

MAXGE



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ALPHA SERIES FINAL DISTRIBUTION PRODUCTS TECHNICAL CATALOGUE





Miniature Circuit Breaker



Miniature Circuit Breaker



EPB-63H-1P



EPB-63H-2P

Technical data

Standard	EN / IEC60898-1
Breaking capacity	10kA
Rated current I_n	0.5, 1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A
Number of poles	1P, 1P+N, 2P, 3P, 3P+N and 4P



Technical data Characteristic

Thermal operating limit:	$(1.13-1.45) \times I_n$
Magnetic operating	B: $(3-5) \times I_n$ C: $(5-10) \times I_n$ D: $(10-20) \times I_n$



EPB-63H-3P



EPB-63H-4P

DC Miniature Circuit Breaker



EPB-63M-DC-2P



EPB-63M-DC-1P

Technical data

Standard	EN / IEC60947-2
Breaking capacity	6kA
Rated current I_n	0.5, 1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A
Rated voltage	DC: Rated voltage $U_e(VDC)$: 1P 250 3P 750 2P 500 4P 1000 Operational volatge(VDC): Min: 12 Max: 1P 250 2P 500

Number of poles 1P, 2P, 3P and 4P

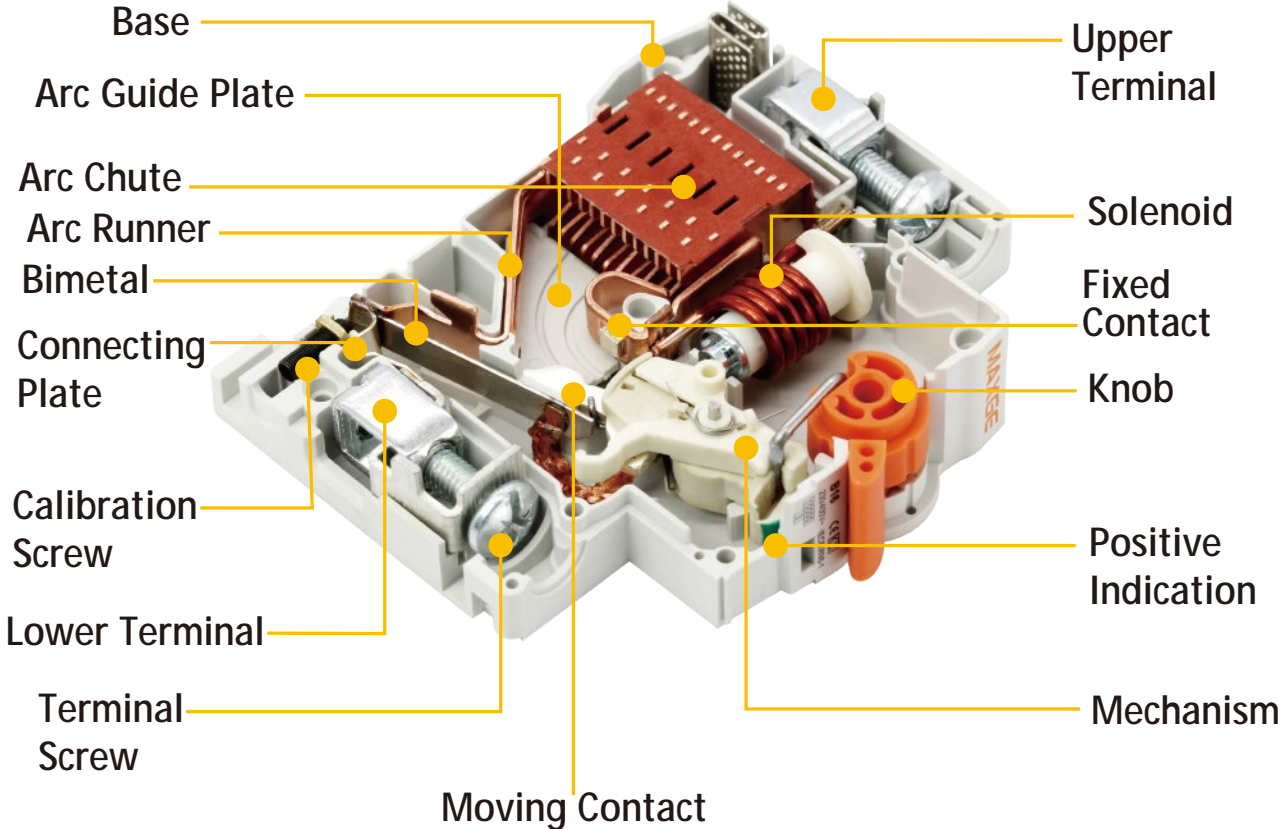


EPB-63M-DC-3P

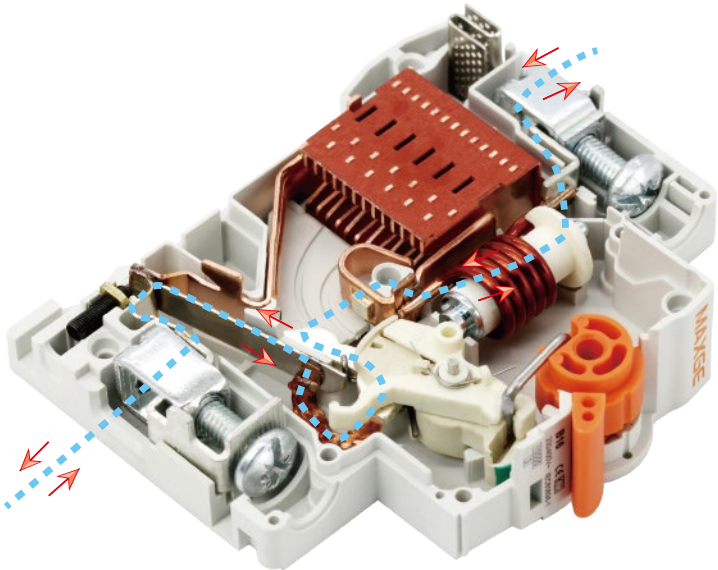
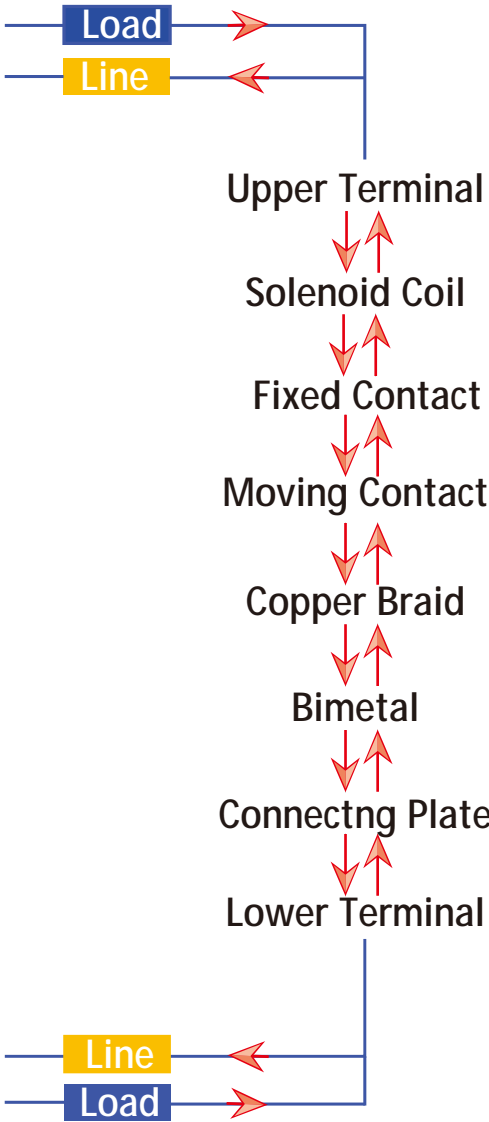


EPB-63M-DC-4P

MCB Design

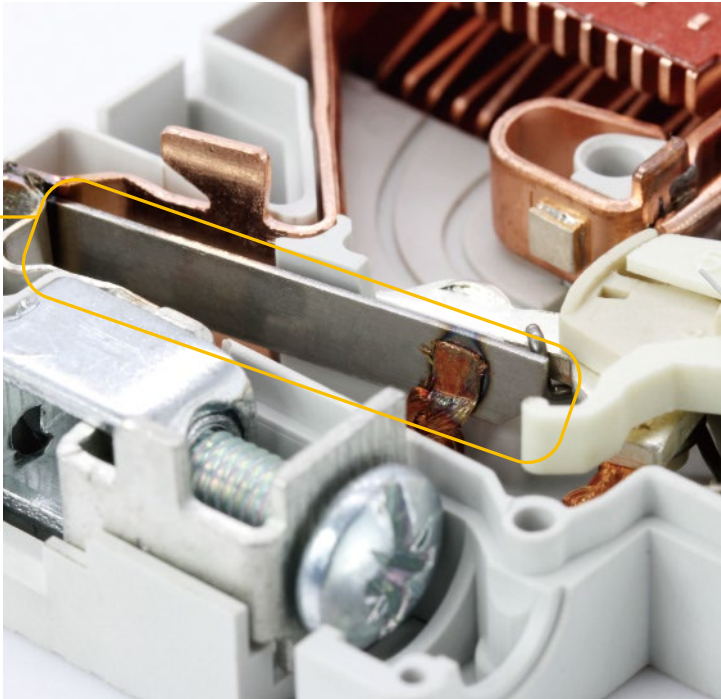


Current Path MCB



Overload Operation

Bimetal Metal Alloy

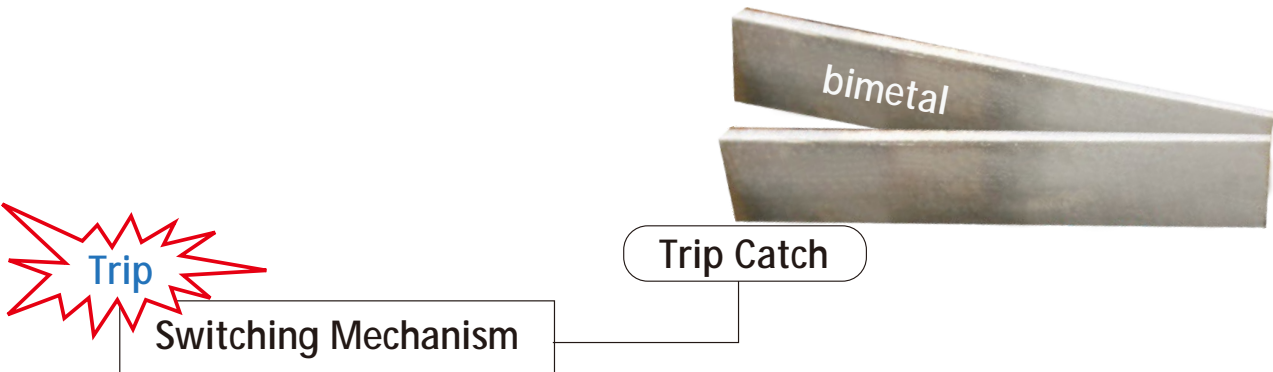


Overload Protection:Through

Consists of 2 differernt metals bonded together

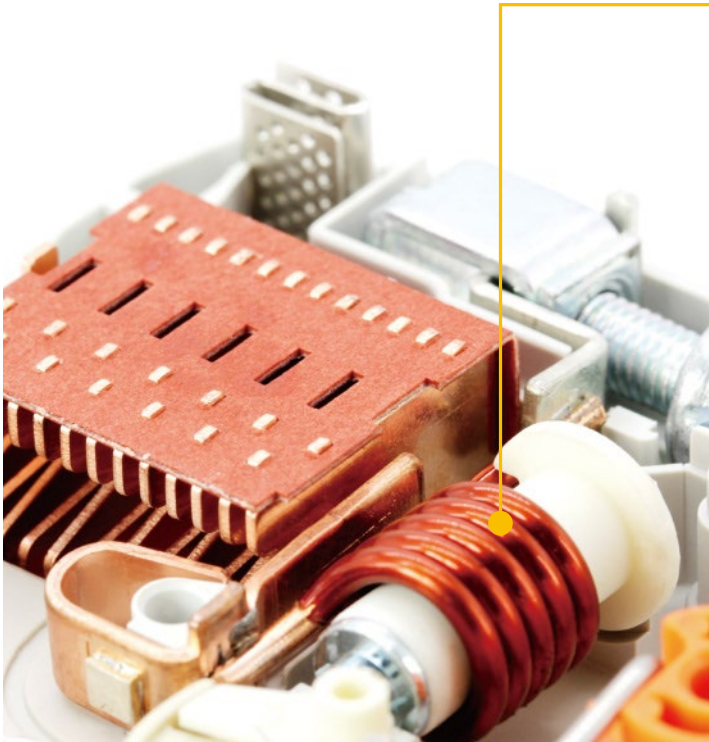
Different metals have different coefficient of expansion

- On heating-it bends towards tripping
- Pushes the trip catch lever
- Switching mechanism actuated

