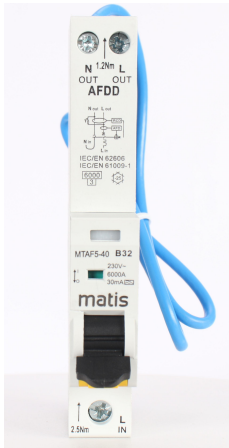


MTAF5-40
RCBO+AFDD
Arc Fault Detection Device

RCBO MTA5-40 With Arc Fault Protective

----- Standard_ IEC62606


Protection

- ① Arc Fault Protection
- ② Overload Protection
- ③ Short-Circuit Protection
- ④ Earth-Leakage Protection

Technical Data

Electrical Features	Mode	Electronic
	Type	A
	Rated current I_n	6,10,16,20,25,32,40A
	Poles	1P+N
	Rated voltage U_e	230V~
	Insulation voltage U_i	400V
	Rated frequency	50Hz
	Rated residual operating current ($I_{\Delta n}$)	30mA
	Break time under $I_{\Delta n}$	$\leq 0.1s$
	Rated breaking capacity	6,000A
	Energy limiting class	3
	Rated impulse with stand voltage (1.5/50) U_{imp}	4,000V
	Dielectric test voltage at ind.Freq.for 1min	2kV
	Pollution degree	2
Thermo-magnetic release characteristic	B	
Mechanical Features	Electrical life	4,000Cycles
	Mechanical life	10,000Cycles
	Contact position indicator	Yes
	Protection degree	IP 40 in Sentry MCU & Enclosures
	Reference temperature for setting of thermal element	30°C
	Ambient temperature (with daily average $\leq 35^\circ\text{C}$)	$-5^\circ\text{C} \sim +40^\circ\text{C}$
	Storage temperature	$-25^\circ\text{C} \sim +55^\circ\text{C}$
Installation	Terminal connection type	Cable/Pin-type busbar
	Tightening torque for L-LINE	2.5Nm^2
	Tightening torque for L&N-LOAD	1.2Nm^2
	Mounting	On DIN rail EN60715(35mm) by means of fast clip device
	Connection	Power supply from button

MTAF5-40

RCBO+MTAF

Arc Fault Detection Device

RCBO MTA5-40 With Arc Fault Protective

Standard_ IEC62606

Characteristics

Tripping Current Range	Type	Lagging Angle	Tripping current I _Δ /A	
			I _{Δn} > 0.01A	I _{Δn} ≤ 0.01A
A		0°	0.35I _{Δn} ≤ I _Δ ≤ 1.4I _{Δn}	0.35I _{Δn} ≤ I _Δ ≤ 2I _{Δn}
		90°	0.25I _{Δn} ≤ I _Δ ≤ 1.4I _{Δn}	0.25I _{Δn} ≤ I _Δ ≤ 2I _{Δn}
		135°	0.11I _{Δn} ≤ I _Δ ≤ 1.4I _{Δn}	0.11I _{Δn} ≤ I _Δ ≤ 2I _{Δn}

Characteristics

As per IEC60898	Thermal Tripping			Magnetic Tripping		
	No tripping current	Tripping current I ₂	Time Limits t	Hold current I ₄	Trip current I ₅	Time Limits t
BCurve	1.13×I _N	≥ 1h	3× I _N	≥ 0.1s		
	1.45×I _N	< 1h	5× I _N	< 0.1s		
CCurve	1.13×I _N	≥ 1h	5× I _N	≥ 0.1s		
	1.45×I _N	< 1h	10× I _N	< 0.1s		

The rated voltage is 230V
 The limit of action discrimination as follows:

Test arc current (Valid values)	3 A	6A	13A	20A	40A	63 A
Maximum section time	1s	0.5s	0.25s	0.15s	0.12s	0.12s

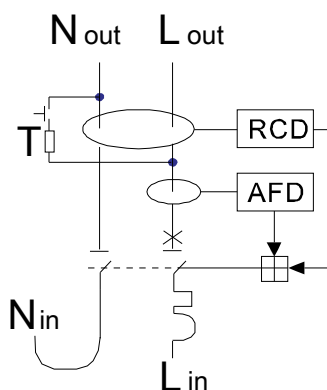
The test arc current is the expected current in the test circuit

