and no-voltage happens and auto-reclosing when power comes to normal status.
- Manual mode:Auto-opening when overlotage and undervoltage happens. There is auto actions and it need manual control when no-voltage happens and power comes to normal status.

When overvoltage, undervoltage or no voltage happens, the indicator in the front panel of device has different color, please check the different meaning of indicator color in the following table:

Indicator color	Fault cause	Voltage Range
■	Normal open: Undervoltage	One phase voltage range is 45-175V at least
	Flash: phase loss	One phase voltage range is 0-44V (only for three phase four wires breaker)
■	Normal open: normal voltage	Voltage is 175-290V
■	Normal open: Overvoltage	One phase voltage is more than 290V
■	Normal open: Overvoltage and undervoltage	Overvoltage and undervoltage occurs at the same time (just for three phase four wires breaker)
	Flash:overvoltage and phase loss	Overvoltage and no-voltage occurs at the same time (just for three phase four wires breaker)

The device analyses the voltage and makes control action based on the following requirements :

Number	Power voltage from PV	Initial status	Status after action		Continuous holding time of voltage statue
			Auto-mode	Manual-mode	
1	185V<=U<=285V	open	Close	open	10s
2	175V<=U<=290V	close	close	close	keeping initial status
3	U<175V	close	open	open	10s
4	U<185V	open	open	open	keeping initial status
5	U>290V	close	open	open	10s
6	U>285V	open	open	open	keeping initial status
7	U<45V(no voltage)	close	open	close	10s
8	Loss phase (just for three phase and four wires)	open	open	open	keeping initial status
9	Loss phase (just for three phase and four wires)	close	close	close	10s

Photovoltaic & Meter Recloser MT66

Control features for MT66-PM

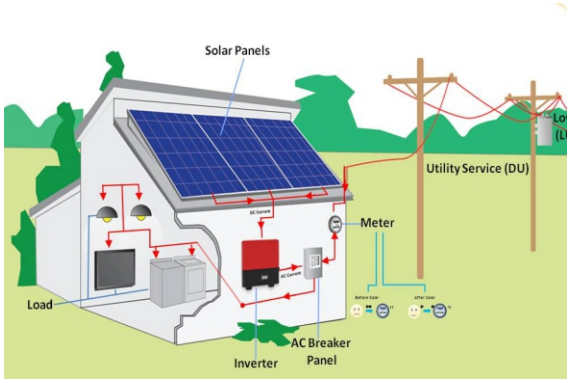
- The control unit of MT66-PM gets power from control signal wire and get power from line in short time only when breaker closing or opening happens. After closing or opening, the breaker is in the status of low power consumption.
- The feedback signal voltage is 220V, when breaker is on status of closing, the feedback voltage is 220v, and when the breaker is on status of opening, there is no feedback singal in the feedback terminal.
- The feedback signal of single phase breaker gets power from phase line and the feedback signal of three phase breaker get power from any phase line, so it can work normally when any phase loss happens.
- This device include two control modes: remote auto-control mode and manual-control mode. It may be setup in the device like above picture.
- There is a red control signal indicator in front panel of breaker, when the control signal is 0V, the indicator is close and we will know the status of pre-paid meter.

The device makes control action based on the following requirements :

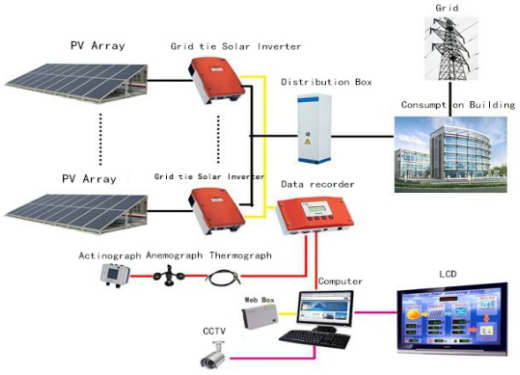
Number	Phase voltage	Control signal wire	Initial status	Status after action	Remark
1	AC220V	0V-AC220V	open	close	Receiving closing signal (when control signal wire voltage changed to 220V from 0V)
2	AC220V	AC220V	close	open	Manual open
3	AC220V	AC220V	open	close	Manual close
4	AC220V	AC220V-0V	close	open	Receiving opening signal (when control signal wire voltage changed to 220V from 0V)
5	AC220V	AC220V-0V	open	open	Receiving opening signal (when control signal wire voltage changed to 220V from 0V)
6	AC220V	0V	open	open	0v control signal wire, it is not allowed to make manual-closing
7	AC220V-0 0-AC220V	AC220V	close	close	When powering on after powering cut, the breaker keep in initial status of closing, it is not allowed to reclose after auto-opening
8	AC220V-0 0-AC220V	AC220V	open	open	When powering on after powering cut, the breaker keep in initial status of opening, it is not allowed to make auto-reclose or open after auto-close
9	/	/	open	open	Keeping initial status when power cut
10	/	/	close	close	Keeping initial status when power cut