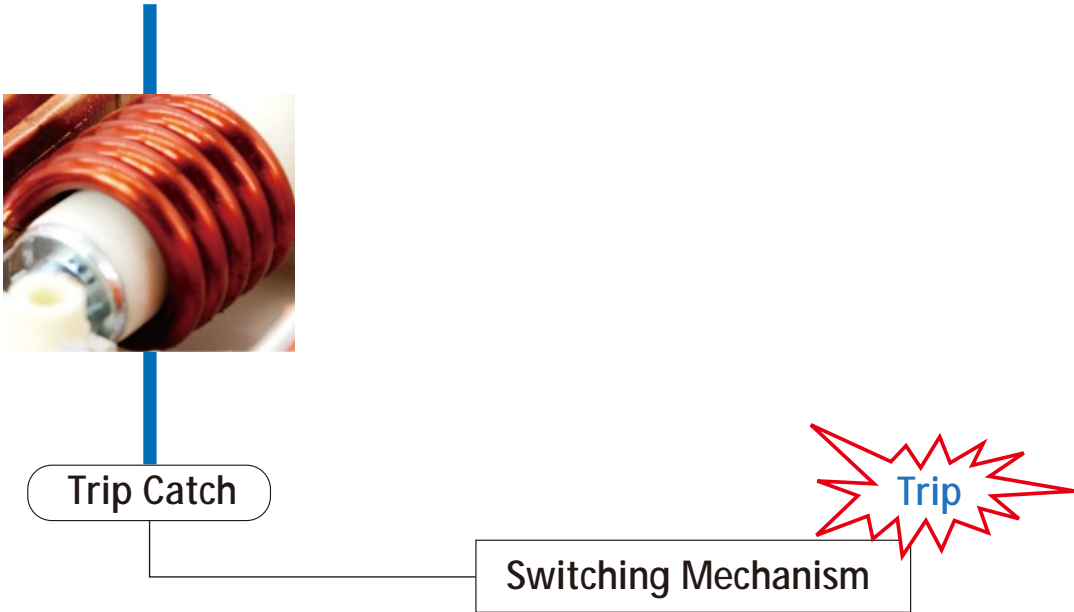


Short Circuit Operation

Solenoid

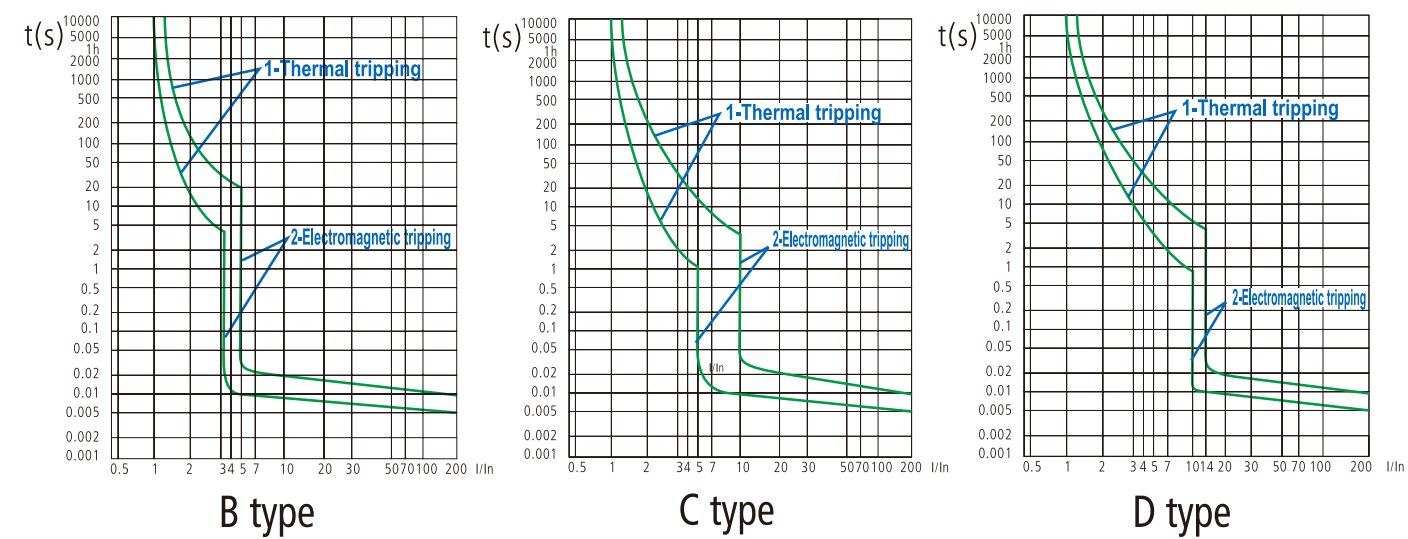


- High current flows
- Solenoid gets magnetized
- Attracts tripping plunger
- Lower portion of plunger pushes trip catch lever
- Switching mechanism actuated



Tripping Characteristics











1. Curves



2. Overcurrent protecting characteristics

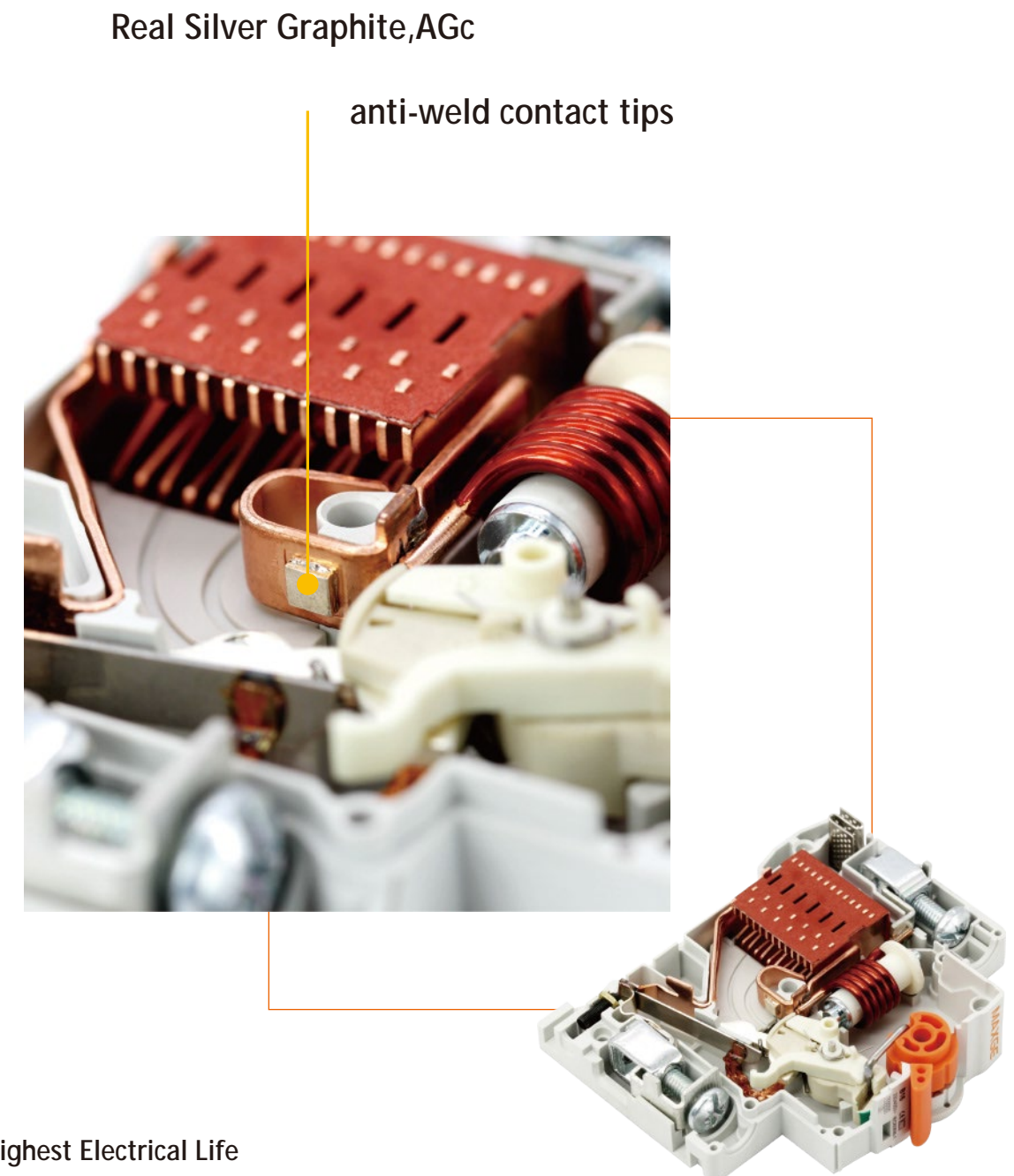
No	Rated current of release(A)	Initial state	Test current	Specified time	Result to be obtained	Remarks
1	1~63	cold state	1.13In	$t \leq 1h$	Non-trip	
2	1~63	upon the previous test	1.45In	$t < 1h$	trip	Setting current up to specified value steadily in 5S
3	$In \leq 32$	cold state	2.55In	$1s < t < 60s$	trip	
	$In > 32$	cold state	2.55In	$1s < t < 120s$	trip	
4	1~63	cold state	3In	$t \leq 0.1s$	Non-trip	B type
	1~63	cold state	5In	$t < 1.1s$	trip	B type
	1~63	cold state	5In	$t \leq 0.1s$	Non-trip	C type
	1~63	cold state	10In	$t < 1.1s$	trip	C type
	1~63	cold state	10In	$t \leq 0.1s$	Non-trip	D type
	1~63	cold state	20In	$t < 1.1s$	trip	D type

MCB Selection-Curve type

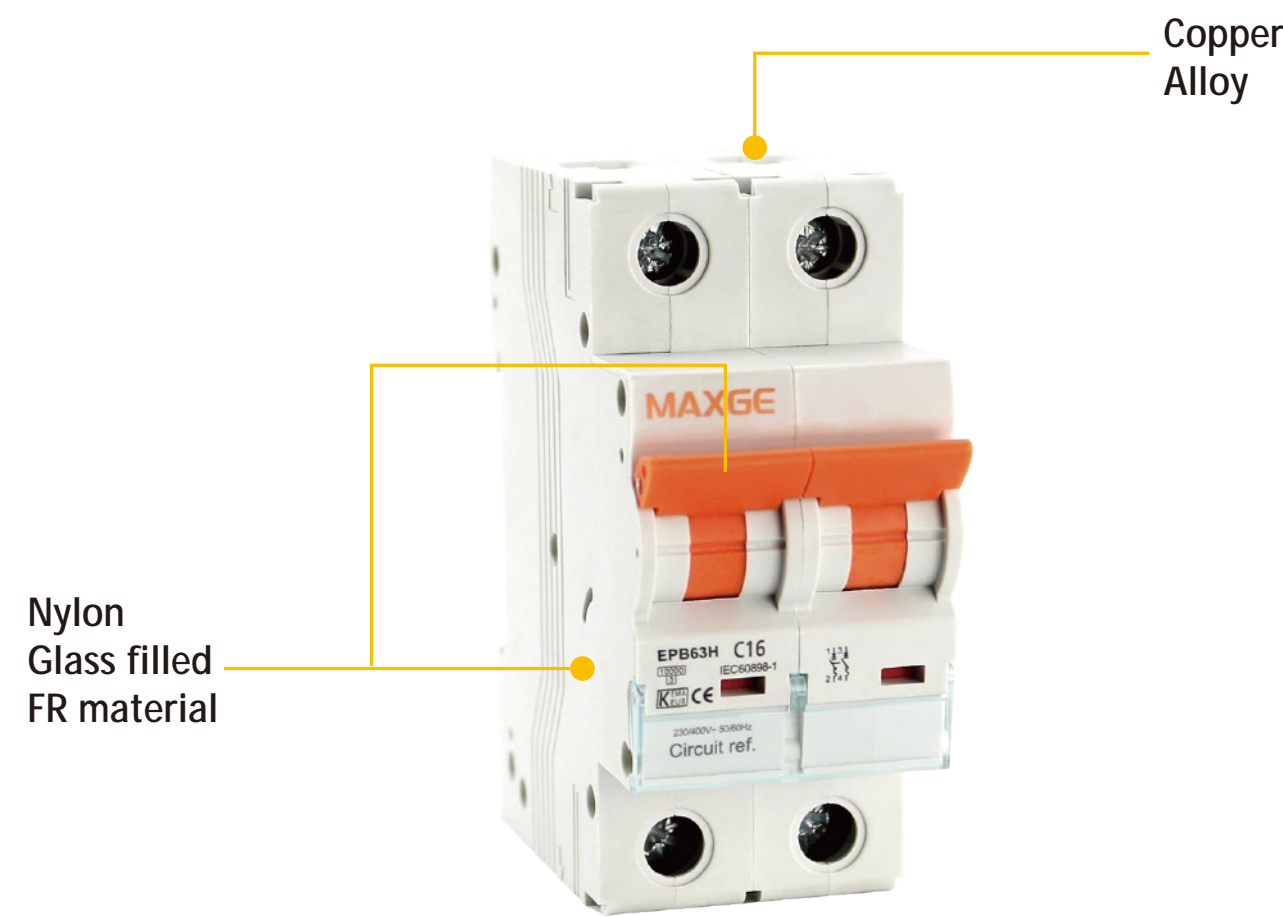
Charact eristics	Loads		
	Resistive	Inductive	High Inductive
	NO Starting surge	Starting surge Present	HIGH starting surge current
B	✓		
C	✓	✓	
D	✓	✓	✓
Examples			
			
			
			

Features & Benefits

Features & Benefits



Features & Benefits



- High
- Strength
 - Ecofriendly
 - Melting Point
 - Dielectric Strength
 - Temperature Resistant



