Dedicated
Will Be More Professional
2022-2023

TRM Series TRE Series

MCCB & ELCB

Molded **C**ase **C**ircuit **B**reaker
Earth **L**eakage **C**ircuit **B**reaker

www.traner.cn
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TRANER®
Since 1990

TRANER®
Since 1990

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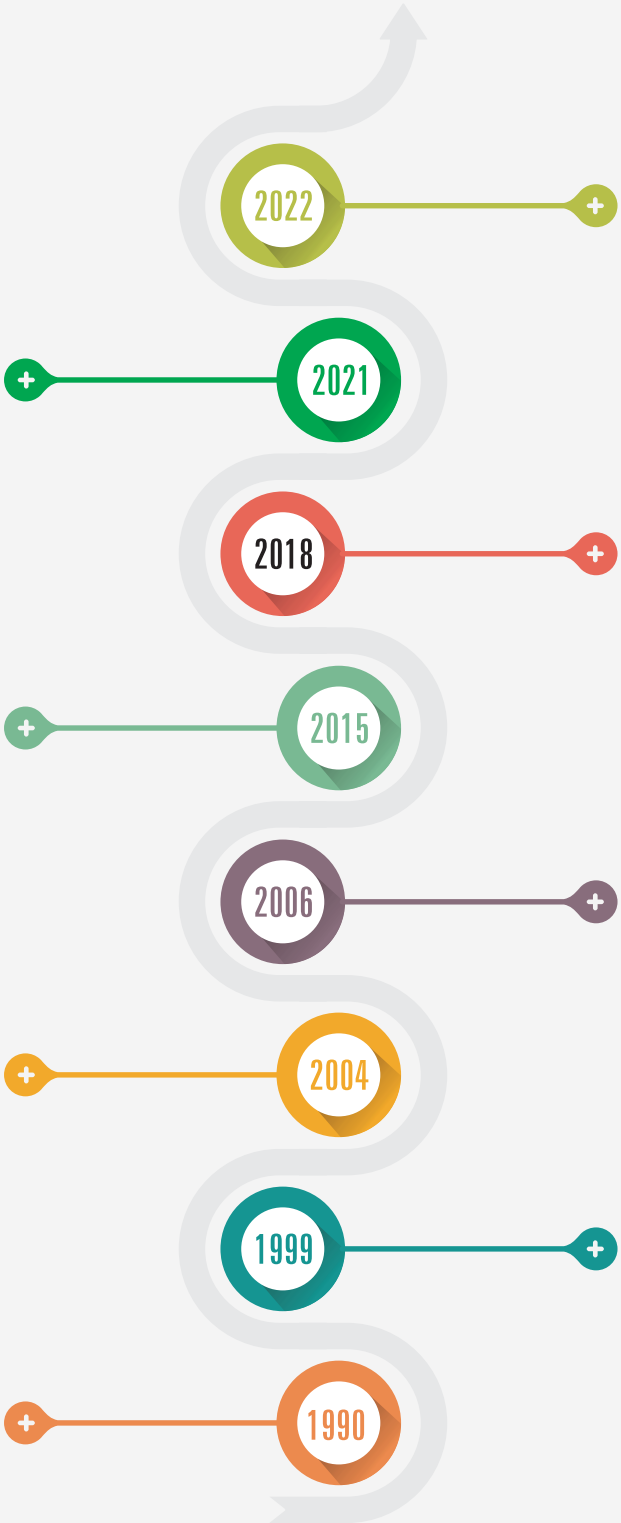
Corporate Milestone



2022,Jan.
TRANER's turnover reach 20 millions US dollars.

2021,Oct.
We finished our new plant which was invested around 8 millions US dollars.

2018,Dec.
The annual turn over more than 15 millions US dollars.

2015,May.
Changed the company name to Zhejiang Qianna Electric Co., Ltd.

2006,Mar.
Got ISO9001：2000 Certificate.

2004,Oct.
Changed the company's name to Wenzhou Qianna Electric Co.,Ltd.

1999,Jun.
Yue qing Zhi yuan Accessory Factory was established and became the official supplier of Chint.

1990,Jun.
The founder started the production in a family workshop.

Since 1990

ZHEJIANG QIANNA ELECTRIC CO.,LTD(TRANER) was founded in 1990, we engage in tooling making, parts punching, injection mould, spot welding, and PCB production to finished product assembly. Now we are professional with MCCB, ELCB, MINI safety breaker MCB, RCCB, RCBO, Al/Cu universal terminal block, etc. Our product are wide selling to Norway, Sweden, Germany, Netherlands, Turkey, Thailand, Malaysia, Korea, Japan etc more than 15 countries. With so many years rich experience, we have won favorable comments due to the superior quality, reasonable price and excellent after-sale service.

TRANER has strong technical ability, complete production line and testing equipment. All the process strict control to ensure the excellence, reliable and stable product quality. So far, the company has passed ISO9001:2015 quality assurance system certification and ISO14001:2015 environmental management system certification; Our products have passed the national compulsory CCC certificate, CE, CB etc product certificates.

Warmly welcome friends at domestic and abroad come to talk, welcome to TRANER!

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Integrity wins the market, quality makes the future!

TRM&TRE For Protection

Our circuit breakers are designed to protect low voltage electrical systems from damage caused by overload and short circuit as well as the earth leakage.

For Power Distribution

High breaking capacity

Optimum coordination technique

Powerful engineering tools

For Protection Of Motors And Their Control Devices

Optimal overload protection

Guaranteed Short Circuit Current Ratings

For Disconnecting & Controlling Circuits

For Extensive Applications

Wide range of optimized accessories

CONTENTS

TRM2 MCCB

TRM MCCB

TRM **MCCB**

Molded Case Circuit Breaker

CONTENTS

TRE2 ELCB

TRE ELCB

TRE **ELCB**

Earth Leakage Circuit Breaker

STANDARDS

TRM series circuit breakers and auxiliaries comply with the following international standard:

- **IEC / EN 60947-1**
  Low-voltage switchgear and controlgear-Part 1:General rules
- **IEC / EN 60947-2**
  Low-voltage switchgear and controlgear-Part 2:Circuit-breakers

TRM MCCB (Standard use environment for TRM series MCCB)

1)Ambient Temperature:	Within the range of -5℃～+55℃ (However, when the temperature exceed 40℃,it should be considered to reduce the capacity to use)
2) Relative Humidity:	Within the range of 45%～85%
3) Altitude：	2,000m or less (However, if it exceeds 1,000m, atmosphere correction through humidity test and withstand voltage test can be considered.)
4) Atmosphere where excessive steam, oil steam, smoke, dust, salt and other corrosive materials do not exist.	

IEC/EN 60947-1
IEC/EN 60947-2

TRM2 TYPE GUIDE

CLASSIFICATION

According to the Pole : 2-poles, 3-poles

According to the frame size : Frame.50, Frame.100

TR	M2	–	50	/	2	–	30
Traner electric	MCCB series		Ampere frame		Number of the poles		Rated current

Ampere frame	
50	A
100	A

Number of the poles	
2	- Two Poles
3	- Three Poles

Rated current	
5	A
10	A
15	A
20	A
30	A
40	A
50	A
63	A
80	A
100	A

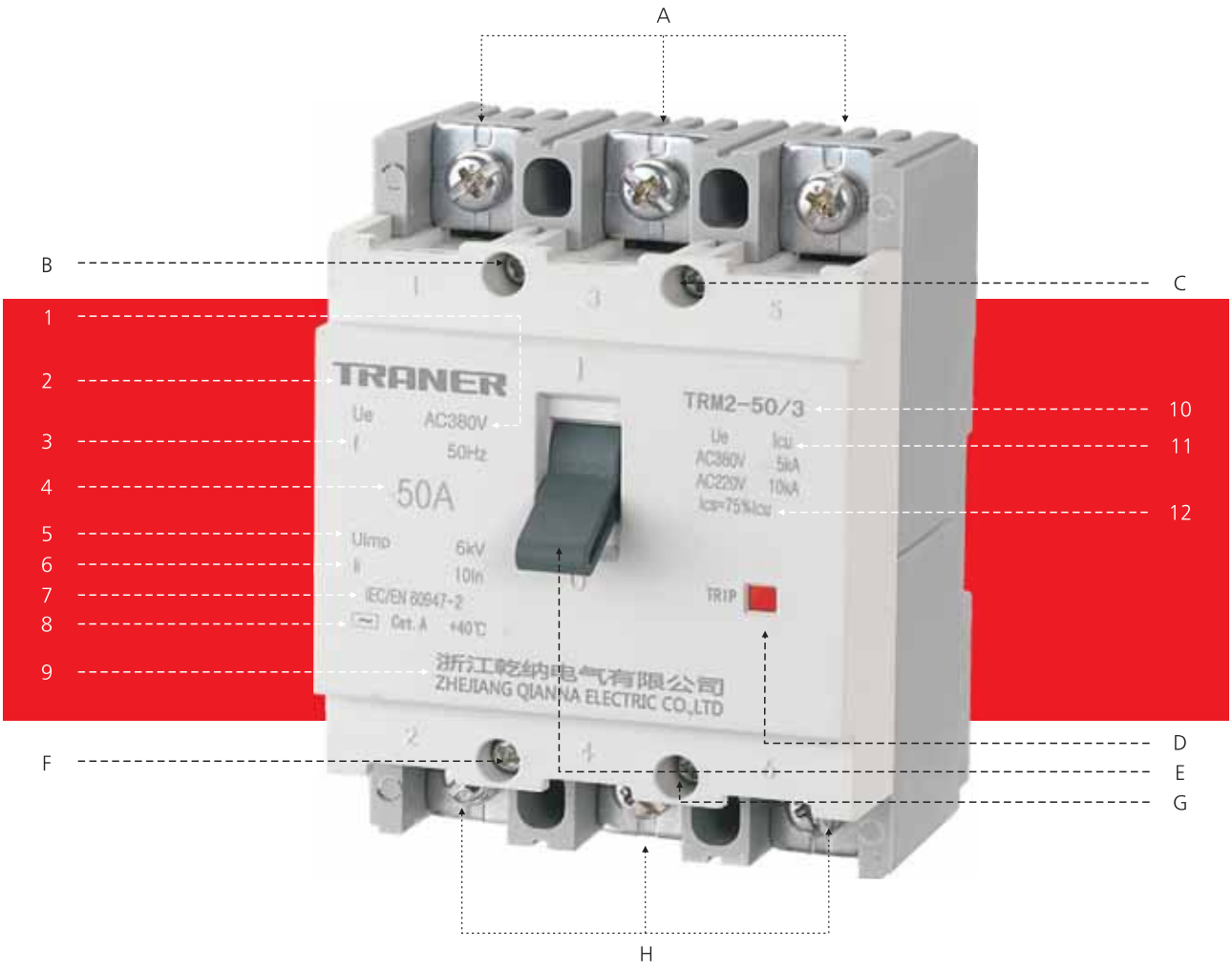
TRM2 MCCB

1.Small size,high capacity;
2.Beautiful appearance;
3.Bimetal design;

Ics=75%Icu


TRANER
TRM2-50/3
TRM2-50/2
50A
TRIP
浙江乾纳电气有限公司
ZHEJIANG QIANNA ELECTRIC CO.,LTD

Marking & Configuration



Marking & Configuration

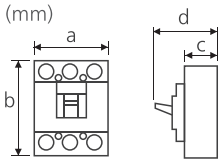
Printing instruction

1	Ue: Rated operational voltage
2	Company logo
3	Rated frequency
4	In: Rated current
5	Uimp: Rated impulse withstand voltage
6	Instantaneous/short circuit trip current
7	IEC/EN standard
8	Calibrated temperature as defined by IEC/EN 60947-2
9	Company name
10	Product code
11	Icu: Ultimate breaking capacity
12	Ics: Service breaking capacity

Function instruction

A	Up-stream cable connections
B	Fixing hole
C	Fixing hole
D	"Push to trip" button for over current trip
E	Operating handle
F	Fixing hole
G	Fixing hole
H	Down-stream cable connections

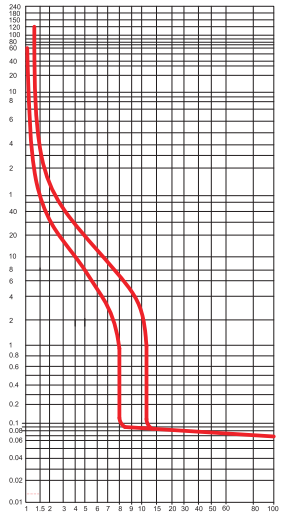
Technical Data Table

Ampere frame size		50AF								100AF	
Product type		TRM2-50/2				TRM2-50/3				TRM2-100/2	TRM2-100/3
Number of poles		2				3				2	3
Rated frequency (Hz)		50/60				50/60				50/60	50/60
Rated current (A)	In	5, 10		15, 20, 30, 40, 50		5, 10		15, 20, 30, 40, 50		63, 80, 100	63, 80, 100
Rated voltage (V)	Ue	220/415				220/415				220/415	220/415
Rated Insulated voltage (V)	Ui	500				500				500	500
Rated impulse voltage (kV)	Uimp	6				6				6	6
Ultimate breaking capability (kA) GB 14048.2, IEC/EN 60947-2	Icu	220V	415V	220V	415V	220V	415V	220V	415V	220V	415V
		5	2.5	10	6	5	2.5	10	6	10	6
Ics=%×Icu		75%		75%		75%		75%		75%	75%
Dimensions (mm) 	a	50				75				50	75
	b	98				98				98	98
	c	60				60				60	60
	d	80				80				80	80
Weight (kg)		0.31				0.41				0.31	0.41

Characteristics curves

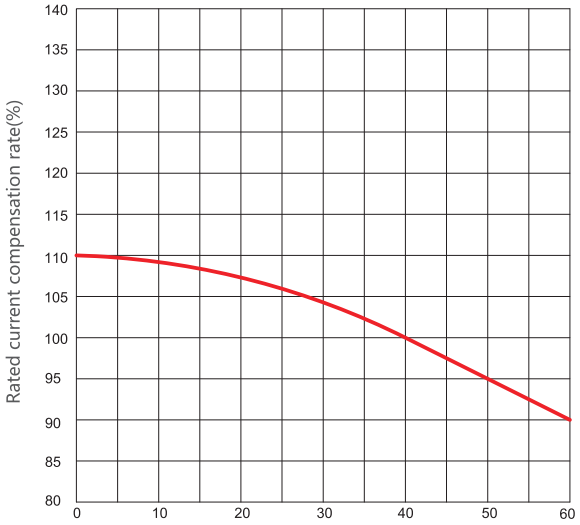
TRM2-50

Rated Current(5A-50A)



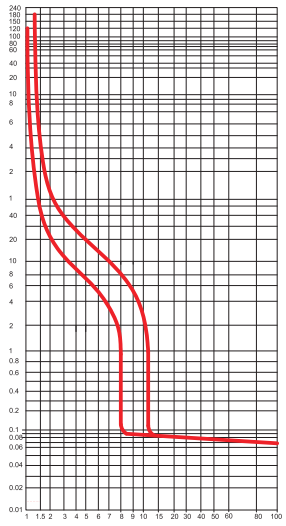
Rated current times

Temperature compensation curves



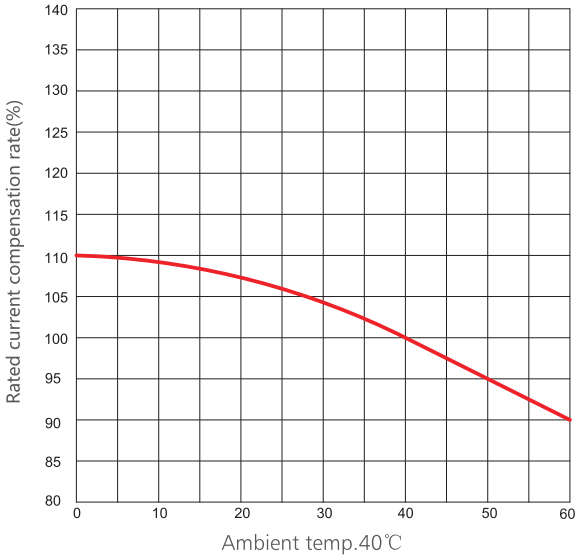
TRM2-100

Rated Current(63A-100A)



Rated current times

Temperature compensation curves



Characteristics Curves Table

Test No.	Load current	Rated current	Initial state	Time	Estimated result
Over-load					
1.	1.05 In	In≤63A	cold state	t < 1h	Non-trip
		In > 63A		t < 2h	
2.	1.30 In	In≤63A	continuing the test	t < 1h	Trip
Short circuit					
3.	10 In*80%	All ampere	cold state	t < 0.2s	Non-trip
	10 In*120%			t < 0.2s	Trip