The small arc current below 63A runs down the limit value of the ADD5-40

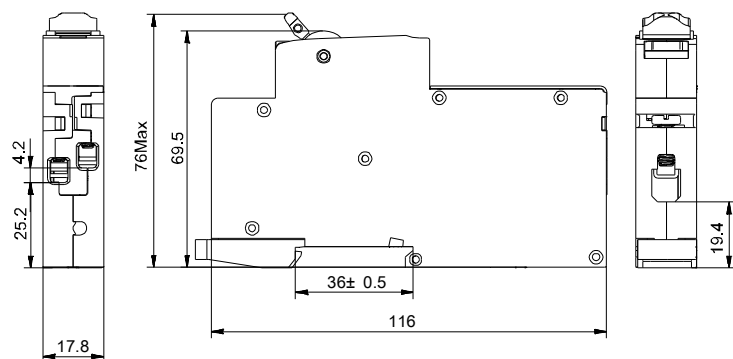
LED Warnings

- With power connected and the switch in the off position, The LED are not lit. when you move the switch to the on position, the green LED is on, which shows the product is working.
- Test button—RCBO should be tested every month by pushing the Test button
- Arc fault ---If the product trips, the causes are either overload or Arc fault. Disconnect any equipment on this circuit and switch the device on. If the red LED flashes 5 or 6 times that indicates an arc fault. If the fault is still present the device will trip, DO NOT Reset the device again. If the red LED doesn't flash, that indicates the problem is an overload or short circuit. Switch the device to the OFF position and consult a qualified Electrician.
- If the device trips for any reason, please consult a qualified electrician.

Circuit Diagram



Overall and Installation Dimension(mm)



MTAF1-32 Manual Instruction

Arc Fault Detection Device



Shanghai Matis Electric Co.,Ltd.

MTAF1-32 Arc fault Detection Device

Product overview

MTAF1-32 Arc fault Detection Devices consist of a small circuit breaker, tripping mechanism, and an arc detection module. MTAF1-32 Arc Fault Detection Devices have the function of short circuit protection, overload protection, and arc fault protection. It detects the arc fault through the chip detection program, and if it is confirmed as the fault arc, it will disconnect the power supply and provide arc fault protection. According to statistics, the proportion of total fire in electric fire is increasing year by year. In addition, seventy percent of electrical fires are caused by faulty arcs. MTAF1-32 Arc Fault Protection Devices can effectively avoid fire caused by fault arcs.

Product usage

MTAF1-32 Arc fault Detection Devices are widely used in rated current 32A and the following household and similar communication circuits.

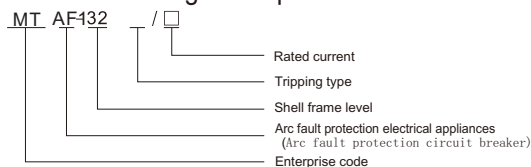
Arc fault protection unit of MTAF1-32 Arc fault Detection Devices can detect and identify series arc faults, parallel arc faults, and ground arc faults. For example: the old and damaged insulation layer of the line, wet air can cause arc fault phenomena. When Arc fault Detection Devices detect that there is an arc fault, it will be automatically tripped and cut off the power supply.

- 1 -

Main technical parameters of the product

- 1) Rated working voltage : AC 230V
- 2) Rated working frequency: 50Hz±2%
- 3) Rated insulation voltage: 400V
- 4) Rated impact withstand voltage: 4kV
- 5) Rated current : 6A, 10A, 16A, 20A, 25A, 32A.
- 6) Number of poles: 1P+N
- 7) Type of Instantaneous trip: B, C
- 8) Short circuit capability: 6kA

Model and meaning of the product.



Product classification

- ◆ Rated current (A) 6A 10A 16A 20A 25A 32A
- ◆ Type of Instantaneous trip: B, C

Normal operating condition

The surrounding temperature is -5 or +40
Average daily maximum temperature: +35°C. The elevation is not more than 2000m. Relative humidity: maximum 50% at 40 °C, 90% at 20°C.

- 2 -

Product characteristics

MTAF1-32 Arc fault Detection Device has the function of arc fault protection, overload protection, and short circuit protection.