Rigidity

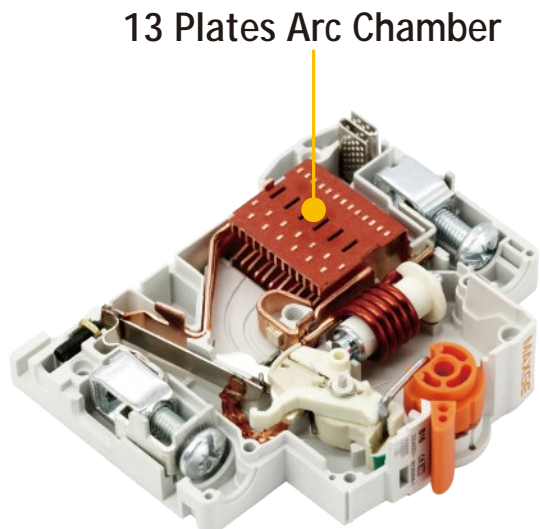


Strength

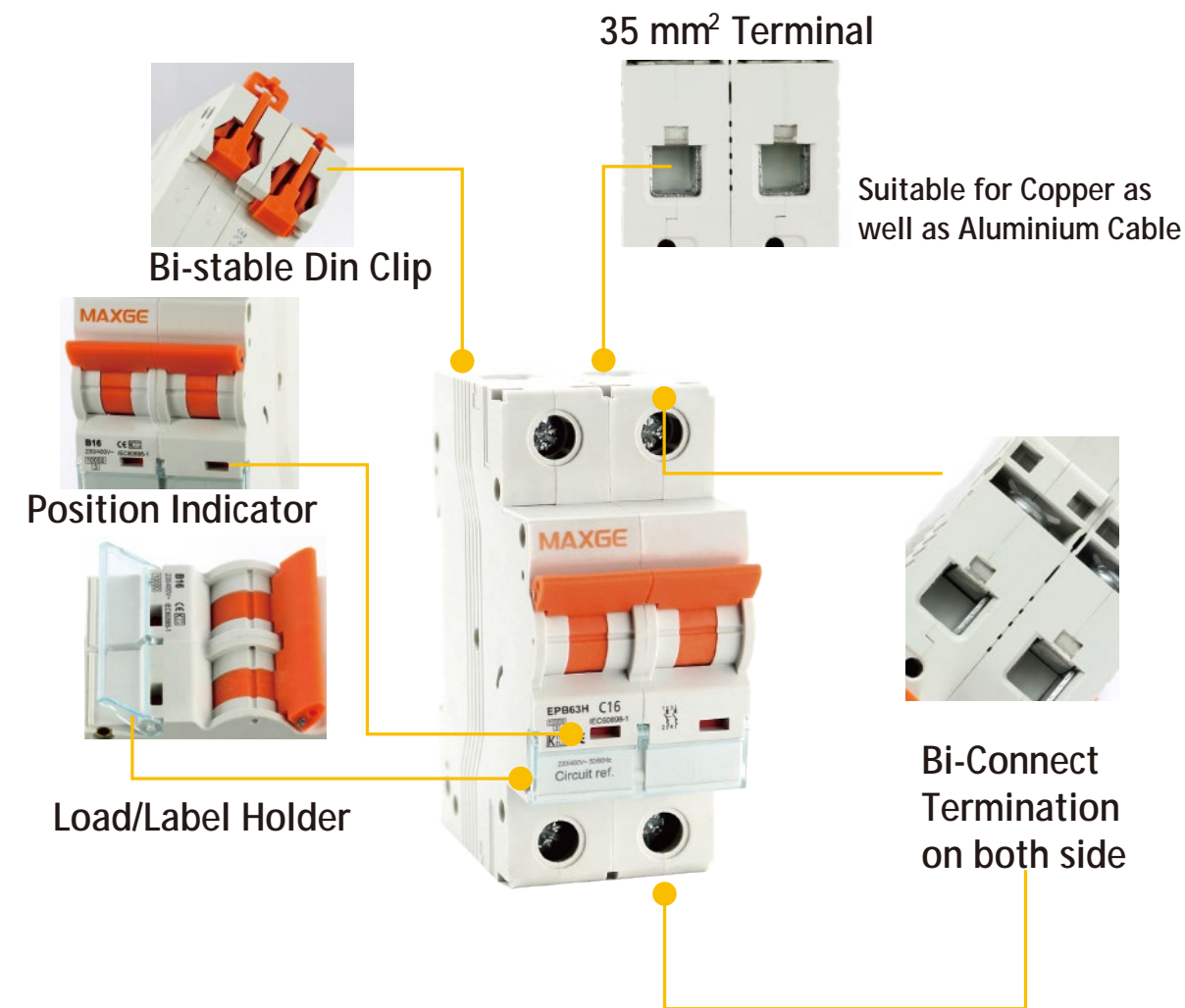
Features & Benefits



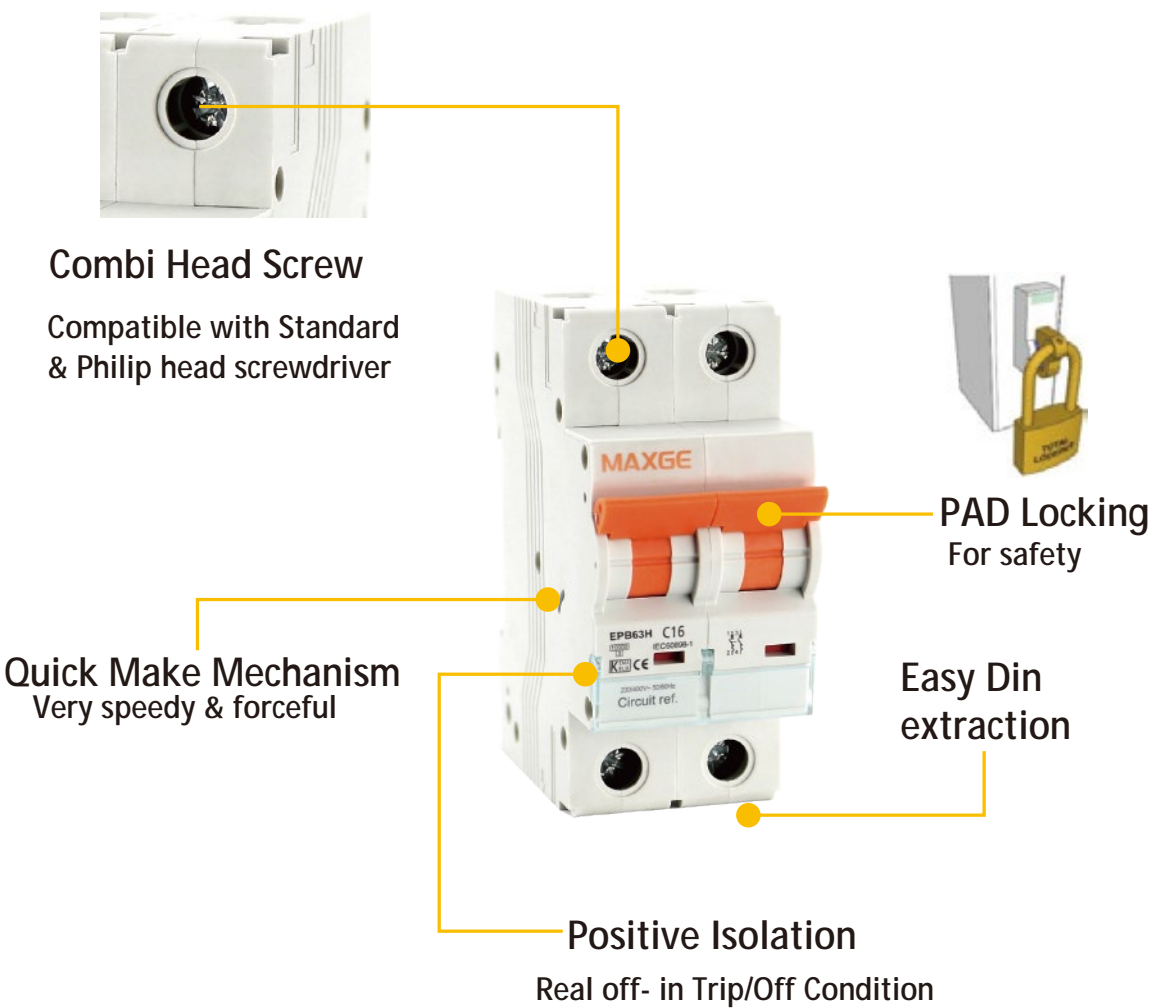
- Quick & Efficient Arc Quenching
- Very low let through energy, class 3
- Increases life of Installation & equipment



Features & Benefits



Features & Benefits



Features & Benefits



Ergonomic
Design



Best Fitted



Accurate

NO Possibility of Single Phasing



Protected Terminals
IP=20

Features & Benefits

NO accidental Contact/Shock from
live parts during installation

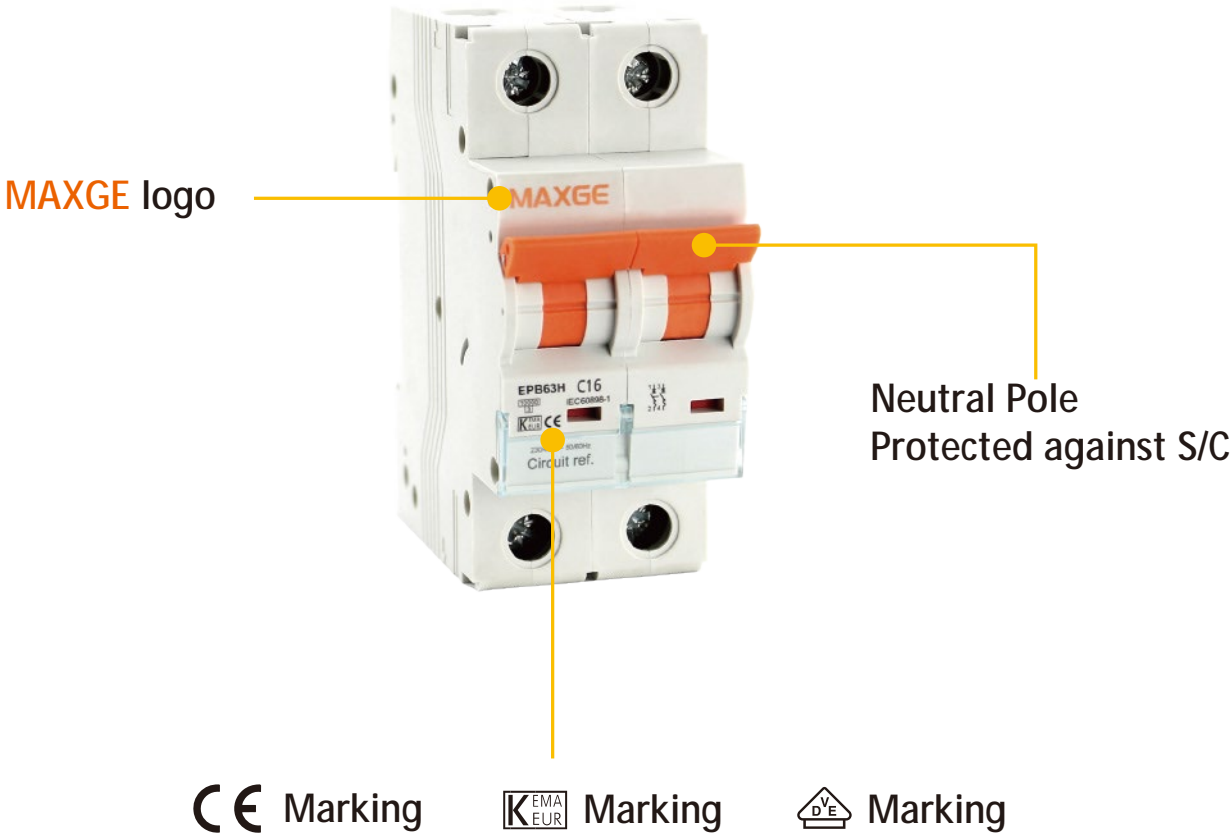


Features & Benefits



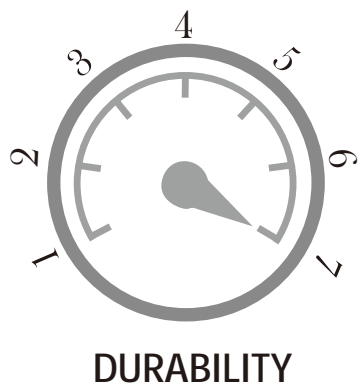
Conformity to
Health, Safety & Environmental
Protection Standard

Line Load Reversibility

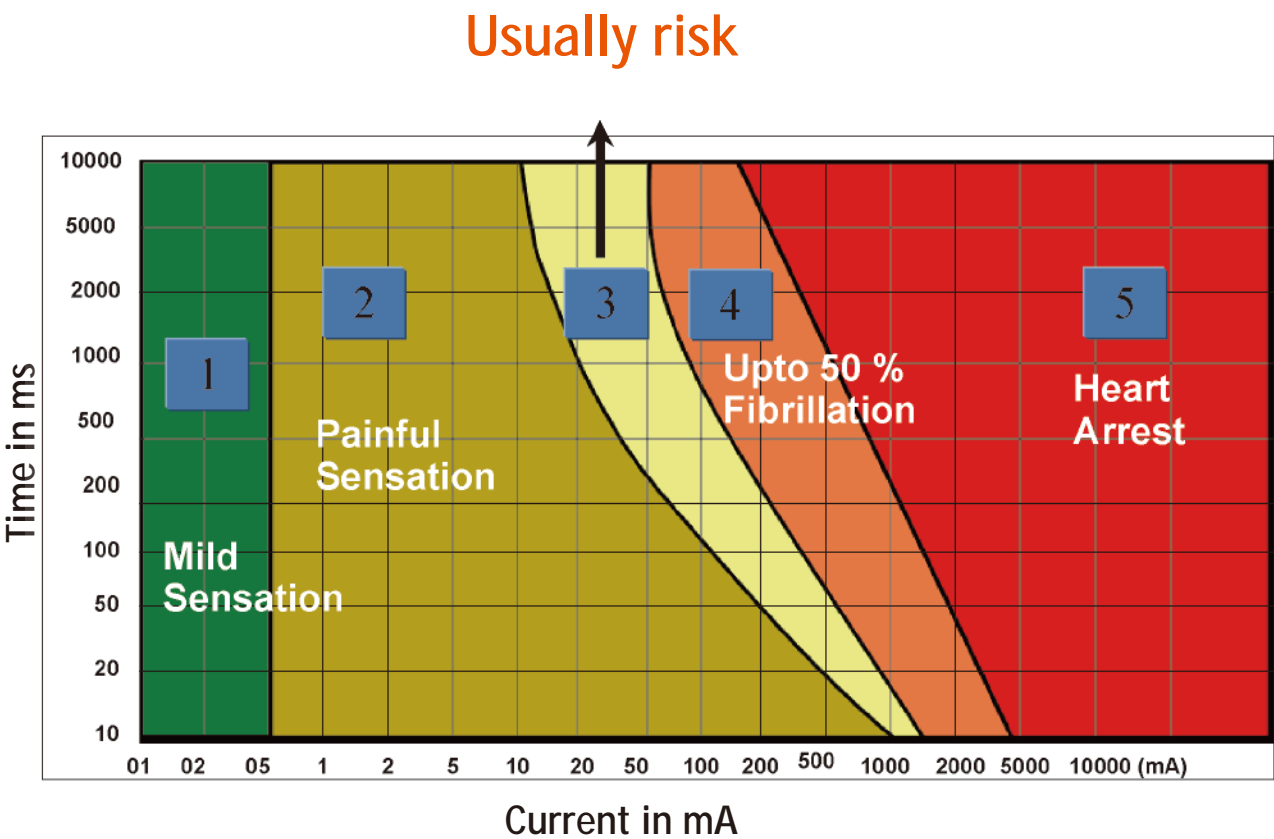


Features & Benefits

MCB Durability	IEC 60898-1	MAXGE
Electrical Life	4000 Operation Tested	8000 Operation Tested
Mechanical Life	10000 Operation Tested	20000 Operation Tested



Residual Current Circuit Breaker



Residual Current Circuit Breaker

Technical data

Standard
Rated conditional short-circuit current Inc
Rated current In
Rated sensitivity currents, I_{Δn}

