SELECTION GUIDE

UTS1200

CATALOG NUMBERING [PRODUCT SELECTION]

UTS1200	NT	N	G	O	1200A	3P	LL	UL

SERIES & FRAME: Susol 1200AF

Performance

Rating	80%	100%	kA
240Vac	N	NT	50
	H	HT	100
	P	PT	65
	L	LT	150
480Vac	N	NT	35
	H	HT	65
	P	PT	50
	L	LT	100
600Vac	N	NT	18
	H	HT	25
	P	PT	50
	L	LT	35

OCR-I

N - Normal	**A** - Ammeter
P - Power meter	**S** - Super meter

MCP : Motor Circuit Protector

MCS: Molded Case Switch

OCR-II (Remote Reset)

G: Communication(X)

E: Com.(X) + Outer CT (G/F)

C: Communication(O)

X: Com.(O) + Outer CT (G/F)

OCR-II (ERMS)

I: Communication(X)

T: Com.(X) + Outer CT (G/F)

Q: Communication(O)

R: Com.(O) + Outer CT (G/F)

OCR-III

0 : Power(X), 60Hz

1: AC/DC 100~250V, 60Hz

2: DC 24~60V, 60Hz

5: Power(X), 50Hz

6: AC/DC 100~250V, 50Hz

7: DC 24~60V, 50Hz

AMPERES

800

1000

1200

POLES

3: Three

SUFFIX

UL : UL

TERMINALS

LL: Lugs Line/Load Side

L : Lugs Line Side

LO: Lugs Load Side

- : Bolt-on

UTS1200 FRAME

UTS1200 breaker is HACR rated

UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) AC 50/60Hz		
		240V ac	480V ac	600V ac
UTS1200N	3	50	35	18
UTS1200H	3	100	65	25
UTS1200P	3	65	50	50
UTS1200L	3	150	100	35

IEC60947-2 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY(kA rms) AC 50/60Hz, Icu			RATED SHORT-TIME WITHSTAND CURRENT (Icw)	UTILIZATION CATEGORY
		220/240V	380/415V	480/500V		
UTS1200N	3	50	35	25	25kA	B
UTS1200H	3	100	65	35	-	A
UTS1200P	3	65	50	50	25kA	B
UTS1200L	3	150	100	50	-	A
Service breaking capacity, Ics (%Icu)				100%		
Insulation Voltage, Ui				1000 Vac		
Impulse Withstand Voltage, Uimp				8 kVac		

DIMENSIONS

POLE	DIMENSIONS inch (mm)		
	W	H	D
3-Pole	8.27 (210)	16.26 (413)	6 (152.5)

CIRCUIT BREAKER

WITH N (NORMAL) TYPE TRIP UNIT			
Ampere Rating, In	50kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 25kA at 600V	65kA at 240V, 50kA at 480V, 50kA at 600V
	3-Pole	3-Pole	3-Pole
800A	UTS1200·N·N● ■ ·800·3	UTS1200·H·N● ■ ·800·3	UTS1200·P·N● ■ ·800·3
1000A	UTS1200·N·N● ■ ·1000·3	UTS1200·H·N● ■ ·1000·3	UTS1200·P·N● ■ ·1000·3
1200A	UTS1200·N·N● ■ ·1200·3	UTS1200·H·N● ■ ·1200·3	UTS1200·P·N● ■ ·1200·3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 35kA at 600V	Remarks
	3-Pole	N(normal) type trip unit *1
800A	UTS1200·L·N● ■ ·800·3	Long time delay / Short time delay Instantaneous / Ground faults / Self power *LCD/SMPS is Removed from A type
1000A	UTS1200·L·N● ■ ·1000·3	
1200A	UTS1200·L·N● ■ ·1200·3	

WITH A (AMMETER) TYPE TRIP UNIT			
Ampere Rating, In	50kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 25kA at 600V	65kA at 240V, 50kA at 480V, 50kA at 600V
	3-Pole	3-Pole	3-Pole
800A	UTS1200·N·A● ■ ·800·3	UTS1200·H·A● ■ ·800·3	UTS1200·P·A● ■ ·800·3
1000A	UTS1200·N·A● ■ ·1000·3	UTS1200·H·A● ■ ·1000·3	UTS1200·P·A● ■ ·1000·3
1200A	UTS1200·N·A● ■ ·1200·3	UTS1200·H·A● ■ ·1200·3	UTS1200·P·A● ■ ·1200·3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 35kA at 600V	Remarks
	3-Pole	A(ammeter) type trip unit *1
800A	UTS1200·L·A● ■ ·800·3	All function of N type / Earth Leakage (Except residual current) ZSI / Comm. (Modbus, Profibus) AC/DC 100~250V / DC 24~60V Fault Recording 10ea
1000A	UTS1200·L·A● ■ ·1000·3	
1200A	UTS1200·L·A● ■ ·1200·3	

* ●: OCR-II, ■: OCR-III

UTS1200 FRAME

CIRCUIT BREAKER

WITH P (POWER METER) TYPE TRIP UNIT			
Ampere Rating, In	50kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 25kA at 600V	65kA at 240V, 50kA at 480V, 50kA at 600V
	3-Pole	3-Pole	3-Pole
800A	UTS1200·N·P● ■ ·800·3	UTS1200·H·P● ■ ·800·3	UTS1200·P·P● ■ ·800·3
1000A	UTS1200·N·P● ■ ·1000·3	UTS1200·H·P● ■ ·1000·3	UTS1200·P·P● ■ ·1000·3
1200A	UTS1200·N·P● ■ ·1200·3	UTS1200·H·P● ■ ·1200·3	UTS1200·P·P● ■ ·1200·3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 35kA at 600V	Remarks
	3-Pole	P(power meter) type trip unit *1
800A	UTS1200·L·P● ■ ·800·3	All function of A type (UV/OV/OF/UF/RV/Vun/Cun) a) Measuring (V/A/W/P/F/PF) b) Fault Recording 256ea / Event Recording 256ea
1000A	UTS1200·L·P● ■ ·1000·3	
1200A	UTS1200·L·P● ■ ·1200·3	

Note :
a) UV: Under Voltage // OV: Over Voltage // OF: Over Frequency // UF: Under Frequency // RV: Reverse power // Vun: Voltage Unbalance // Cun: Current Unbalance
b) V: Voltage // A: Ampere // W: Watt // P: Power // F: Frequency // PF: Power factor

WITH S (SUPER METER) TYPE TRIP UNIT			
Ampere Rating, In	50kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 25kA at 600V	65kA at 240V, 50kA at 480V, 50kA at 600V
	3-Pole	3-Pole	3-Pole
800A	UTS1200·N·S● ■ ·800·3	UTS1200·H·S● ■ ·800·3	UTS1200·P·S● ■ ·800·3
1000A	UTS1200·N·S● ■ ·1000·3	UTS1200·H·S● ■ ·1000·3	UTS1200·P·S● ■ ·1000·3
1200A	UTS1200·N·S● ■ ·1200·3	UTS1200·H·S● ■ ·1200·3	UTS1200·P·S● ■ ·1200·3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 35kA at 600V	Remarks
	3-Pole	S(super meter) type trip unit *1
800A	UTS1200·L·S● ■ ·800·3	All function of P type Display Harmonics and wave forms
1000A	UTS1200·L·S● ■ ·1000·3	
1200A	UTS1200·L·S● ■ ·1200·3	

Note *1 : The range of rated current setting is same with 4 Types but P/S type is able to set detail adjustment of rated current per 1A (Fine Adjustable)

MOLDED CASE SWITCH

WITH MCS TRIP UNIT (FIXED MAGNETIC ONLY)			
Ampere Rating, In	50kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 25kA at 600V	65kA at 240V, 50kA at 480V, 50kA at 600V
	3-Pole	3-Pole	3-Pole
1200A	UTS1200·N·MCS● ■ ·1200·3	UTS1200·H·MCS● ■ ·1200·3	UTS1200·P·MCS● ■ ·1200·3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 35kA at 600V	Remarks
	3-Pole	MCS type trip unit
1200A	UTS1200·L·MCS● ■ ·1200·3	Magnetic range : 18000A fixed and wave forms

MOTOR CIRCUIT PROTECTOR

WITH MCP TRIP UNIT (ADJUSTABLE MAGNETIC ONLY)			
Ampere Rating, In	**3-Pole**	**3-Pole**	**3-Pole**
1200A	UTS1200·N·MCP●■·1200·3	UTS1200·H·MCP●■·1200·3	UTS1200·P·MCP●■·1200·3

Ampere Rating, In	**3-Pole**	**Remarks**
		MCP type trip unit
1200A	UTS1200·L·MCP●■·1200·3	Magnetic range : 2~8In

ITEM	SETTING RANGE
Ir (rated current)	0.4~1.0 In
Tr (long time tripping delay)	0.5~20 (s)
Isd (short time current)	1.5~10 Ir
Tsd (short time tripping delay)	0.05~0.4 (s)

ITEM	SETTING RANGE
Ii (instantaneous current)	2~15 In
Tg (ground fault tripping delay)	0.05~0.4 (s)
Ig (ground fault current)	0.2~1In

●

OCR-II (Remote Reset)
G: Communication(X)
E: Com.(X)+Outer CT(G/F)
C: Communication(O)
X: Com.(O)+Outer CT(G/F)

OCR-II (ERMS)
I: Communication(X)
T: Com.(X)+Outer CT(G/F)
G: Communication(O)
R: Com.(O)+Outer CT(G/F)

■

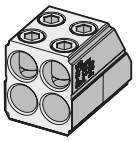
OCR-III
0: Power(X), 60Hz
1: AC/DC 100~250V, 60Hz
2: DC 24~60V, 60Hz
5: Power(X), 50Hz
6: AC/DC 100~250V, 50Hz
7: DC 24~60V, 50Hz

ACCESSORIES FOR UTS1200

MECHANICAL LUGS

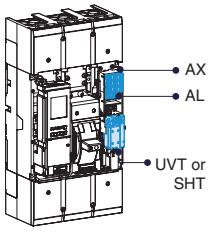
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	Wire type	Ordering type
1200A	Aluminum	Cu/Al	AL1200TS

AL 1200TS 800~1200A Lug



INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
Shunt Trip, SHT	DC 24~30V	
	AC 48V/DC 48~60V	
	AC/DC 100~130V	
	AC/DC 200~250V	
	AC 380~480V	
Undervoltage Trip, UVT	DC 24~30V	
	AC 48V/DC 48~60V	
	AC/DC 100~130V	
	AC/DC 200~250V	
	AC 380~480V	



Type	Right(T)
AX	3
AL	1
SHT	1*
UVT	1*

* Applicable in indicated pole position-not synchronous

ACCESSORIES FOR UTS1200

PADLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in “OFF” position	PL5


<Pad Lock>

PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in “OFF” or “ON” position	PHL5


<Plate Handle Lock>

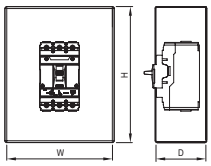
MECHANICAL INTERLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT53


<Mechanical Interlock>

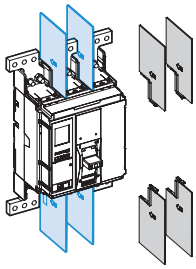
ENCLOSURE

ENCLOSURE DIMENSION(W X H X D) inch (mm)	ORDERING TYPE
20.25 (514.4) x 51.9 (1318.3) x 7.75 (196.9) : 80% Rated	-
23.0 (584.2) x 62.25 (1581.2) x 14.75 (374.7) : 100% Rated	-



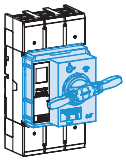
INSULATION BARRIERS

DESCRIPTION	QTY PER KIT	ORDERING TYPE
Standard type	2	B53
Extended type	2	BE53



ROTARY OPERATING HANDLES

DESCRIPTION	TYPE	ORDERING TYPE
Directly Mounted	NEMA Type 1	DH-5
Directly Mounted (with Key lock)	NEMA Type 1	DHK-5
Extended (Door-Mounted)	NEMA Type 1	REH-5
NEMA Door-Mounted	NEMA Type 1, 12	EHU-5
	NEMA Type 3, 3R, 4	EHV-5
	NEMA Type 3, 4, 4X	EHX-5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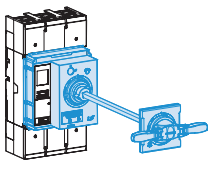
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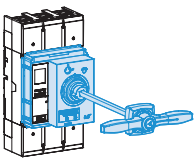
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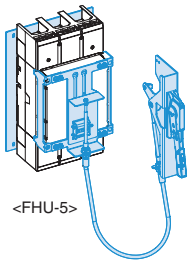
FLANGE OPERATING HANDLES