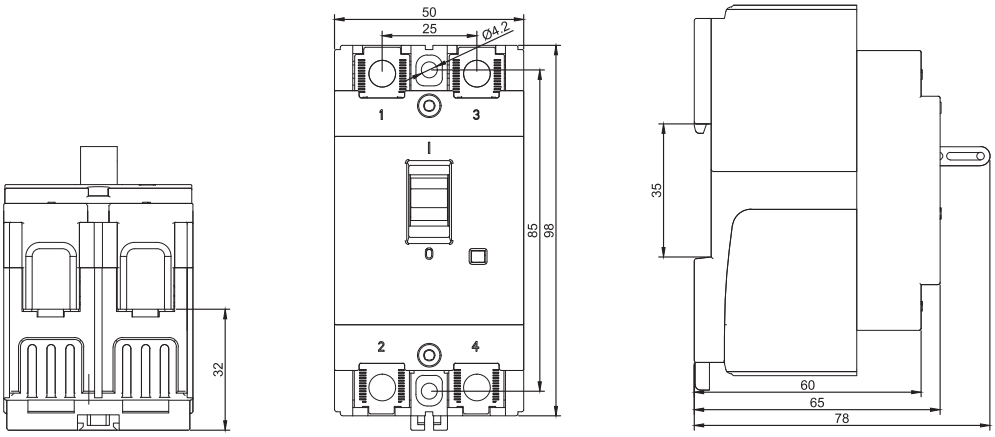
Temperature Compensation Table

(IEC/EN 60947-2) (Calibration at 40℃)

Product code	Rated current range	Compensation coefficient						
		0℃	10℃	20℃	30℃	40℃	50℃	60℃
TRM2-50	5A~50A	110%	109%	107%	104%	100%	95%	90%
TRM2-100	63A~100A	110%	109%	107%	104%	100%	95%	90%

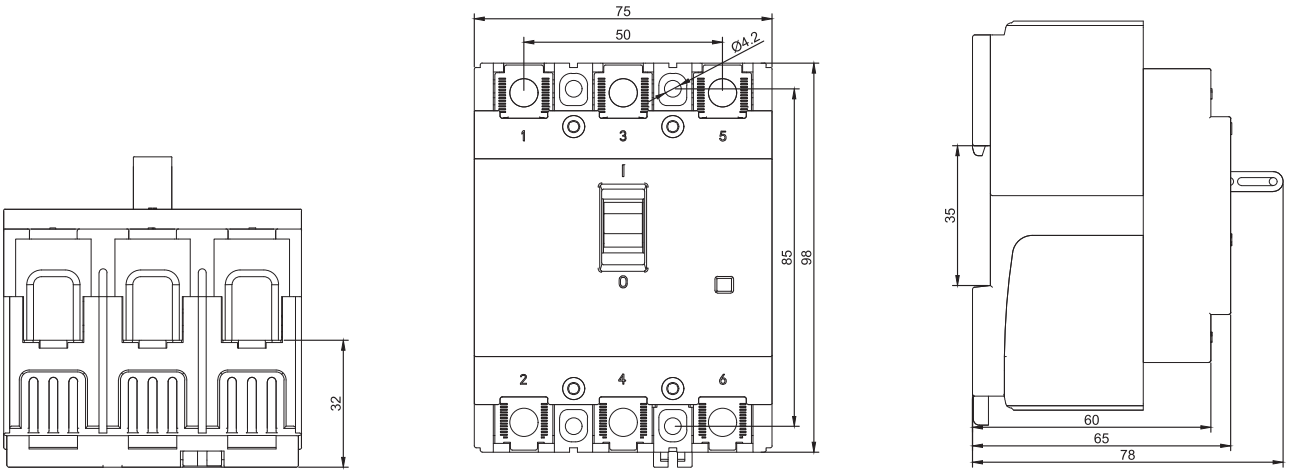
Outline Dimension

TRM2-50/2P



2P

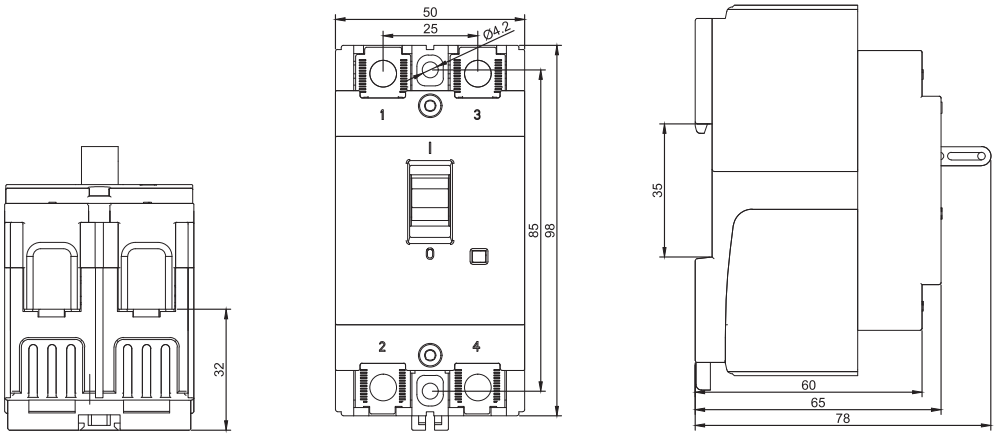
TRM2-50/3P



3P

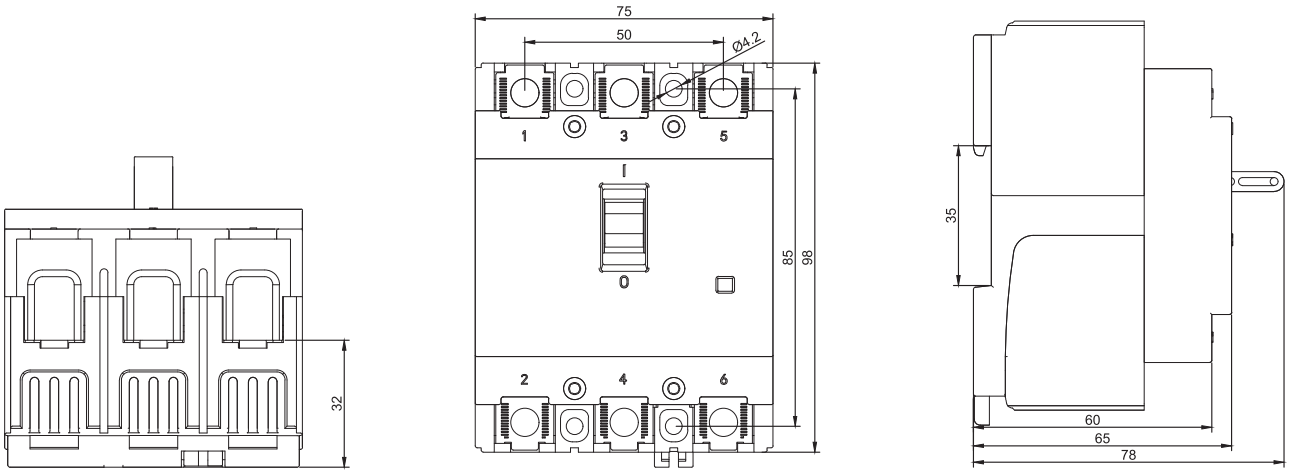
Outline Dimension

TRM2-100/2P



2P

TRM2-100/3P



3P

TYPE GUIDE

CLASSIFICATION

According to the Pole : 1-pole, 2-poles, 3-poles, 4-poles
According to the Breaking Capacity : S-type, H-type
According to the rated current : Fix type, Adjustable type(0.8In～1.0In)

TR	M	F4	–	H	3	/	250	–	AX
Traner electric	MCCB Series	Ampere frame		Breaking capacity level	Number of the poles		Rated current		Built-in Accessories

F1	63A
F2	125A
F3	160A
F4	250A
F5	400A
F6	800A

S	Standard capacity type
H	High capacity type

1	- One pole
2	- Two Poles
3	- Three Poles
4	- Four poles

15A～63A	F1
15A～125A	F2
15A～160A	F3
100A～250A	F4
250A～400A	F5
500A～800A	F6

AX	Auxiliary switch
AL	Alarm switch
SHT	Shunt tirp
AX+AX	Auxiliary switch Auxiliary switch
AX+AL	Auxiliary switch Alarm switch

Remark:
For the rated current ,it has fix type and adjustable type .
The default type is adjustable type(0.8In～1.0In) .
If need fix type or have other special requirement ,please advise in advance .

Built-out Accessories

IB	Inter-phase Insulation Barrier
STC	Short Terminal Cover
CCB	Copper Connection Bar

TRM MCCB

1.Small size,high capacity;

2.Rated current adjustable(0.8In~1.0In);

3.Beautiful appearance;

4.Modular structure design,better performance;

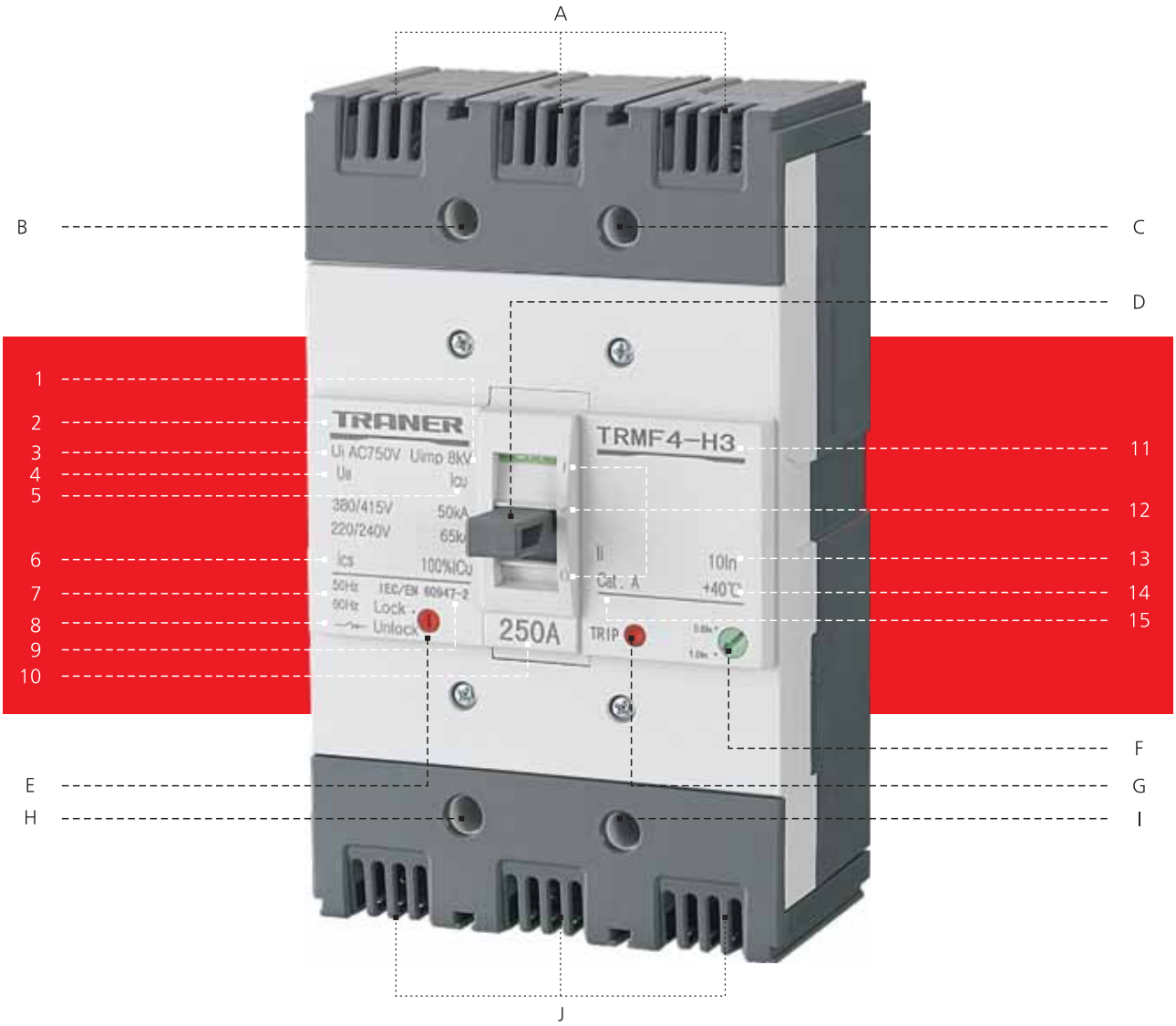
Ics=100%Icu

(Except single pole MCCB)

65kA

Modular structure design

Marking & Configuration



Marking & Configuration

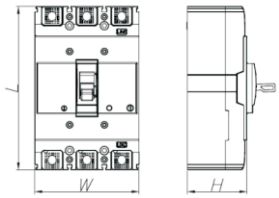
Printing instruction

1	Uimp: Rated impulse withstand voltage
2	Company logo
3	Ui: Rated insulation voltage
4	Ue: Rated operational voltage
5	Icu: Ultimate breaking capacity
6	Ics: Service breaking capacity
7	Rated frequency
8	Symbol indicating suitability for Isolation as defined by IEC/EN 60947-2
9	IEC/EN standard
10	In: Rated current
11	Product code
12	Indication of closed (I/ON) position Indication of free trip position Indication of open (O/OFF) position
13	Instantaneous/short circuit trip current
14	Calibrated temperature as defined by IEC/EN 60947-2
15	Utilization category

Function instruction

A	Up-stream cable connections
B	Fixing hole
C	Fixing hole
D	Operating handle
E	Lock setting for the operating handle
F	Long time current setting
G	"Push to trip" button for over current trip
H	Fixing hole
I	Fixing hole
J	Down-stream cable connections

Technical Data Table

Ampere frame size		TRMF1 (63A)			
Breaking capacity code		S		H	
Product code and pole		2P	3P	2P	3P
		TRMF1-S2	TRMF1-S3	TRMF1-H2	TRMF1-H3
Rated current ,In (A)		15.20.30.40.50.63			
Adjustable part	Rated current setting(0.8In~1.0In)①	√	√	√	√
	Lockup device for operating handle②	√	√	√	√
Rated operational voltage ,Ue (V) , AC		240/415			
Rated insulation voltage ,Ui (V)		1000			
Rated impulse withstand voltage ,Uimp (kV)		8			
Standard		Conformity with IEC / EN 60947-2			
Rated frequency (Hz)		50/60			
Rated short-circuit breaking capacity ,Icu (kA)					
AC	240V	14		25	
	415V	5		7.5	
Ics=% x Icu		100%			
Mechanical life (circle)		8500			
Electrical life (circle)		1500			
Dimension Length*Width*Height (mm) 	1-pole	-			
	2-poles	100*50*60			
	3-poles	100*75*60			
	4-poles	-			

① Optional ② Optional

③ Frame F5(400) can extend to 500A,630A MCCB

Technical Data Table

DEKRA

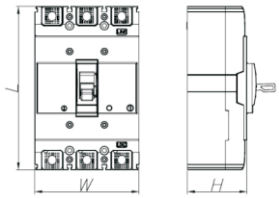
TRMF2 (125A)								TRMF3 (160A)			
S				H				S		H	
1P	2P	3P	4P	1P	2P	3P	4P	3P	4P	3P	4P
TRMF2-S1	TRMF2-S2	TRMF2-S3	TRMF2-S4	TRMF2-H1	TRMF2-H2	TRMF2-H3	TRMF2-H4	TRMF3-S3	TRMF3-S4	TRMF3-H3	TRMF3-H4
15.20.30.40.50.60.75.80.100.125								15.20.30.40.50.60.80.100.125.140.160			
×	√	√	√	×	√	√	√	√	√	√	√
×	√	√	√	×	√	√	√	√	√	√	√
240/415								240/415			
1000								1000			
8								8			
Conformity with IEC / EN 60947-2								Conformity with IEC / EN 60947-2			
50/60								50/60			
18	35			25	50			50		65	
-	18			-	35			25		37	
50%	100%			50%	100%			100%			
8500				8500				7000			
1500				1500				1000			
130*25*60								–			
130*50*60								–			
130*75*60								155*90*60			
130*100*60								155*120*60			

Technical Data Table



DEKRA

Ampere frame size		TRMF4 (250A)					
Breaking capacity code		S			H		
Product code and pole		1P	3P	4P	1P	3P	4P
		TRMF4-S1	TRMF4-S3	TRMF4-S4	TRMF4-H1	TRMF4-H3	TRMF4-H4
Rated current ,In (A)		100.125.160.180.200.225.250					
Adjustable part	Rated current setting(0.8In~1.0In)①	×	√	√	×	√	√
	Lockup device for operating handle②	×	√	√	×	√	√
Rated operational voltage ,Ue (V) ,AC		240/415					
Rated insulation voltage ,Ui (V)		1000					
Rated impulse withstand voltage ,Uimp (kV)		8					
Standard		Conformity with IEC / EN 60947-2					
Rated frequency (Hz)		50/60					
Rated short-circuit breaking capacity ,Icu (kA)							
AC	240V	25	50		36	65	
	415V	-	37		-	50	
Ics=% x Icu		50%	100%		50%	100%	
Mechanical life (circle)		7000			7000		
Electrical life (circle)		1000			1000		
Dimension Length*Width*Height (mm)	1-pole	150*38*60					
	2-poles	-					
	3-poles	165*105*60					
	4-poles	165*140*60					



① Optional ② Optional

③ Frame F5(400) can extend to 500A,630A MCCB

Technical Data Table

TRMF5 (400A)				TRMF6 (800A)			
S		H		S		H	
3P	4P	3P	4P	3P	4P	3P	4P
TRMF5-S3	TRMF5-S4	TRMF5-H3	TRMF5-H4	TRMF6-S3	TRMF6-S4	TRMF6-H3	TRMF6-H4
250.315.350.400 ③				500.630.700.800			
×	×	×	×	×	×	×	×
×	×	×	×	×	×	×	×
240/415				240/415			
1000				1000			
8				8			
Conformity with IEC / EN 60947-2				Conformity with IEC / EN 60947-2			
50/60				50/60			
50		65		65		85	
37		50		50		65	
100%				100%			
4000				2500			
1000				500			
–				–			
–				–			
257*140*103				275*210*103			
257*184*103				275*280*103			

Built-In Accessories

Shunt trip (SHT)

- The shunt trip is an accessory for remote control.
- The shunt will trip when the input voltage is 70% - 110% of the rated operational voltage.(US)

Auxiliary switch (AX)

- Auxiliary switch is used to indicate the "On" and "Off" status of the breaker.
- Each switch has two contacts with a common connection.
- One is open and the other closed when the circuit breaker is open, and viceversa.