Application

MT66-PV is mainly designed for distributed grid-connected PV system specially , it make control based on votlage status of power from PV, and it can be used as over-under voltage protector.

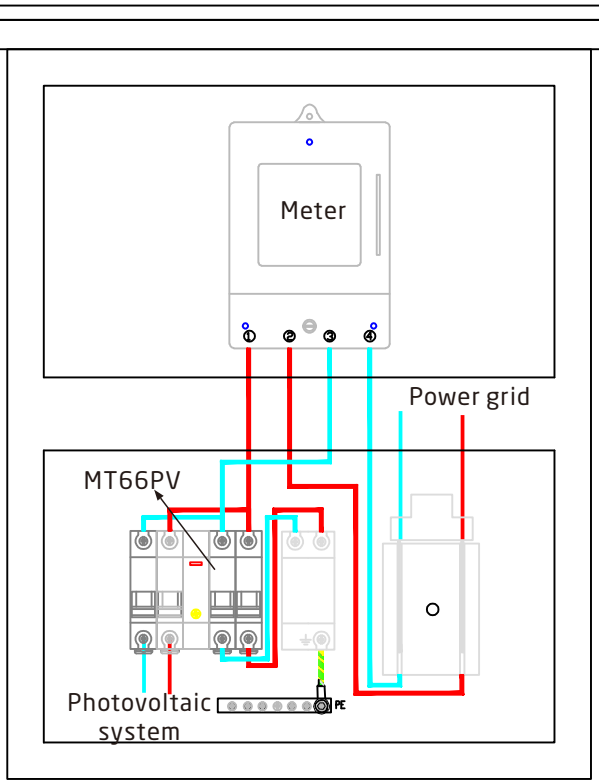


Distributed grid-connected PV system

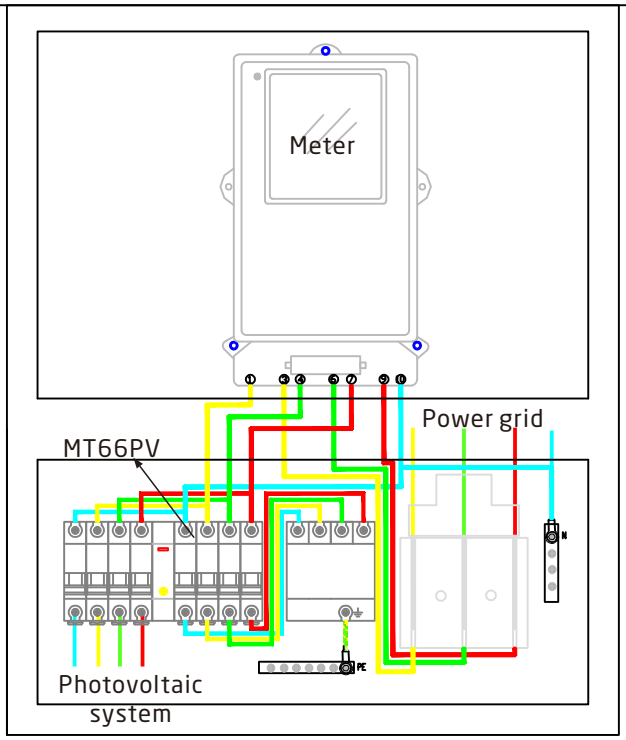


Commercial and residential building as overvoltage and undervoltage protector

MT66-PM is only designed for working with prepaid meter for smart meter control system