DESCRIPTION	TYPE	ORDERING TYPE
Handles (Including driving part/ excluding cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-5
	NEMA Type 4, 4X	FHX-5
Cable	60 inch	FH5-60
	84 inch	FH5-84
	128 inch	FH5-128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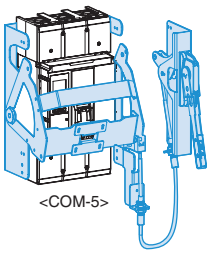
FLANGE HANDLES WITH CABLE OPERATING MECHANISM

DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without cable)		COM-5
Long type handle (with operating mechanism)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L
Cable	60 inch	FH5-60
	84 inch	FH5-84
	128 inch	FH5-128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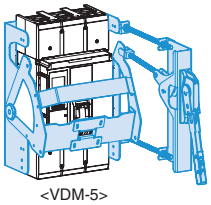
FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod and handle		VDM-5
Long type handle (with operating mechanism)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L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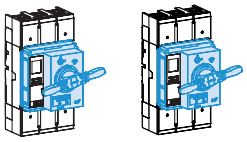
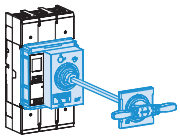
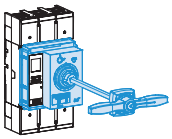
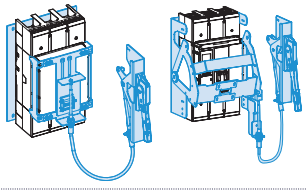
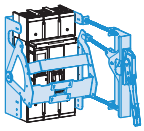
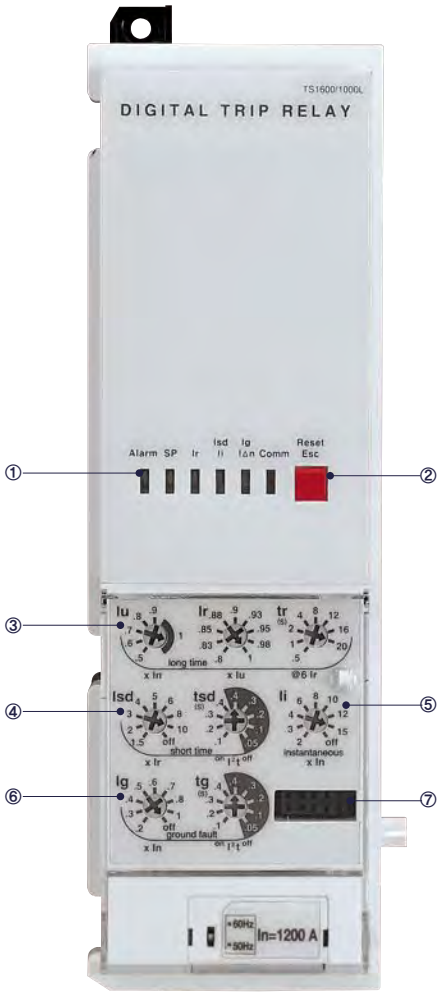
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE/SLIDING OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA TYPE 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

TRIP UNITS FOR UTS800 AND UTS1200

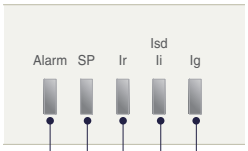
Circuit breaker includes factory-installed internal trip units. Be careful not to interchange trip units in the field. There are various kinds of trip units according to rated current and function as follows.

N type: Normal type

- Optimized protection function
- OCR, OCGR function according IEC60947-2
- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  Short-time delay / Instantaneous
  - I^2t On/Off optional (for short-time delay)
- Ground fault protection
  - I^2t On/Off optional
- Self-Power



① LED: Indication of trip info, and overload state



- **Ig**: LED indicating ground-fault
- **Isd / Ii**: LED indicating short-time or instantaneous tripping
- **Ir**: LED indicating long-time delay
- **SP**: Self-protection and battery test LED
- **Alarm**: LED indicating an overload
  (Turn on above 90%, Blink above 105%)

② Reset Key: Fault reset or battery check
③ Iu, Ir: Long-time current setting, tr: Long-time tripping delay setting
④ Isd: Short-time current setting, tsd: Short-time tripping delay setting
⑤ Ii: Instantaneous current setting
⑥ Ig: Ground fault setting, tg: Ground fault tripping delay setting
⑦ Test terminal: OCR test terminal (Connected with OCR tester)

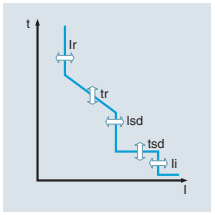
PROTECTION

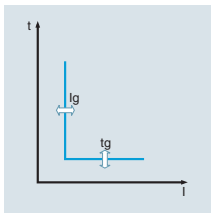
LONG TIME											
Current setting (A)	Iu = In X ...		0.5	0.6	0.7	0.8	0.9	1.0			
	Ir = Iu X ...		0.8	0.83	0.85	0.88	0.9	0.93	0.95	0.98	1.0
Time delay (s) Accuracy: ±15% or below 100ms	tr@(1.5 x Ir)		12.5	25	50	100	200	300	400	500	
	tr@(6.0 x Ir)		0.5	1	2	4	8	12	16	20	
	tr@(7.2 x Ir)		0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	

SHORT TIME											
Current setting (A) Accuracy: ±10%	Isd=Ir X ...		1.5	2	3	4	5	6	8	10	Off
Time delay (s) @ 10 x Ir	tsd	I^2t Off	0.05	0.1	0.2	0.3	0.4				
		I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off)	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

INSTANTANEOUS										
Current setting (A)	Ii=In X ...	2	3	4	6	8	10	12	15	Off
Tripping time		50(±10)ms								

GROUND FAULT											
Pick-up (A) Accuracy: ±10% (Ig>0.4In) ±20% (Ig<0.4In)	Ig=In X ...		0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off
Time delay (s) @ 1 x In	tg	I^2t Off	0.05	0.1	0.2	0.3	0.4				
		I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off)	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				





SELECTION GUIDE

UTS800

CATALOG NUMBERING [PRODUCT SELECTION]

UTS800	NT	N	G	O	800A	3P	LL	UL

SERIES & FRAME: Susol 800AF

PERFORMANCE

Rating	80%	100%	kA
240Vac	N	NT	65
	H	HT	100
	L	LT	150
480Vac	N	NT	35
	H	HT	65
	L	LT	100
600Vac	N	NT	18
	H	HT	35
	L	LT	50

OCR-I

N - Normal	**A** - Ammeter
P - Power meter	**S** - Super meter

MCP : Motor Circuit Protector

MCS: Molded Case Switch

OCR-II (Remote Reset)

G: Communication(X)
E: Com.(X) + Outer CT (G/F)
C: Communication(O)
X: Com.(O) + Outer CT (G/F)

OCR-II (ERMS)

I: Communication(X)
T: Com.(X) + Outer CT (G/F)
Q: Communication(O)
R: Com.(O) + Outer CT (G/F)

OCR-III

0: Power(X), 60Hz
1: AC/DC 100~250V, 60Hz
2: DC 24~60V, 60Hz
5: Power(X), 50Hz
6: AC/DC 100~250V, 50Hz
7: DC 24~60V, 50Hz

AMPERES

400
600
630
800

POLES

3: Three

TERMINALS

LL: Lugs Line/Load Side
L : Lugs Line Side
LO: Lugs Load Side
- : Bolt-on

SUFFIX

UL : UL

UTS800 FRAME

UTS800 breaker is HACR rated

UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) AC 50/60Hz		
		240V ac	480V ac	600V ac
UTS800N	3	65	35	18
UTS800H	3	100	65	35
UTS800L	3	150	100	50

IEC60947-2 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY(kA rms) AC 50/60Hz, Icu			RATED SHORT-TIME WITHSTAND CURRENT (Icw)	UTILIZATION CATEGORY
		220/240V	380/415V	480/500V		
UTS800N	3	65	35	18	18kA	B
UTS800H	3	100	65	35	-	A
UTS800L	3	150	100	50	-	A
Service breaking capacity, Ics (%Icu)				100%		
Insulation Voltage, Ui				1000 Vac		
Impulse Withstand Voltage, Uimp				8 kVac		

DIMENSIONS

POLE	DIMENSIONS inch (mm)		
	W	H	D
3-Pole	8.27 (210)	12.88 (327.2)	6 (152.5)

CIRCUIT BREAKER

WITH N (NORMAL) TYPE TRIP UNIT				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 35kA at 600V	150kA at 240V, 100kA at 480V, 50kA at 600V	Remarks
	3-Pole	3-Pole	3-Pole	N(normal) type trip unit *1
400A	UTS800·N·N●■·400·3	UTS800·H·N●■·400·3	UTS800·L·N●■·400·3	Long time delay / Short time delay Instantaneous / Ground faults / Self power ※ LCD/SMPS is Removed from A type
600A	UTS800·N·N●■·600·3	UTS800·H·N●■·600·3	UTS800·L·N●■·600·3	
630A	UTS800·N·N●■·630·3	UTS800·H·N●■·630·3	UTS800·L·N●■·630·3	
800A	UTS800·N·N●■·800·3	UTS800·H·N●■·800·3	UTS800·L·N●■·800·3	

WITH A (AMMETER) TYPE TRIP UNIT				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 35kA at 600V	150kA at 240V, 100kA at 480V, 50kA at 600V	Remarks
	3-Pole	3-Pole	3-Pole	A(ammeter) type trip unit *1
400A	UTS800·N·A●■·400·3	UTS800·H·A●■·400·3	UTS800·L·A●■·400·3	All function of N type / Earth Leakage (Except residual current) ZSI / Comm. (Modbus, Profibus) AC/DC 100-250V / DC 24~60V Fault Recording 10ea
600A	UTS800·N·A●■·600·3	UTS800·H·A●■·600·3	UTS800·L·A●■·600·3	
630A	UTS800·N·A●■·630·3	UTS800·H·A●■·630·3	UTS800·L·A●■·630·3	
800A	UTS800·N·A●■·800·3	UTS800·H·A●■·800·3	UTS800·L·A●■·800·3	

WITH P (POWER METER) TYPE TRIP UNIT				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 35kA at 600V	150kA at 240V, 100kA at 480V, 50kA at 600V	Remarks
	3-Pole	3-Pole	3-Pole	P(power meter) type trip unit *1
400A	UTS800·N·P●■·400·3	UTS800·H·P●■·400·3	UTS800·L·P●■·400·3	All function of A type (UV/OV/OF/UF/RV/Vun/Cun) a) Measuring (V/A/W/P/F/PF) b) Fault Recording 256ea/ Event Recording 256ea
600A	UTS800·N·P●■·600·3	UTS800·H·P●■·600·3	UTS800·L·P●■·600·3	
630A	UTS800·N·P●■·630·3	UTS800·H·P●■·630·3	UTS800·L·P●■·630·3	
800A	UTS800·N·P●■·800·3	UTS800·H·P●■·800·3	UTS800·L·P●■·800·3	

Note :

a) UV: Under Voltage // OV: Over Voltage // OF: Over Frequency // UF: Under Frequency // RV: Reverse power // Vun: Voltage Unbalance // Cun: Current Unbalance

b) V: Voltage // A: Ampere // W: Watt // P: Power // F: Frequency // PF: Power factor

* ●: OCR-II, ■: OCR-III

UTS800 FRAME

CIRCUIT BREAKER

WITH S (SUPER METER) TYPE TRIP UNIT				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 35kA at 600V	150kA at 240V, 100kA at 480V, 50kA at 600V	Remarks
	3-Pole	3-Pole	3-Pole	S(super meter) type trip unit *1
400A	UTS800·N·S● ■ ·400·3	UTS800·H·S● ■ ·400·3	UTS800·L·S● ■ ·400·3	All function of P type Display Harmonics and wave forms
600A	UTS800·N·S● ■ ·600·3	UTS800·H·S● ■ ·600·3	UTS800·L·S● ■ ·600·3	
630A	UTS800·N·S● ■ ·630·3	UTS800·H·S● ■ ·630·3	UTS800·L·S● ■ ·630·3	
800A	UTS800·N·S● ■ ·800·3	UTS800·H·S● ■ ·800·3	UTS800·L·S● ■ ·800·3	

Note *1 : The range of rated current setting is same with 4 Types but P/S type is able to set detail adjustment of rated current per 1A (Fine Adjustable)