Alarm switch (AL)

- Alarm switch will make immediate audio or visual indication in a tripped breaker due to overload, short circuit or shunt trip to remind people.
- This switch features a closed contact when the circuit breaker is tripped automatically.
- In other words, this switch does not function when the breaker is operated manually.

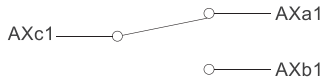
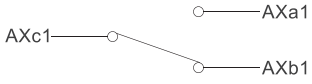
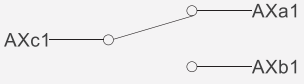
Combination switch (AX+AX)

It has two auxiliary switch(AX) in a body to connect into the same position of the breaker.

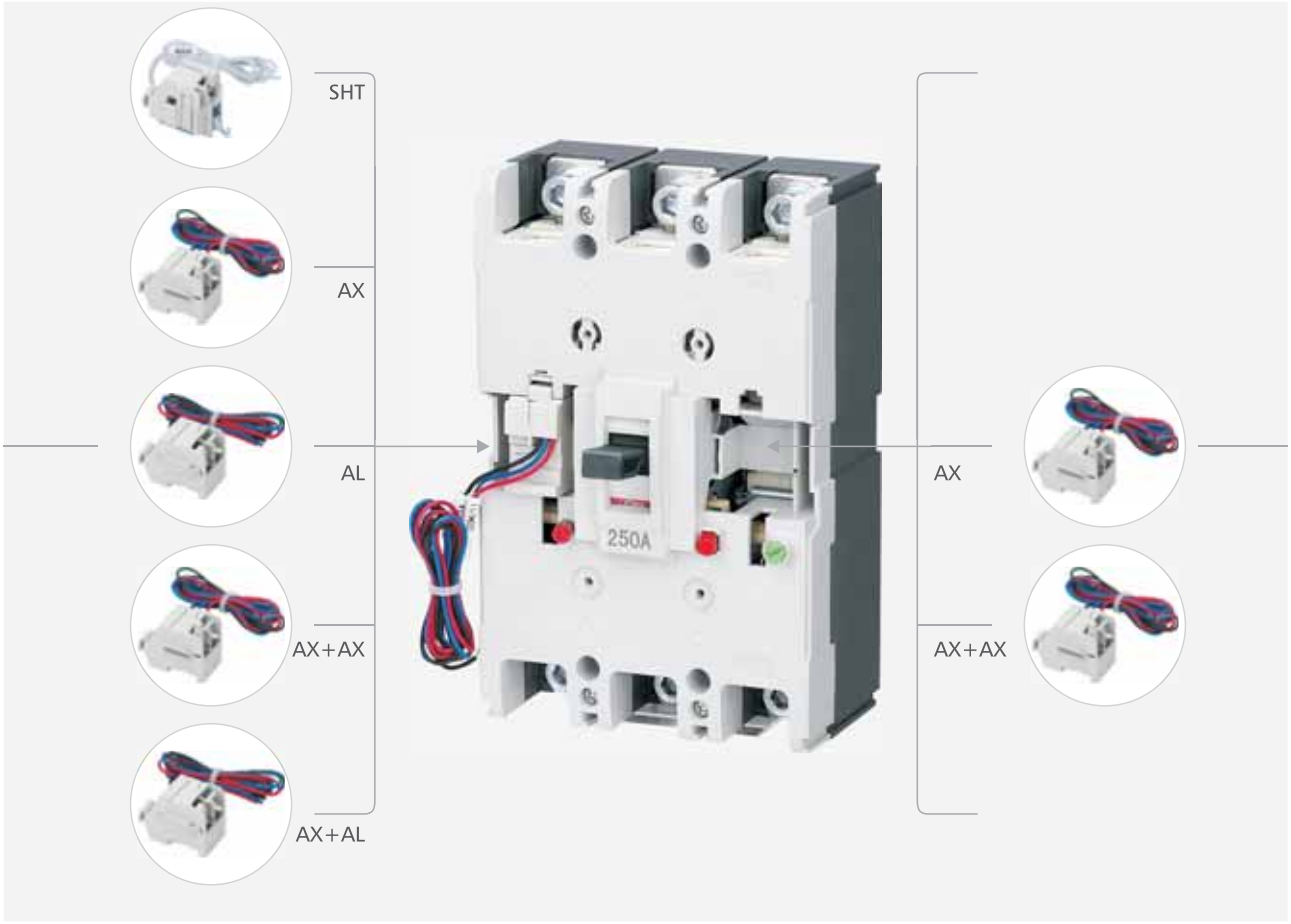
Combination switch (AX+AL)

It has one auxiliary switch(AX) and one alarm switch(AL) in a body to connect into the same position of the breaker.

CONTACT(AX+AL)

MCCB	ON	OFF	TRIP
AX			
AL			

Built-In Accessories



Maximum Possibilities

Product code	Poles	Left hole position					Right hole position				
		AX	AL	SHT	AX+AX	AX+AL	AX	AL	SHT	AX+AX	AX+AL
TRMF1(63A)	2P	-	-	-	-	-	√	-	-	√	-
	3P	√	√	√	√	√	√	-	-	√	-
	4P	-	-	-	-	-	-	-	-	-	-
TRMF2(125A)	1P	-	-	-	-	-	-	-	-	-	-
	2P	-	-	-	-	-	√	-	-	√	-
	3P	√	√	√	√	√	√	-	-	√	-
	4P	√	√	√	√	√	√	-	-	√	-
TRMF3(160A)	3P	-	-	-	-	-	-	-	-	-	-
	4P	-	-	-	-	-	-	-	-	-	-
TRMF4(250A)	1P	-	-	-	-	-	-	-	-	-	-
	3P	√	√	√	√	√	√	-	-	√	-
	4P	√	√	√	√	√	√	-	-	√	-
TRMF5(400A)	3P	-	-	-	-	-	-	-	-	-	-
	4P	-	-	-	-	-	-	-	-	-	-
TRMF6(800A)	3P	-	-	-	-	-	-	-	-	-	-
	4P	-	-	-	-	-	-	-	-	-	-

Built-Out Accessories

Inter-phase Insulation Barrier + **Short Terminal Cover**

Inter-phase Insulation Barrier

Short Terminal Cover

Built-Out Accessories

Inter-phase Insulation Barrier(IB)

- Inter-phase insulation barrier is safety accessory, which is used for the insulation between the phases. It can guarantee the best insulation of the wiring terminal.
- They are compatible with both the short terminal covers. And it is ok to mount the inter-phase insulation barrier in both TRM&TRE series and every phase(2P,3P and 4P).

Short Terminal Cover(STC)

- Short terminal cover is insulation accessory ,which is used to prevent the direct contact between the terminal in circuit breaker and other live parts to ensure the safety of the users.
- All the terminal cover is designed with holes which can be knocked off to connect the cables of various wires and the copper platens.
- They are compatible with both the interphase insulation barrier and suitable for same phase & ampere frame of both TRM&TRE series(Such as TREF1-2P and TRMF1-2P).

Copper Connection Bar(CCB)

- Copper connection bar is connection accessories, which is used to connect wire/cable or any other conductor together with TRM&TRE series.
- They are suitable for same phase and same ampere frame of both TRM&TRE series(Such as TREF1-2P AND TRMF1-2P).

Maximum Possibilities

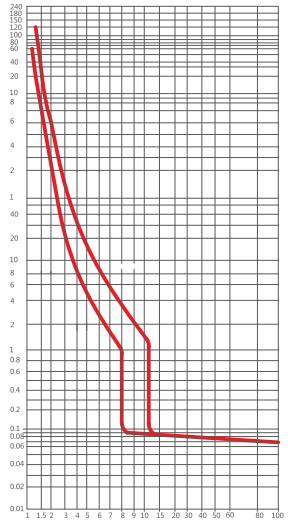
Frame	Poles	Short terminal cover(STC)		Inter-phase insulation barrier(IB)		Copper Connection Bar(CCB)	
		Product code	Each product requird quantity	Product code	Each product requird quantity	Product code	Each product requird quantity
TRMF1(63A)	2P	STC 12	2	IB 01	2	-	-
	3P	STC 13	2	IB 01	4	-	-
TRMF2(125A)	1P	STC 21	2	-	-	CCB 01	2
	2P	STC 22	2	IB 01	2	CCB 01	4
	3P	STC 23	2	IB 01	4	CCB 01	6
	4P	STC 24	2	IB 01	6	CCB 01	8
TRMF3(160A)	3P	-	-	-	-	-	-
	4P	-	-	-	-	-	-
TRMF4(250A)	1P	-	-	-	-	CCB 02	2
	3P	STC43	2	IB 02	4	CCB 02	6
	4P	STC44	2	IB 02	6	CCB 02	8
TRMF5(400A)	3P	-	-	IB 03	4	CCB 03	6
	4P	-	-	IB 03	6	CCB 03	8
TRMF6(800A)	3P	-	-	IB 04	4	CCB 04	6
	4P	-	-	IB 04	6	CCB 04	8

Remark:For the product code of short terminal cover(STC),STC12 means frame.1 two poles MCCB/ELCB.

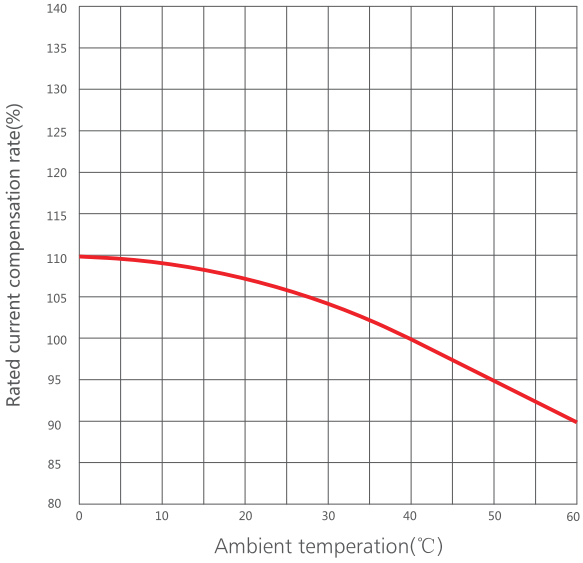
Characteristics curves

TRMF1

Rated Current(15A-63A)

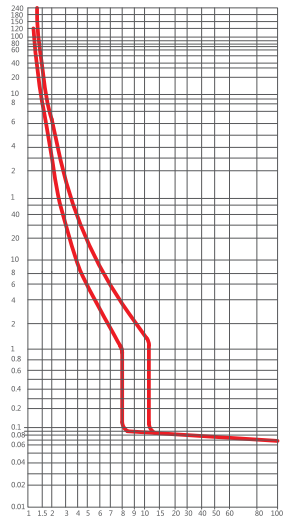


Temperature compensation curves

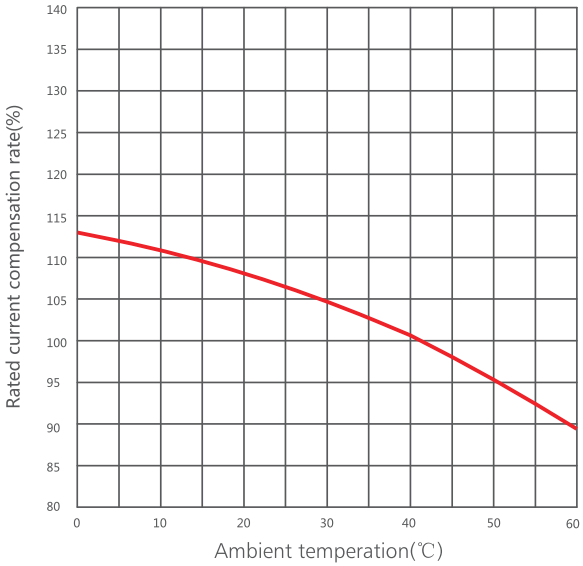


TRMF2

Rated Current(15A-125A)



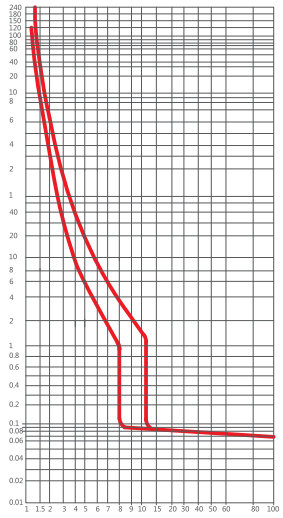
Temperature compensation curves



Characteristics curves

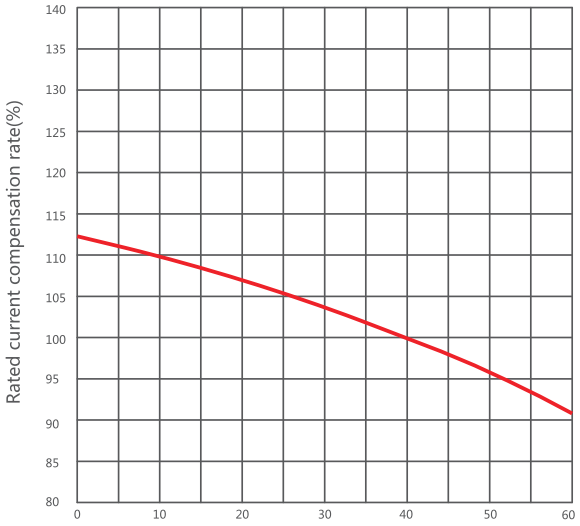
TRMF3

Rated Current(15A-160A)



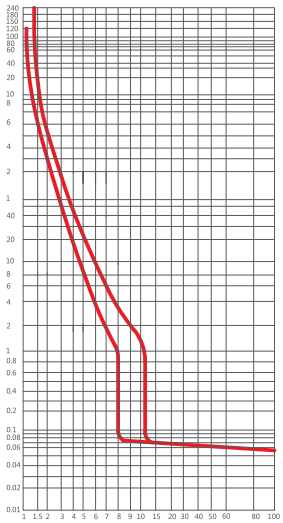
Rated current times

Temperature compensation curves



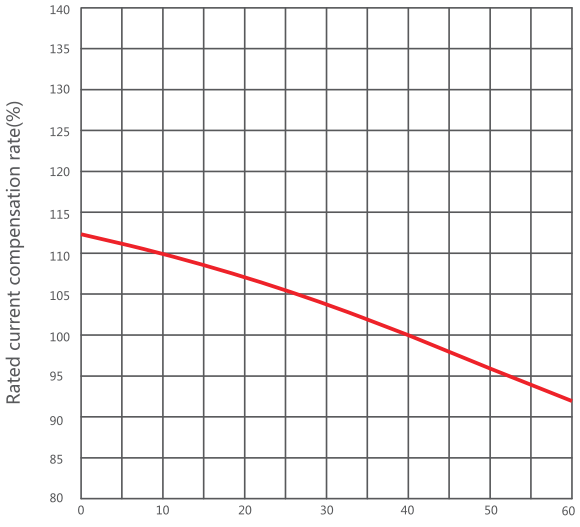
TRMF4

Rated Current(100A-250A)



Rated current times

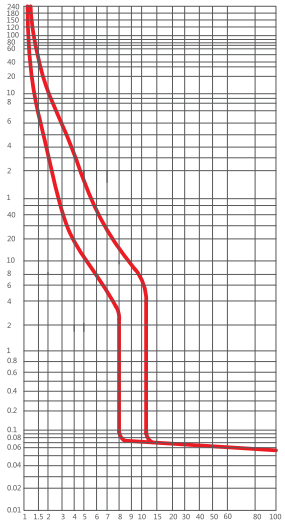
Temperature compensation curves



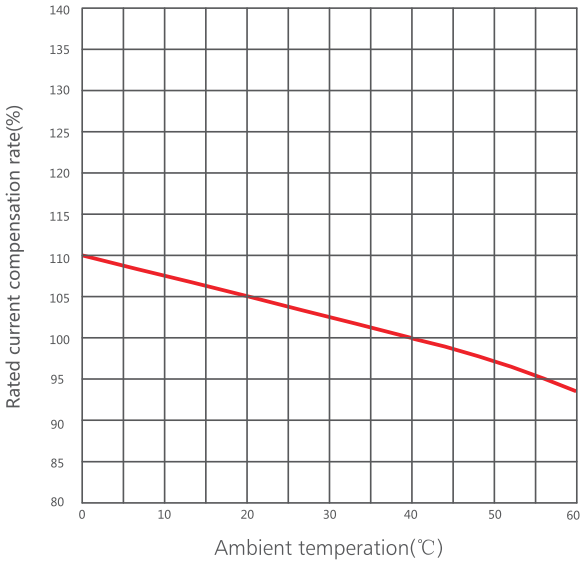
Characteristics curves

TRMF5

Rated Current(250A-400A)