The rated voltage is 230V. The limit of action discrimination is as follows:

Test arc current (Valid values)	3A	6A	13A	20A	40A	63A
Maximum section time	1s	0.5s	0.25s	0.15s	0.12s	0.12s
The test arc current is the expected current in the test circuit.						

Table 1

The small arc current below 63A runs down the limit value of the MTAF1-32

MTAF1-32 arc fault Detection Device has the overcurrent protection function of arc fault protection appliance. When the circuit current exceeds the rated current of the product, the MTAF1-32 bending deformation of the thermal tripping system drives the main contact from the closed position to the disconnection position so that the current is switched off. The characteristics of overcurrent trip of MTAF1-32 arc fault protection appliance is shown in table 3.

- 3 -

No.	Tripping device type	Rated current of the tripper. (InA)	Initial state	Test current xin	Tripping time (t)	The expected results	Remark	
1	B,C	≤ 32	Cold	1.13	≤ 1h	No Tripping	-	
2			After the first experiment.	1.45	< 1h	Tripping	The current rises steadily to the regular value in the 5s.	
3				2.55	1s < t < 60s	Tripping	-	
4	B		Cold		3	≤ 0.1s	No Tripping	Turn off the auxiliary switch turn on the current
5					5	< 0.1s	Tripping	Turn off the auxiliary switch turn on the current
6	C		Cold		5	≤ 0.1s	No Tripping	Turn off the auxiliary switch turn on the current
7					10	< 0.1s	Tripping	Turn off the auxiliary switch turn on the current

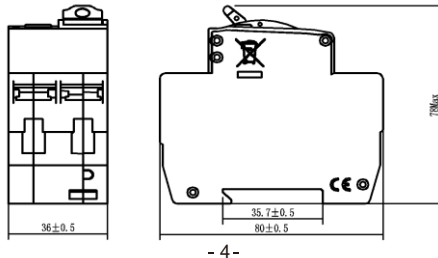
Cold state: refers to the temperature of the reference calibration, without load before the test.

Table 3: the characteristics of overcurrent trip.

The product wiring mode and indicator light function are shown in the attached drawing.

Product installation

- ◆ Dimensions and mounting dimensions pls see picture 1.



- 4 -

- ◆ MTAF1-32 Arc Fault Detection Device needs to Check before installation. Confirm intact, Flexible, and the sign corresponds with the use requirement so that can be installed.
- ◆ In addition to the distribution box, for single installation installation of MTAF1-32 Arc Fault Detection Device should be installed by a piece of ground metal (or insulating material) to prevent electric shock.
- ◆ The characteristics of MTAF1-32 Arc Fault Detection Device has been adjusted and stabilized before delivery. Users are not allowed to adjust in use.

Custody and maintenance

In transportation and custody of MTAF1-32 Arc Fault Detection Device cannot be affected by rain and should be stored in air circulation. The relative humidity is not greater than 90% (when surrounding temperature is at +25°C), Temperature is not higher than +40 °C or not less than 25 °C in the warehouse.

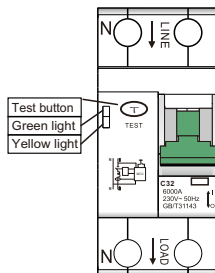
MTAF1-32 Arc Fault Detection Device should be periodic checked in the operation. Remove dust and dirt from incoming line and product surface. The power should be cut off when checking.

Ordering Instructions

Attention must be paid when ordering MTAF1-32 Arc Fault Protection Device:

- Product name and model number;
- rated current of MTAF1-32 Arc Fault Protection Device;
- Tripping device type: B/C;
- Order quantity;

- 5 -



LED Warnings

- 1) With power connected and the switch in the off position, The green and yellow LED are not lit. When you move the switch to the on position, the green LED is on, which shows the product is working.
- 2) Test button---With power connected and the switch on, push the test button, the product will trip, green LED does not illuminate, yellow LED will flash once. If the device does not trip or yellow LED not flash consult a qualified Electrician
- 3) Arc fault ---If the product trips, the causes are either overload or Arc fault. Disconnect any equipment on this circuit and switch the device on. If the yellow LED flashes 5 or 6 times that indicates an arc fault. If the fault is still present the device will trip, DO NOT Reset the device again. If the yellow LED doesn't flash, that indicates the problem is an overload or short circuit. Switch the device to the OFF position and consult a qualified Electrician.
- 4) If the device trips for any reason, please consult a qualified electrician