MOLDED CASE SWITCH

WITH MCS TRIP UNIT (FIXED MAGNETIC ONLY)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V	100kA at 240V, 65kA at 480V, 35kA at 600V	150kA at 240V, 100kA at 480V, 50kA at 600V	Remarks
	3-Pole	3-Pole	3-Pole	MCS type trip unit
800A	UTS800·N·MCS● ■ ·800·3	UTS800·H·MCS● ■ ·800·3	UTS800·L·MCS● ■ ·800·3	Magnetic range : 12000A fixed

MOTOR CIRCUIT PROTECTOR

WITH MCP TRIP UNIT (ADJUSTABLE MAGNETIC ONLY)				
Ampere Rating, In	3-Pole	3-Pole	3-Pole	Remarks
				MCP type trip unit
800A	UTS800·N·MCP● ■ ·800·3	UTS800·H·MCP● ■ ·800·3	UTS800·L·MCP● ■ ·800·3	Magnetic range : 2~12In

ITEM	SETTING RANGE
Ir (rated current)	0.4~1.0 In
Tr (long time tripping delay)	0.5~20 (s)
Isd (short time current)	1.5~10 Ir
Tsd (short time tripping delay)	0.05~0.4 (s)

ITEM	SETTING RANGE
Ii (instantaneous current)	2~15 In
Tg (ground fault tripping delay)	0.05~0.4 (s)
Ig (ground fault current)	0.2~1In

●

OCR-II (Remote Reset)
G: Communication(X)
E: Com.(X)+Outer CT(G/F)
C: Communication(O)
X: Com.(O)+Outer CT(G/F)

OCR-II (ERMS)
I: Communication(X)
T: Com.(X)+Outer CT(G/F)
G: Communication(O)
R: Com.(O)+Outer CT(G/F)

■

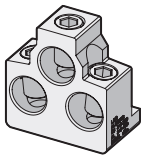
OCR-III
0: Power(X), 60Hz
1: AC/DC 100~250V, 60Hz
2: DC 24~60V, 60Hz
5: Power(X), 50Hz
6: AC/DC 100~250V, 50Hz
7: DC 24~60V, 50Hz

ACCESSORIES FOR UTS800

MECHANICAL LUGS

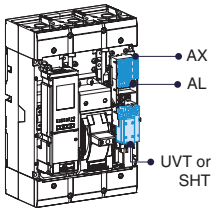
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
800A	Aluminum	Cu/Al	AL800TS

AL800TS 400~800A Lug



INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
Shunt Trip, SHT	DC 24~30V	
	AC 48V/DC 48~60V	
	AC/DC 100~130V	
	AC/DC 200~250V	
	AC 380~480V	
Undervoltage Trip, UVT	DC 24~30V	
	AC 48V/DC 48~60V	
	AC/DC 100~130V	
	AC/DC 200~250V	
	AC 380~480V	



Type	Right(T)
AX	3
AL	1
SHT	1*
UVT	1*

* Applicable in indicated pole position-not synchronous

PADLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in “OFF” position	PL5


<Pad Lock>

PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in “OFF” or “ON” position	PHL5


<Plate Handle Lock>

MECHANICAL INTERLOCKING DEVICE

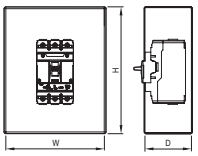
DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT53


<Mechanical Interlock>

ACCESSORIES FOR UTS800

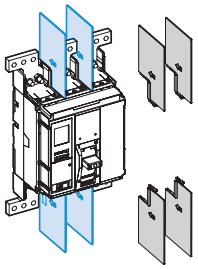
ENCLOSURE

ENCLOSURE DIMENSION (W X H X D) inch (mm)	ORDERING TYPE
20.25 (514.4) x 51.9 (1318.3) x 7.75 (196.9)	-



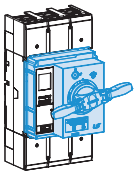
INSULATION BARRIERS

DESCRIPTION	QTY PER KIT	ORDERING TYPE
Standard type	2	B53
Extended type	2	BE53



ROTARY OPERATING HANDLES

DESCRIPTION	TYPE	ORDERING TYPE
Directly Mounted	NEMA Type 1	DH-5
Directly Mounted (with Key lock)	NEMA Type 1	DHK-5
Extended (Door-Mounted)	NEMA Type 1	REH-5
NEMA Door-Mounted	NEMA Type 1, 12	EHU-5
	NEMA Type 3, 3R, 4	EHV-5
	NEMA Type 3, 4, 4X	EHX-5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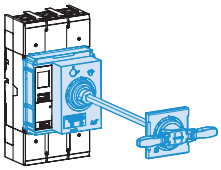
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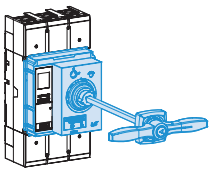
FLANGE OPERATING HANDLES

DESCRIPTION	TYPE	ORDERING TYPE
Handles (Including driving part/ excluding cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-5
	NEMA Type 4, 4X	FHX-5
Cable	60 inch	FH5-60
	84 inch	FH5-84
	128 inch	FH5-128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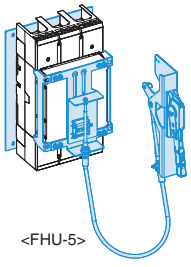
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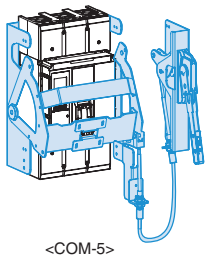
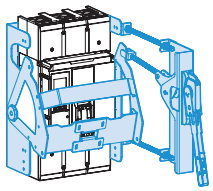
FLANGE HANDLES WITH CABLE OPERATING MECHANISM

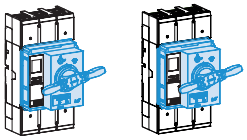
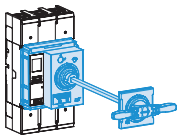
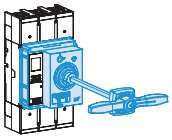
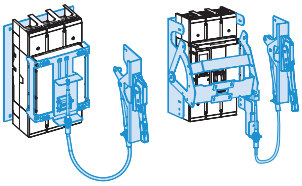
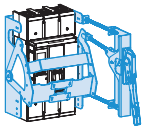
DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without cable)		COM-5
Long type handle (with operating mechanism)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L
Cable	60 inch	FH5-60
	84 inch	FH5-84
	128 inch	FH5-128


<COM-5>

FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM

Description	Type	Ordering type
Variable depth operating mechanism with threaded-rod and handle		VDM-5
Long type handle (with operating mechanism)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L


<VDM-5>

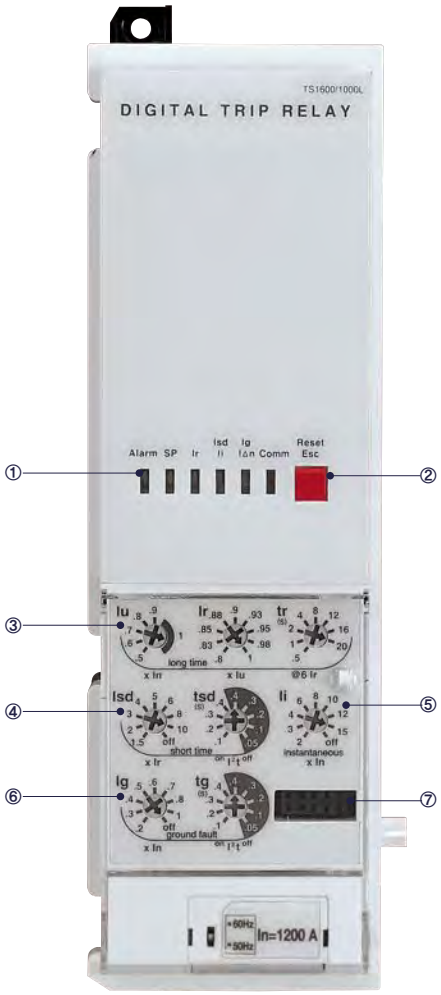
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE/SLIDING OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA TYPE 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

TRIP UNITS FOR UTS800 AND UTS1200

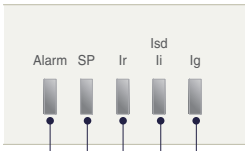
Circuit breaker includes factory-installed internal trip units. Be careful not to interchange trip units in the field. There are various kinds of trip units according to rated current and function as follows.

N type: Normal type

- Optimized protection function
- OCR, OCGR function according IEC60947-2
- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  Short-time delay / Instantaneous
  - I^2t On/Off optional (for short-time delay)
- Ground fault protection
  - I^2t On/Off optional
- Self-Power



① LED: Indication of trip info, and overload state



- **Ig**: LED indicating ground-fault
- **Isd / Ii**: LED indicating short-time or instantaneous tripping
- **Ir**: LED indicating long-time delay
- **SP**: Self-protection and battery test LED
- **Alarm**: LED indicating an overload
  (Turn on above 90%, Blink above 105%)

② Reset Key: Fault reset or battery check
③ Iu, Ir: Long-time current setting, tr: Long-time tripping delay setting
④ Isd: Short-time current setting, tsd: Short-time tripping delay setting
⑤ Ii: Instantaneous current setting
⑥ Ig: Ground fault setting, tg: Ground fault tripping delay setting
⑦ Test terminal: OCR test terminal (Connected with OCR tester)

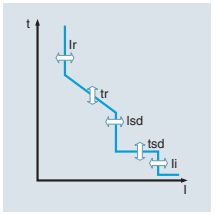
PROTECTION

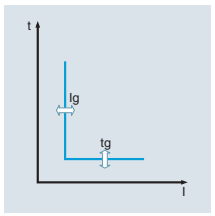
LONG TIME											
Current setting (A)	Iu = In X ...		0.5	0.6	0.7	0.8	0.9	1.0			
	Ir = Iu X ...		0.8	0.83	0.85	0.88	0.9	0.93	0.95	0.98	1.0
Time delay (s) Accuracy: ±15% or below 100ms	tr@(1.5 x Ir)		12.5	25	50	100	200	300	400	500	
	tr@(6.0 x Ir)		0.5	1	2	4	8	12	16	20	
	tr@(7.2 x Ir)		0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	

SHORT TIME											
Current setting (A) Accuracy: ±10%	Isd=Ir X ...		1.5	2	3	4	5	6	8	10	Off
Time delay (s) @ 10 x Ir	tsd	I^2t Off	0.05	0.1	0.2	0.3	0.4				
		I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off)	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

INSTANTANEOUS										
Current setting (A)	Ii=In X ...	2	3	4	6	8	10	12	15	Off
Tripping time		50(±10)ms								

GROUND FAULT											
Pick-up (A) Accuracy: ±10% (Ig>0.4In) ±20% (Ig<0.4In)	Ig=In X ...		0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off
Time delay (s) @ 1 x In	tg	I^2t Off	0.05	0.1	0.2	0.3	0.4				
		I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off)	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

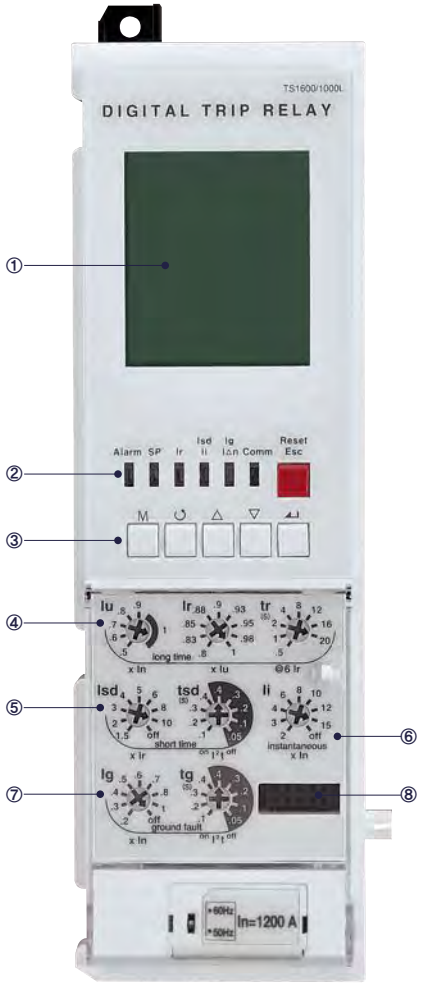




TRIP UNITS FOR UTS800 AND UTS1200

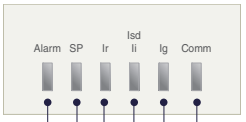
A type: Ammeter type

- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  - Short-time delay/ Instantaneous
  - I^2t On/Off optional (for short-time delay)
- Ground fault protection
  - I^2t On/Off optional
- Realization of protective coordination by ZSI (Zone Selective Interlocking)
- High-performance and high-speed MCU buillt-in
  - Accurate measurement with tolerance of 1.0%
- Fault recording
  - Records Max. up to 10 fault information about fault type, fault phase, fault data, occurrence time of fault
- SBO (Select Before Operation)
  - High reliability for control and setting change method
- 3 DO(Digital Output)
  - Fixed
- Communication
  - Modbus/RS485
  - Profibus-DP
- ERMS
  - Arc Flash Reduction
  - Instantaneous setting value is minimized. (2*In)