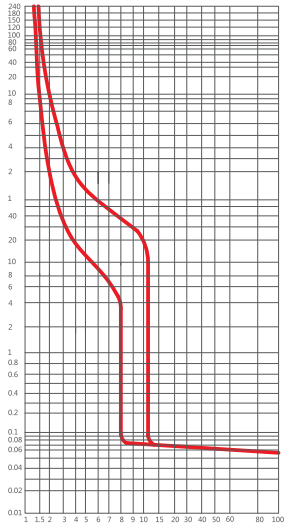


Temperature compensation curves

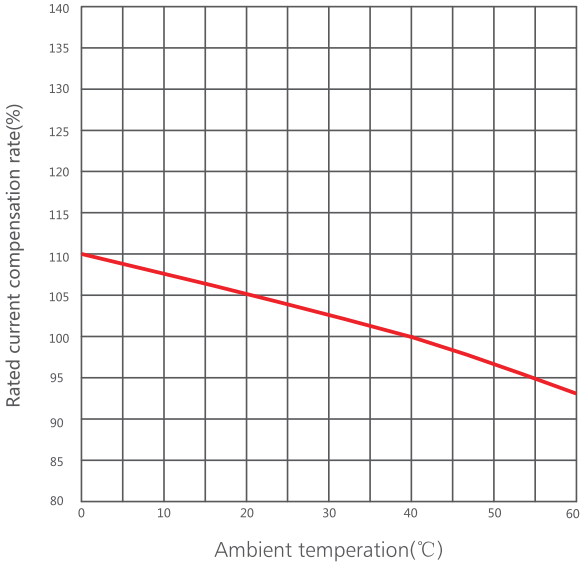


TRMF6

Rated Current(500A-800A)



Temperature compensation curves



Characteristics Curves Table

Test No.	Load current	Rated current	Initial state	Time	Estimated result
Over-load					
1.	1.05 In	In≤63A	cold state	t < 1h	Non-trip
		In > 63A		t < 2h	
2.	1.30 In	In≤63A	continuing the test	t < 1h	Trip
Short circuit					
3.	10 In*80%	All ampere	cold state	t < 0.2s	Non-trip
	10 In*120%			t < 0.2s	Trip

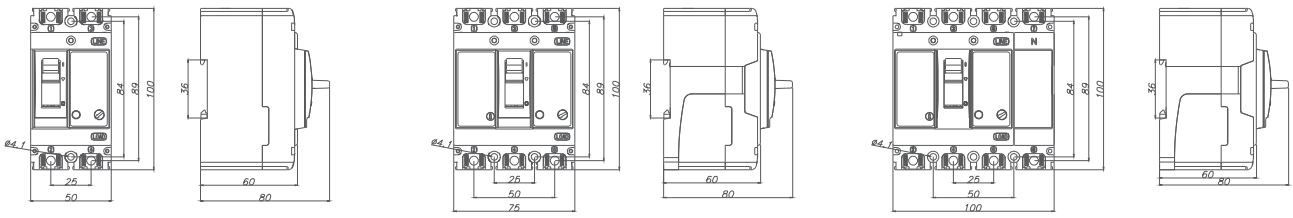
Temperature Compensation Table

(IEC/EN 60947-2) (Calibration at 40℃)

Product code	Rated current range	Compensation coefficient						
		0℃	10℃	20℃	30℃	40℃	50℃	60℃
TRMF1-S ,H 63	15A~63A	110%	108%	107%	104%	100%	95%	90%
TRMF2-S ,H 125	15A~125A	112%	110%	107%	103%	100%	94%	89%
TRMF3-S ,H 160	15A~160A	112%	110%	108%	104%	100%	96%	91%
TRMF4-S ,H 250	100A~250A	112%	110%	107%	104%	100%	96%	92%
TRMF5-S ,H 400	250A~400A	110%	108%	105%	103%	100%	97%	94%
TRMF6-S ,H 800	500A~800A	110%	107%	105%	102%	100%	96%	93%

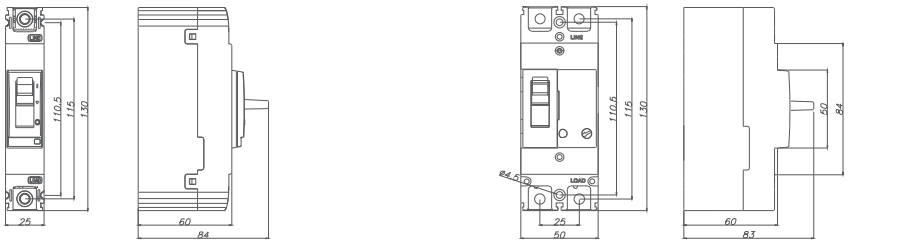
Outline Dimension

TRMF1(63A)

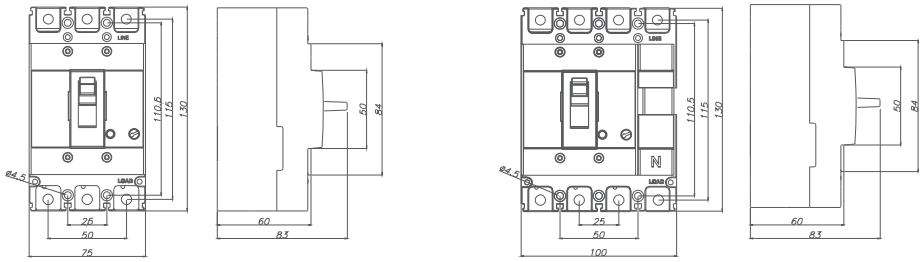


2P　　3P　　4P

TRMF2(125A)



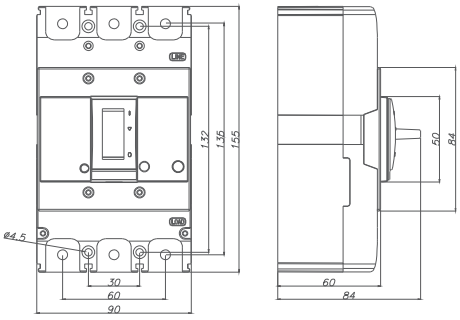
1P　　2P



3P　　4P

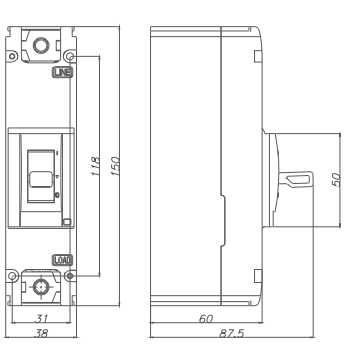
Outline Dimension

TRMF3(160A)

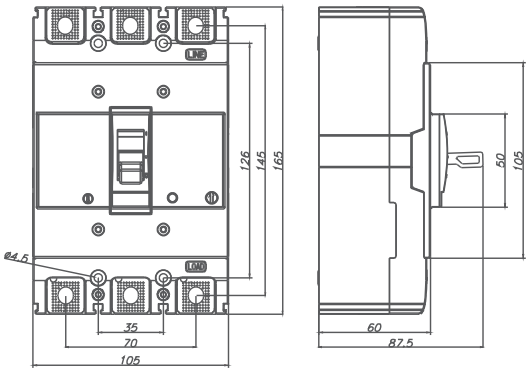


3P　　4P

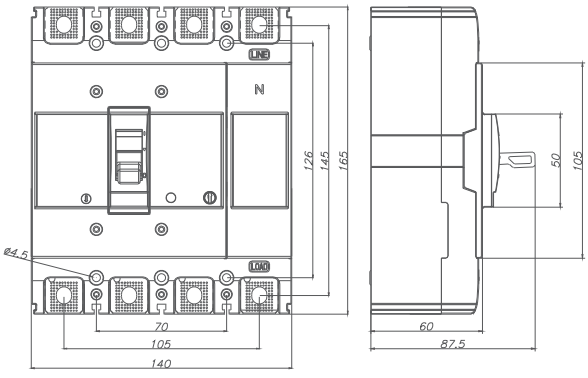
TRMF4(250A)



1P



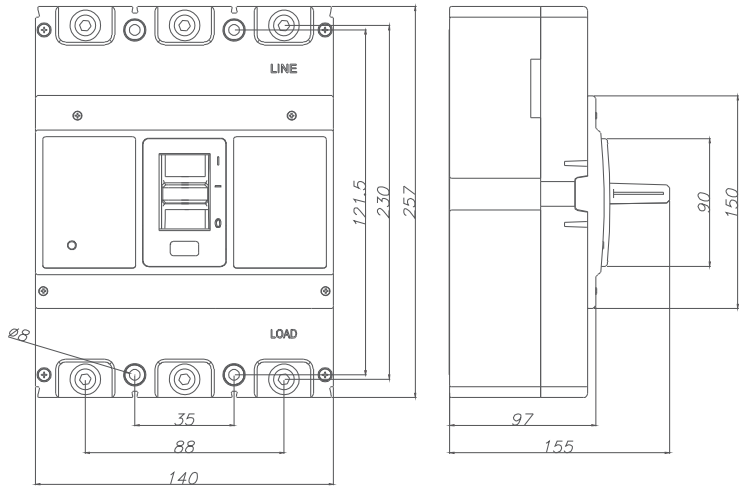
3P



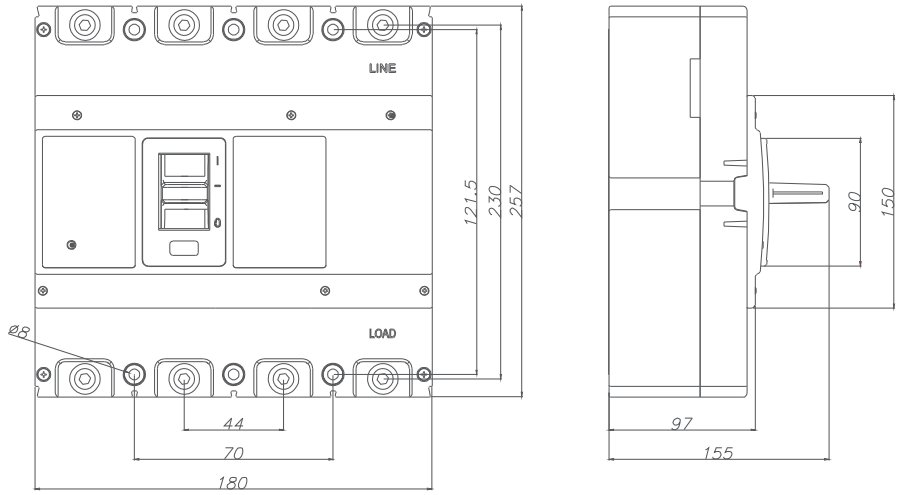
4P

Outline Dimension

TRMF5(400A)



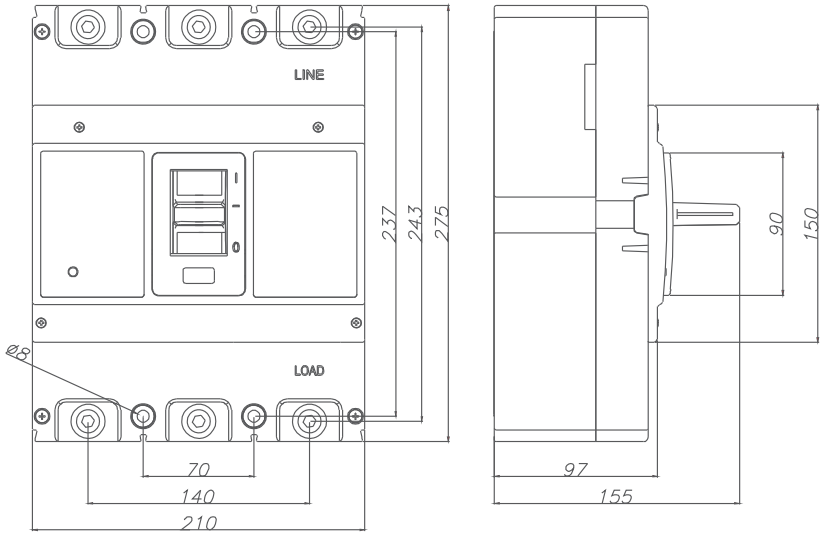
3P



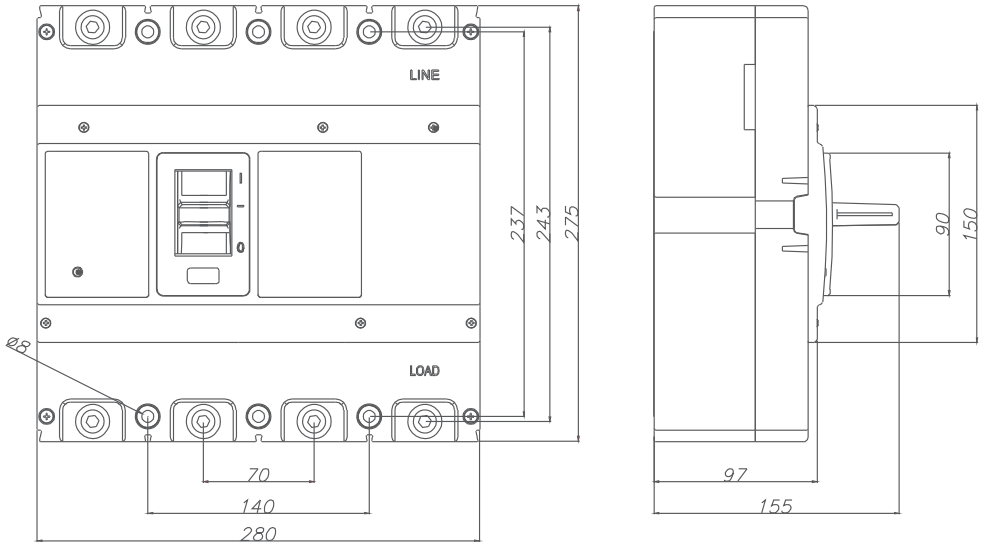
4P

Outline Dimension

TRMF6(800A)



3P



4P

Ordering code

● TRM MCCB

Item NO.	Frame	Rated current(A)	Product code	
			2 poles	3 poles
1	TRM2-50	5	TRM2-50/2-5	TRM2-50/3-5
2		10	TRM2-50/2-10	TRM2-50/3-10
3		15	TRM2-50/2-15	TRM2-50/3-15
4		20	TRM2-50/2-20	TRM2-50/3-20
5		30	TRM2-50/2-30	TRM2-50/3-30
6		40	TRM2-50/2-40	TRM2-50/3-40
7		50	TRM2-50/2-50	TRM2-50/3-50
8	TRM2-100	63	TRM2-100/2-63	TRM2-50/3-63
9		80	TRM2-100/2-80	TRM2-50/3-80
10		100	TRM2-100/2-100	TRM2-50/3-100