- 6 -

Users who purchase this model shall enjoy a 24-month warranty period from the date of purchase. During the warranty period, the product itself is affected by the quality of the problem and normal use, can enjoy free repair and replacement. Non-recoverable damage caused by improper use, drops, and installation wiring errors may be repaired or replaced for a fee during the warranty period. If you remove the modification yourself, you will not be covered by the warranty. If you have any questions about the operation or failure of the equipment, please contact Matis Technical Support Services.

Notice

- The information provided in this manual may be modified without prior notice.
- Shanghai Matismart Electric Co., Ltd. reserves the right to interpret the information.

Web: www.matismart.com

Mail: ricky@matismart.com

Tel: +86 2168682728

Mob: +86 186 2187 9631

Add: Room 318-320, No. 83, Huanhu West 3rd Road, Pudong Shanghai, China 201306

MTAF2-63 Arc fault protect Device

Product Overview

MTAF2-63 series arc fault protection appliances consist of miniature circuit breakers, tripping mechanisms, arc detection module is assembled. Series arc fault protection appliances with short circuit, overload, MTAF2-63 Residual current protection and arc fault protection functions. It detects arc faults through chip detection procedures. If it is confirmed as a fault arc, the power supply will be disconnected to play the role of arc fault protection. according to Statistics show that the proportion of electrical fires in total fires is increasing year by year. However, 70% of electrical fires are due to arc faults, Series Arc Fault Protection MTAF2-63 Electric appliances can effectively avoid fires caused by fault arcs.

Product Usage

MTAF2-63 Arc fault Detection Devices is widely used in rated current 63A and the following household and similar communication circuits. Arc fault protection unit of MTAF2-63 Arc fault Detection Devices can detect and identify series arc faults, parallel arc faults and ground arc faults. For example: the old and damaged insulation layer of line, wet air can cause arc faults phenomena. When Arc fault Detection Devices detects that there is arc faults exist, it would be automatically tripping and cut off the power supply.

Main technical parameters

- 1). Rated working voltage (Ue): AC230V
- 2). Rated operating frequency: 50Hz±2%
- 3). Rated insulation voltage (Ui): 400V
- 4). Rated impulse with stand voltage (Uimp): 4kV
- 5). Rated current (In): 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A.
- 6). Number of poles: 2P
- 7). Instantaneous tripping type C
- 8). Running short-circuit capability (Ics): 4.5kA
- 9). Rated short-circuit capacity (Icn): 4.5kA
- 10). Rated residual operating current I_{Δn}: 30mA
- 11). Action characteristics when the residual current has a DC component: AC, A type (If equipped with leakage function)
- 12). Grid distance (mm): 40mm

Product Category

According to the rated current (A), it is divided into 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A. According to the instantaneous tripping current, it is divided into C type.

Normal use conditions

The ambient temperature is -5°C or +40°C, and the daily average maximum temperature is +35°C. The altitude does not exceed 2000m, the relative humidity: 50% maximum at 40°C, 90% at 20°C.

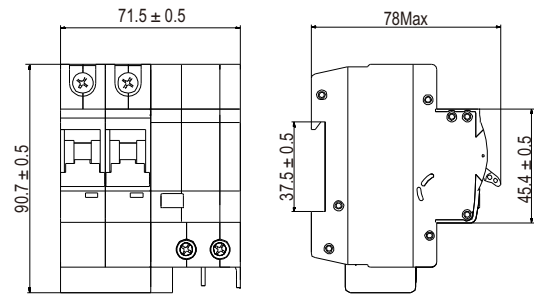
Product Features

MTAF2-63 series arc fault protection appliances include arc fault protection, overload protection and short circuit protection functions.

The rated voltage of 230V arc fault protection electrical action judgment limit, the value of breaking time is shown in Table.