EN / IEC61008-1
6kA, 10kA
16, 25, 32, 40, 50, 63, 80A
10, 30, 100, 300mA



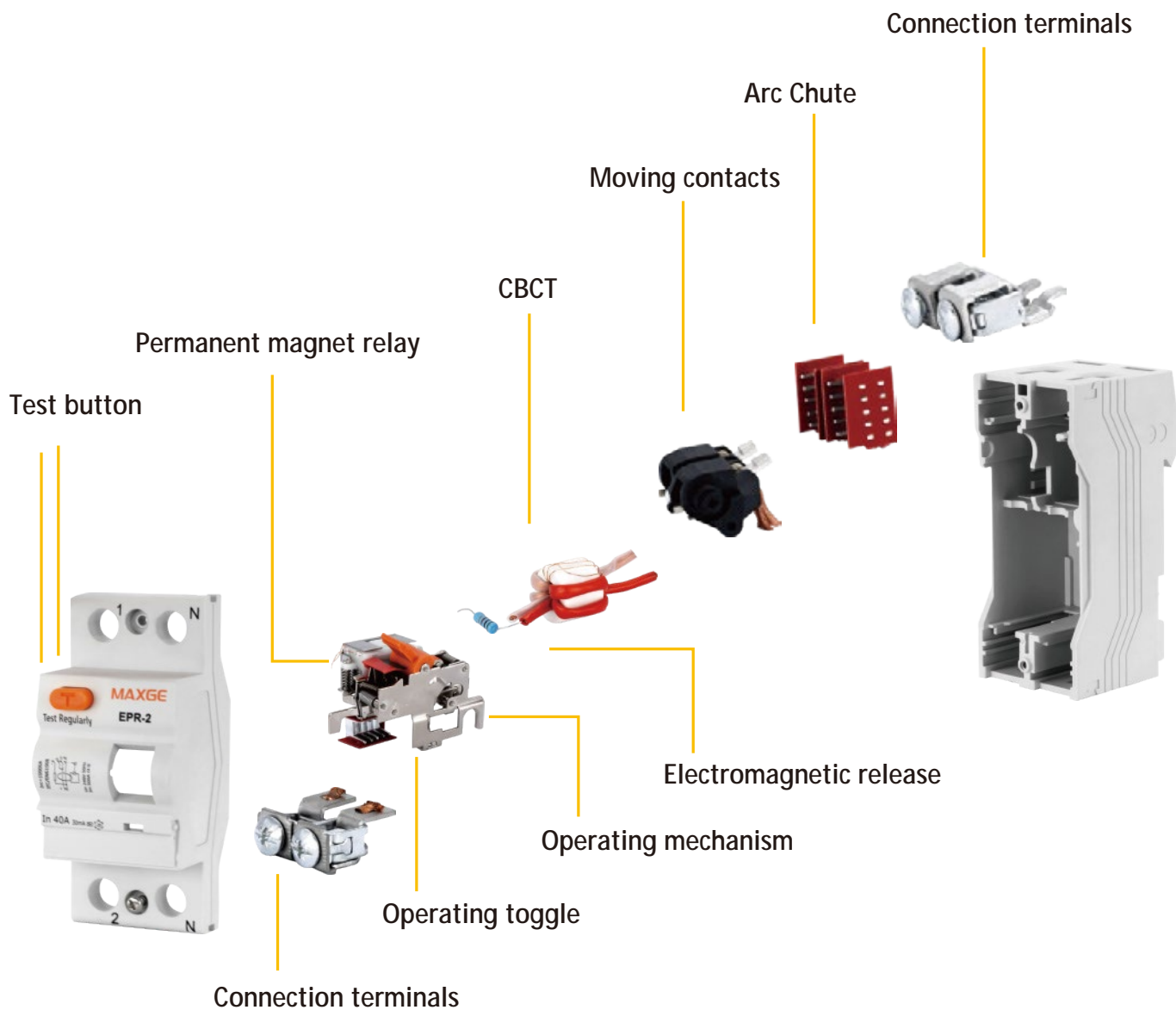
EPR-2P



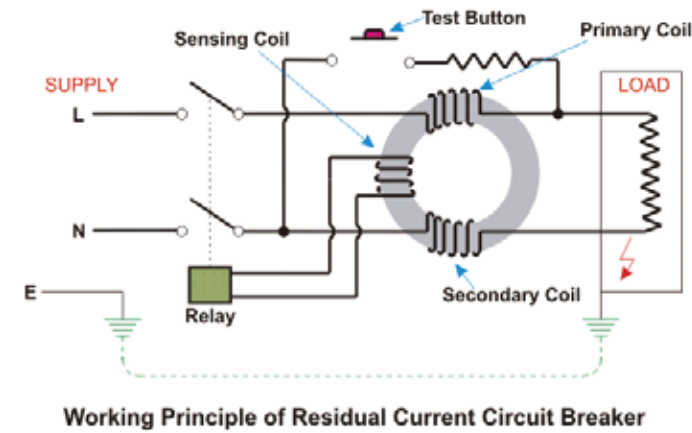
EPR-4P

RCCB DESIGN

RESIDUAL CURRENT CIRCUIT BREAKER



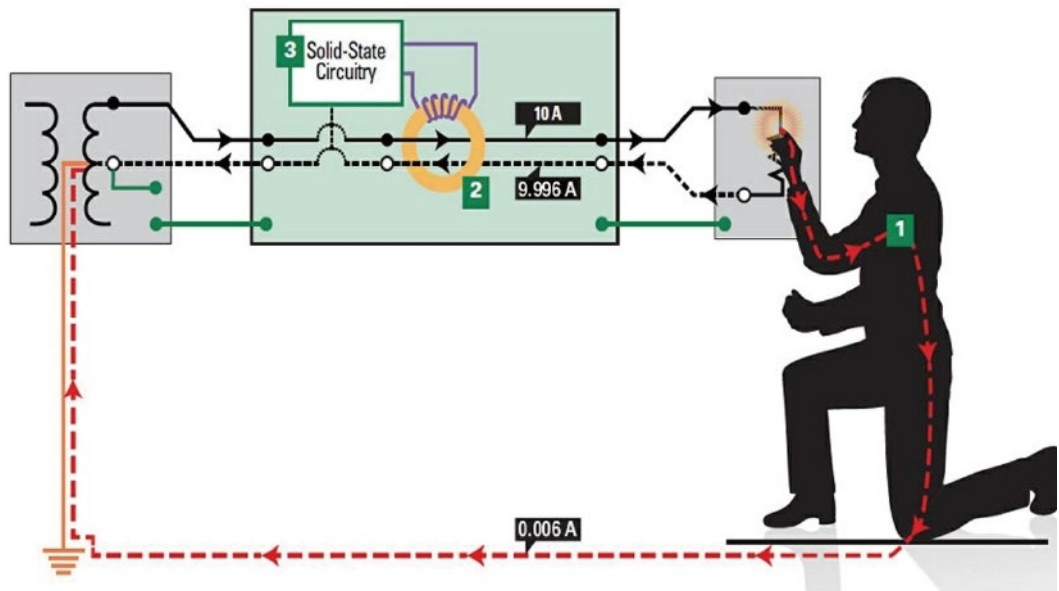
Earth leakage Protection



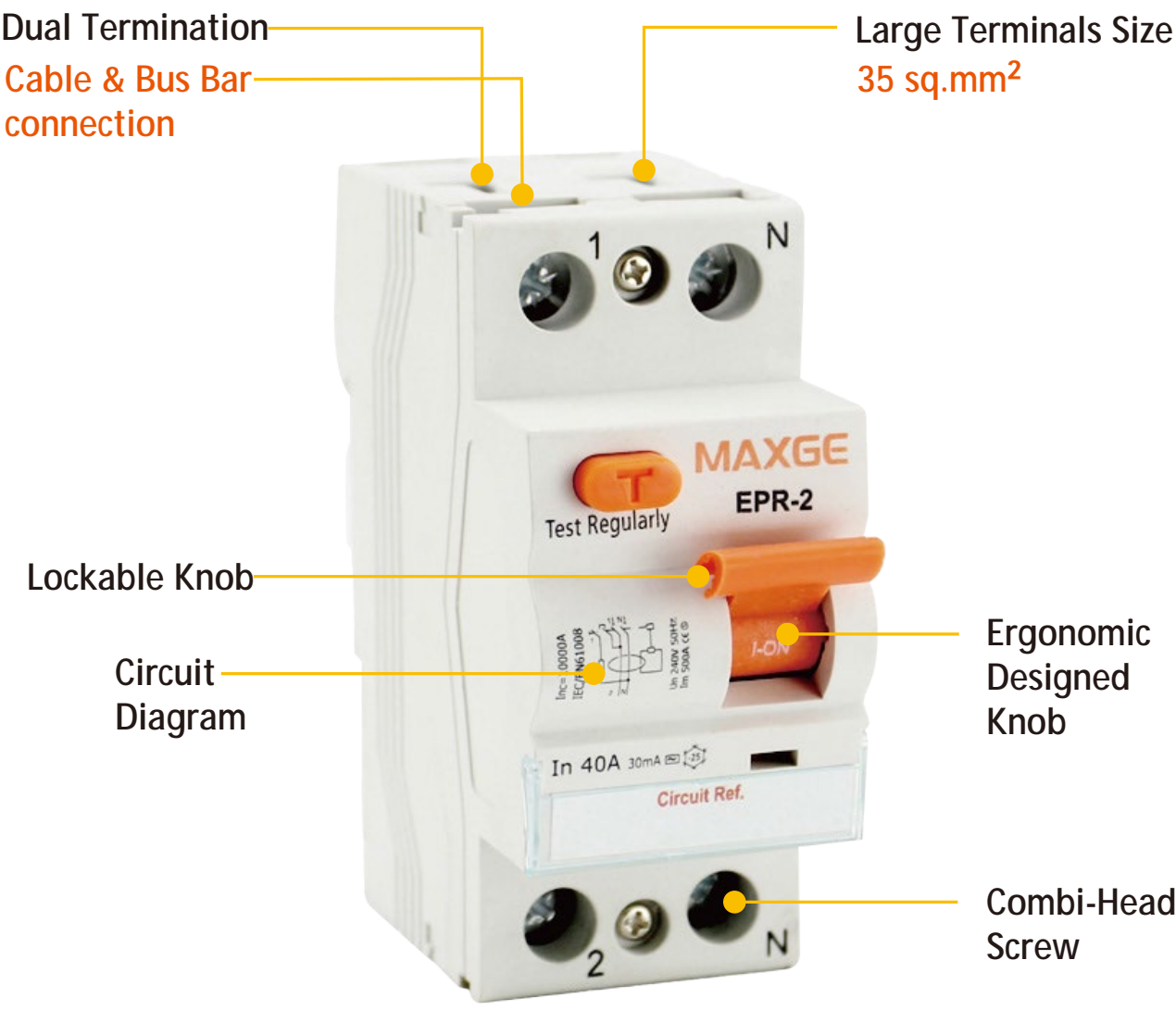
- Current travels through the body
- CBCT picks up the imbalance current
- PMR push the plunger forward
- Switching mechanism Actuate



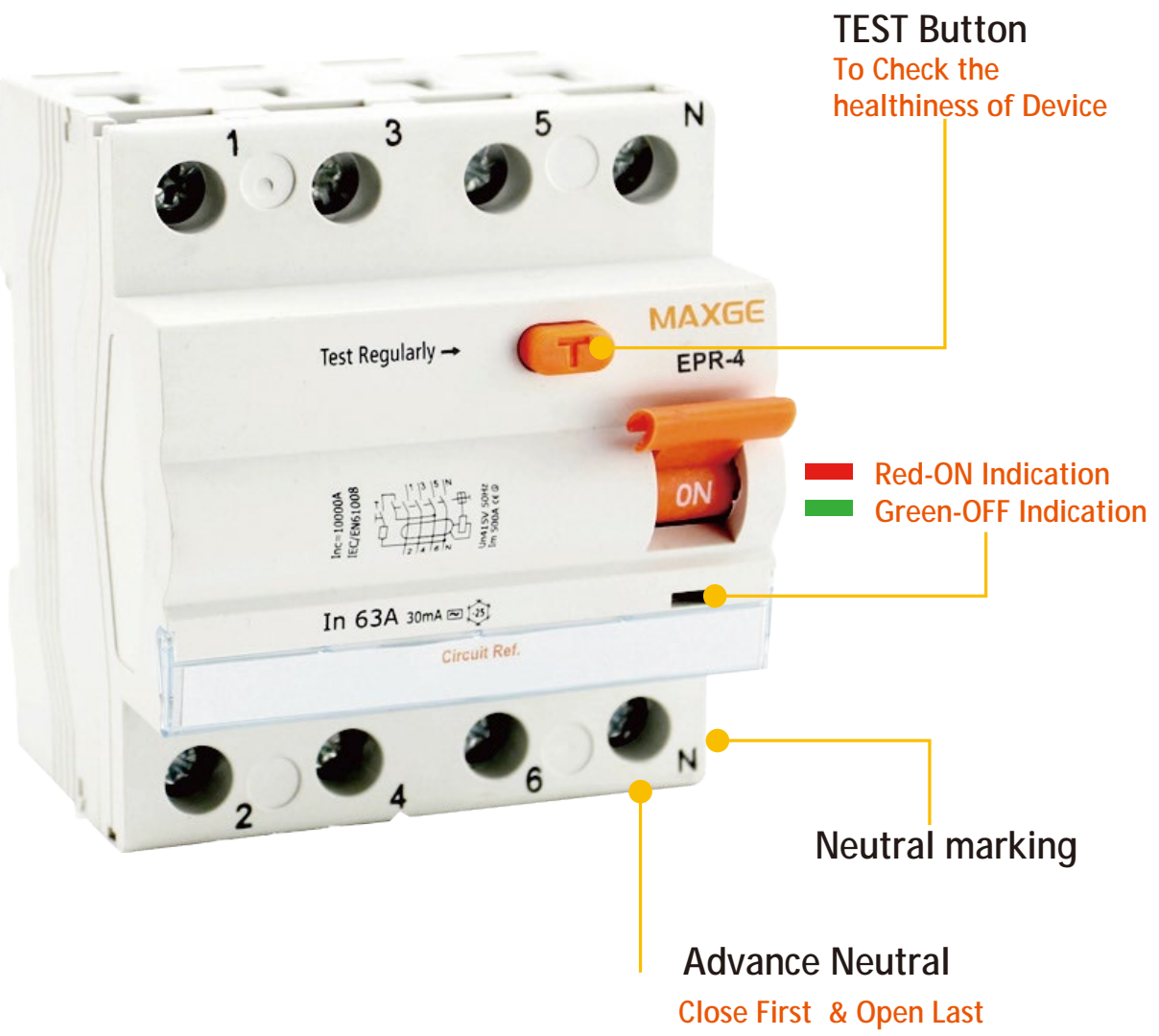
RCCB works on the principle that in an electrical circuit the incoming current is the same as out going current as shown in the diagram. RCCB incorporates a core balance transformer having primary and secondary windings and a sensitive relay for instantaneous detection of fault signal.