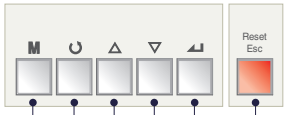
① LCD: Indication of measurement and information

② LED: Indication of trip info, and overload state



- **Comm:** LED indicating comm. state (Blink when runnig)
- **Ig:** LED indicating ground-fault
- **Isd / Ii:** LED indicating short-time or instantaneous tripping
- **Ir:** LED indicating long-time delay
- **SP:** Self-protection and battery test LED
- **Alarm:** LED indicating an overload (Turn on above 90%, Blink above 105%)

③ Key: Move to menu of reset



- **Reset / ESC:** Fault reset or ESC from menu and Inspection Battery
- **Enter:** Enter into secondary menu or setting input
- **Up / Down:** Move the cursor up/down on screen or increase/decrease a setting value
- **Right / Left:** Move the cursor or setting right/left on screen(Rotation)
- **Menu:** Menu display ↔ Measurement display

④ Iu, Ir: Long-time current setting, tr: Long-time tripping delay setting

⑤ Isd: Short-time current setting, tsd: Short-time tripping delay setting

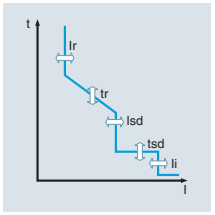
⑥ Ii: Instantaneous current setting

⑦ Ig: Ground fault setting, tg: Ground fault tripping delay setting

⑧ Test terminal: OCR test terminal (Connected with OCR tester)

PROTECTION

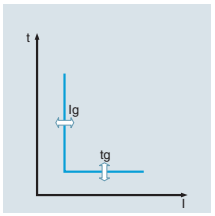
LONG TIME											
Current setting (A)	Iu = In X ...		0.5	0.6	0.7	0.8	0.9	1.0			
	Ir = Iu X ...		0.8	0.83	0.85	0.88	0.9	0.93	0.95	0.98	1.0
Time delay (s) Accuracy: ±15% or below 100ms	tr@(1.5 x Ir)		12.5	25	50	100	200	300	400	500	
	tr@(6.0 x Ir)		0.5	1	2	4	8	12	16	20	
	tr@(7.2 x Ir)		0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	



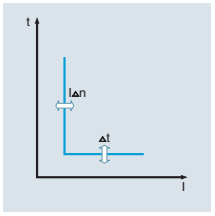
SHORT TIME										
Current setting (A) Accuracy: ±10%	Isd=Ir X ...	1.5	2	3	4	5	6	8	10	Off
Time delay (s) @ 10 x Ir	tsd — I^2t Off	0.05	0.1	0.2	0.3	0.4				
	tsd — I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off) — Min. Trip Time (ms)	20	80	160	260	360				
	(I^2t Off) — Max. Trip Time (ms)	80	140	240	340	440				

INSTANTANEOUS										
Current setting (A)	Ii=In X ...	2	3	4	6	8	10	12	15	Off
Tripping time	50(±10)ms									

GROUND FAULT											
Pick-up (A) Accuracy: ±10% (Ig>0.4In) ±20% (Ig<0.4In)	Ig=In X ...	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off
Time delay (s) @ 1 x In	tg — I^2t Off	0.05	0.1	0.2	0.3	0.4				
	tg — I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off) — Min. Trip Time(ms)	20	80	160	260	360				
	(I^2t Off) — Max. Trip Time(ms)	80	140	240	340	440				



EARTH LEAKAGE (OPTION)											
Current setting (A)	IΔn		0.5	1	2	3	5	10	20	30	Off
Time delay (ms) Accuracy: ±15%	Δt	Alarm Time(ms)	140	230	350	800	950				
		Trip Time(ms)	140	230	350	800					

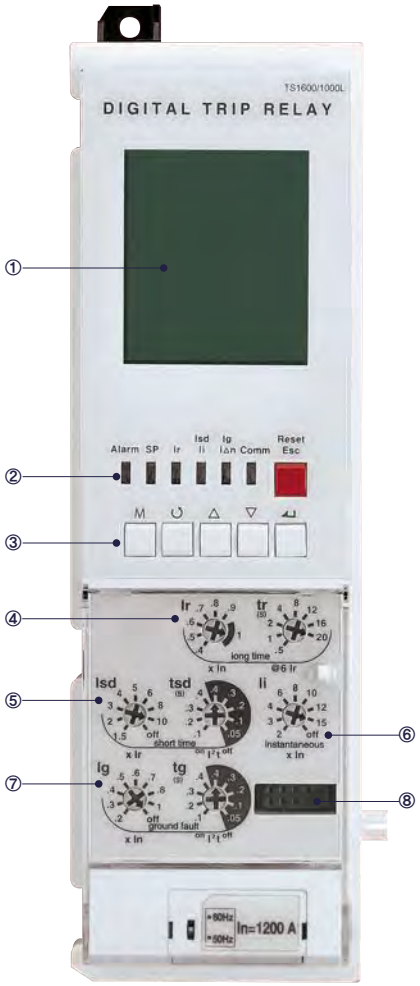


Note) Earth leakage function is available with ZCT or external CT

TRIP UNITS FOR UTS800 AND UTS1200

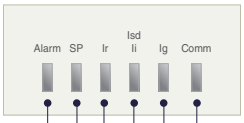
P type: Power meter type

- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  - Short-time delay/Instantaneous
  - I^2t On/Off optional (for short-time delay)
- Ground fault protection
  - I^2tOn/Off optional
- Protection for Over voltage/Under voltage/Over frequency/ Under frequency/Unbalance/Reverse power
- Realization of protective coordination by ZSI (Zone Selective Interlocking)
- The fine-adjustable setting by knob and key
- IDMTL setting (SIT, VIT, EIT, EIT50, DT curve)
  - Basic setting: "None".Thermal curve.
- Measurement and Display Function
  - High detailed measurement for 3 phase Current/Voltage/ Power/Energy/Phase angle/Frequency/PF/Demand
  - 128×128 Graphic LCD
  - Indicates current/Voltage Vector Diagram and Waveform
- Fault recording
  - Records Max. up to 256 fault information about fault type, fault phase, fault value, occurrence time of fault
- Event recording
  - Records events of device related to setting change, operation and state change. (Max. up to 256)
- SBO (Select Before Operation)
  - High reliability for control and setting change method
- 3 DO(Digital output)
  - Programmable for alarm, trip and general DO
- Communication
  - Modbus/RS485
  - Profibus-DP
- ERMS
  - Arc Flash Reduction
  - Instantaneous setting value is minimized. (2*In)



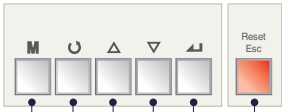
① Graphic LCD: Indication of measurement and information

② LED: Indication of trip info, and overload state



- **Comm:** LED indicating comm. state (Blink when runnig)
- **Ig:** LED indicating ground-fault
- **Isd / Ii:** LED indicating short-time or instantaneous tripping
- **Ir:** LED indicating long-time delay
- **SP:** Self-protection and battery test LED
- **Alarm:** LED indicating an overload (Turn on above 90%, Blink above 105%)

③ Key: Move to menu of reset



- **Reset / ESC:** Fault reset or ESC from menu and Inspection Battery
- **Enter:** Enter into secondary menu or setting input
- **Up / Down:** Move the cursor up/down on screen or increase/decrease a setting value
- **Right / Left:** Move the cursor or setting right/left on screen(Rotation)
- **Menu:** Menu display ↔ Measurement display

④ Iu, Ir: Long-time current setting, tr: Long-time tripping delay setting
⑤ Isd: Short-time current setting, tsd: Short-time tripping delay setting
⑥ Ii: Instantaneous current setting
⑦ Ig: Ground fault setting, tg: Ground fault tripping delay setting
⑧ Test terminal: OCR test terminal (Connected with OCR tester)

PROTECTION

LONG TIME											
Current setting (A)	Iu = In X ...		0.4	0.5	0.6	0.7	0.8	0.9	1.0		
Time delay (s) Accuracy: ±15% or below 100ms	tr@(1.5 x Ir)		12.5	25	50	100	200	300	400	500	
	tr@(6.0 x Ir)		0.5	1	2	4	8	12	16	20	
	tr@(7.2 x Ir)		0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	

SHORT TIME										
Current setting (A) Accuracy: ±10%	Isd=Ir X ...		1.5	2	3	4	5	6	8	10	Off
Time delay (s) @ 10 x Ir	tsd	I^2t Off	0.05	0.1	0.2	0.3	0.4				
		I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off)	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

INSTANTANEOUS										
Current setting (A)	Ii=In X ...	2	3	4	6	8	10	12	15	Off
Tripping time		50(±10)ms								

GROUND FAULT										
Pick-up (A) Accuracy: ±10% (Ig>0.4In) ±20% (Ig<0.4In)	Ig=In X ...		0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off
Time delay (s) @ 1 x In	tg	I^2t Off	0.05	0.1	0.2	0.3	0.4				
		I^2t On		0.1	0.2	0.3	0.4				
	(I^2t Off)	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

EARTH LEAKAGE (OPTION)											
Current setting (A)	IΔn		0.5	1	2	3	5	10	20	30	Off
Time delay (ms) Accuracy: ±15%	Δt	Alarm Time(ms)	140	230	350	800	950				
		Trip Time(ms)	140	230	350	800					

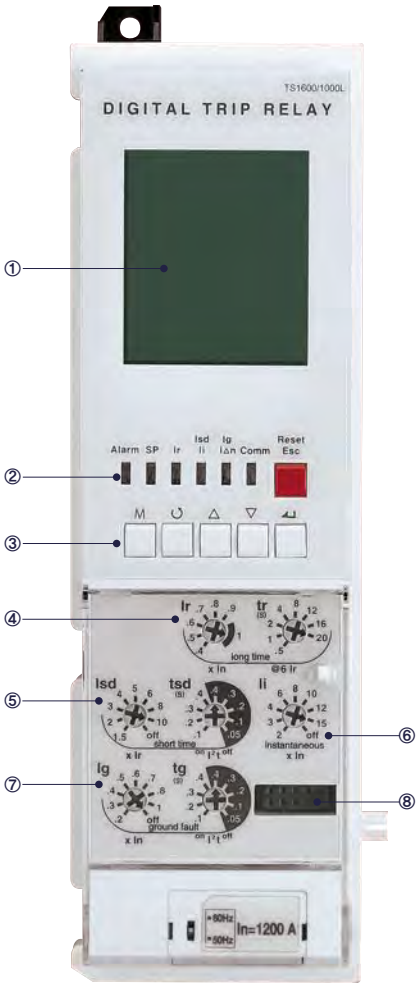
Note) Earth leakage function is available with ZCT or external CT

OTHER PROTECTION		PICK-UP			TIME DELAY(S)		
		SETTING RANGE	STEP	ACCURACY	SETTING RANGE	STEP	ACCURACY
Under Voltage		80V-0V_Pick-up	1V	±5%	1.2~40 (s)	0.1 (s)	±0.1 (s)
Over Voltage		UV_Pick-up~980V	1V	±5%			
Voltage Unbalance		6%~99%	1%	±2.5% or (*±10%)			
Reverse Power		10~500kW	1kW	±10%	0.2~40 (s)		
Over Power		500~5000W	1kW	±10%			
Current Unbalance		6%~99%	1%	±2.5% or (*±10%)			
Over Frequency	**60Hz**	UF_Pick-up~65	1Hz	±0.1Hz	1.2~40 (s)		
	50Hz	UF_Pick-up~55	1Hz	±0.1Hz			
Under Frequency	**60Hz**	55Hz~OF_Pick-up	1Hz	±0.1Hz			
	50Hz	45Hz~OF_Pick-up	1Hz	±0.1Hz			