Item NO.	Frame	Rated current(A)	Product code(S type)				Product code(H type)			
			1 pole	2 poles	3 poles	4 poles	1 pole	2 poles	3 poles	4 poles
1	TRMF1 (63A)	15	-	TRMF1-S2/15	TRMF1-S3/15	TRMF1-S4/15	-	TRMF1-H2/15	TRMF1-H3/15	TRMF1-H4/15
2		20	-	TRMF1-S2/20	TRMF1-S3/20	TRMF1-S4/20	-	TRMF1-H2/20	TRMF1-H3/20	TRMF1-H4/20
3		30	-	TRMF1-S2/30	TRMF1-S3/30	TRMF1-S4/30	-	TRMF1-H2/30	TRMF1-H3/30	TRMF1-H4/30
4		40	-	TRMF1-S2/40	TRMF1-S3/40	TRMF1-S4/40	-	TRMF1-H2/40	TRMF1-H3/40	TRMF1-H4/40
5		50	-	TRMF1-S2/50	TRMF1-S3/50	TRMF1-S4/50	-	TRMF1-H2/50	TRMF1-H3/50	TRMF1-H4/50
6		63	-	TRMF1-S2/63	TRMF1-S3/63	TRMF1-S4/63	-	TRMF1-H2/63	TRMF1-H3/63	TRMF1-H4/63
7	TRMF2 (125A)	15	TRMF2-S1/15	TRMF2-S2/15	TRMF2-S3/15	TRMF2-S4/15	TRMF2-S1/15	TRMF2-H2/15	TRMF2-H3/15	TRMF2-H4/15
8		20	TRMF2-S1/20	TRMF2-S2/20	TRMF2-S3/20	TRMF2-S4/20	TRMF2-S1/20	TRMF2-H2/20	TRMF2-H3/20	TRMF2-H4/20
9		30	TRMF2-S1/30	TRMF2-S2/30	TRMF2-S3/30	TRMF2-S4/30	TRMF2-S1/30	TRMF2-H2/30	TRMF2-H3/30	TRMF2-H4/30
10		40	TRMF2-S1/40	TRMF2-S2/40	TRMF2-S3/40	TRMF2-S4/40	TRMF2-S1/40	TRMF2-H2/40	TRMF2-H3/40	TRMF2-H4/40
11		50	TRMF2-S1/50	TRMF2-S2/50	TRMF2-S3/50	TRMF2-S4/50	TRMF2-S1/50	TRMF2-H2/50	TRMF2-H3/50	TRMF2-H4/50
12		60	TRMF2-S1/60	TRMF2-S2/60	TRMF2-S3/60	TRMF2-S4/60	TRMF2-S1/60	TRMF2-H2/60	TRMF2-H3/60	TRMF2-H4/60
13		75	TRMF2-S1/75	TRMF2-S2/75	TRMF2-S3/75	TRMF2-S4/75	TRMF2-S1/75	TRMF2-H2/75	TRMF2-H3/75	TRMF2-H4/75
14		80	TRMF2-S1/80	TRMF2-S2/80	TRMF2-S3/80	TRMF2-S4/80	TRMF2-S1/80	TRMF2-H2/80	TRMF2-H3/80	TRMF2-H4/80
15		100	TRMF2-S1/100	TRMF2-S2/100	TRMF2-S3/100	TRMF2-S4/100	TRMF2-S1/100	TRMF2-H2/100	TRMF2-H3/100	TRMF2-H4/100
16		125	TRMF2-S1/125	TRMF2-S2/125	TRMF2-S3/125	TRMF2-S4/125	TRMF2-S1/125	TRMF2-H2/125	TRMF2-H3/125	TRMF2-H4/125
17	TRMF3 (160A)	15	-	-	TRMF3-S3/15	TRMF3-S4/15	-	-	TRMF3-H3/15	TRMF3-H4/15
18		20	-	-	TRMF3-S3/20	TRMF3-S4/20	-	-	TRMF3-H3/20	TRMF3-H4/20
19		30	-	-	TRMF3-S3/30	TRMF3-S4/30	-	-	TRMF3-H3/30	TRMF3-H4/30
20		40	-	-	TRMF3-S3/40	TRMF3-S4/40	-	-	TRMF3-H3/40	TRMF3-H4/40
21		50	-	-	TRMF3-S3/50	TRMF3-S4/50	-	-	TRMF3-H3/50	TRMF3-H4/50
22		60	-	-	TRMF3-S3/60	TRMF3-S4/60	-	-	TRMF3-H3/60	TRMF3-H4/60
23		80	-	-	TRMF3-S3/80	TRMF3-S4/80	-	-	TRMF3-H3/80	TRMF3-H4/80
24		100	-	-	TRMF3-S3/100	TRMF3-S4/100	-	-	TRMF3-H3/100	TRMF3-H4/100
25		125	-	-	TRMF3-S3/125	TRMF3-S4/125	-	-	TRMF3-H3/125	TRMF3-H4/125
26		140	-	-	TRMF3-S3/140	TRMF3-S4/140	-	-	TRMF3-H3/140	TRMF3-H4/140
27		160	-	-	TRMF3-S3/160	TRMF3-S4/160	-	-	TRMF3-H3/160	TRMF3-H4/160
28	TRMF4 (250A)	100	TRMF4-S1/100	-	TRMF4-S3/100	TRMF4-S4/100	TRMF4-H1/100	-	TRMF4-H3/100	TRMF4-H4/100
29		125	TRMF4-S1/125	-	TRMF4-S3/125	TRMF4-S4/125	TRMF4-H1/125	-	TRMF4-H3/125	TRMF4-H4/125
30		160	TRMF4-S1/160	-	TRMF4-S3/160	TRMF4-S4/160	TRMF4-H1/160	-	TRMF4-H3/160	TRMF4-H4/160
31		180	TRMF4-S1/180	-	TRMF4-S3/180	TRMF4-S4/180	TRMF4-H1/180	-	TRMF4-H3/180	TRMF4-H4/180
32		200	TRMF4-S1/200	-	TRMF4-S3/200	TRMF4-S4/200	TRMF4-H1/200	-	TRMF4-H3/200	TRMF4-H4/200
33		225	TRMF4-S1/225	-	TRMF4-S3/225	TRMF4-S4/225	TRMF4-H1/225	-	TRMF4-H3/225	TRMF4-H4/225
34		250	TRMF4-S1/250	-	TRMF4-S3/250	TRMF4-S4/250	TRMF4-H1/250	-	TRMF4-H3/250	TRMF4-H4/250
35	TRMF5 (400A)	250	-	-	TRMF5-S3/250	TRMF5-S4/250	-	-	TRMF5-H3/250	TRMF5-H4/250
36		315	-	-	TRMF5-S3/315	TRMF5-S4/315	-	-	TRMF5-H3/315	TRMF5-H4/315
37		350	-	-	TRMF5-S3/350	TRMF5-S4/350	-	-	TRMF5-H3/350	TRMF5-H4/350
38		400	-	-	TRMF5-S3/400	TRMF5-S4/400	-	-	TRMF5-H3/400	TRMF5-H4/400
39	TRMF6 (800A)	500	-	-	TRMF5-S3/500	TRMF5-S4/500	-	-	TRMF5-H3/500	TRMF5-H4/500
40		630	-	-	TRMF5-S3/630	TRMF5-S4/630	-	-	TRMF5-H3/630	TRMF5-H4/630
41		700	-	-	TRMF5-S3/700	TRMF5-S4/700	-	-	TRMF5-H3/700	TRMF5-H4/700
42		800	-	-	TRMF5-S3/800	TRMF5-S4/800	-	-	TRMF5-H3/800	TRMF5-H4/800

Built-in Accessories

Product code	Specification
SHT	Shunt Trip
AX	Auxiliary Switch
AL	Alarm Switch
AX+AX	Combination switch:Two Auxiliary Switch in one body
AX+AL	Combination switch:One Auxiliary Switch and one Alarm Switch in one body

Built-out Accessories

Product code	Specification
STC 12	Short Terminal Cover 12 ,F1(63A) 2P
STC 13	Short Terminal Cover 13 ,F1(63A) 3P
STC 21	Short Terminal Cover 21 ,F2(125A) 1P
STC 22	Short Terminal Cover 22 ,F2(125A) 2P
STC 23	Short Terminal Cover 23 ,F2(125A) 3P
STC 24	Short Terminal Cover 24 ,F2(125A) 4P
STC 43	Short Terminal Cover 43 ,F4(250A) 3P
STC 44	Short Terminal Cover 44 ,F4(250A) 4P
IB 01	Inter-phase Insulation Barrier 01 for F1(63A),F2(125A)
IB 02	Inter-phase Insulation Barrier 02 for F4(250A)
IB 03	Inter-phase Insulation Barrier 03 for F5(400A)
IB 04	Inter-phase Insulation Barrier 04 for F6(800A)
CCB 01	Copper Connection Bar 01 for F2(125A)
CCB 02	Copper Connection Bar 02 for F4(250A)
CCB 03	Copper Connection Bar 03 for F5(400A)
CCB 04	Copper Connection Bar 04 for F6(800A)

STANDARDS

TRM series circuit breakers and auxiliaries comply with the following international standard:

- IEC / EN 60947-1
  Low-voltage switchgear and controlgear-Part 1:General rules
- IEC / EN 60947-2
  Low-voltage switchgear and controlgear-Part 2:Circuit-breakers

TRE ELCB (Standard use environment for TRE series ELCB)

1) Ambient Temperature:	Within the range of -5℃~+40℃ (However, the average for the duration of 24 hours must not exceed 35℃)
2) Altitude:	2,000m or less
3) Installation class:	III
4) The magnetic field near the installation site should not be more than five times the earth magnetic field in any direction.	
5) Pollution levels:	II

IEC/EN 60947-1
IEC/EN 60947-2

TRANER®
Since 1990

TYPE GUIDE

CLASSIFICATION

According to the Pole : 2-poles, 3-poles

According to the frame size current : Frame.50, Frame.100

TR	E2	–	50	/	2	–	30	–	30
Traner electric	MCCB series		Ampere frame		Number of the poles		Rated current		Rated leakage current

Ampere frame	
50	A
100	A

Number of the poles	
2	- Two Poles
3	- Three Poles

Rated current	
5	A
10	A
15	A
20	A
30	A
40	A
50	A
63	A
80	A
100	A

Rated leakage current	
15	mA
30	mA

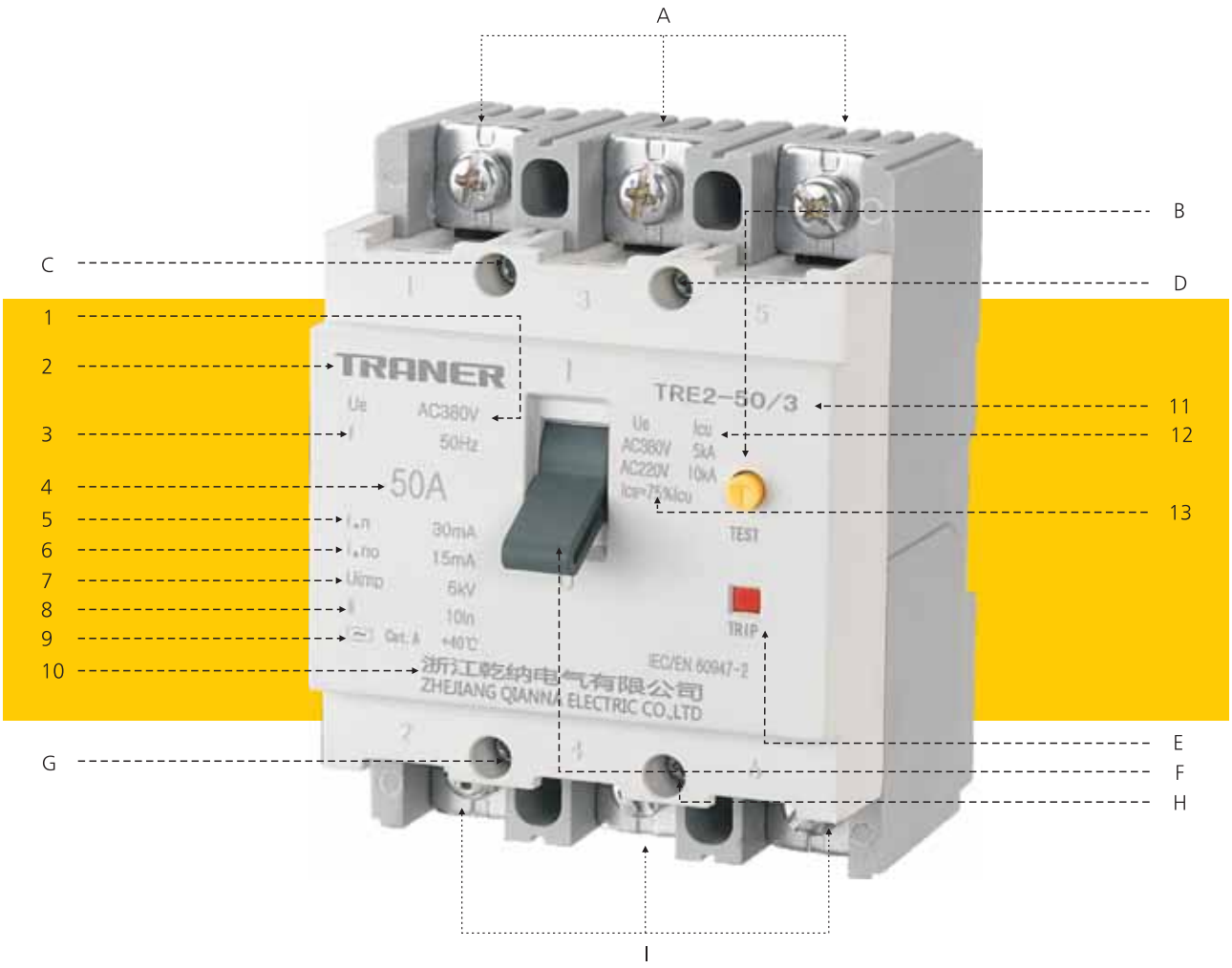
TRE2 ELCB

1.Small size,high capacity;
2.Beautiful appearance;
3.Bimetal design;

Ics=75%Icu


10kA
TRE2-50/3
TRANER
TRE2-50/2
50A
TRANER
TRE2-50/3
50A
TRANER
TRE2-50/2
50A
TEST
TRIP
IEC/EN 60947-2
ZHEJIANG QIANNA ELECTRIC CO.,LTD

Marking & Configuration



Marking & Configuration

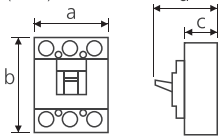
Printing instruction

1	Ue: Rated operational voltage
2	Company logo
3	Rated frequency
4	In: Rated current
5	IΔn: Rated residual operating current(mA)
6	IΔno: Rated residual non-operating current (mA)
7	Uimp: Rated impulse withstand voltage
8	Instantaneous/short circuit trip current
9	Calibrated temperature as defined by IEC/EN 60947-2
10	Company name
11	Product code
12	Icu: Ultimate breaking capacity
13	Ics: Service breaking capacity

Function instruction

A	Up-stream cable connections
B	Push to trip button for earth fault
C	Fixing hole
D	Fixing hole
E	Push to trip button for over current trip
F	Operating handle
G	Fixing hole
H	Fixing hole
I	Down-stream cable connections

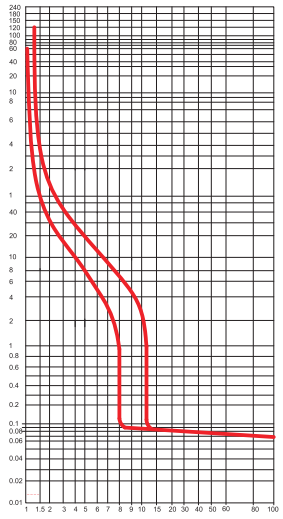
Technical Data Table

Ampere frame size		50AF							
Product type		TRE2-50/2				TRE2-50/3			
Number of poles		2				3			
Rated frequency (Hz)		50/60				50/60			
Rated current (A)	In	5, 10		15, 20, 30, 40, 50		5, 10		15, 20, 30, 40, 50	
Rated voltage(V)	Ue	220/415				220/415			
Rated Insulated voltage (V), 50/60Hz	Ui	500				500			
Rated impulse voltage (kV)	Uimp	6				6			
Rated residual current (mA)		15/30				15/30			
Action time (sec)		<0.03 sec				<0.03 sec			
Ultimate breaking capability(kA) GB 14048.2, IEC/EN 60947-2	Icu	220V	415V	220V	415V	220V	415V	220V	415V
		5	2.5	10	6	5	2.5	10	6
Ics=%×Icu		75%		75%		75%		75%	
Dimensions (mm) 	a	50				75			
	b	98				98			
	c	60				60			
	d	80				80			
Weight (kg)		0.31				0.41			

Characteristics curves

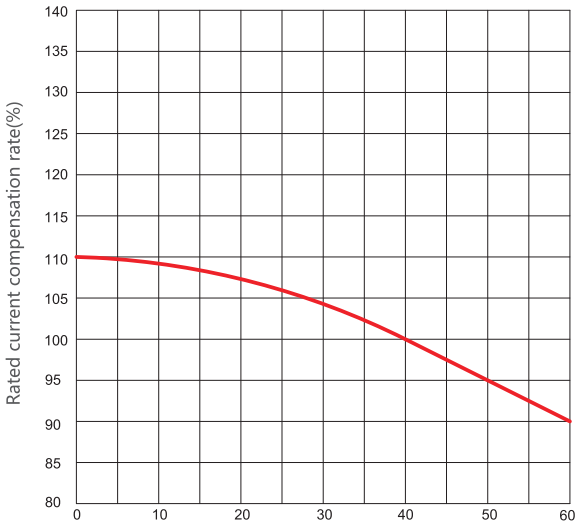
TRE2-50

Rated Current(5A-50A)



Rated current times

Temperature compensation curves



Ambient temp.40℃

Characteristics Curves Table

Test No.	Load current	Rated current	Initial state	Time	Estimated result
Over-load					
1.	1.05 In	In≤63A	cold state	t < 1h	Non-trip
		In > 63A		t < 2h	
2.	1.30 In	In≤63A	continuing the test	t < 1h	Trip
Short circuit					
3.	10 In*80%	All ampere	cold state	t < 0.2s	Non-trip
	10 In*120%			t < 0.2s	Trip