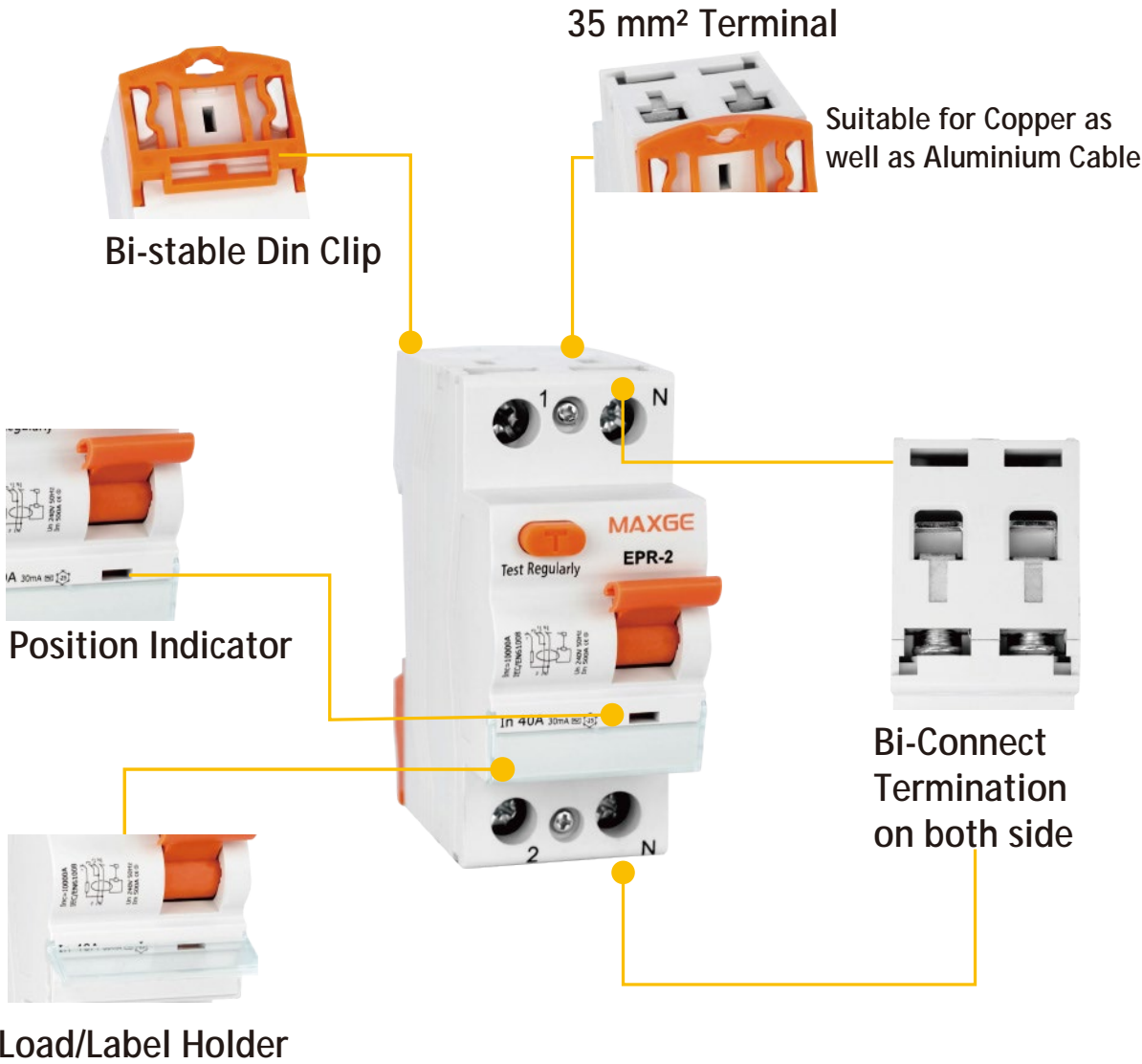
Features & Benefits



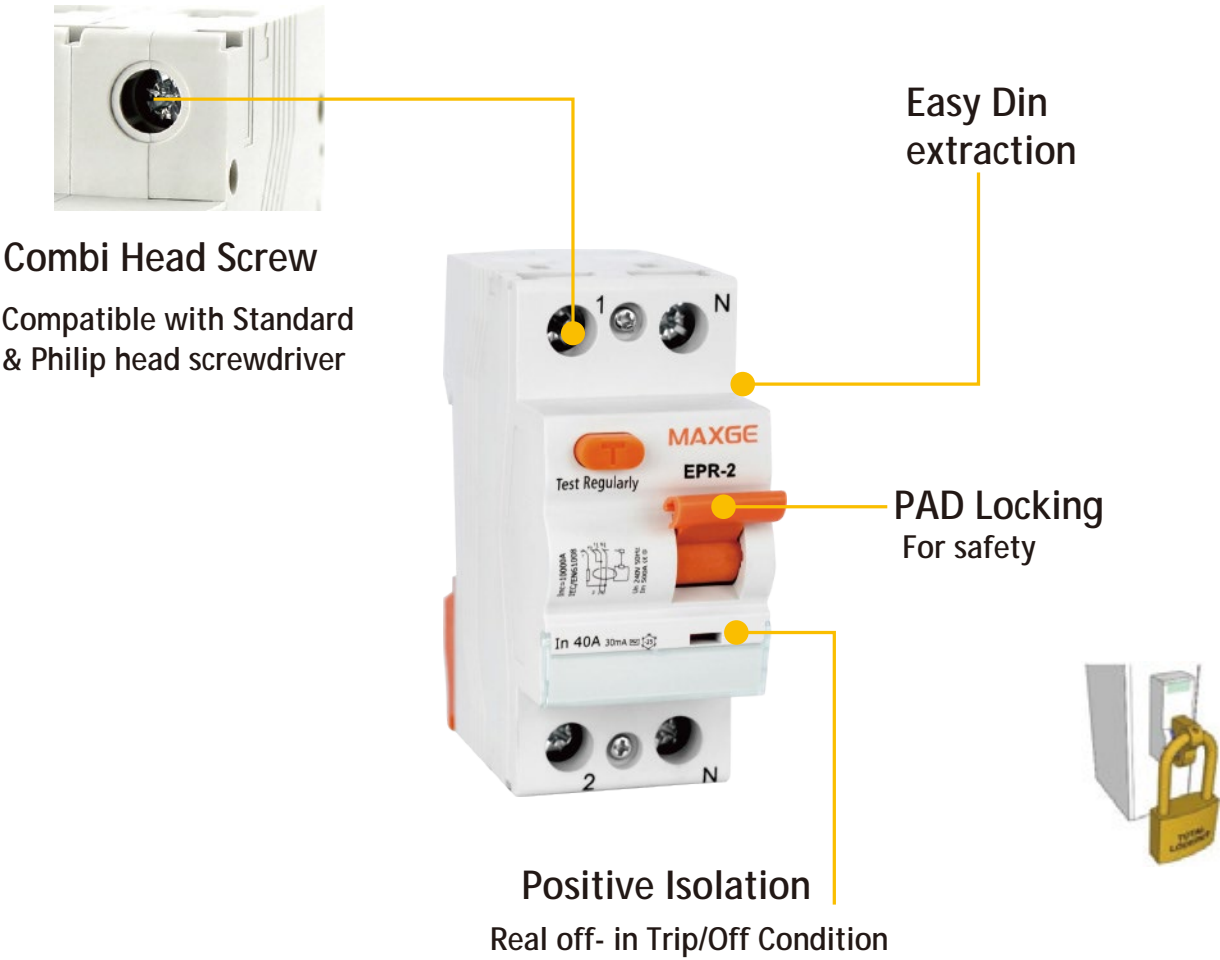
Features & Benefits



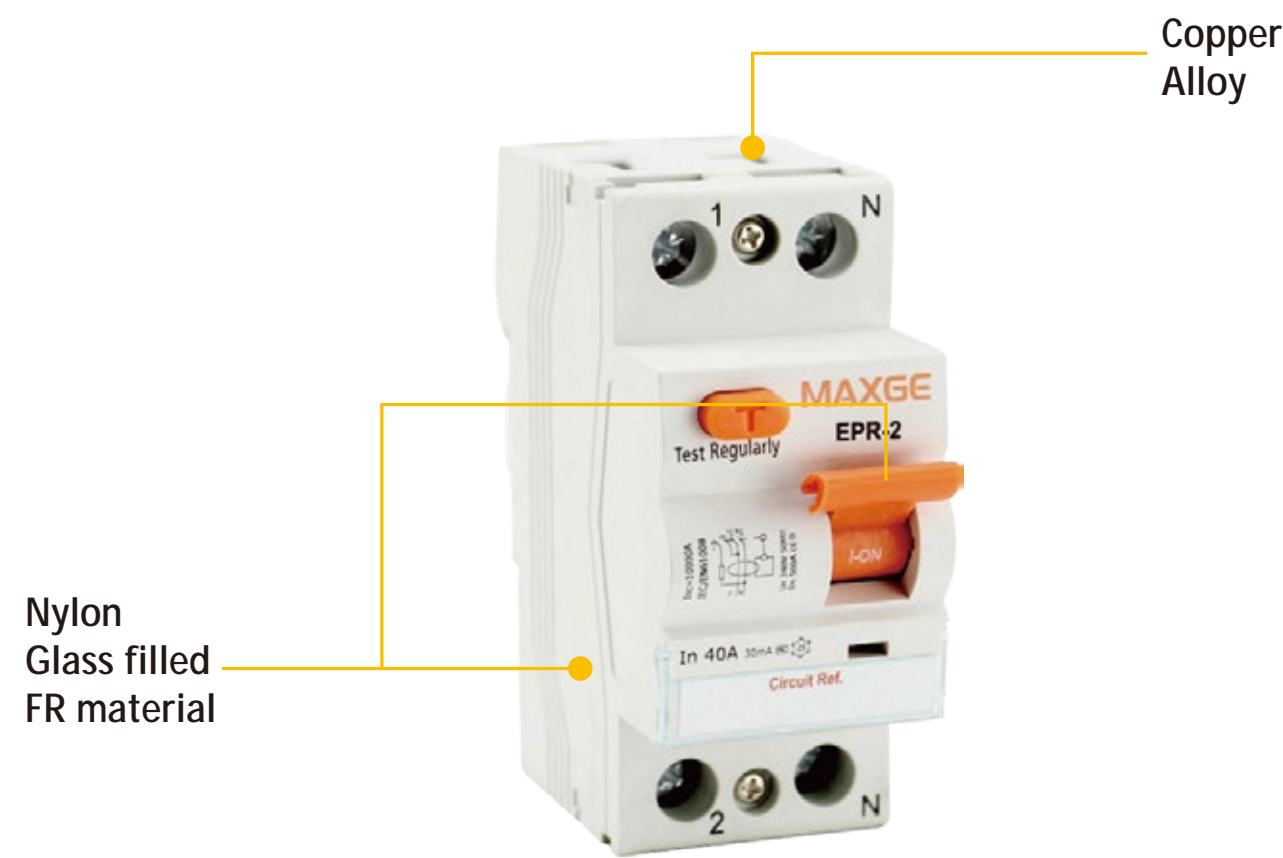
Features & Benefits



Features & Benefits



Features & Benefits



- High
- Strength
 - Ecofriendly
 - Melting Point
 - Dielectric Strength
 - Temperature Resistant



Rigidity



Strength

Features & Benefits



- Quick & Efficient Arc Quenching
- Rated sensitivity currents $I_{\Delta n}$ 10,30,100,300mA
- Increases life of Installation & equipment

Features & Benefits



Ergonomic
Design



Best Fitted



Accurate



Protected Terminals
IP=20

NO accidental Contact/Shock from
live parts during installation



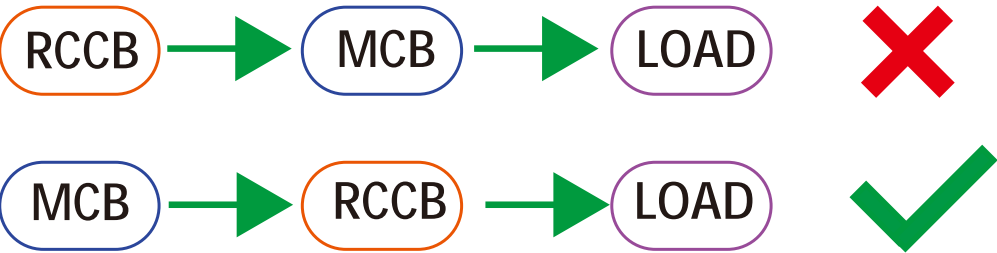
Line Load Reversibility



RCCB Selection type

Residual/Leakage current components					Transiebt Resistant
RCCB Type	AC 50Hz	AC 50Hz Pulse	Smooth DC	AC>50Hz<kHz	3kA/20US Current Wave
AC	✓	✗	✗	✗	✗
A	✓	✓	* <6mA(1)	✗	✗
B	✓	✓	✓(1)	✓	✓

DOs & Don'ts for RCCB connection



2P Residual Current Circuit Breaker With Overload Protection

2P Residual Current Operated Circuit Breaker(RCBO)

Combination of MCB+RCCB=RCBO

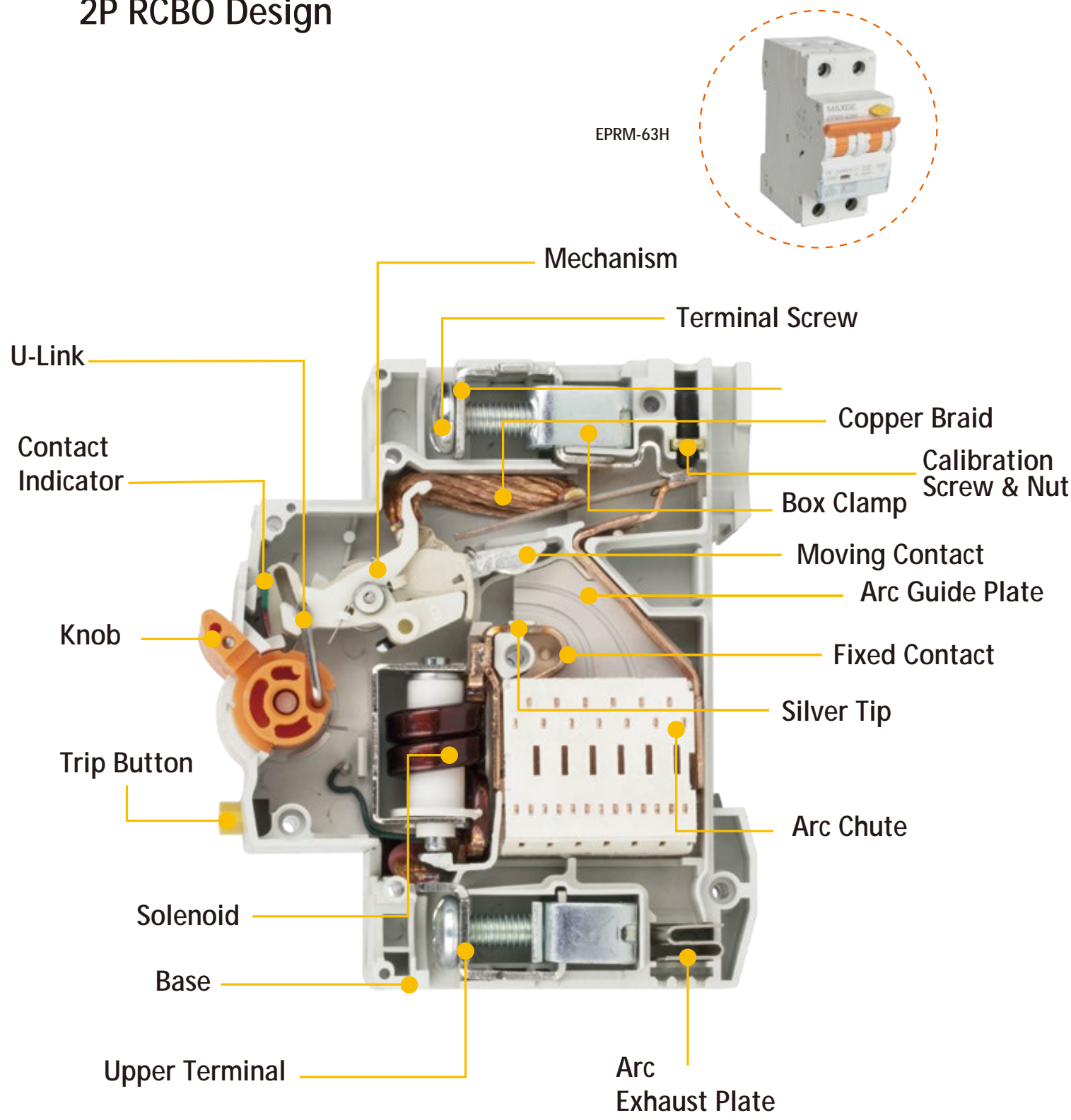
Technical data EPRM

Standard	EN / IEC61009-1
Breaking Capacity	6kA, 10KA
Rated current In	6, 10, 16, 20, 25, 32, 40, 50, 63A
Rated Tripping Current	10, 30, 100, 300mA