TRIP UNITS FOR UTS800 AND UTS1200

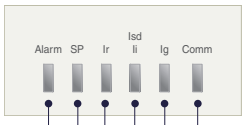
S type: Supreme meter type

- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  - Short-time delay/ Instantaneous
  - I^2t On/Off optional (for short-time delay)
- Ground fault protection
  - I^2tOn/Off optional
- Protection for Over voltage/Under voltage/Over frequency/ Under frequency/Unbalance/Reverse power
- Realization of protective coordination by ZSI (Zone Selective Interlocking)
- The fine-adjustable setting by knob and key
- IDMTL setting (SIT, VIT, EIT, DT curve)
  - Basic setting: "None".Thermal curve.
- Measurement and Display Function
  - High detailed measurement for 3 phase current/ Voltage/ Power/Energy/Phase angle/Frequency/PF/Demand
  - 128 x 128 Graphic LCD
  - Indicates current/Voltage Vector Diagram and Waveform
- Fault recording
  - Records Max. up to 256 fault information about fault type, fault phase, fault value, occurrence time of fault
  - fault wave recording: records the latest fault wave
- Event recording
  - Records events of device related to setting change, operation and state change. (Max. up to 256)
- SBO (Select Before Operation)
  - High reliability for control and setting change method
- Power quality analysis
  - Measurement for 1st-63th harmonics
  - THD, TDD, k-Factor
  - Voltage/Current waveform capture
- 3 DO(Digital output)
  - Programmable for alarm, trip and general DO
- Communication
  - Modbus/RS485
  - Profibus-DP
- ERMS
  - Arc Flash Reduction
  - Instantaneous setting value is minimized. (2*In)



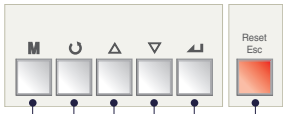
① Graphic LCD: Indication of measurement and information

② LED: Indication of trip info, and overload state



- **Comm:** LED indicating comm. state (Blink when runnig)
- **Ig:** LED indicating ground-fault
- **Isd / Ii:** LED indicating short-time or instantaneous tripping
- **Ir:** LED indicating long-time delay
- **SP:** Self-protection and battery test LED
- **Alarm:** LED indicating an overload (Turn on above 90%, Blink above 105%)

③ Key: Move to menu of reset



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- **Enter:** Enter into secondary menu or setting input
- **Up / Down:** Move the cursor up/down on screen or increase/decrease a setting value
- **Right / Left:** Move the cursor or setting right/left on screen(Rotation)
- **Menu:** Menu display ↔ Measurement display

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⑤ Isd: Short-time current setting, tsd: Short-time tripping delay setting
⑥ Ii: Instantaneous current setting
⑦ Ig: Ground fault setting, tg: Ground fault tripping delay setting
⑧ Test terminal: OCR test terminal (Connected with OCR tester)

PROTECTION

LONG TIME											
Current setting (A)	Iu = In X ...		0.4	0.5	0.6	0.7	0.8	0.9	1.0		
Time delay (s) Accuracy: ±15% or below 100ms	tr@(1.5 x Ir)		12.5	25	50	100	200	300	400	500	
	tr@(6.0 x Ir)		0.5	1	2	4	8	12	16	20	
	tr@(7.2 x Ir)		0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	

SHORT TIME										
Current setting (A) Accuracy: ±10%	Isd=Ir X ...	1.5	2	3	4	5	6	8	10	Off
Time delay (s) @ 10 x Ir	tsd (I^2t Off)	0.05	0.1	0.2	0.3	0.4				
	tsd (I^2t On)		0.1	0.2	0.3	0.4				
	(I^2t Off) Min. Trip Time(ms)	20	80	160	260	360				
	(I^2t Off) Max. Trip Time(ms)	80	140	240	340	440				

INSTANTANEOUS										
Current setting (A)	Ii=In X ...	2	3	4	6	8	10	12	15	Off
Tripping time		50(±10)ms								

GROUND FAULT										
Pick-up (A) Accuracy: ±10% (Ig>0.4In) ±20% (Ig<0.4In)	Ig=In X ...	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off
Time delay (s) @ 1 x In	tg (I^2t Off)	0.05	0.1	0.2	0.3	0.4				
	tg (I^2t On)		0.1	0.2	0.3	0.4				
	(I^2t Off) Min. Trip Time(ms)	20	80	160	260	360				
	(I^2t Off) Max. Trip Time(ms)	80	140	240	340	440				

EARTH LEAKAGE (OPTION)											
Current setting (A)	IΔn		0.5	1	2	3	5	10	20	30	Off
Time delay (ms) Accuracy: ±15%	Δt	Alarm Time(ms)	140	230	350	800	950				
		Trip Time(ms)	140	230	350	800					

Note) Earth leakage function is available with ZCT or external CT

OTHER PROTECTION		PICK-UP			TIME DELAY (s)		
		SETTING RANGE	STEP	ACCURACY	SETTING RANGE	STEP	ACCURACY
Under Voltage		80V-0V_Pick-up	1V	±5%	1.2~40 (s)	0.1 (s)	±0.1 (s)
Over Voltage		UV_Pick-up~980V	1V	±5%			
Voltage Unbalance		6%~99%	1%	±2.5% or (*±10%)			
Reverse Power		10~500kW	1kW	±10%	0.2~40 (s)		
Over Power		500~5000W	1kW	±10%			
Current Unbalance		6%~99%	1%	±2.5% or (*±10%)			
Over Frequency	**60Hz**	UF_Pick-up~65	1Hz	±0.1Hz	1.2~40 (s)		
	50Hz	UF_Pick-up~55	1Hz	±0.1Hz			
Under Frequency	**60Hz**	55Hz~OF_Pick-up	1Hz	±0.1Hz			
	50Hz	45Hz~OF_Pick-up	1Hz	±0.1Hz			

TRIP UNITS FOR UTS800 AND UTS1200

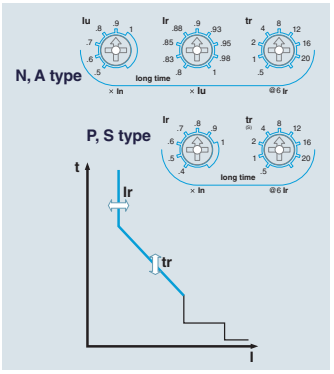
TRIP RELAY TYPES

CLASSIFICATION	N TYPE	A TYPE	P TYPE	S TYPE
Externals				
Current protection	• L / S / I / G Thermal	• L / S / I / G / Thermal • ZSI(Protective coordination) • ERMS	• L / S / I / G / Thermal(Continuous) • ZSI(Protective coordination) • ERMS	• L / S / I / G / Thermal(Continuous) • ZSI(Protective coordination) • ERMS
Other protection	-	• Earth leakage (Option)	• Earth leakage (Option) • Over/Under voltage • Unbalance(Voltage/Current) • Reverse power/Over power	• Earth leakage (Option) • Over/Under voltage • Unbalance(Voltage/Current) • Reverse power/Over power
Measurement function	-	• Current (R / S / T)	• 3 Phase Voltage/Current RMS/Vector • Power(P, Q, S), PF(3-Phase) • Energy(Positive/Negative) • Frequency, Demand	• 3 Phase Voltage/Current RMS/Vector • Power(P, Q, S), PF(3-Phase) • Energy(Positive/Negative) • Frequency, Demand • Voltage/Current harmonics (1st~63th) • 3 Phase Waveforms • THD, TDD, K-Factor
Fine adjustment	-	-	• Fine adjustment for long/short time delay/instantaneous/ ground	• Fine adjustment for long/short time delay/instantaneous/ ground
Digital Output	-	• 3DO (Fixed) • L, S/I, G Alarm	• 3DO (Programmable) • Trip, Alarm, General	• 3DO (Programmable) • Trip, Alarm, General
IDMTL setting	-	-	• Compliance with IEC60255-3 • SIT, VIT, EIT, DT	• Compliance with IEC60255-3 • SIT, VIT, EIT, DT
Communication	-	• Modbus/RS-485 • Profibus-DP	• Modbus/RS-485 • Profibus-DP	• Modbus/RS-485 • Profibus-DP
Power supply	• Self Power - Power source works over 20% of load current.	• Self Power - Power source works over 20% of oad current. - External power source are required for comm. • AC/DC 100~250V • DC 24~60V	• AC/DC 100~250V • DC 24~60V Basic protection function(L / S / I / G) is still under normal operation without control power.	• AC/DC 100~250V • DC 24~60V
RTC timer	-	• Available	• Available	• Available
LED for trip info.	• Long time delay • Short time delay/Instantaneous • Ground fault	• Long time delay • Short time delay/Instantaneous • Ground fault	• Long time delay • Short time delay/Instantaneous • Ground fault	• Long time delay • Short time delay/Instantaneous • Ground fault
Fault recording	-	• 10 records (Fault/Current/Date and Time)	• 256 records (Fault/Current/Date and Time)	• 256 records (Fault/Current/Date and Time)
Event recording	-	-	• 256 records (Content, Status, Date)	• 256 records (Content, Status, Date)
Operating button	• Reset button	• Reset, Menu Up/Down, Left/Right, Enter	• Reset, Menu Up/Down, Left/Right, Enter	• Reset, Menu Up/Down, Left/Right, Enter

OPERATION CHARACTERISTIC

LONG-TIME DELAY (L)

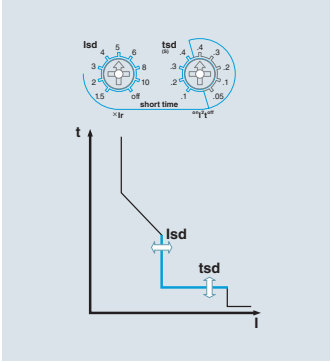
The function for overload protection which has time delayed characteristic in inverse ratio to fault current.



1. Standard current setting knob: Ir
   1)Setting range in P type and S type: (0.4-0.5-0.6-0.7-0.8-0.9-1.0)×In
   2)Setting range in N type and A type: (0.4~1.0)×In
   - **Iu**: (0.5- 0.6 - 0.7 - 0.8 - 0.9 - 1.0)×In
   - **Ir**: (0.8 - 0.83 - 0.85 - 0.88 - 0.9 - 0.93 - 0.95 - 0.98 - 1.0)×Iu
2. Time delay setting knob: tr
   - Standard operrating time is based on the time of 6×Ir
   - Setting range: 0.5-1-2-4-8-12-16-20 (s)
3. Relay pick-up current
   - When current over(1.15)×Ir fows in, relay is picked up.
4. Relay operates basing on the largest load current among R/S/T phase.

SHORT-TIME DELAY (S)

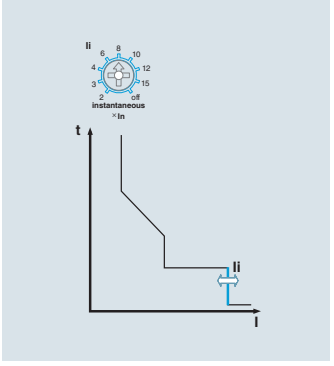
The function for fault current (over current) protection which has definite time characteristic and time delayed in inverse ratio to fault current.



1. Standard current setting knob: Isd
   - Setting range:(1.5 - 2 - 3 - 4 - 5 - 6 - 8 - 10 - Off) x Ir
2. Time delay setting knob: tsd
   - Standard operrating time is based on the time of 10×Ir
   - Inverse time(I^2t On): 01 - 0.2 - 0.3 - 0.4 (s)
   - Definite time (I^2t Off): 0.05 - 0.1 - 0.2 - 0.3 - 0.4 (s)
3. Relay operates based on the largest load current among R/S/T phase.
4. When the ZSI function is set, the protection operation will take place instantaneously with input absence by downstream devices. It is advised to disable the ZSI funcion on the last downstream device.

INSTANTANEOUS (I)

The function for breaking fault current above the setting value within the shortest time to protect the circuit from short-circuit

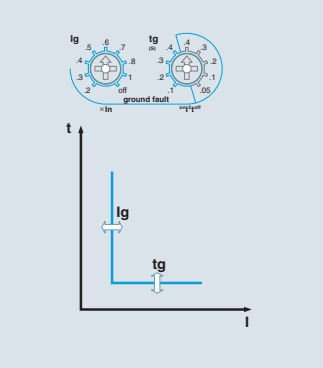


1. Standard current setting knob: Ii
   - Setting range:(2 - 3 - 4 - 6 - 8 - 10 - 12 - 15 - Off) x In
2. Relay operates based on the largest load current among R/S/T phase.
3. Total breaking time is below 50ms.
4. When using the ERMS function, Instantaneous setting value is applied as 2*In (N type OCR does not apply)

OPERATION CHARACTERISTIC

GROUND FAULT (G)

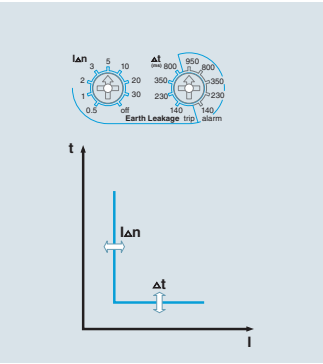
The function for breaking ground fault current above setting value after time-delay to protect the circuit from ground fault.