Single-phase grid-connected power distribution cabinet



Three-phase grid-connected power distribution cabinet

Photovoltaic & Meter Recloser MT66

Instruction of Type code

General Appreance

	series code		Frame current (80A, 125A)		curve (C ,D)	
MT	66	PV/PM	80	S/T	C	A
Company code		PV: Being used for PV system, PM: besing used for Smart meter control system		S:single phase two wires, T:three phases four wires		Rated current (40,50,63,80,100,125A)

Technical Parameter

	Picture			
	Standards:		IEC60898, GB10963.1	
	Approvals:		CCC,CE	
Electrical Features	Rated voltage Ue	Vac	230	400
	Frame Currem Inm	A	80,125	80,125
	Rated current In	A	40,50,63,80,100,125	
	Rated frequency	Hz	50/60	
	Rated insulation voltage Ui	Vac	500	500
	Rated impulse withstand voltage (1.2/50) Uimp	A	2500	
	Rated Breaking capacity acc.to IEC60899 Icn	A	6000	
	Triping Characteristic		C (5-10In)	D (10-14In)
	Pollution degreee		2	
Mechnical features	Width	mm	54	90
	Electrical life	times	20000	20000
	Mechanical life	times	6000	6000
	Protection degree		Ip20	
	Reference temperature for setting of thermal elecment	.C	30	
	Ambient temerature	.C	-25---+55	
	Storage temperation	.C	-40---+70	
	Humidity	.C	95%	
Electrical Features	Terminal connection type		Cable	
	Terminal size top/bottom for cable	mm2	1x25,2x25	
	Tightening torque	N*m	4	
	Mounting		On Din rail En60715(35mm) by means of fast clip device	
	Connection		From top to bottom	
Electrical Features			Dry contact	

Ordering information

For distributed grid-connected PV system

Pictures	Pole	Frame Current(A)	Rated current (A)	Curve	Type Code	Numbers of Modules	Weight Unit: g
	2P	80	40	C	MT66-PV80SC40	54	
		80	50	C	MT66-PV80SC50	54	
		80	63	C	MT66-PV80SC63	54	
		80	80	C	MT66-PV80SC80	54	
		125	80	C	MT66-PV125SC80	54	
		125	100	C	MT66-PV125SC100	54	
		125	125	C	MT66-PV125SC125	54	
	2P	80	40	D	MT66-PV80SD40	54	
		80	50	D	MT66-PV80SD50	54	
		80	63	D	MT66-PV80SD63	54	
		80	80	D	MT66-PV80SD80	54	
		125	80	D	MT66-PV125SD80	54	
		125	100	D	MT66-PV125SD100	54	
		125	125	D	MT66-PV125SD125	54	
	4p	80	40	C	MT66-PV80TC40	90	
		80	50	C	MT66-PV80TC50	90	
		80	63	C	MT66-PV80TC63	90	
		80	80	C	MT66-PV80TC80	90	
		125	80	C	MT66-PV125TC80	90	
		125	100	C	MT66-PV125TC100	90	
		125	125	C	MT66-PV125TC125	90	
	4P	80	40	D	MT66-PV80TD40	90	
		80	50	D	MT66-PV80TD50	90	
		80	63	D	MT66-PV80TD63	90	
		80	80	D	MT66-PV80TD80	90	
		125	80	D	MT66-PV125TD80	90	
		125	100	D	MT66-PV125TD100	90	
		125	125	D	MT66-PV125TD125	90	

For working with prepaid meter for smart meter control t system

Pictures	Pole	Frame Current(A)	Rated current (A)	Curve	Type Code	Numbers of Modules	Weight Unit: g
	2P	80	40	C	MT66-PM80SC40	54	
		80	50	C	MT66-PM80SC50	54	
		80	63	C	MT66-PM80SC63	54	
		80	80	C	MT66-PM80SC80	54	
		125	80	C	MT66-PM125SC80	54	
		125	100	C	MT66-PM125SC100	54	
		125	125	C	MT66-PM125SC125	54	
	2P	80	40	D	MT66-PM80SD40	54	
		80	50	D	MT66-PM80SD50	54	
		80	63	D	MT66-PM80SD63	54	
		80	80	D	MT66-PM80SD80	54	
		125	80	D	MT66-PM125SD80	54	
		125	100	D	MT66-PM125SD100	54	
		125	125	D	MT66-PM125SD125	54	

