

Green Innovators of Innovation

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**Susol**  
Super Solution

**UL Molded Case Circuit Breakers**

**LSIS**









# Super Solution for Protection

The new series Susol with thermal-magnetic or electronic circuit breakers are designed to protect low voltage electrical systems from damage caused by overloads and short circuits.

## ■ FOR POWER DISTRIBUTION

- High breaking capacity
- Optimum coordination technique
- Powerful engineering tools
- Reverse feeding

## ■ FOR PROTECTION OF MOTORS AND THEIR CONTROL DEVICES

- Optimal overload protection
- Guaranteed Short Circuit Current Ratings

## ■ FOR CONTROLLING AND DISCONNECTING CIRCUITS

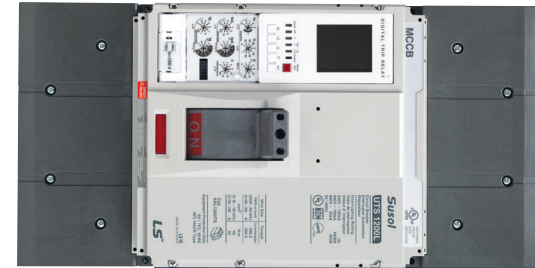
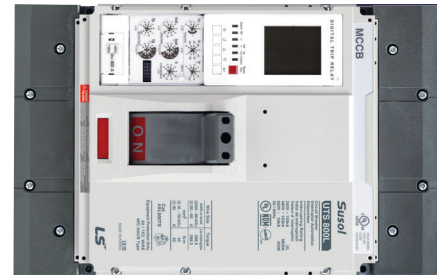
## ■ FOR EXTENSIVE APPLICATIONS

- Wide range of optimized auxiliaries and accessories





# Contents









# SUSOL MCCBS AT A GLANCE.

## 1 FOR POWER DISTRIBUTION

- High breaking capacity
- Optimum coordination technique
- Powerful engineering tools
- Reverse feeding

## 2 FOR PROTECTION OF MOTORS AND THEIR CONTROL DEVICES

- Optimal overload protection
- Guaranteed Short Circuit Current Ratings

## 3 FOR EXTENSIVE APPLICATIONS

- Wide range of optimized auxiliaries and accessories

## 4 FOR CONTROLLING AND DISCONNECTING CIRCUITS



UTE100

UTS150

UTS250

UTS400



## SIMPLIFIED PRODUCT RANGE

- **AF:** 100AF, 150AF, 250AF, 400AF, 600AF, 800AF, 1200AF
- **Ampere Range:** 15A ~ 1200A
- **Pole:** 2P, 3P

## VARIABLE ACCESSORIES

- Electrical auxiliaries[AX, AL, UVT, SHT]
- Extended and direct mount rotary handle
- Flange handle with flexible cable and linkage
- Variable depth mechanism
- Locking devices
- LUG for CU/AL cable with UL486

## HIGH PERFORMANCE

- Ultimate breaking capacity (kA rms)
- Max 100kA @480VAC and 50kA @600V

## STANDARDS

- World class with UL489
  - UL489
  - UL508
  - NOM ANCE

## VARIOUS TRIP UNITS

- **ATU:** Adjustable thermal & magnetic unit
- **FMU:** Adjustable thermal, fixed magnetic unit
- **FTU:** Fixed thermal & magnetic unit
- **OCR:** Electronic trip unit

## MCP CHARACTERISTIC

- Simplified product range
  - **AF:** 150AF, 250AF, 400AF, 600AF, 800AF, 1200AF
  - **Ampere Range:** 1.6A ~ 1200A Only 3 Pole use
- **Standards**
  - Instantaneous circuit breaker with UL489
  - Motor protector with MC and Relay with UL508

## MCS CHARACTERISTIC

- Simplified product range
  - **AF:** 100AF, 150AF, 250AF, 400AF, 600AF, 800AF, 1200AF
  - **Ampere Range:** 100A ~ 1200A
  - **Pole:** 2P, 3P
- **Standards**
  - World class with UL489



UTS600



UTS800



UTS1200

# Engineered for Optimal Protection

## SUSOL SERIES OFFER VARIOUS TRIP UNITS :

- **ATU** ( Adjustable thermal & magnetic unit )
- **FMU** ( Adjustable thermal, fixed magnetic unit )
- **FTU** ( Fixed thermal & magnetic unit )
- **OCR** ( Electronic trip unit )

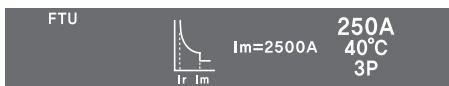


### THERMAL MAGNETIC TRIP UNITS

- UTE100...UTS600 Frame
- 15-600 Amperes
- Factory-installed
- Several versions by rated current and function

#### FTU

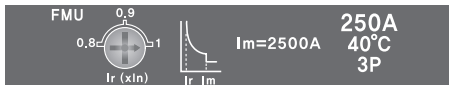
- Fixed Thermal. 15A~600A
- Fixed Magnetic. 400A~6000A



7951 1172 065

#### FMU

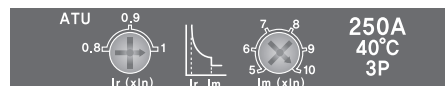
- Adjustable Thermal. 25A~600A( 0.8-1 x In)
- Fixed Magnetic. 400A~6000A



7951 1172 071

#### ATU

- Adjustable Thermal. 100A~600A( 0.8~1 x In)
- Adjustable Magnetic. 500A~6000A(5~10 x In)