1. Standard setting current knob: Ig
   - Setting range: (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 1.0 - Off) x In
2. Time delay setting knob: tg
   - Inverse time (I^2t On): 0.1 - 0.2 - 0.3 - 0.4 (s)
   - Definite time (I^2t Off): 0.05 - 0.1 - 0.2 - 0.3 - 0.4 (s)
3. Ground fault current is the vector sum of each phase current. Therefore, 3Pole products may operate under its phase-unbalace including ground fault situation.(R+S+T Phase)
4. When the ZSI function is set, the protection operation will take place instantaneously with input absence by downstream devices. It is advised to disable the ZSI function on the last downstream device.
5. Ground-fault functions are basically provided with products equipped with a trip relay through its internal CT that is embedded in each phase.
   (But, it can't be used with earth - leakage protection function at the same time)

EARTH LEAKAGE (G) - OPTION

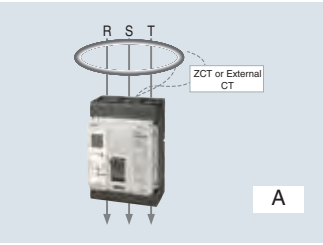
The function for breaking earth leakage current above setting value after time delay to protect the circuit from earth leakage. (A, P, S type)



1. Standard setting current knob: IΔn
   -Setting range: 0.5-1-2-3-5-10-20-30-OFF(A)
2. Time delay setting knob: Δt
   - Trip time: 140-230-350-800 ms
   - Alarm time: 140-230-350-800-950 ms
3. Settings within its alarm range will prevent its breaker from tripping but activating its alarm.
4. This function is enabled and can be used only with private external CT(secondary output 5A) selected by customers.
5. When the ZSI function is set, the protection operation will take place instantaneously with input absence by downstream devices. It is advised to disable the ZSI function on the last downstream device.

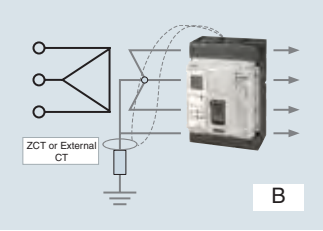
※ USE CAUTIONS WITH EARTH-LEAKAGE CURRENT SETTINGS

- When using other CT selected by customers, the setting range is from 0.5 to 5A based on its secondary current. (Secondary output rating: 5A)
  Hence, under 100:5A CT, if trip relay is set to 0.5A, earth-leakage exceeding 10A will activate its operation (0.5A x 20=10A)



※GUIDELINES FOR USING AN EXTERNAL CT

- Earth-leakage protection characteristics using the standard CT which is installed inside of MCCB can protect currents from 20 to 100% range on its rated current.
- As rated currents on MCCB increases, current that is covered by its standard CT increase as well. This can not protect against small leakage currents.
  ex) 400A MCCB Min. Earth-leakage current 400A x 20%=80A
- Therefore, customers are advised to install an external CT in accordance with its rated currents within its systems. And choose trip relay(E, X type) which is required with CT usage in order to provide earth-leakage function.



MEASUREMENT FUNCTION

A type

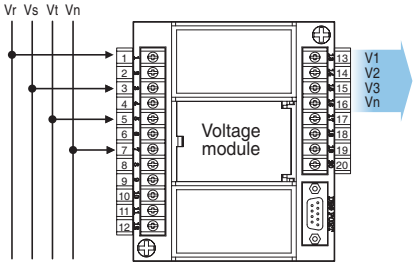
P type

S type

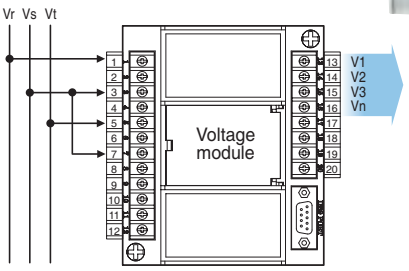
CLASS.	MEASUREMENT ELEMENT	DETAILED ELEMENT	UNIT	DISPLAY RANGE	ACCURACY
Current	Line current	Ia,Ib,Ic	A	80A~65,535A	±3%
	Normal current	I_1			
	Reverse current	I_2			
Voltage	Line voltage	Vab,Vbc,Vca	V	60~690V	±1%
	Phase voltage	Va,Vb,Vc			±1%
	Normal voltage	V_1			
	Reverse voltage	V_2			
Angle	Line-to-line Line-to-current	∠VabIa, ∠VabIb, ∠VabIc, ∠VabVbc, ∠VabVca	°	0~360°	±1°
	Phase-to-phase	∠VaVb,∠VaVc			±1°
	Phase-to-current	∠VaIa, ∠VbIb, ∠VcIc			±1°
Power	Active power	Pa(ab), Pb(bc), Pc(ca), P	kW	1kW~99,999kW	±3%
	Reactive power	Qa(ab), Qb(bc), Qc(ca), Q	kVar	1kVar~99,999kVar	±3%
	Apparent power	Sa(ab), Sb(bc), Sc(ca), S	kVA	1kVA~99,999kVA	±3%
Energy	Active energy	WHa(ab), WHb(bc), WHc(ca), WH	kWh MWh	1kWh~9999.99MWh	±3%
	Reactive energy	VARHa(ab), VARHb(bc), VARHc(ca), VARH	kVarh Mvarh	1kVarh~9999.99MVarh	±3%
	Reverse active energy	rWHa(ab), rWHb(bc), rWHc(ca), rWH	kWh MWh	1kWh ~9999.99MWh	±3%
Freq.	Frequency	F	Hz	45~65Hz	
Power factor	Power factor(PF)	PFa(ab), PFb(bc), PFc(ca), PF		+: Lead, -: Lag	
Unbalance	Unbalance rate	Iunalance, Vunbalance	%	0.0~100.0	
Demand	Active power demand	Peak demand	kW	1kW~99999kW	
	Current demand	Peak demand	A	80A~65,535A	
Harmonics	Voltage harmonics	1st~63th harmonics of Va(ab),Vb(bc),Vc(ca)	V	60~690V	
	Current harmonics	1st~63th harmonics of Ia,Ib,Ic	A	80A~65,535A	
	THD, TDD		%	0.0~100.0	
	K-Factor		-	0.0~100.0	

Voltage module

For P and S type Trip relay, separate voltage module is necessary to measure other element besides current (Separate purchase is needed)
- Voltage input range: AC 60~690V



3P4W wiring

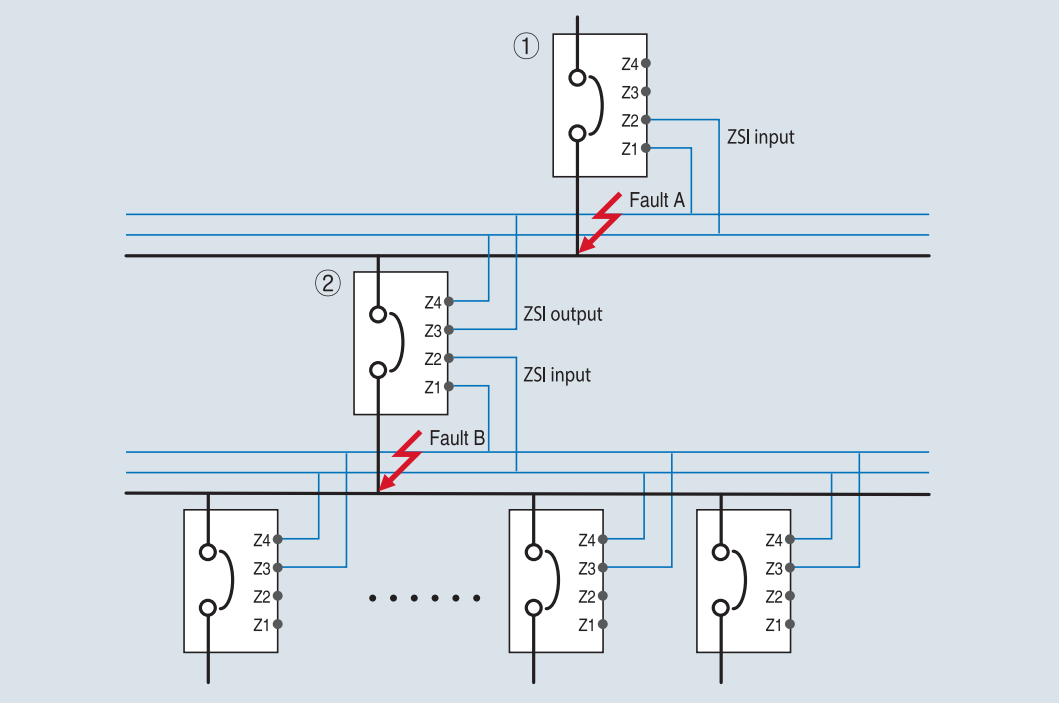


3P3W wiring

ZSI - ZONE SELECTIVE INTERLOCKING (A, P, S TYPE)

Zone-selective interlocking drops delay time that eliminates faults for breakers. It minimizes the shock that all kinds of electric machines get under fault conditions.

1. In case of short time-delay or ground fault in a system where ZSI built in,the breaker at the point of failure generates a ZSI output signal to suppress the operation of upstream breaker.
2. To eliminate a breakdown, trip relay of MCCB at accident site activates trip operation without time delay.
3. The upstream breaker that received ZSI signal adhere to pre-set short time-delay or ground fault time-delay for protective coordination in the system. However upstream breaker that did not receive its signal will trip instantaneously.
4. For ordinary ZSI operation, it should arrange operation time accordingly so that downstream circuit breakers will react before upstream ones under overcurrent/short time delay/ ground fault situations.
5. ZSI connecting line needs to be Max. 3m.



1) Occurrence of fault A
   - Only breaker ① performs instantaneous trip operation.
2) Occurrence of fault B
   - Breaker ② performs instantaneous trip operation, breaker ① performs trip operation after prearranged delay time
   - But if breaker ② did not break the fault normally, breaker ① performs instantaneous trip operation to protect system.

REMOTE RESET AND DIGITAL I/O (A, P, S TYPE)

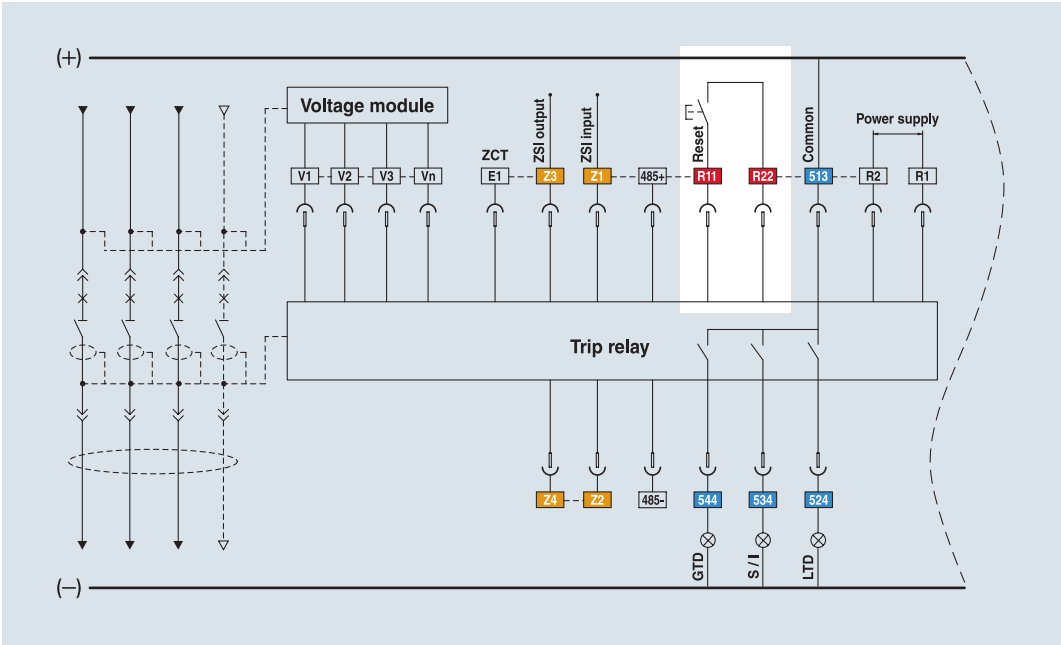
In case of an accident or overcurrent, the trip relay displays the accident information along with the contact output through LCD and LED.
A, P, S type Trip Relay enables remote reset through DI (Digital Input) input and provides 3 DO (Digital Output) outputs

1. Methods to reset Trip relay is to push the Reset button on the frontal side and to use the remote reset.

2. Digital input
   - [R11-R22] input: Remote reset
   - [Z1-Z2] Input: ZCT for earth leakage detection or external CT input

※All DI are dry contact that has 3.3V of recognition voltage. When inputting close by SSR(Solid State Relay) or open-collector, connect collector(Drain) to R11.