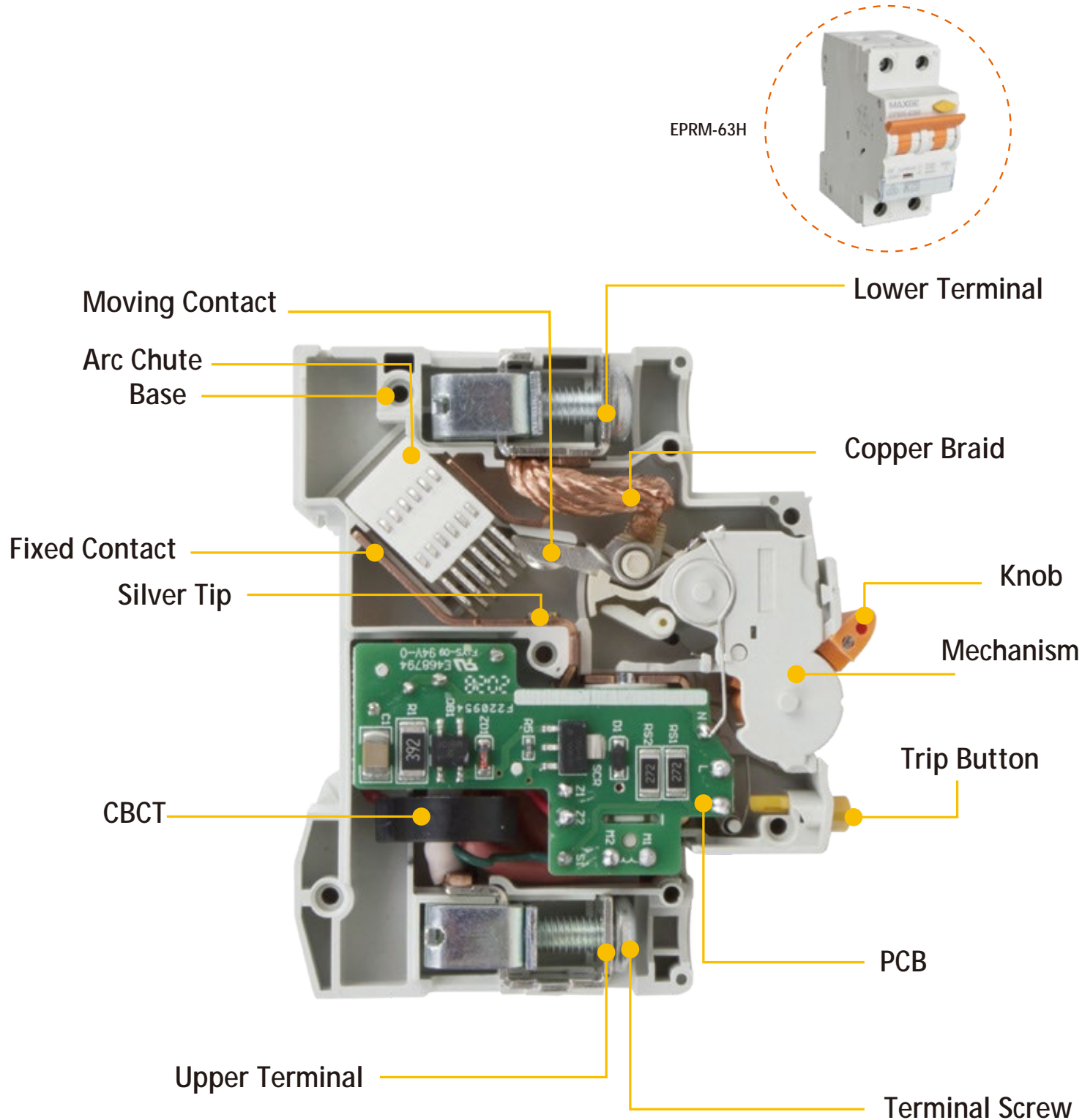
EPRM-63H

2P RCBO Design



EPRM-63H (MCB Side)

RCBO Design



EPRM-63H (RCCB Side)

1P Residual Current Circuit Breaker With Overload Protection

1P Residual Current Operated Circuit Breaker(RCBO)

Combination of MCB+RCCB=RCBO

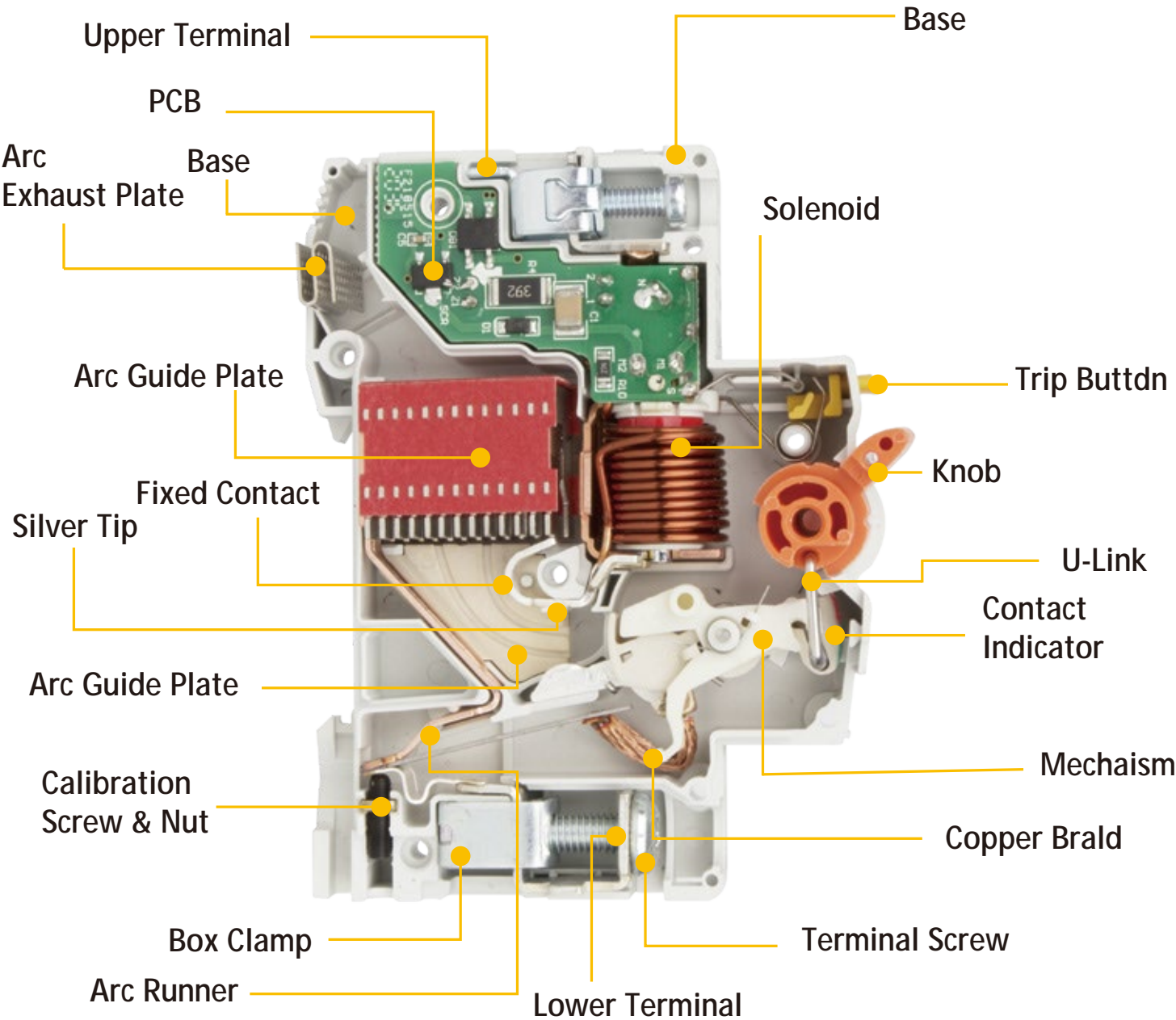
Technical data EPBRi

Standard	EN/ IEC61009-1
Breaking Capacity	6kA,10kA
Number of poles	1 P+N(1 module)
Rated current,In	6, 10, 16, 20, 25, 32, 40A
Rated voltage	240VAC
Rated Tripping Current	10,30,100,300mA
Residual current off time	≤ 0.1s
Characteristic	B,C Curve
Electrical endurance	4000

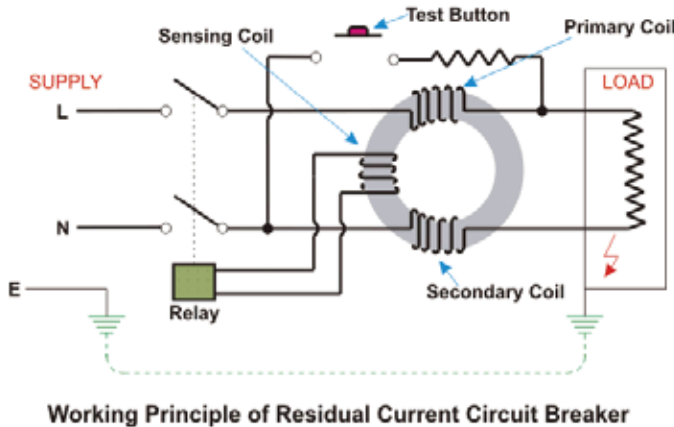


EPBRi6K

E-RCBO Design



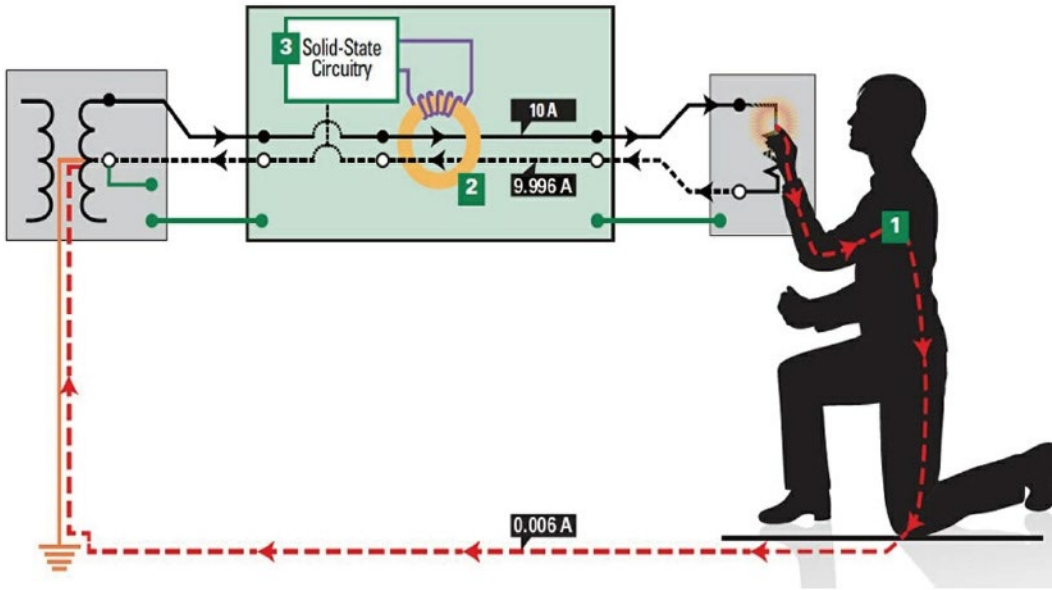
Earth leakage Protection



- Current travels through the body
- CBCT picks up the imbalance current
- PMR push the plunger forward
- Switching mechanism Actuate



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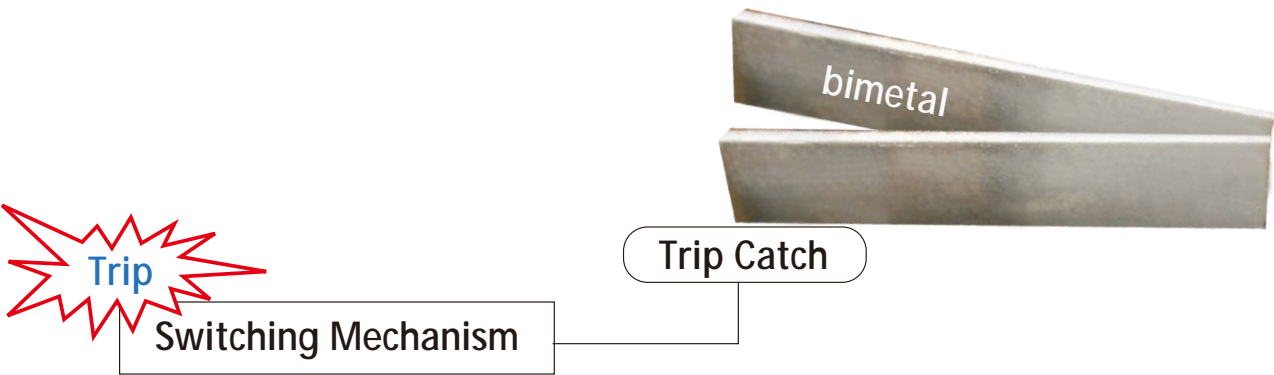
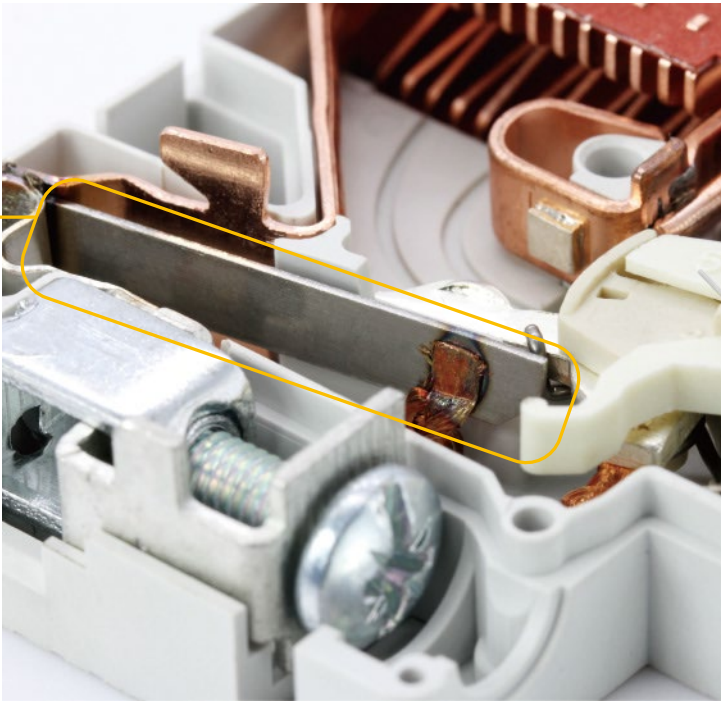


Overload Operation

Bimetal Metal Alloy

Overload Protection:Through
Consists of 2 differernt metals bonded together
Different metals have different coefficient of expansion