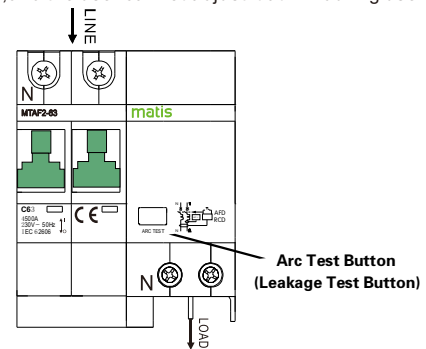
Test ARC current Valid Value	3 A	6 A	13 A	20 A	40 A	63 A
Maximum section time	1 s	0.5 s	0.25 s	0.15 s	0.12 s	0.12 s
The test arc current is the expected current in the test circuit before ignition occurs						

Dimensions and mounting dimensions picture (:mm)



Wiring mode and indicator light function in attached picture

- 1) The protector should be inspected before installation to confirm that it is intact, flexible, and that signs meet the requirements for use before installation.
- 2) The protector is installed inside and outside the distribution box. If it is used alone, a grounded metal (or insulating material) protective panel should be installed to prevent electric shock.
- 3) The characteristics of the protector have been debugged and stabilized before leaving the factory, and the user cannot adjust it at will during use.



Maintenance

- 1) During transportation and storage, the protector should not be attacked by rain, and should be stored in a ventilated environment with a relative humidity of not more than 90% (when the ambient temperature is +25°C), and the temperature should not be higher than +40°C and not lower than -25°C in the warehouse.
- 2) Device should be checked regularly during operation, and the dust and dirt on the incoming and outgoing wires and the surface of the product should be removed, and the power should be cut off during inspection.
- 3) Should be checked regularly operation, press the test button once a month.

Instructions

When installing this product, it is necessary to disconnect the upper-level power supply, and then connect the incoming line (LINE) and the outgoing line (LOAD), as follows:

1. Turn on the upper-level power supply, the handle is closed and the green indicator light is on, indicating that the product is running normally.
2. When the handle is closed, turn on the load, press the test button, the product trips, and the green indicator light goes out.
3. During the normal operation of the load, if the product trips, turn off all loads at this time, and the handle is closed. If it shows red and then goes out, it is judged that the last trip of the product was caused by the fault arc. If the red indicator light is not on, judge the last time the product tripping is caused by short circuit, overload or leakage current.
4. To confirm the arc fault of the lower line, first perform the operation of No. 3. After completion, the handle is closed, and the load before the upper trip is connected and operated. If the red indicator flashes momentarily, the product trips, the lower power supply is disconnected, and the line is disconnected. If there is an arc fault, please ask a professional electrician to troubleshoot the line.
5. Any abnormal indication can contact the supplier or manufacturer.

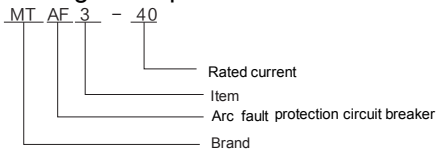
MTAF3-40 Arc fault protect Device

Product Overview

MTAF3-40 series arc fault protector is suitable for AC 50Hz, rated voltage 230V, rated

Current 40A and below in household and similar circuits. It provides overload and short circuit protection for the line, as well as indirect contact protection for people and backup protection for direct contact. The arc fault protection unit of the protector can detect and distinguish series arc faults, parallel arc faults and grounding arc faults in the line. For example, the aging, damage and humidity of the line insulation layer are prone to cause arc fault. When the protector detects that there is an arc fault in the line, it will automatically trip and cut off the power supply, effectively avoiding the fire caused by the arc fault.

Model and meaning of the product

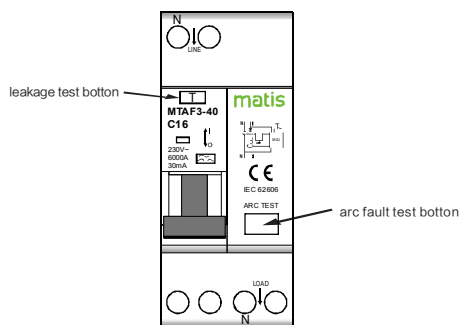


Main technical parameters

- 1) Rated working voltage AC 230V
- 2) Rate working: Frequency ;50Hz
- 3) Rated insulation voltage:400V
- 4) Rate Current (In) : 6A、10A、16A、20A、25A、32A、40A
- 5) Pole: 1P+N
- 6) Type of Instantaneous trip: B、C
- 7) Short circuit capability: (Ics) : 6kA
- 8) Rated residual current (IΔn) :30mA
- 9) Operating characteristics when residual current has a DC component : A、AC
- 10) Insulation material group: IIIa
- 11) grid distance (mm) : 40mm