3. Digital output 3a(524, 534, 544-513)
   - Fault output: Long/Short time delay, Instantaneous, Ground fault, UVR, OVR, UFR, OFR, rPower, Vunbal, Iunbal (Maintains state as Latch form until user pushes reset.)
   - General DO: when setting L/R as remote, it is available to control close/open remotely by using communication.



Trip Relay	Digital Output	Long time	Short time	Instantaneous	Ground	Overload Alarm	OVR	UVR	rPower	Vunbal	Iunbal	OFR	UFR	OPR	Note
P, S type	DO1(524)	●	○	○	○	○	○	○	○	○	○	○	○	○	Programmable
	DO2(534)	○	●	●	○	○	○	○	○	○	○	○	○	○	
	DO3(544)	○	○	○	●	○	○	○	○	○	○	○	○	○	
A type	DO1(524)	●	×	×	×	Not available									Fixed
	DO2(534)	×	●	●	×										
	DO3(544)	×	×	×	●										

ERMS AND DIGITAL I/O (A, P, S TYPE)

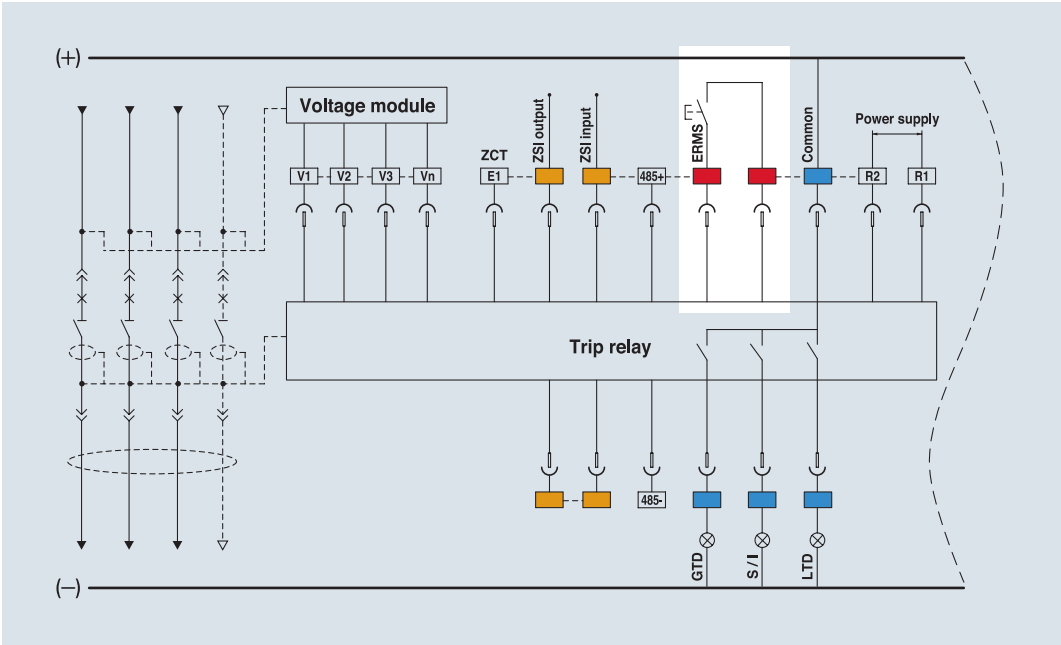
ERMS(Energy Reduction Maintenance Setting) is a function to reduce the arc energy to ensure workers' safety. When using the ERMS function, the instantaneous setting value is minimized(2*In). A, P, and S type trip relays are able to perform the ERMS by digital input and have 3 DO (digital output).

1. To use the ERMS function, short both ends of ERMS terminal

2. Digital input
   - [R11-R22] input: ERMS
   - [Z1-Z2] Input: ZCT for earth leakage detection or external CT input

※ All DI are dry contact that has 3.3V of recognition voltage. When inputting close by SSR(Solid State Relay) or open-collector, connect collector(Drain) to R11.

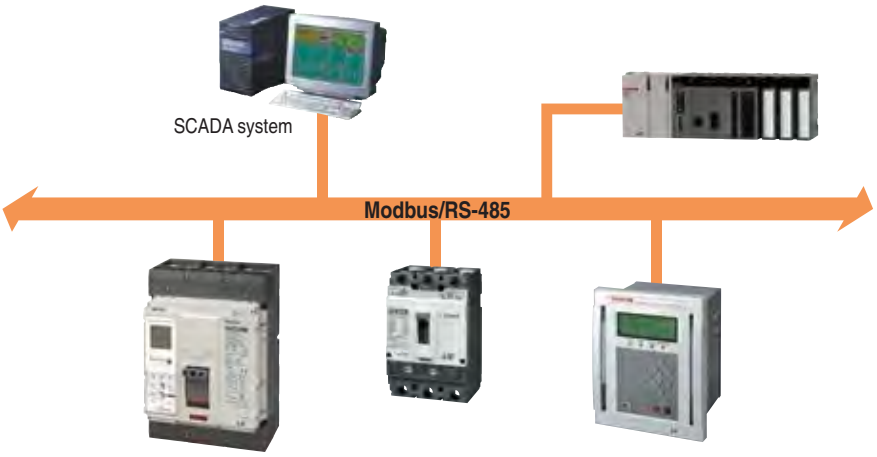
3. Digital output 3a(524, 534, 544-513)
   - Fault output: Long/Short time delay, Instantaneous, Ground fault, UVR, OVR, UFR, OFR, rPower, Vunbal, Iunbal
     (Maintains state as Latch form until user pushes reset.)
   - General DO: when setting L/R as remote, it is available to control close/open remotely by using communication.



COMMUNICATION

Modbus/RS-485

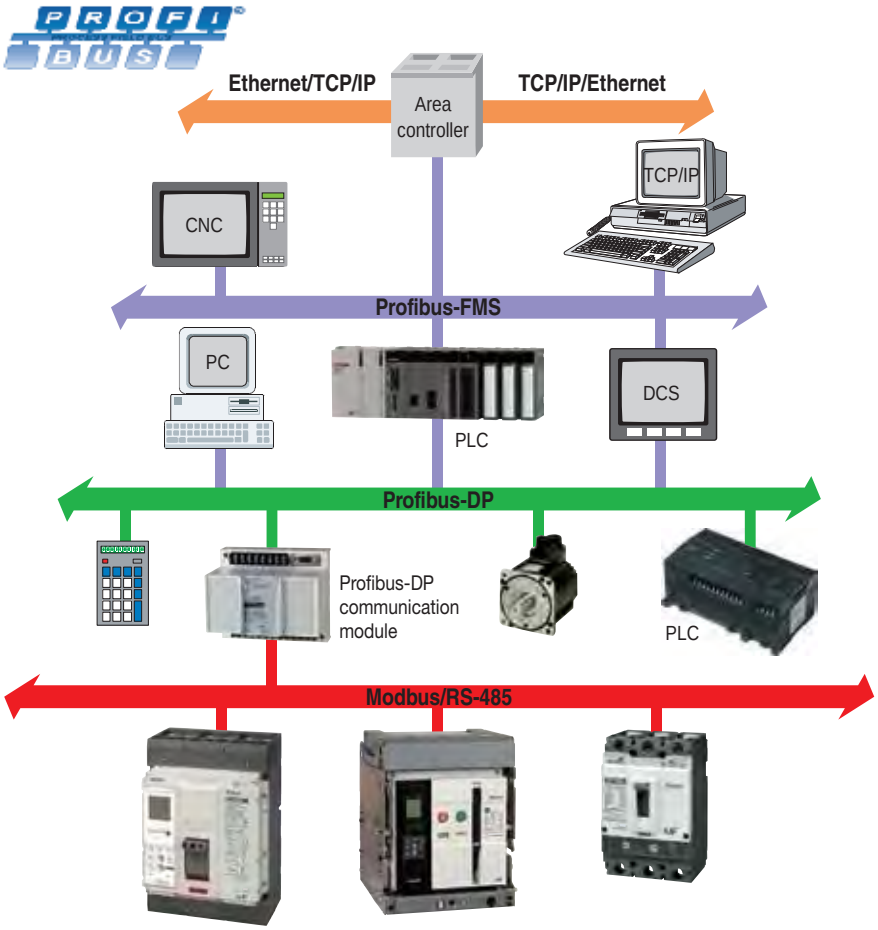
- Operation mode: Differential
- Distance: Max. 1.2km
- Cable :
  General RS-485 shielded twist 2-pair cable
- Baud rate :
  9600bps, 19200bps, 38400bps
- Transmission method: Half-Duplex
- Termination: 150Ω



Profibus-DP

- Profibus-DP module is installed separately (Option)
- Operation mode: Differential
- Distance: Max. 1.2km
- Cable :
  Profibus-DP shielded twist 2-pair cable
- Baud rate: 9600bps~12Mbps
- Transmission method: Half-Duplex
- Termination: 150Ω
- Standard: EN 50170 / DIN 19245

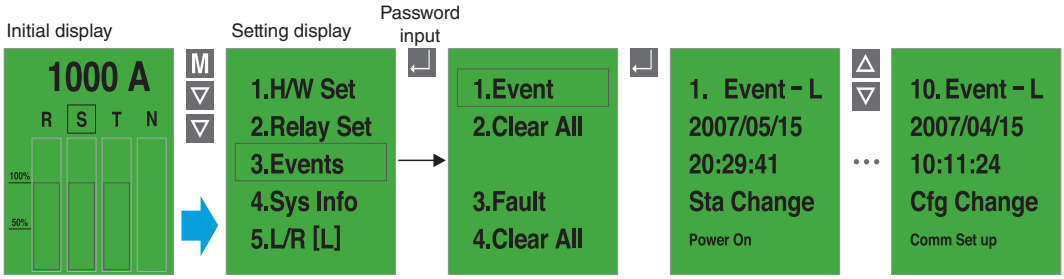
Profibus-DP
communication module
(Option)



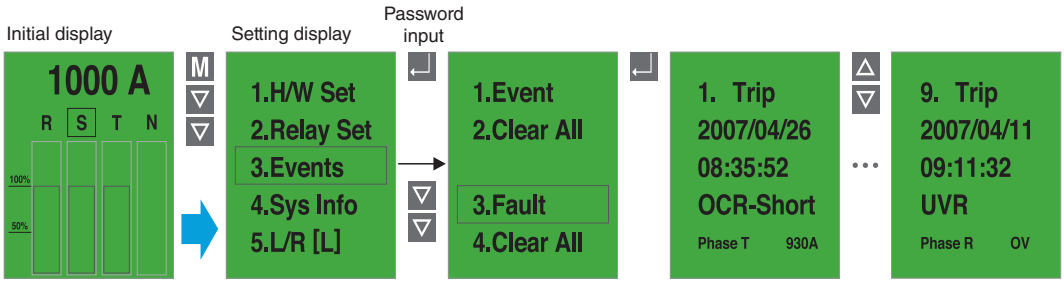
EVENT & FAULT RECORDING (P, S TYPE)

P, S type Trip Relay records up to 256 information with ms time when an event such as device configuration change, information change, self-diagnostic error occurrence, or status change occurs. In addition, when a fault such as an operation or trip of a relay element occurs, detailed fault information such as an fault cause, fault phase, and an accident value can be stored up to 256 times (up to 10 for A-types) with ms information.