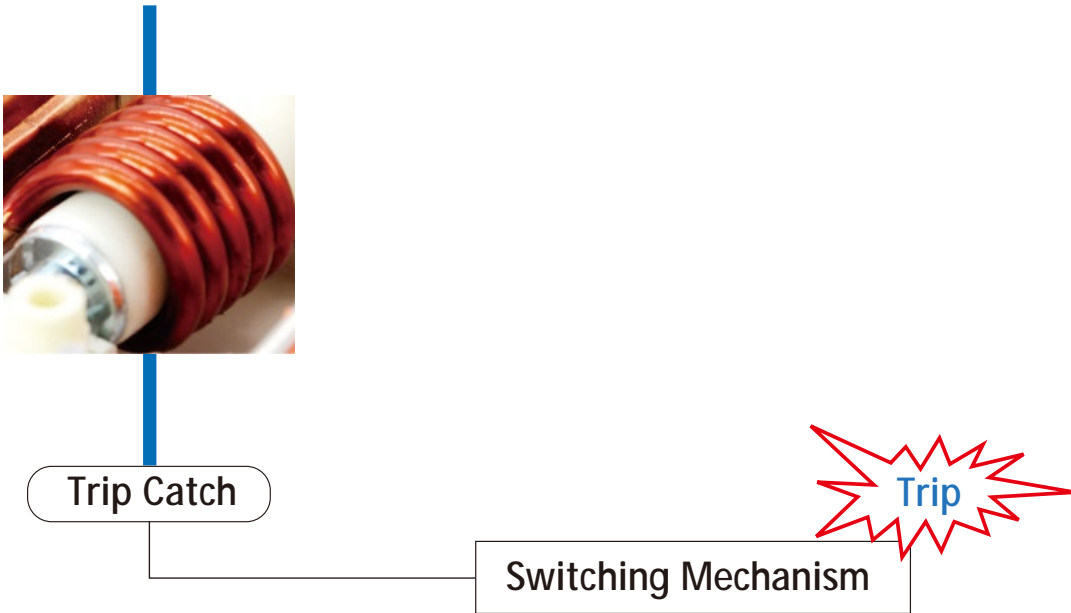
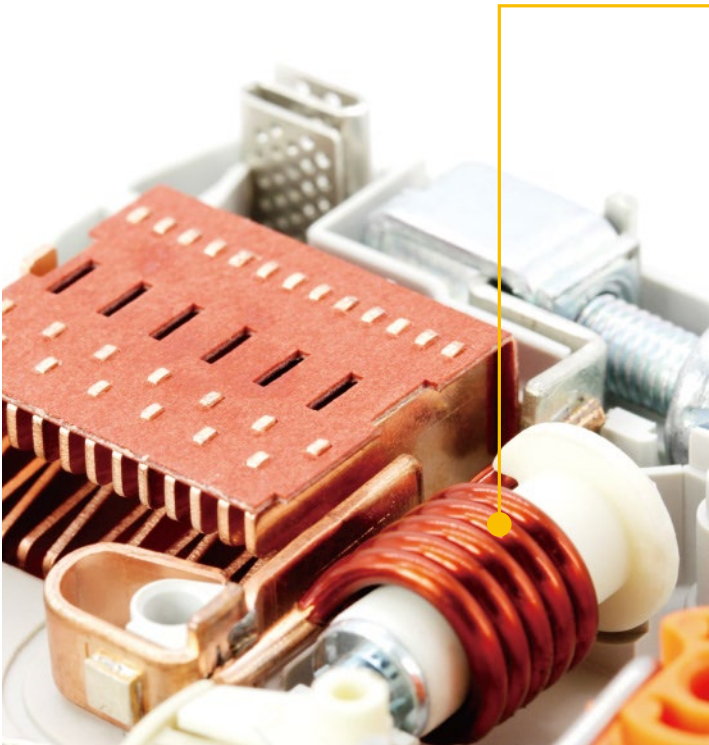
- On heating-it bends towards tripping
- Pushes the trip catch lever
- Switching mechanism actuated



Short Circuit Operation

Solenoid

- High current flows
- Solenoid gets magnetized
- Attracts tripping plunger
- Lower portion of plunger pushes trip catch lever
- Switching mechanism actuated



Features & Benefits



Ergonomic
Design



Best Fitted



Accurate

NO Possibility of Single Phasing



Features & Benefits

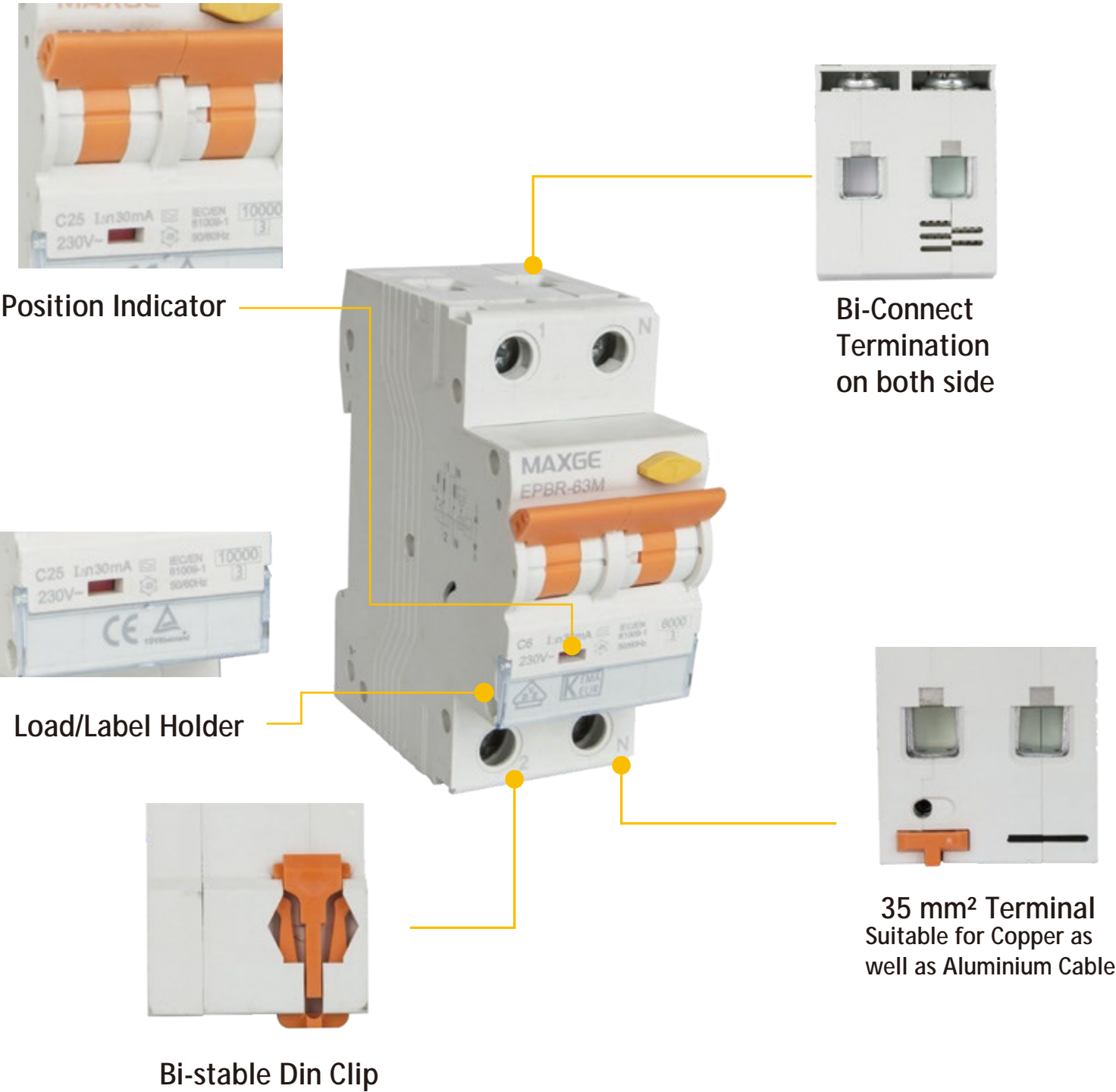


Protected Terminals
IP=20

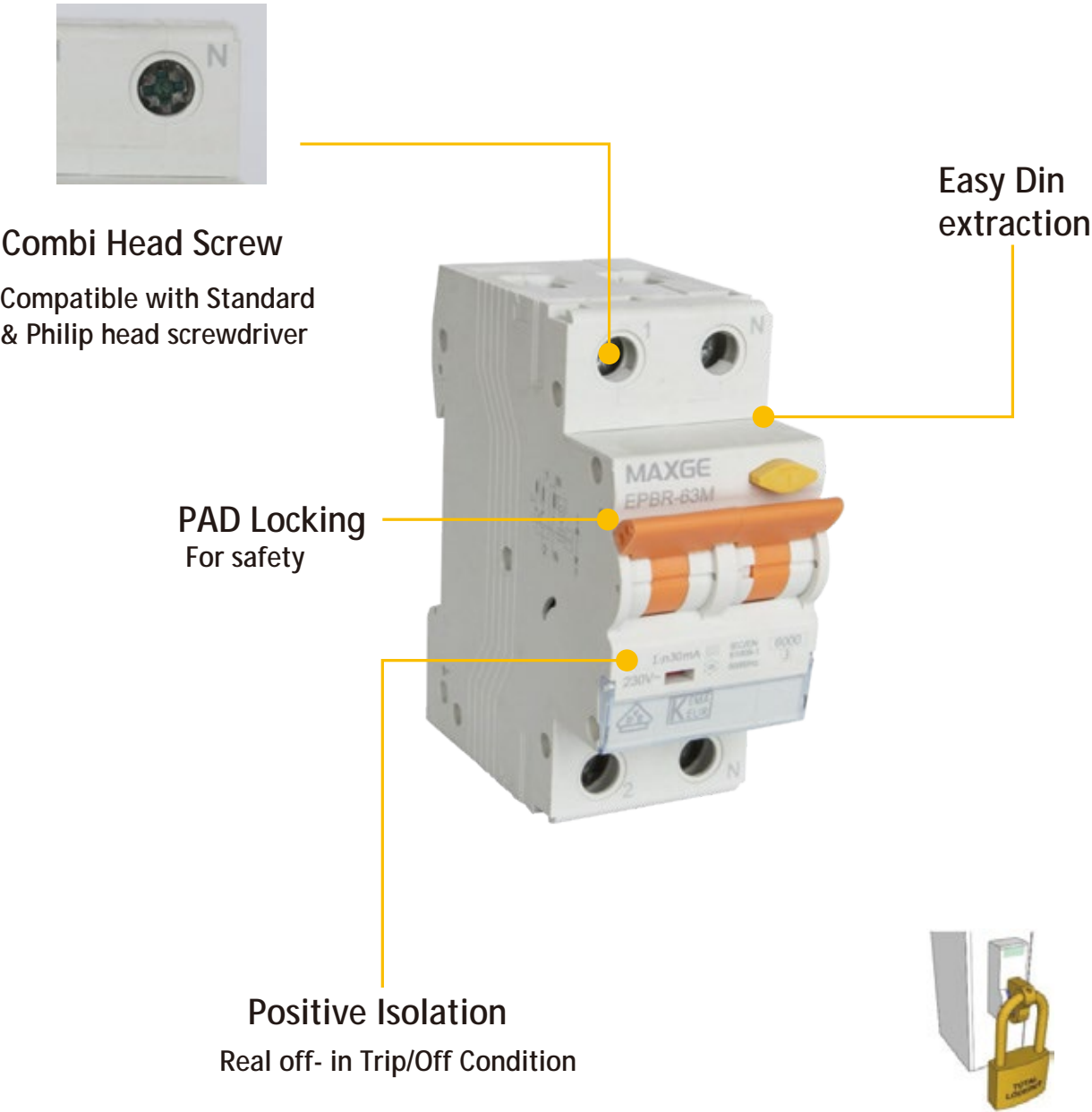
NO accidental Contact/Shock from
live parts during installation