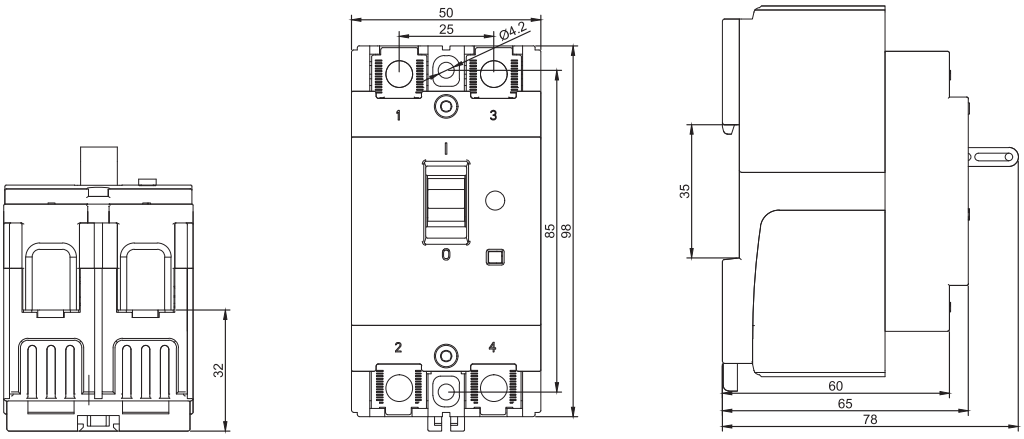
Temperature Compensation Table

(IEC/EN 60947-2) (Calibration at 40℃)

Product code	Rated current range	Compensation coefficient						
		0℃	10℃	20℃	30℃	40℃	50℃	60℃
TRE2-50	5A~50A	110%	109%	107%	104%	100%	95%	90%

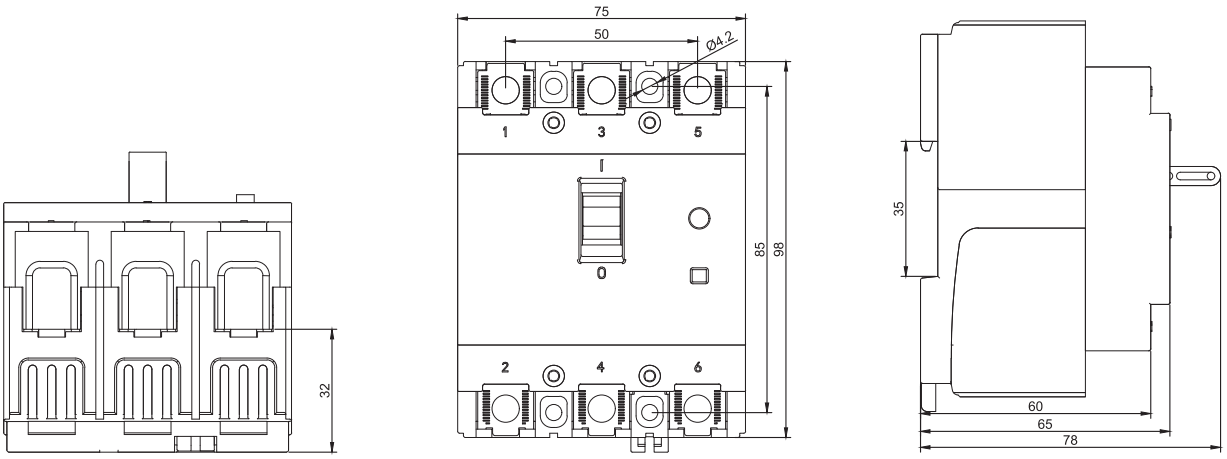
Outline Dimension

TRE2-50/2P



2P

TRE2-50/3P



3P

PRODUCT APPLICATION

TYPE GUIDE

CLASSIFICATION

According to the Pole :	2-poles, 3-poles, 4-poles
According to the Breaking Capacity :	S-type, H-type
According to the Rated current :	Fix type, Adjustable type(0.8In~1.0In)
According to the Trip action time :	Fix type, Adjustable type(0.1s / 0.3s / 0.5s or 0.45s/1.0s/2.0s)
According to the Rated residual current :	Fix type, Adjustable type(30mA / 100mA / 300mA / 500mA)

TR	E	F4	–	H	3	/	250	–	300	–	AX
Traner electric	ELCB Series	Ampere frmae		Breaking capacity level	Number of the poles		Rated current		Rated residual current		Built-in Accessories

F1	63A
F2	125A
F3	160A
F4	250A
F5	400A
F6	800A

S	Standard capacity type
H	High capacity type

1	- One pole
2	- Two Poles
3	- Three Poles
4	- Four poles

15A~63A	F1
15A~125A	F2
15A~160A	F3
100A~250A	F4
250A~400A	F5
500A~800A	F6

30	mA
100	mA
300	mA
500	mA
Adjustable	

AX	Auxiliary switch
AL	Alarm switch
SHT	Shunt tirp
AX+AX	Auxiliary switch Auxiliary switch
AX+AL	Auxiliary switch Alarm switch

Remark:
1.For the rated current ,it has fix type and adjustable type .
The default type is adjustable type(0.8In~1.0In) .
If need fix type or have other special requirement ,please advise in advance .

2.For the trip action time ,it has fix type and adjustable type.
The default type is adjustable type(0.1s / 0.3s / 0.5s or 0.45s/1.0s/2.0s).
If need fix type or have other special requirement,please advise in advance.

Built-out Accessories

IB	Inter-phase Insulation Barrier
STC	Short Terminal Cover
CCB	Copper Connection Bar

TRE ELCB

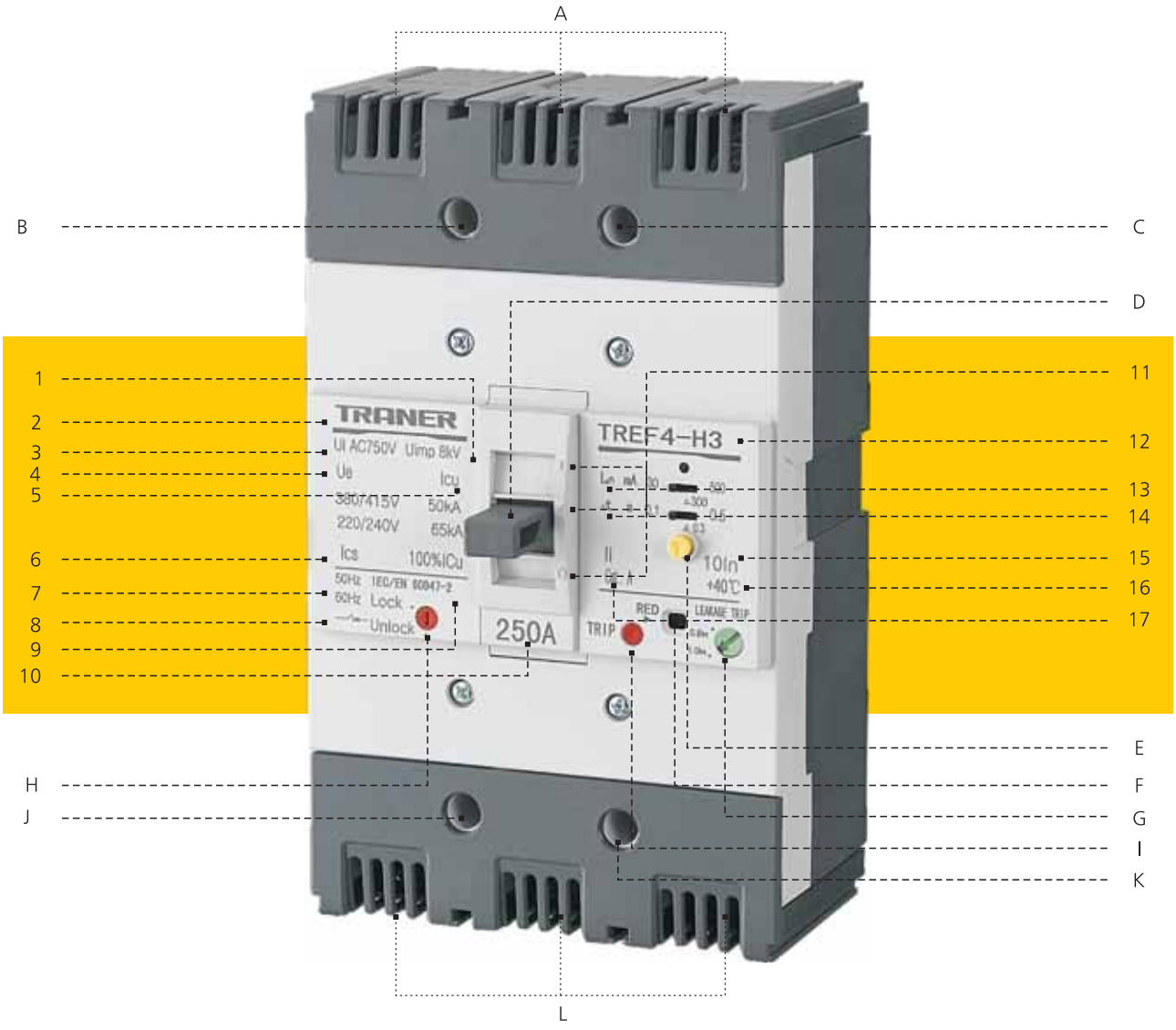
1.Small size,high capacity;
2.Rated current adjustable(0.8In~1.0In);
3.Trip action time adjustable(0.1s/0.3s/0.5s,0.45s/1.0s/2.0s);
4.Rated residual current adjustable(30mA/300mA/500mA);
5.Beautiful appearance;
6.Modular structure design,better performance;

Ics=100%Icu

65kA

Modular structure design

Marking & Configuration



Marking & Configuration

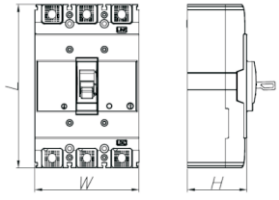
Printing instruction

1	Uimp: Rated impulse withstand voltage
2	Company logo
3	Ui: Rated insulation voltage
4	Ue: Rated operational voltage
5	Icu: Ultimate breaking capacity
6	Ics: Service breaking capacity
7	Rated frequency
8	Symbol indicating suitability for Isolation as defined by IEC/EN 60947-2
9	IEC/EN standard
10	In: Rated current
11	Indication of closed (I/ON) position
	Indication of free trip position
	Indication of open (O/OFF) position
12	Product code
13	I Δ n:Residual current setting
14	Δ t:Residual trip time setting
15	Instantaneous/short circuit trip current
16	Calibrated temperature as defined by IEC/EN 60947-2
17	Utilization category

Function instruction

A	Up-stream cable connections
B	Fixing hole
C	Fixing hole
D	Operating handle
E	Push to trip button for earth fault
F	Trip indication by earth fault
G	Long time current setting
H	Lock setting for the operating handle
I	Push to trip button for over current trip
J	Fixing hole
K	Fixing hole
L	Down-stream cable connections

Technical Data Table

Ampere frame size		TREF1 (63A)			
Breaking capacity code		S		H	
Product code and pole		2P	3P	2P	3P
		TREF1-S2	TREF1-S3	TREF1-H2	TREF1-H3
Protective function		Overload & Short-circuit & Ground fault			
Rated current ,In (A)		15、20、30、40、50、63			
Rated residual current ,In (A)	Operating ,I Δ n (mA)	30、50、100、200、300、500			
	Non-operating ,I Δ no (mA)	15、25、50、100、150、250			
Adjustable part	Rated current (0.8In~1.0In)①	√		√	
	Lockup device for operating handle②	-	√	-	√
	Residual current ,I Δ n③	30mA / 100mA / 300mA / 500mA			
	Trip action time④	0.1s / 0.3s / 0.5s			
Rated operational voltage ,Ue (V) ,AC 50/60 Hz		240V/415V			
Rated insulation voltage ,Ui (V)		1000			
Rated impulse withstand voltage ,Uimp (kV)		8			
Residual current off-time at IΔn,Sec (s)		0.1			
Standard		Conformity with IEC / EN 60947-2			
Rated frequency (Hz)		50/60 Hz			
Rated short-circuit breaking capacity ,Icu (kA)					
AC	240V	14		25	
	415V	5		7.5	
Ics=% x Icu		100%			
Mechanical life (circle)		8500			
Electrical life (circle)		1500			
Dimension Length*Width*Height (mm) 	2-poles	100*50*60			
	3-poles	100*75*60			
	4-poles	-			

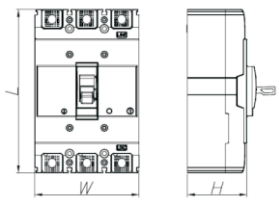
① Optiona ② Optional ③ Optional ④ Optional

⑤ Frame F5(400) can extend to 500A,630A ELCB

Technical Data Table

TREF2 (125A)						TREF3 (160A)			
S			H			S		H	
2P	3P	4P	2P	3P	4P	3P	4P	3P	4P
TREF2-S2	TREF2-S3	TREF2-S4	TREF21-H2	TREF2-H3	TREF2-H4	TREF3-S3	TREF3-S4	TREF3-H3	TREF3-H4
Overload & Short-circuit & Ground fault						Overload & Short-circuit & Ground fault			
15、20、30、40、50、60、75、80、100、125						15、20、30、40、50、60、80、100、125、140、160			
30、50、100、200、300、500						30、50、100、200、300、500			
15、25、50、100、150、250						15、25、50、100、150、250			
√			√			√		√	
-	√	√	-	√	√	√	√	√	√
30mA / 100mA / 300mA / 500mA						30mA / 100mA / 300mA / 500mA			
0.1s / 0.3s / 0.5s						0.1s / 0.3s / 0.5s			
240V/415V						240V/415V			
1000						1000			
8						8			
0.1						0.1			
Conformity with IEC / EN 60947-2						Conformity with IEC / EN 60947-2			
50/60 Hz						50/60 Hz			
35			50			50		65	
18			35			25		37	
100%						100%			
8500						7000			
1500						1000			
130*50*60						-			
130*75*60						155*90*60			
130*100*60						155*120*60			

Technical Data Table

Ampere frame size		TREF4 (250A)			
Breaking capacity code		S		H	
Product code and pole		3P	4P	3P	4P
		TREF4-S3	TREF4-S4	TREF4-H3	TREF4-H4
Protective function		Overload & Short-circuit & Ground fault			
Rated current ,In (A)		100、125、160、180、200、225、250			
Rated residual current	Operating ,I Δ n (mA)	30、50、100、200、300、500			
	Non-operating ,I Δ no (mA)	15、25、50、100、150、250			
Adjustable part	Rated current (0.8In~1.0In)①	√		√	
	Lockup device for operating handle②	√	√	√	√
	Residual current ,I Δ n③	30mA / 100mA / 300mA / 500mA			
	Trip action time④	0.1s / 0.3s / 0.5s			
Rated operational voltage ,Ue (V) ,AC 50/60 Hz		240V/415V			
Rated insulation voltage ,Ui (V)		1000			
Rated impulse withstand voltage ,Uimp (kV)		8			
Residual current off-time at IΔn,Sec (s)		0.1			
Standard		Conformity with IEC / EN 60947-2			
Rated frequency (Hz)		50/60 Hz			
Rated short-circuit breaking capacity ,Icu (kA)					
AC	240V	50		65	
	415V	37		50	
Ics=% x Icu		100%			
Mechanical life (circle)		7000			
Electrical life (circle)		1000			
Dimension Length*Width*Height (mm) 	2-poles	-			
	3-poles	165*105*60			
	4-poles	165*140*60			

① Optiona ② Optional ③ Optional ④ Optional

⑤ Frame F5(400) can extend to 500A,630A ELCB

Technical Data Table

TREF5 (400A)				TREF6 (800A)			
S		H		S		H	
3P	4P	3P	4P	3P	4P	3P	4P
TREF5-S3	TREF5-S4	TREF5-H3	TREF5-H4	TREF6-S3	TREF6-S4	TREF6-H3	TREF6-H4
Overload & Short-circuit & Ground fault				Overload & Short-circuit & Ground fault			
250、315、350、400⑤				500、630、700、800			
30、50、100、200、300、500				30、50、100、200、300、500			
15、25、50、100、150、250				15、25、50、100、150、250			
-		-		-		-	
-	-	-	-	-	-	-	-
100mA / 300mA / 500mA				100mA / 300mA / 500mA			
0.1s / 0.3s / 2.0s				0.45s/1.0s/2.0s			
240V/415V				240V/415V			
1000				1000			
8				8			
0.1				0.1			
Conformity with IEC / EN 60947-2				Conformity with IEC / EN 60947-2			
50/60 Hz				50/60 Hz			
50		65		50		65	
37		50		37		50	
100%				100%			
4000				2500			
1000				500			
-				-			
257*140*103				275*210*103			
257*184*103				275*280*103			

Built-In Accessories

Shunt trip (SHT)

- The shunt trip is an accessory for remote control.
- The shunt will trip when the input voltage is 70% - 110% of the rated operational voltage.(US)

Auxiliary switch (AX)

- Auxiliary switch is used to indicate the "On" and "Off" status of the breaker.
- Each switch has two contacts with a common connection.
- One is open and the other closed when the circuit breaker is open, and viceversa.

Alarm switch (AL)

- Alarm switch will make immediate audio or visual indication in a tripped breaker due to overload, short circuit or shunt trip to remind people.
- This switch features a closed contact when the circuit breaker is tripped automatically.
- In other words, this switch does not function when the breaker is operated manually.