wiring mode and indicator light function in attached picture

- 1)The protector should be inspected before installation to confirm that it is intact, flexible, and that the signs meet the requirements for use before installation.
- 2)The protector is installed inside and outside the distribution box. If it is used alone, a grounded metal (or insulating material) protective panel should be installed to prevent electric shock.
- 3)The characteristics of the protector have been debugged and stabilized before leaving the factory, and the user cannot adjust it at will during use.



- ◆ During transportation and storage, the protector should not be

Instructions: When installing this product, it is necessary to disconnect the upper-level power supply, and then connect the incoming line (LINE) and the outgoing line (LOAD), as follows

- 1、 Turn on the upper-level power supply, the handle is closed, and the green indicator light is on, indicating that the product is running normally
- 2、 When the handle is closed, turn on the load, press the test button, the product trips, and the green indicator light goes out
- 3、 During the normal operation of the load, if the product trips, turn off all loads at this time, and the handle is closed. If it shows red and then goes out, it is judged that the last trip of the product was caused by the fault arc. If the red indicator light is not on, judge the last time the product Tripping is caused by short circuit, overload or leakage current.
- 4、 To confirm the arc fault of the lower line, first perform the operation of No. 3. After completion, the handle is closed, and the load before the upper trip is connected and operated. If the red indicator flashes momentarily, the product trips, the lower power supply is disconnected, and the line is disconnected. If there is an arc fault, please ask a professional electrician to troubleshoot the line.
- 5、 Any abnormal indication can contact the supplier or manufacturer

4.1 Normal use conditions

- a) The upper limit of ambient air temperature should not exceed +40°C, the lower limit should not be lower than 5°C, the maximum daily average is +35°C; NoteThe protector used when the ambient air temperature is higher than +40°C o lower than -5°C The manufacturer should be consulted.
- b) The altitude of the installation site shall not exceed 2000m;
- c) The relative humidity of the atmosphere does not exceed 50% when the ambient maximum temperature is 40+°C

4.2 Normal installation conditions

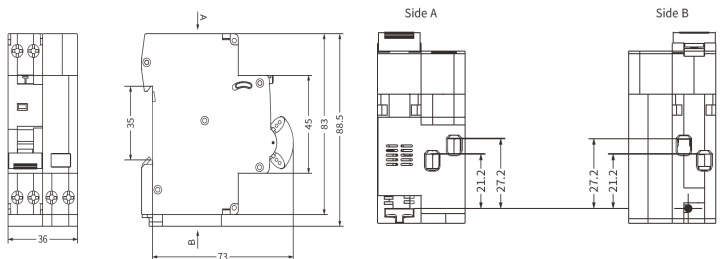
- a)The external magnetic field near the installation site of the protector should not exceed 5 times of the earth's magnetic field in any direction;
- b) The installation position should be vertical, and the inclination in each direction should not exceed 10°;
- c) Pollution degree: Class 2; d) Installation category: Class II

Table1 limit value work judgement under small arc current below 63A

Test ARC current Valid Value	3 A	6A	13 A	20A	40A	63 A
Maximum section time	1s	0.5s	0.25s	0.15s	0.12s	0.12s

The test arc current is the expected current in the test circuit before ignition occurs

Dimensions and mounting dimensions picture (:mm)



Maintenance

- attacked by rain, and should be stored in a ventilated environment with a relative humidity of not more than 90% (when the ambient temperature is +25° C), and the temperature should not be higher than +40° C and not lower than - 25° C in the warehouse.
- ◆ Device should be checked regularly during operation, and the dust and dirt on the incoming and outgoing wires and the surface of the product should be removed, and the power should be cut off during inspection.
- Should be checked regularly during operation, press the test button once a month.