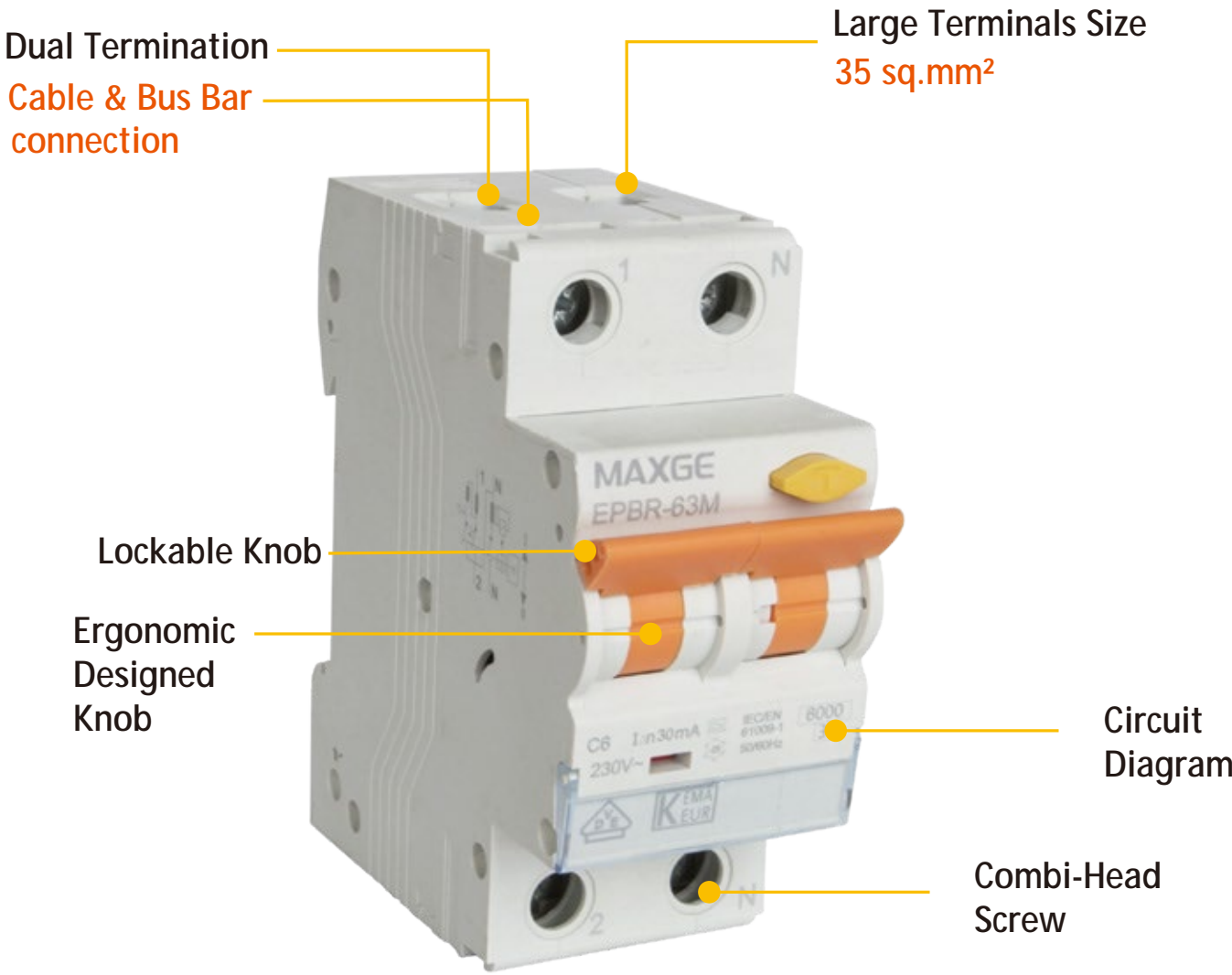
Features & Benefits



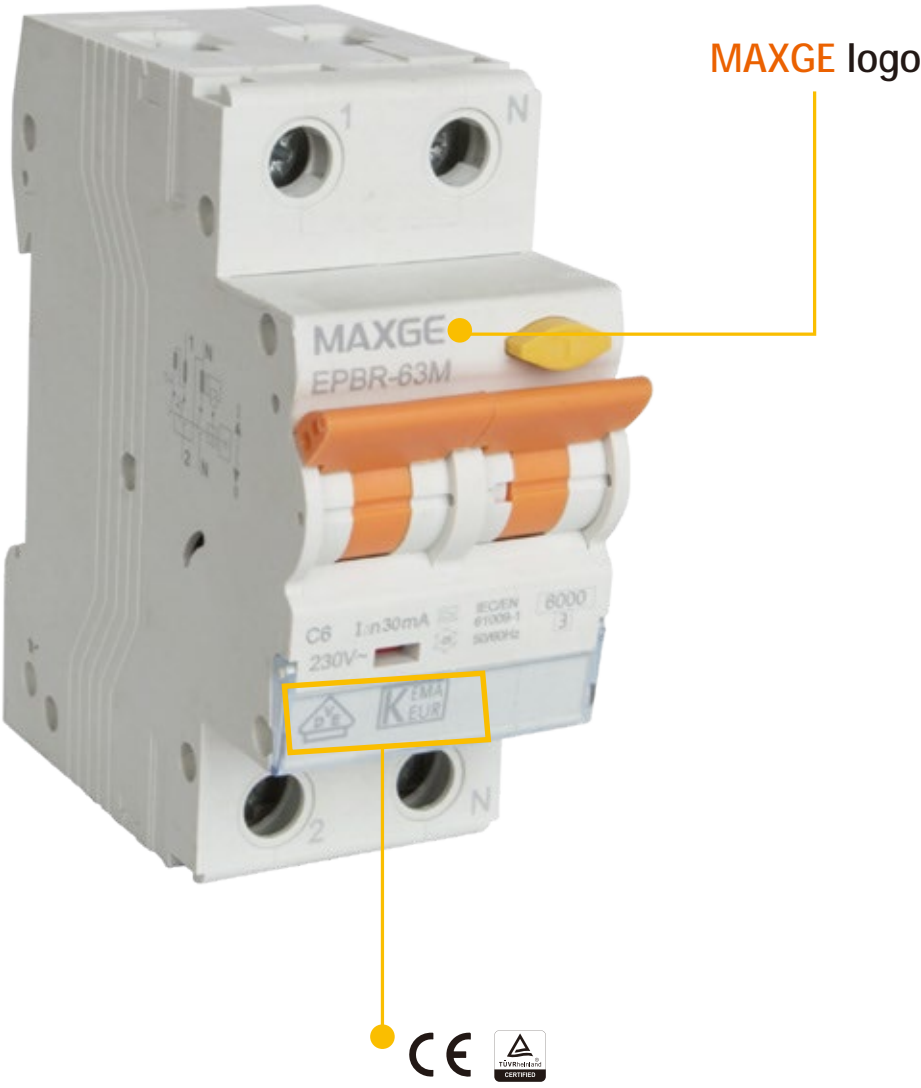
Features & Benefits



Features & Benefits

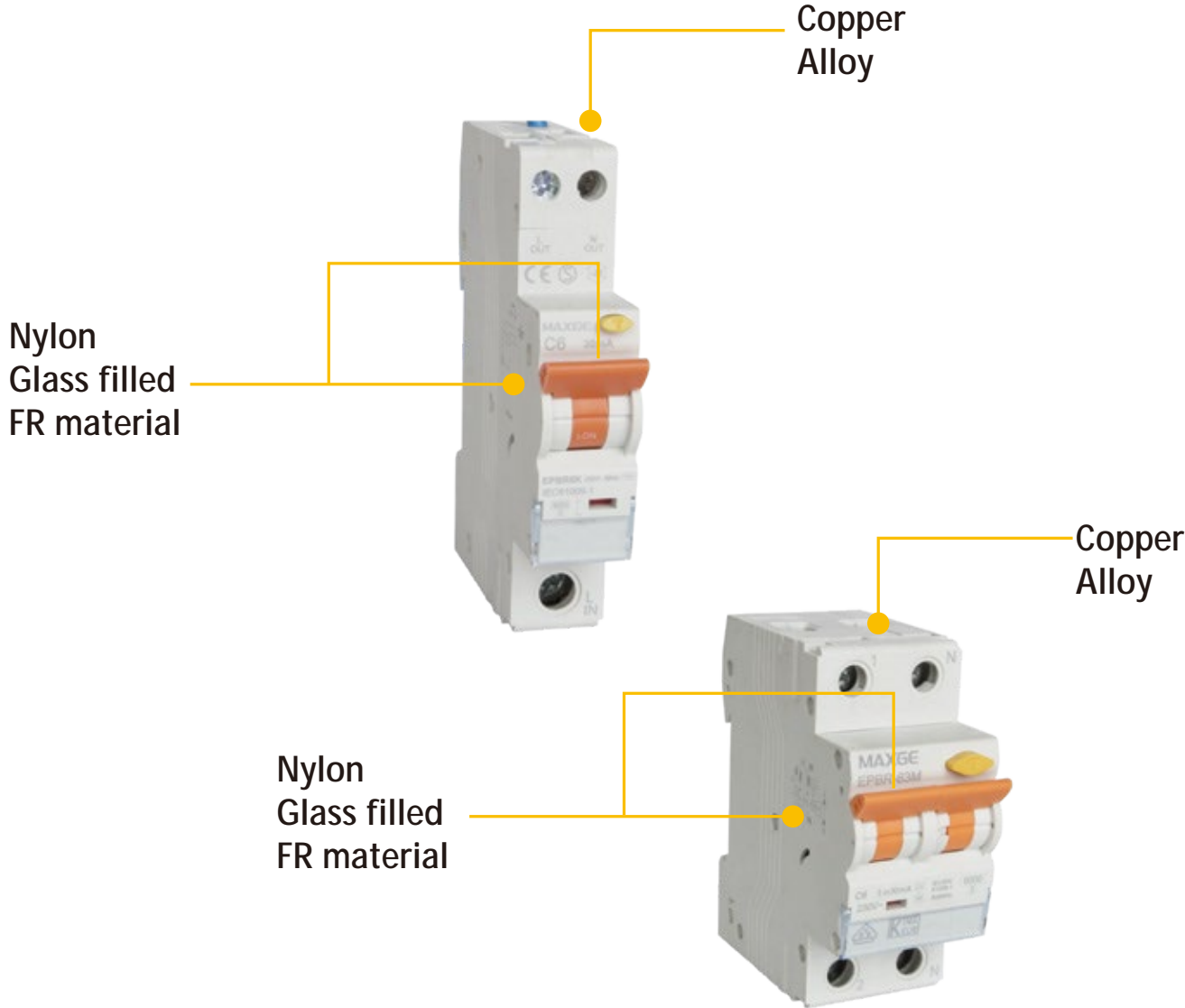


Features & Benefits



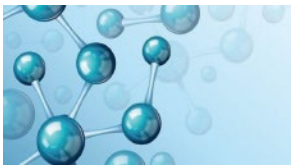
Conformity to
Health, Safety & Environmental
Protection Standard

Features & Benefits



High

- Strength
- Ecofriendly
- Melting Point
- Dielectric Strength
- Temperature Resistant

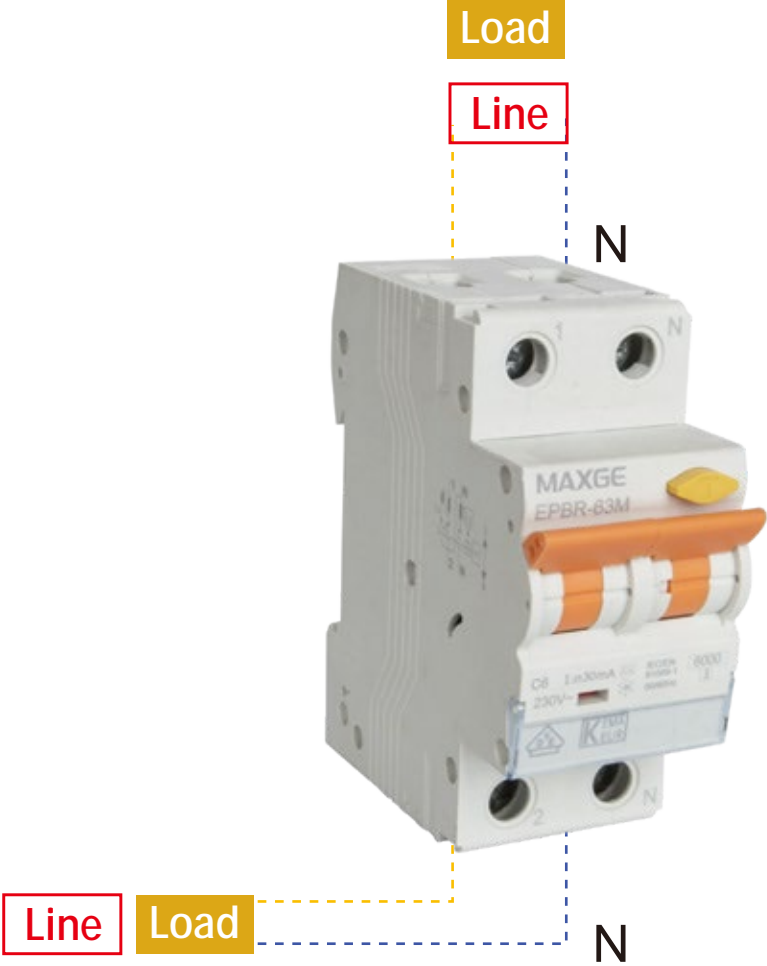


Rigidity



Strength

Line Load Reversibility



*For Ercbo Line & Load cannot be reversed.

ISOLATOR

Isolator



EPI-R-1P



EPI-R-2P

Technical data

Standard	EN / IEC60947-3
Number of poles	1P,2P,3P, 4P
Rated currents	16,20,25,32,40,50,63,80,100A



CB CE

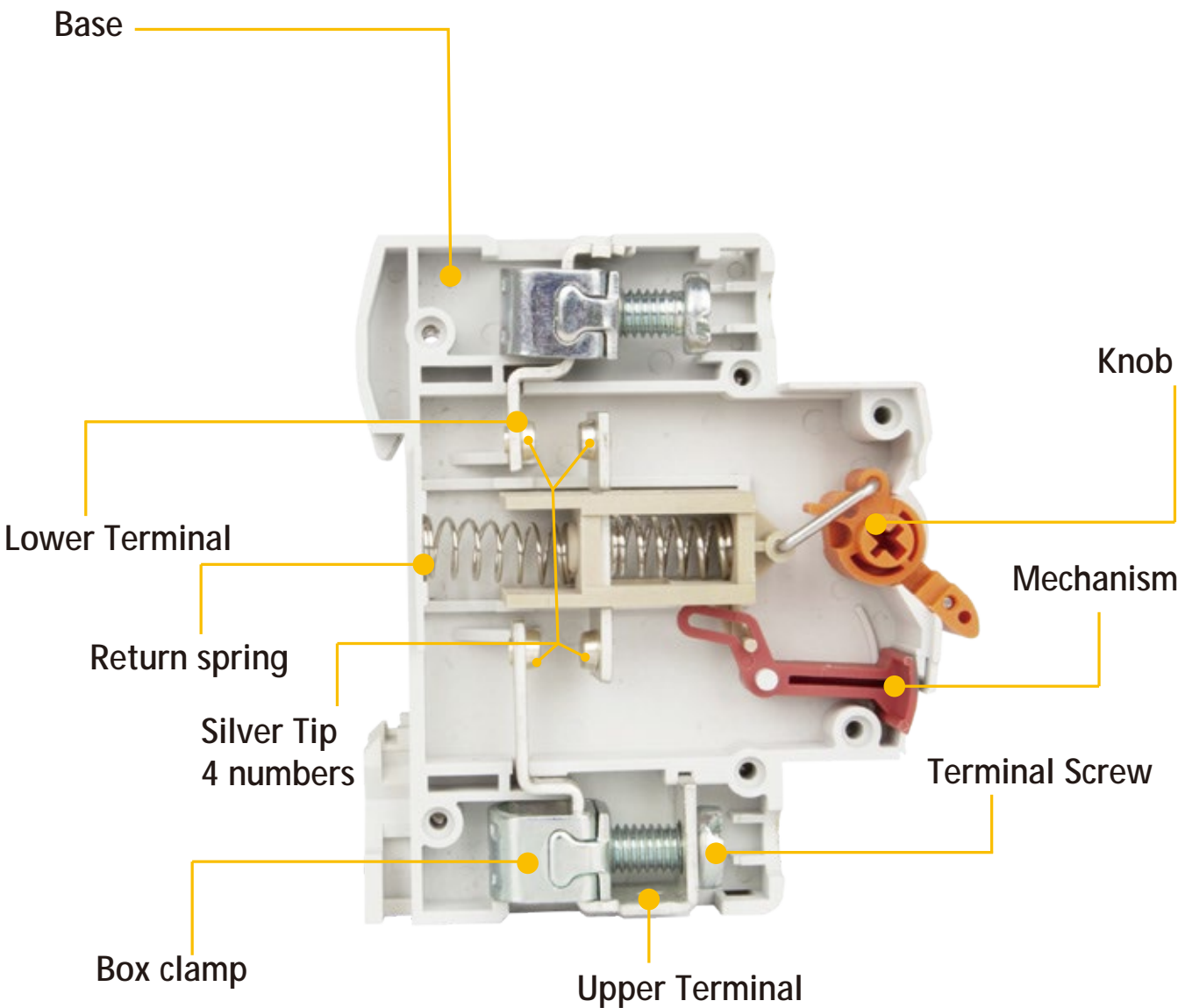


EPI-R-3P



EPI-R-4P

Isolator Design



Distribution Board-Range

SGDBi -S/F Series
Distribution Box

Technical data

Standard	IEC60439-3
Approval	CE
Modules(No.)	6,10,12,18,24,36
Row	Single row for 6,10,12,18 modules 2 rows for 24,36 modules
Rated voltage In(A)	63,100,125A
Color	White RAL 9003 amd Grey RAL 7035
Color of door	Transparent,Grey
Mounting type	Surface,Flush
Degree of protection	IP30
Material	PS or ABS for body,PC for door
Fire resistance	650°C /30s
Ambient temperature(C)	-5~+40,max.95% humidity
Storage temperature(C)	-40~+75 °C



Distribution Board-Range

SGDBM Series
Distrbution Box

Technical data

Standard	BS,EN / IEC61439-2
Approval	CE
Modules(No.)	4,6,8,10,12
Enclosure Material	Electro galvanized steel sheet
Steel thickness	0.8-1.5mm
Phase	Single,Three
Mounting type	Surface,Flush
Color of Enclosure	Gray
Rated Voltage	110-415V AC,50/60HZ
MCB Mounting Design	Din-rall,Plug-In
Main Swith Rated Current	MCB-125A,MCCB-250A
Rated Insulation Voltage	690V/AC
Ambient Temperature	up to 55°C