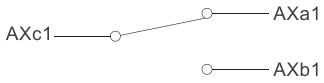
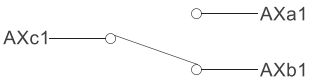
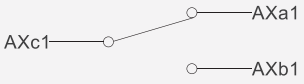
Combination switch (AX+AX)

It has two auxiliary switch(AX) in a body to connect into the same position of the breaker.

Combination switch (AX+AL)

It has one auxiliary switch(AX) and one alarm switch(AL) in a body to connect into the same position of the breaker.

CONTACT(AX+AL)

ELCB	ON	OFF	TRIP
AX			
AL			

Built-In Accessories

Maximum Possibilities

Frame	Poles	Left hole position					Right hole position				
		AX	Al1	SHT	AX+AX	AX+AL	AX	AL	SHT	AX+AX	AX+AL
TREF1(63A)	2P	-	-	-	-	-	-	-	-	-	-
	3P	√	√	√	√	√	-	-	-	-	-
TREF2(125A)	2P	-	-	-	-	-	-	-	-	-	-
	3P	√	√	√	√	√	-	-	-	-	-
	4P	√	√	√	√	√	-	-	-	-	-
TREF3(160A)	3P	-	-	-	-	-	-	-	-	-	-
	4P	-	-	-	-	-	-	-	-	-	-
TREF4(250A)	3P	√	√	√	√	√	-	-	-	-	-
	4P	√	√	√	√	√	-	-	-	-	-
TREF5(400A)	3P	-	-	-	-	-	-	-	-	-	-
	4P	-	-	-	-	-	-	-	-	-	-
TREF6(800A)	3P	-	-	-	-	-	-	-	-	-	-
	4P	-	-	-	-	-	-	-	-	-	-

Built-Out Accessories

Inter-phase Insulation Barrier + **Short Terminal Cover**

Inter-phase Insulation Barrier

Short Terminal Cover

Built-Out Accessories

Inter-phase Insulation Barrier(IB)

- Inter-phase insulation barrier is safety accessory, which is used for the insulation between the phases. It can guarantee the best insulation of the wiring terminal.
- They are compatible with both the short terminal covers. And it is ok to mount the inter-phase insulation barrier in both TRM&TRE series and every phase(2P,3P and 4P).

Short Terminal Cover(STC)

- Short terminal cover is insulation accessory ,which is used to prevent the direct contact between the terminal in circuit breaker and other live parts to ensure the safety of the users.
- All the terminal cover is designed with holes which can be knocked off to connect the cables of various wires and the copper platens.
- They are compatible with both the interphase insulation barrier and suitable for same phase & ampere frame of both TRM&TRE series(Such as TREF1-2P and TRMF1-2P).

Copper Connection Bar(CCB)

- Copper connection bar is connection accessories, which is used to connect wire/cable or any other conductor together with TRM&TRE series.
- They are suitable for same phase and same ampere frame of both TRM&TRE series(Such as TREF1-2P AND TRMF1-2P).

Maximum Possibilities

Frame	Poles	Short terminal cover(STC)		Inter-phase insulation barrier(IB)		Copper Connection Bar(CCB)	
		Product code	Each product requird quantity	Product code	Each product requird quantity	Product code	Each product requird quantity
TREF1(63A)	2P	STC 12	2	IB 01	2	-	-
	3P	STC 13	2	IB 01	4	-	-
TREF2(125A)	2P	STC 22	2	IB 01	2	CCB 01	4
	3P	STC 23	2	IB 01	4	CCB 01	6
	4P	STC 24	2	IB 01	6	CCB 01	8
TREF3(160A)	3P	-	-	-	-	-	-
	4P	-	-	-	-	-	-
TREF4(250A)	3P	STC 43	2	IB 02	4	CCB 02	6
	4P	STC 44	2	IB 02	6	CCB 02	8
TREF5(400A)	3P	-	-	IB 03	4	CCB 03	6
	4P	-	-	IB 03	6	CCB 03	8
TREF6(800A)	3P	-	-	IB 04	4	CCB 04	6
	4P	-	-	IB 04	6	CCB 04	8

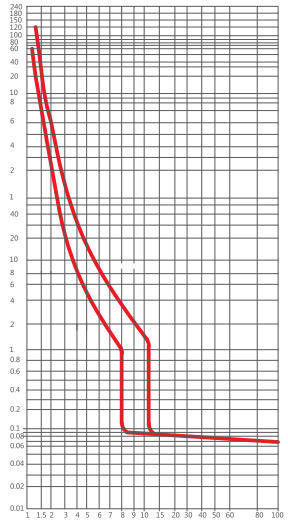
Remark:For the product code of short terminal cover(STC),STC12 means frame.1 two pole MCCB/ELCB.

Characteristics curves

Curves (for power distribution, calibrated at 40℃)

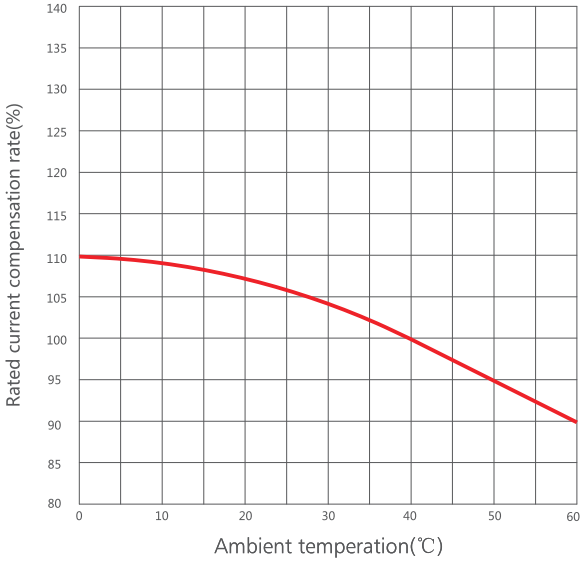
TREF1

Rated Current(15A-63A)



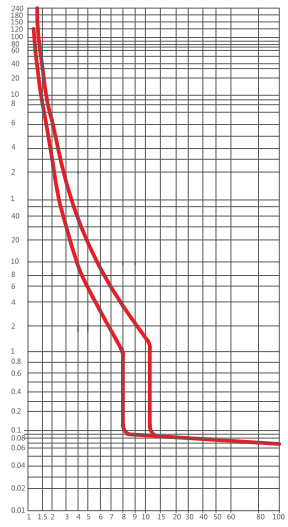
Rated current times

Temperature compensation curves



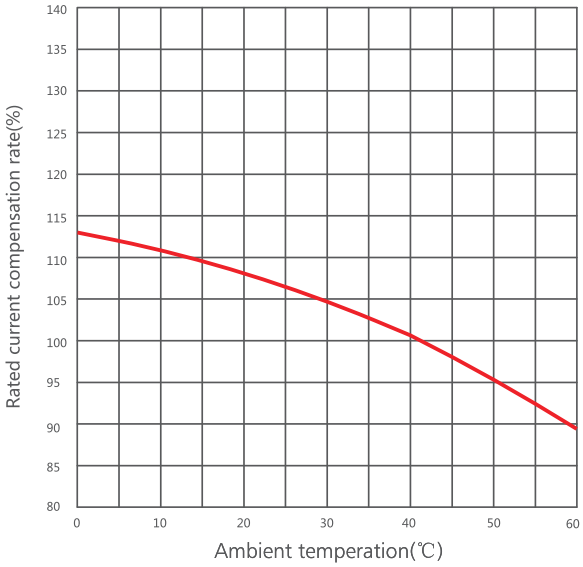
TREF2

Rated Current(15A-125A)



Rated current times

Temperature compensation curves

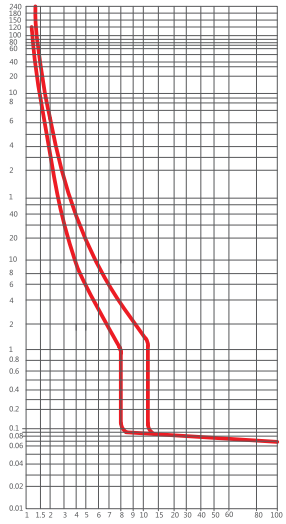


Characteristics curves

Curves (for power distribution, calibrated at 40℃)

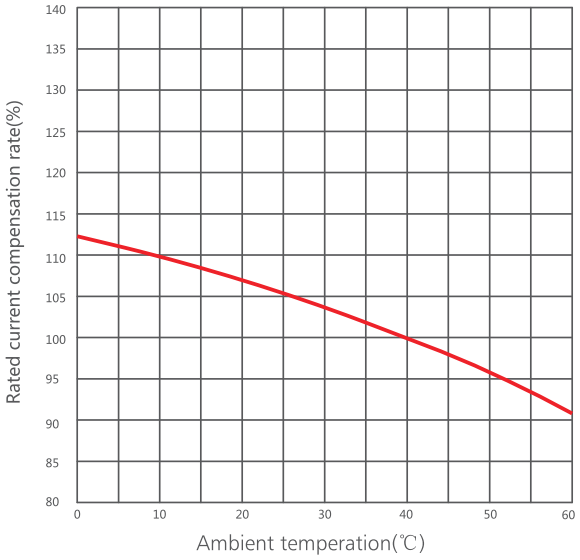
TREF3

Rated Current(15A-160A)



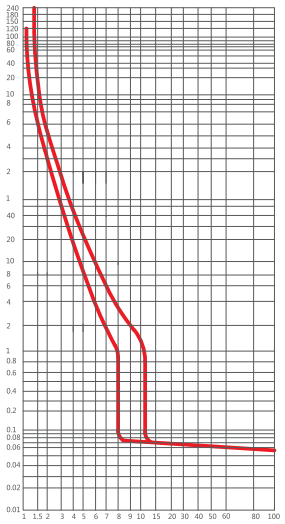
Rated current times

Temperature compensation curves



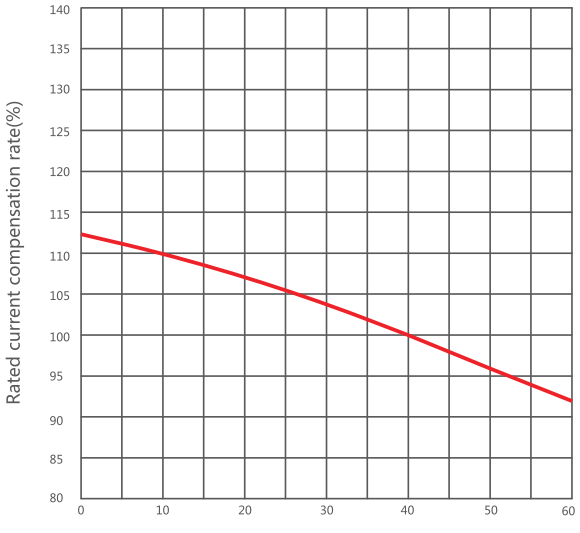
TREF4

Rated Current(100A-250A)



Rated current times

Temperature compensation curves

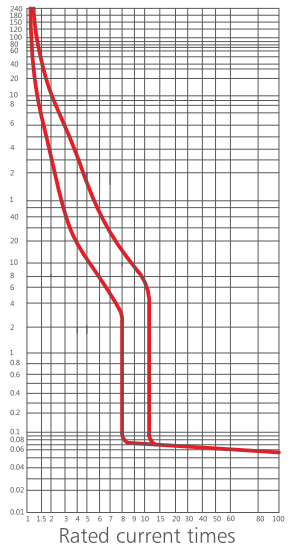


Characteristics curves

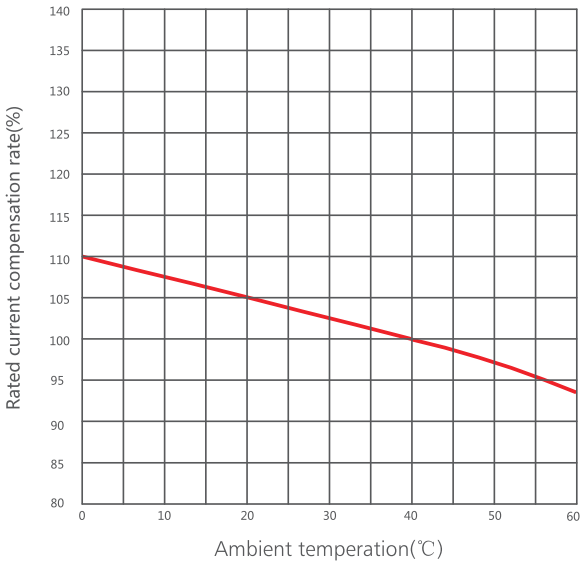
Curves (for power distribution, calibrated at 40℃)

TREF5

Rated Current(250A-400A)

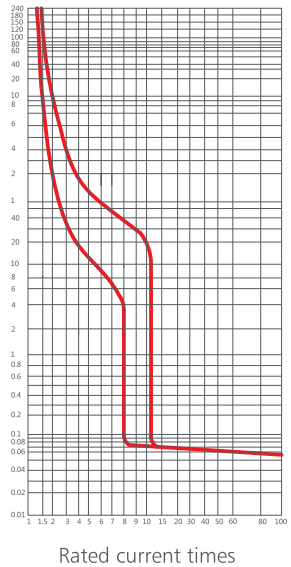


Temperature compensation curves

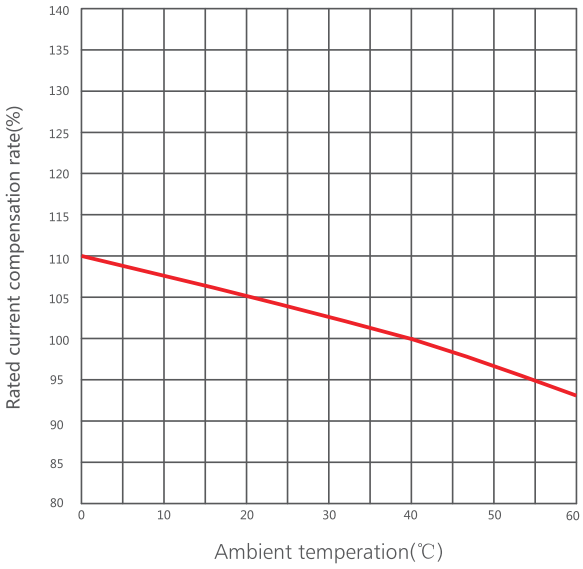


TREF6

Rated Current(500A-800A)



Temperature compensation curves



Characteristics Curves Table

Test No.	Load current	Rated current	Initial state	Time	Estimated result
Over-load					
1.	1.05 In	In≤63A	cold state	t < 1h	Non-trip
		In > 63A		t < 2h	
2.	1.30 In	In≤63A	continuing the test	t < 1h	Trip
Short circuit					
3.	10 In*80%	All ampere	cold state	t < 0.2s	Non-trip
	10 In*120%			t < 0.2s	Trip

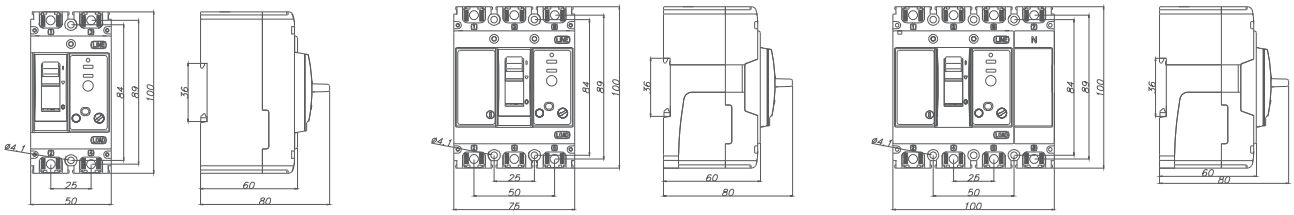
Temperature Compensation Table

(IEC/EN 60947-2) (Calibration at 40℃)

Frame	Current range	Compensation coefficient						
		0℃	10℃	20℃	30℃	40℃	50℃	60℃
TREF1-S ,H 63	15A~63A	110%	108%	107%	104%	100%	95%	90%
TREF2-S ,H 125	15A~125A	112%	110%	107%	103%	100%	94%	89%
TREF3-S ,H 160	15A~160A	112%	110%	108%	104%	100%	96%	91%
TREF4-S ,H 250	100A~250A	112%	110%	107%	104%	100%	96%	92%
TREF5-S ,H 400	250A~400A	110%	108%	105%	103%	100%	97%	94%
TREF6-S ,H 800	500A~800A	110%	107%	105%	102%	100%	96%	93%

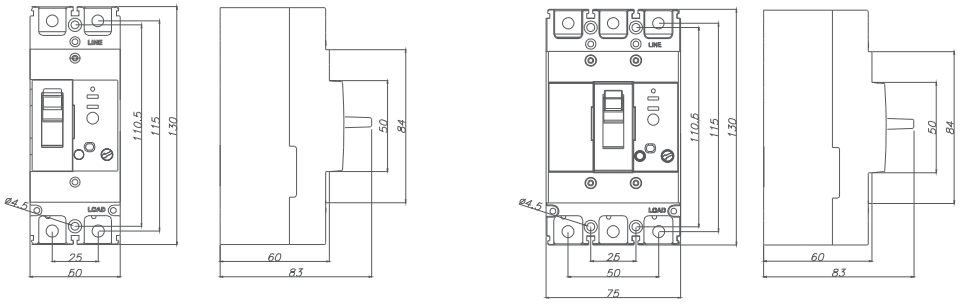
Outline Dimension

TREF1(63)