Event information display



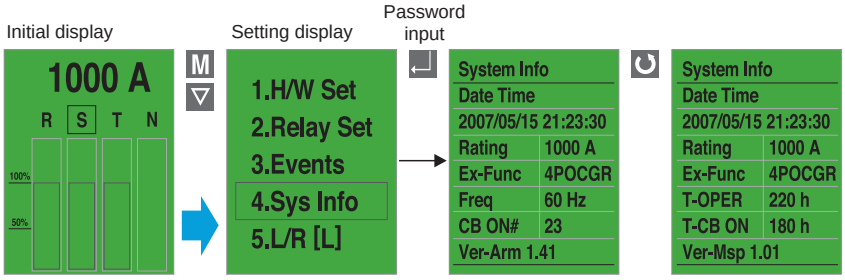
Fault information display



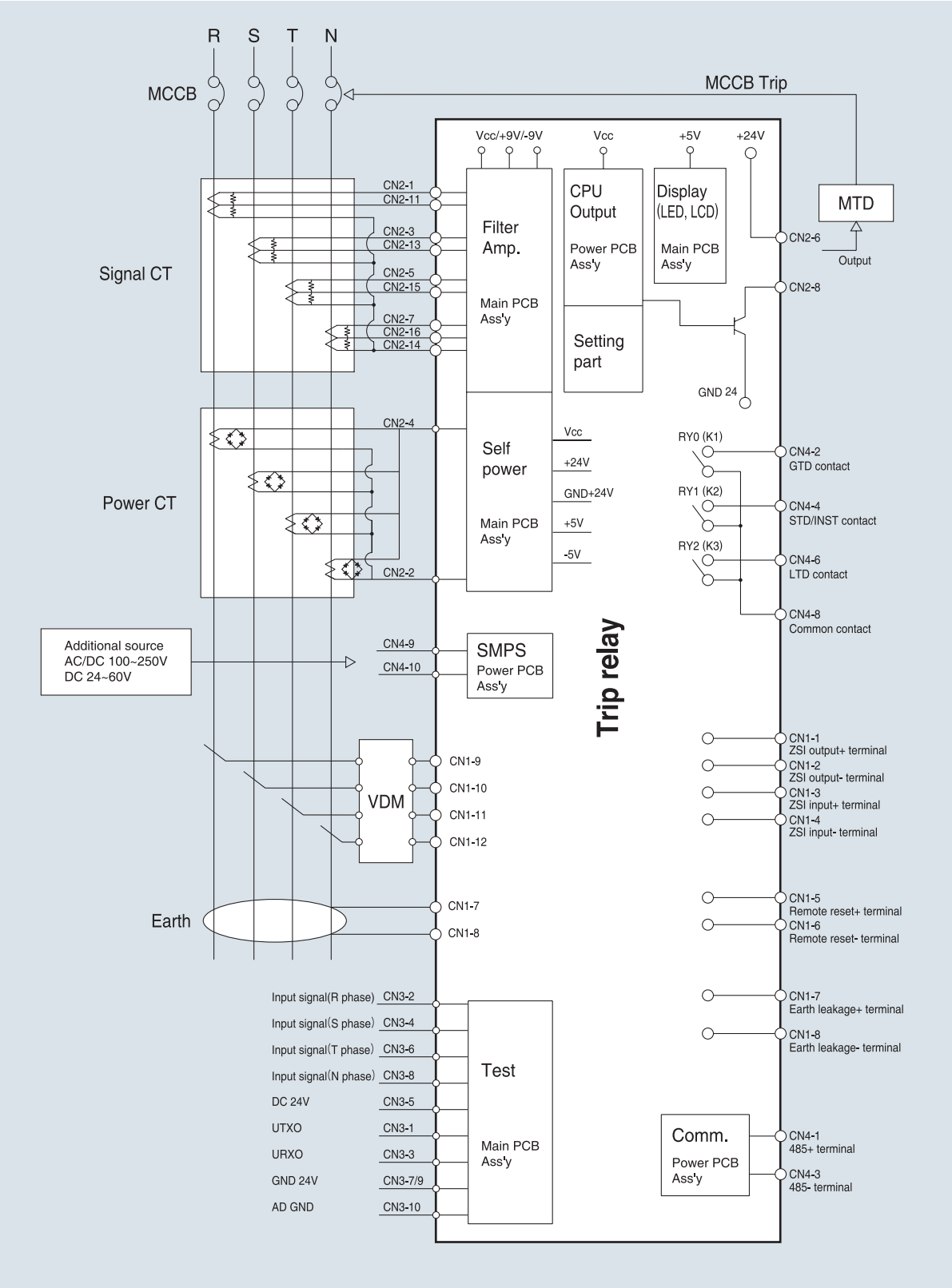
SYSTEM INFORMATION

P and S type can indicate information as followings with the information of the MCCB.
- Present time: year/month/date/hour/minute/ms
- MCCB current ratings
- N-phase current ratings: 100%
- Frequency information: 60Hz / 50Hz
- Closing numbers of breaker: CB ON numbers
- Trip relay operating time: OCR ON time
- ON time of breaker: CB ON time
- S/W ver. information

System information display



SYSTEM BLOCK DIAGRAM

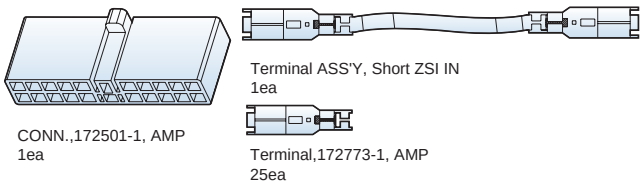


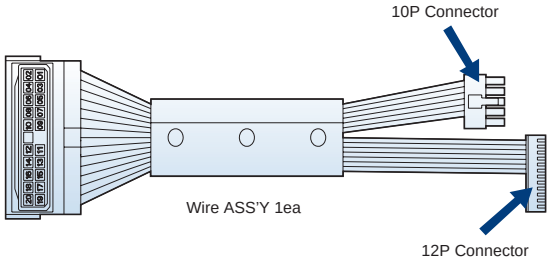
INSTALLATION AND HANDLING

Withdrawal Wiring for Trip Relay

⚠ Caution

1. In case of disassembling and assembling the main cover, screw should be tightened in specific torque of1.5N.m (15.3kgf.cm)
2. In case of disassembling and assembling the main cover by over tightening torque, the parts of MCCB can be damaged.





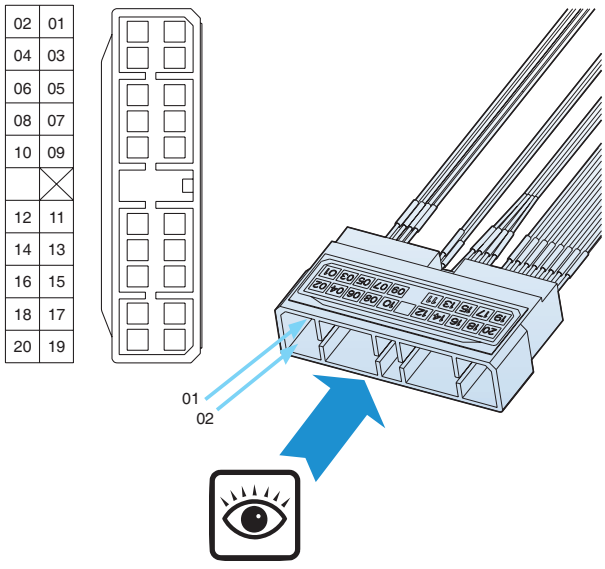
WIRE ASS'Y OCR types

No.	Drawing No.	Part Name	Functions	OCR
1	76671176310	WIRE ASS'Y AG AC OCR	Communication, Digital Output, ZSI, Remote Reset	A Type
2	76671176311	WIRE ASS'Y A ZK PS CKA OCR	Communication, Digital Output, ZSI, Remote Reset, Earth Leakage(<30A), Voltage Module	P, S Type
3	76671176312	WIRE ASS'Y AE AX PX SX OCR	Communication, Digital Output, ZSI, Remote Reset, Earth Leakage(>30A), Voltage Module	P, S Type

Components of wire ass'y OCR and types

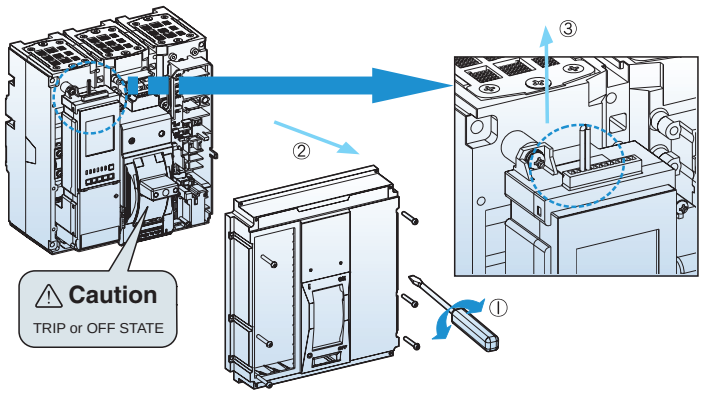
Terminal number and Description

Number	Marking	Description
01	485+	Comm. +
02	485-	Comm. -
03	R1	Power +
04	R2	Power -
05	524	Relay Output (Long time)
06	534	Relay Output (Short time/Instantaneous)
07	544	Relay Output (Ground fault/PAL)
08	513	Relay Output Common
09	Z3	ZSI Out +
10	Z4	ZSI Out -
11	Z1	ZSI In +
12	Z2	ZSI In -
13	R11	Remote Reset +
14	R22	Remote Reset -
15	E1 or B1	Earth Leakage +
16	E2 or B2	Earth Leakage -
17	V1	VR Input
18	V2	VS Input
19	V3	VT Input
20	VN	V Input Common

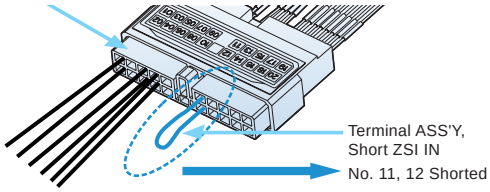


INSTALLATION AND HANDLING

1. Disassembling cover and short connector

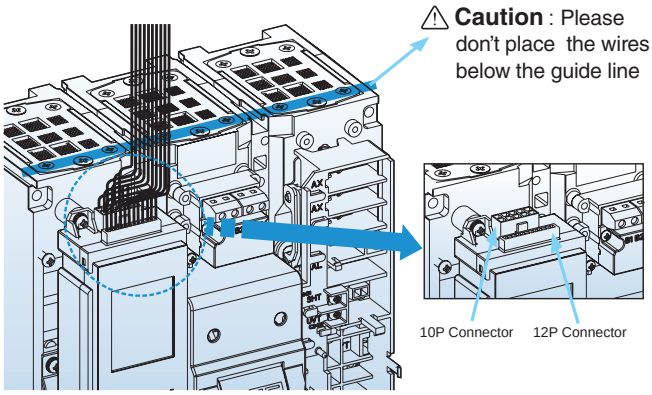


In case of not using ZSI function



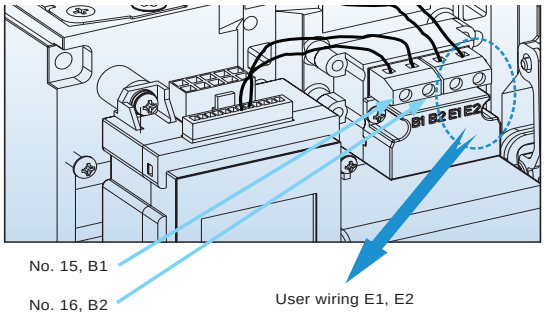
⚠ **Caution** : If not using ZSI function of Trip Relay (OCR), please short ZSI INPUT of terminal No.11,12 (ZSI IN +, ZSI IN -) by using the "TERMINAL ASS'Y, SHORT ZSI IN"

2. Assembly of wire ass'y and withdrawal of wire



In case of the wiring of Earth Leakage ≥30A

Drawing No.	Part Name
76671176312	WIRE ASS'Y AE AX PX SX OCR



Installation of withdrawal wiring for Trip Relay

Trip Relay (OCR) type and applied wire ass'y

No	Type	WIRE ASS'Y, [ ], OCR, UTS1200		
		[AG AC] 76671176310	[A ZK PS CKA] 766711762311	[AE AX PX SX] 76671176312
1	NG0			
2	NG5			
3	AG0			
4	AG1	■		
5	AG2	■		
6	AG5			
7	AG6	■		
8	AG7	■		
9	AE0			
10	AE1			■
11	AE2			■
12	AE5			
13	AE6			■
14	AE7			■
15	AC1	■		
16	AC2	■		
17	AC6	■		
18	AC7	■		
19	AX1			■

No	Type	WIRE ASS'Y, [ ], OCR, UTS1200		
		[AG AC] 76671176310	[A ZK PS CKA] 766711762311	[AE AX PX SX] 76671176312
20	AX2			■
21	AX6			■
22	AX7			■
23	PC1		■	
24	PC2		■	
25	PC6		■	
26	PC7		■	
27	PX1			■
28	PX2			■
29	PX6			■
30	PX7			■
31	SC1		■	
32	SC2		■	
33	SC6		■	
34	SC7		■	
35	SX1			■
36	SX2			■
37	SX6			■
38	SX7			■