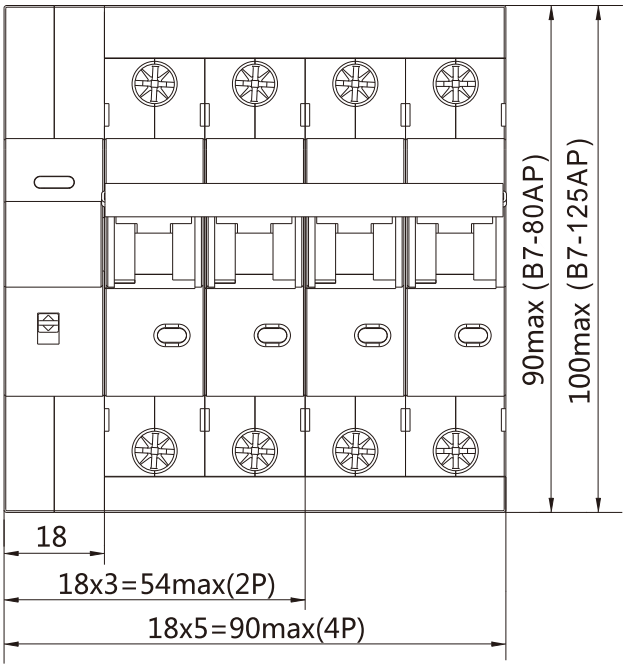
Photovoltaic & Meter Recloser MT66

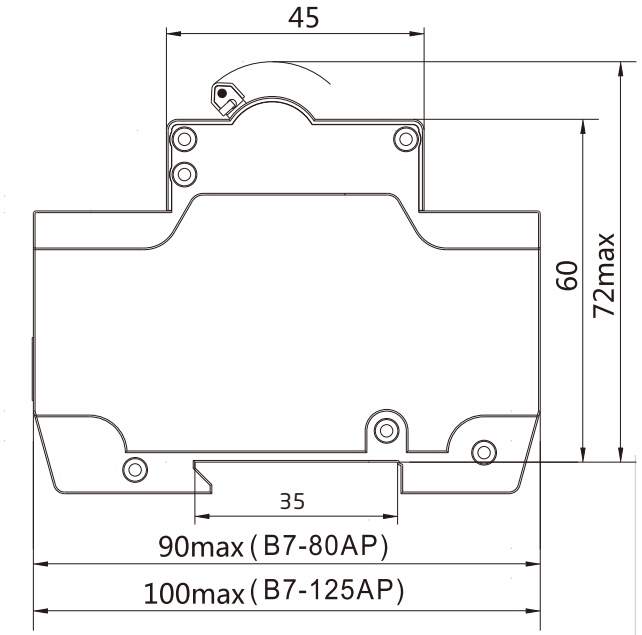
Ordering information

For working with prepaid meter for smart meter control t system

Pictures	Pole	Frame Current(A)	Rated current (A)	Curve	Type Code	Numbers of Modules	Weight Unit: g
	4p	80	40	C	MT66-PM80TC40	90	
		80	50	C	MT66-PM80TC50	90	
		80	63	C	MT66-PM80TC63	90	
		80	80	C	MT66-PM80TC80	90	
		125	80	C	MT66-PM125TC80	90	
		125	100	C	MT66-PM125TC100	90	
		125	125	C	MT66-PM125TC125	90	
	4P	80	40	D	MT66-PM80TD40	90	
		80	50	D	MT66-PM80TD50	90	
		80	63	D	MT66-PM80TD63	90	
		80	80	D	MT66-PM80TD80	90	
		125	80	D	MT66-PM125TD80	90	
		125	100	D	MT66-PM125TD100	90	
		125	125	D	MT66-PM125TD125	90	

Outline and installation dimensions





Note

Note

matismart

MT7 Smart Breaker
iOS

MT7 Smart Breaker
Android

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