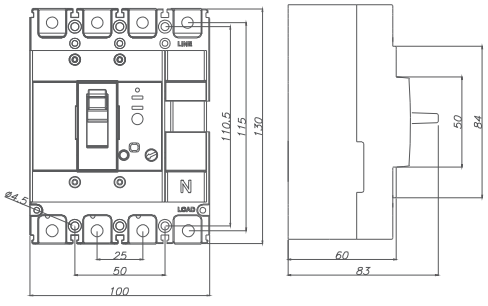


2P　　3P　　4P

TREF2(125)



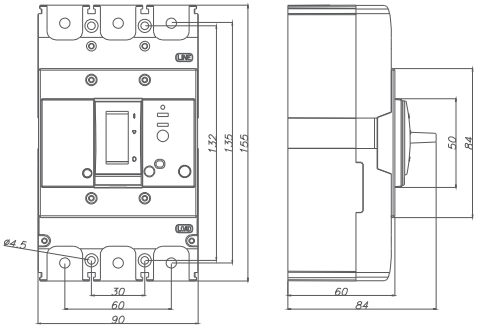
2P　　3P



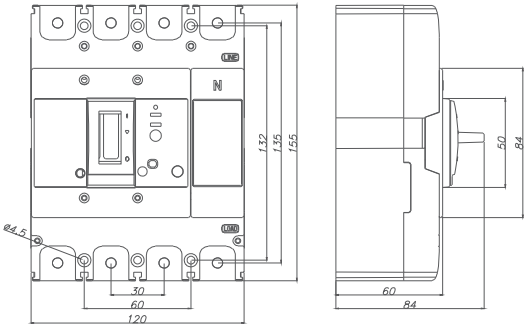
4P

Outline Dimension

TREF3(160)

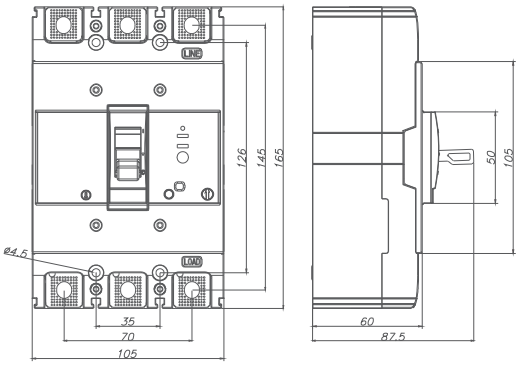


3P

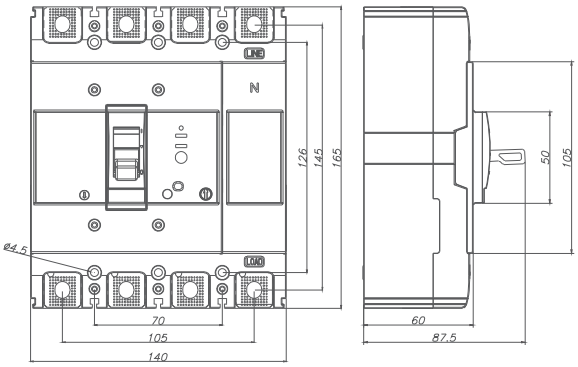


4P

TREF4(250)



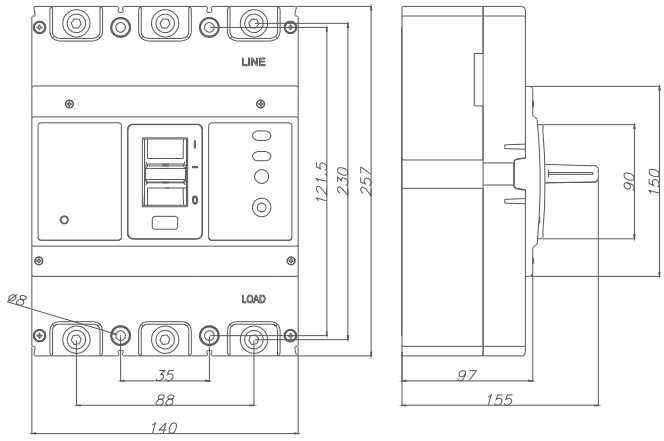
3P



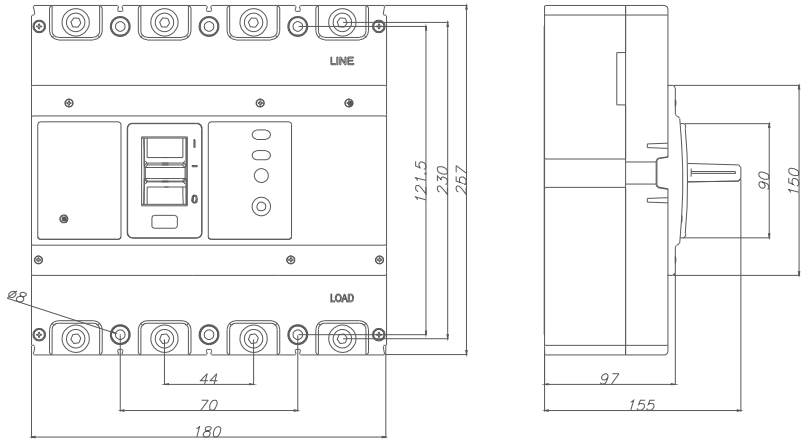
4P

Outline Dimension

TREF5(400)



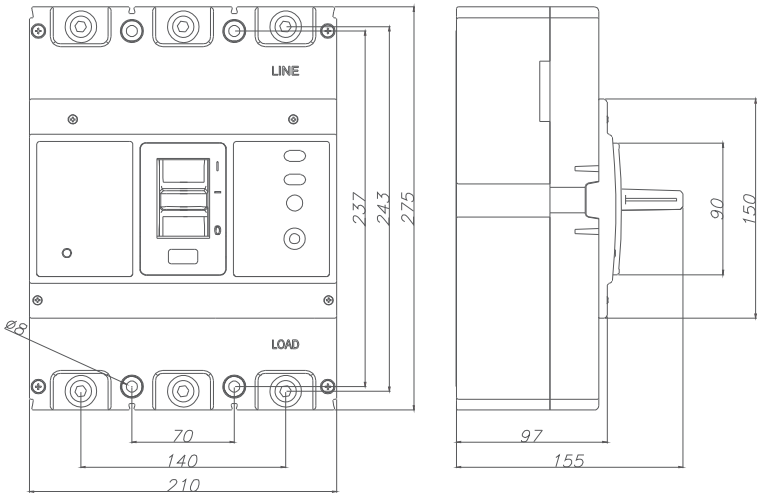
3P



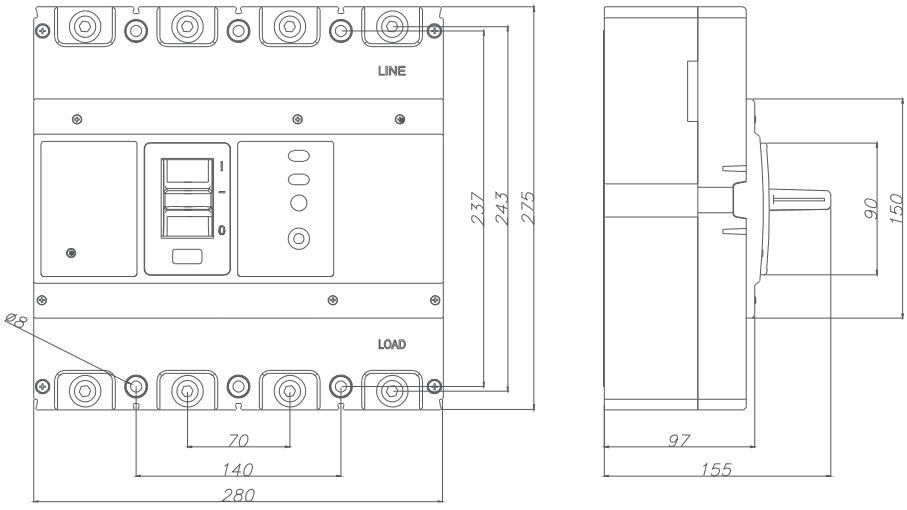
4P

Outline Dimension

TREF6(800)



3P



4P

Ordering code

● TRE ELCB

Item NO.	Frame	Rated current(A)	Rated leakage current(mA)	Product code	
				2 poles	3 poles
1	TRE2-50	5	15	TRE2-50/2-5-15	TRE2-50/3-5-15
2		10		TRE2-50/2-10-15	TRE2-50/3-10-15
3		15		TRE2-50/2-15-15	TRE2-50/3-15-15
4		20		TRE2-50/2-20-15	TRE2-50/3-20-15
5		30		TRE2-50/2-30-15	TRE2-50/3-30-15
6		40		TRE2-50/2-40-15	TRE2-50/3-40-15
7		50		TRE2-50/2-50-15	TRE2-50/3-50-15
8	TRE2-50	5	30	TRE2-50/2-5-30	TRE2-50/3-5-30
9		10		TRE2-50/2-10-30	TRE2-50/3-10-30
10		15		TRE2-50/2-15-30	TRE2-50/3-15-30
11		20		TRE2-50/2-20-30	TRE2-50/3-20-30
12		30		TRE2-50/2-30-30	TRE2-50/3-30-30
13		40		TRE2-50/2-40-30	TRE2-50/3-40-30
14		50		TRE2-50/2-50-30	TRE2-50/3-50-30

Item NO.	Frame	Rated current(A)	Product code(S type)			Product code(H type)		
			2 poles	3 poles	4 poles	2 poles	3 poles	4 poles
1	TREF1 (63A)	15	TREF1-S2/15	TREF1-S3/15	TREF1-S4/15	TREF1-H2/15	TREF1-H3/15	TREF1-H4/15
2		20	TREF1-S2/20	TREF1-S3/20	TREF1-S4/20	TREF1-H2/20	TREF1-H3/20	TREF1-H4/20
3		30	TREF1-S2/30	TREF1-S3/30	TREF1-S4/30	TREF1-H2/30	TREF1-H3/30	TREF1-H4/30
4		40	TREF1-S2/40	TREF1-S3/40	TREF1-S4/40	TREF1-H2/40	TREF1-H3/40	TREF1-H4/40
5		50	TREF1-S2/50	TREF1-S3/50	TREF1-S4/50	TREF1-H2/50	TREF1-H3/50	TREF1-H4/50
6		63	TREF1-S2/63	TREF1-S3/63	TREF1-S4/63	TREF1-H2/63	TREF1-H3/63	TREF1-H4/63
7	TREF2 (125A)	15	TREF2-S2/15	TREF2-S3/15	TREF2-S4/15	TREF2-H2/15	TREF2-H3/15	TREF2-H4/15
8		20	TREF2-S2/20	TREF2-S3/20	TREF2-S4/20	TREF2-H2/20	TREF2-H3/20	TREF2-H4/20
9		30	TREF2-S2/30	TREF2-S3/30	TREF2-S4/30	TREF2-H2/30	TREF2-H3/30	TREF2-H4/30
10		40	TREF2-S2/40	TREF2-S3/40	TREF2-S4/40	TREF2-H2/40	TREF2-H3/40	TREF2-H4/40
11		50	TREF2-S2/50	TREF2-S3/50	TREF2-S4/50	TREF2-H2/50	TREF2-H3/50	TREF2-H4/50
12		60	TREF2-S2/60	TREF2-S3/60	TREF2-S4/60	TREF2-H2/60	TREF2-H3/60	TREF2-H4/60
13		75	TREF2-S2/75	TREF2-S3/75	TREF2-S4/75	TREF2-H2/75	TREF2-H3/75	TREF2-H4/75
14		80	TREF2-S2/80	TREF2-S3/80	TREF2-S4/80	TREF2-H2/80	TREF2-H3/80	TREF2-H4/80
15		100	TREF2-S2/100	TREF2-S3/100	TREF2-S4/100	TREF2-H2/100	TREF2-H3/100	TREF2-H4/100
16		125	TREF2-S2/125	TREF2-S3/125	TREF2-S4/125	TREF2-H2/125	TREF2-H3/125	TREF2-H4/125
17	TREF3 (160A)	15	-	TREF3-S3/15	TREF3-S4/15	-	TREF3-H3/15	TREF3-H4/15
18		20	-	TREF3-S3/20	TREF3-S4/20	-	TREF3-H3/20	TREF3-H4/20
19		30	-	TREF3-S3/30	TREF3-S4/30	-	TREF3-H3/30	TREF3-H4/30
20		40	-	TREF3-S3/40	TREF3-S4/40	-	TREF3-H3/40	TREF3-H4/40
21		50	-	TREF3-S3/50	TREF3-S4/50	-	TREF3-H3/50	TREF3-H4/50
22		60	-	TREF3-S3/60	TREF3-S4/60	-	TREF3-H3/60	TREF3-H4/60
23		80	-	TREF3-S3/80	TREF3-S4/80	-	TREF3-H3/80	TREF3-H4/80
24		100	-	TREF3-S3/100	TREF3-S4/100	-	TREF3-H3/100	TREF3-H4/100
25		125	-	TREF3-S3/125	TREF3-S4/125	-	TREF3-H3/125	TREF3-H4/125
26		140	-	TREF3-S3/140	TREF3-S4/140	-	TREF3-H3/140	TREF3-H4/140
27		160	-	TREF3-S3/160	TREF3-S4/160	-	TREF3-H3/160	TREF3-H4/160
28	TREF4 (250A)	100	-	TREF4-S3/100	TREF4-S4/100	-	TREF4-H3/100	TREF4-H4/100
29		125	-	TREF4-S3/125	TREF4-S4/125	-	TREF4-H3/125	TREF4-H4/125
30		160	-	TREF4-S3/160	TREF4-S4/160	-	TREF4-H3/160	TREF4-H4/160
31		180	-	TREF4-S3/180	TREF4-S4/180	-	TREF4-H3/180	TREF4-H4/180
32		200	-	TREF4-S3/200	TREF4-S4/200	-	TREF4-H3/200	TREF4-H4/200
33		225	-	TREF4-S3/225	TREF4-S4/225	-	TREF4-H3/225	TREF4-H4/225
34		250	-	TREF4-S3/250	TREF4-S4/250	-	TREF4-H3/250	TREF4-H4/250
35	TREF5 (400A)	250	-	TREF5-S3/250	TREF5-S4/250	-	TREF5-H3/250	TREF5-H4/250
36		315	-	TREF5-S3/315	TREF5-S4/315	-	TREF5-H3/315	TREF5-H4/315
37		350	-	TREF5-S3/350	TREF5-S4/350	-	TREF5-H3/350	TREF5-H4/350
38		400	-	TREF5-S3/400	TREF5-S4/400	-	TREF5-H3/400	TREF5-H4/400
39	TREF6 (800A)	500	-	TREF5-S3/500	TREF5-S4/500	-	TREF5-H3/500	TREF5-H4/500
40		630	-	TREF5-S3/630	TREF5-S4/630	-	TREF5-H3/630	TREF5-H4/630
41		700	-	TREF5-S3/700	TREF5-S4/700	-	TREF5-H3/700	TREF5-H4/700
42		800	-	TREF5-S3/800	TREF5-S4/800	-	TREF5-H3/800	TREF5-H4/800

Remark:1.According to the rated current ,it has Fix type and Adjustable type(0.8In～1.0In);
2.According to trip action time,it has Fix type and Adjustable type(0.1s/0.3s/0.5s or 0.45s/1.0s/2.0s);
3.According to the rated residual current,it has Fix type and Adjustable type(30mA/100mA/300mA/500mA);

Built-in Accessories

Product code	Specification
SHT	Shunt Trip
AX	Auxiliary Switch
AL	Alarm Switch
AX+AX	Combination switch:Two Auxiliary Switch in one body
AX+AL	Combination switch:One Auxiliary Switch and one Alarm Switch in one body

Built-out Accessories

Product code	Specification
STC 12	Short Terminal Cover 12 ,F1(63A) 2P
STC 13	Short Terminal Cover 13 ,F1(63A) 3P
STC 21	Short Terminal Cover 21 ,F2(125A) 1P
STC 22	Short Terminal Cover 22 ,F2(125A) 2P
STC 23	Short Terminal Cover 23 ,F2(125A) 3P
STC 24	Short Terminal Cover 24 ,F2(125A) 4P
STC 43	Short Terminal Cover 43 ,F4(250A) 3P
STC 44	Short Terminal Cover 44 ,F4(250A) 4P
IB 01	Inter-phase Insulation Barrier 01 for F1(63A),F2(125A)
IB 02	Inter-phase Insulation Barrier 02 for F4(250A)
IB 03	Inter-phase Insulation Barrier 03 for F5(400A)
IB 04	Inter-phase Insulation Barrier 04 for F6(800A)
CCB 01	Copper Connection Bar 01 for F2(125A)
CCB 02	Copper Connection Bar 02 for F4(250A)
CCB 03	Copper Connection Bar 03 for F5(400A)
CCB 04	Copper Connection Bar 04 for F6(800A)

Marketing And Service

TRANER®

Since 1990

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