7951 1172 077

#### MCP

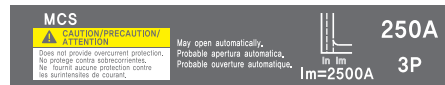
- Adjustable Magnetic. 10A~6000A



7951 1172 082

#### MCS

- Fixed Magnetic. 1000A~6000A

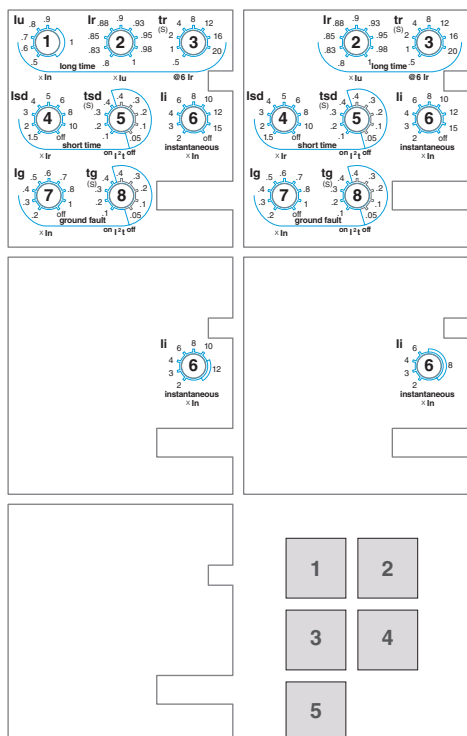


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## ELECTRONIC TRIP UNITS

- UTS800, UTS1200 Frame
- 400-1200 Amperes
- Factory-installed internal trip units.
- Several versions by rated current and function

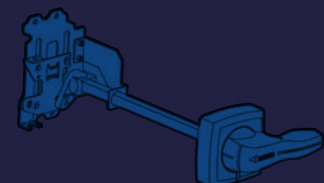
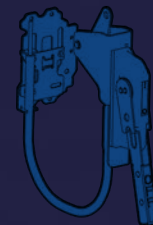
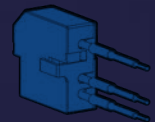
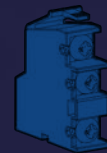
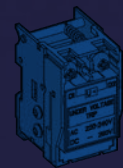
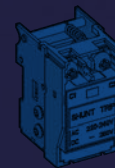
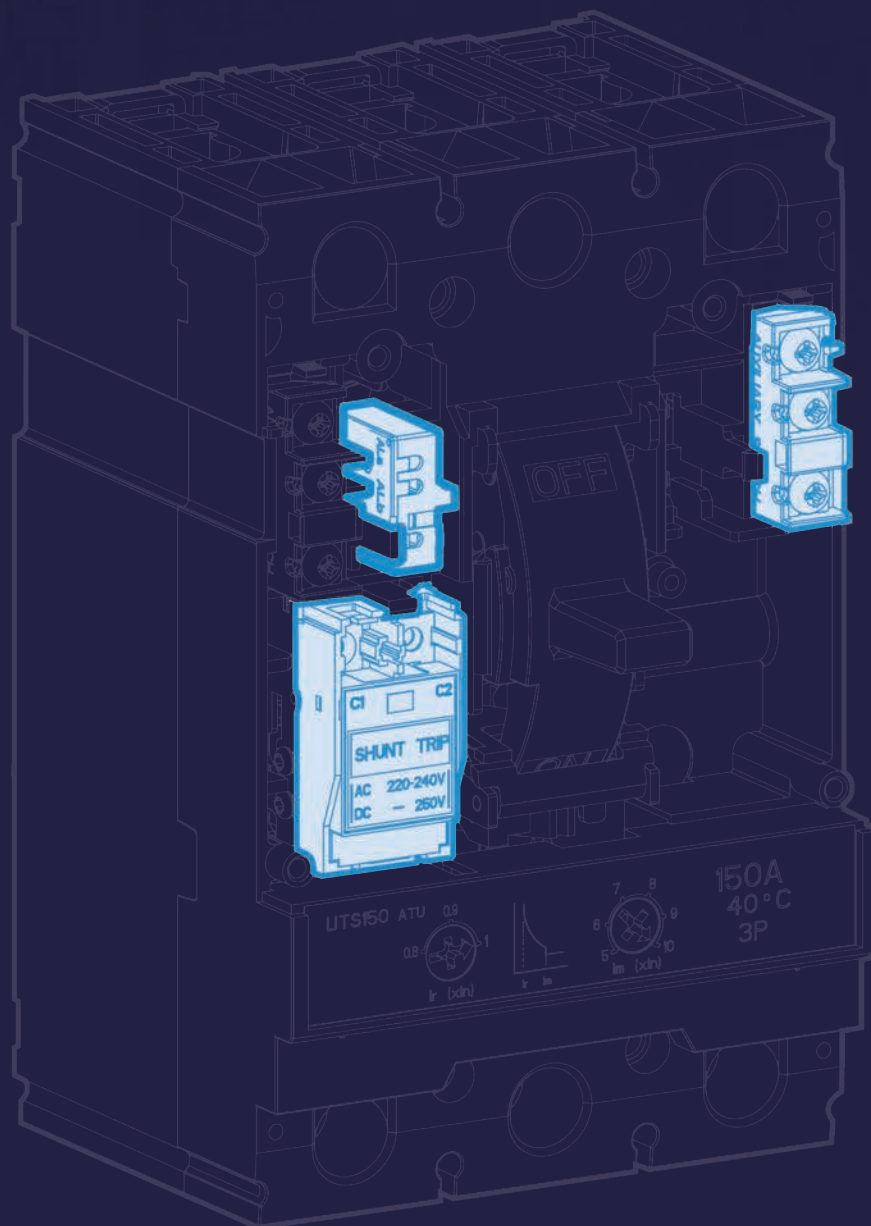


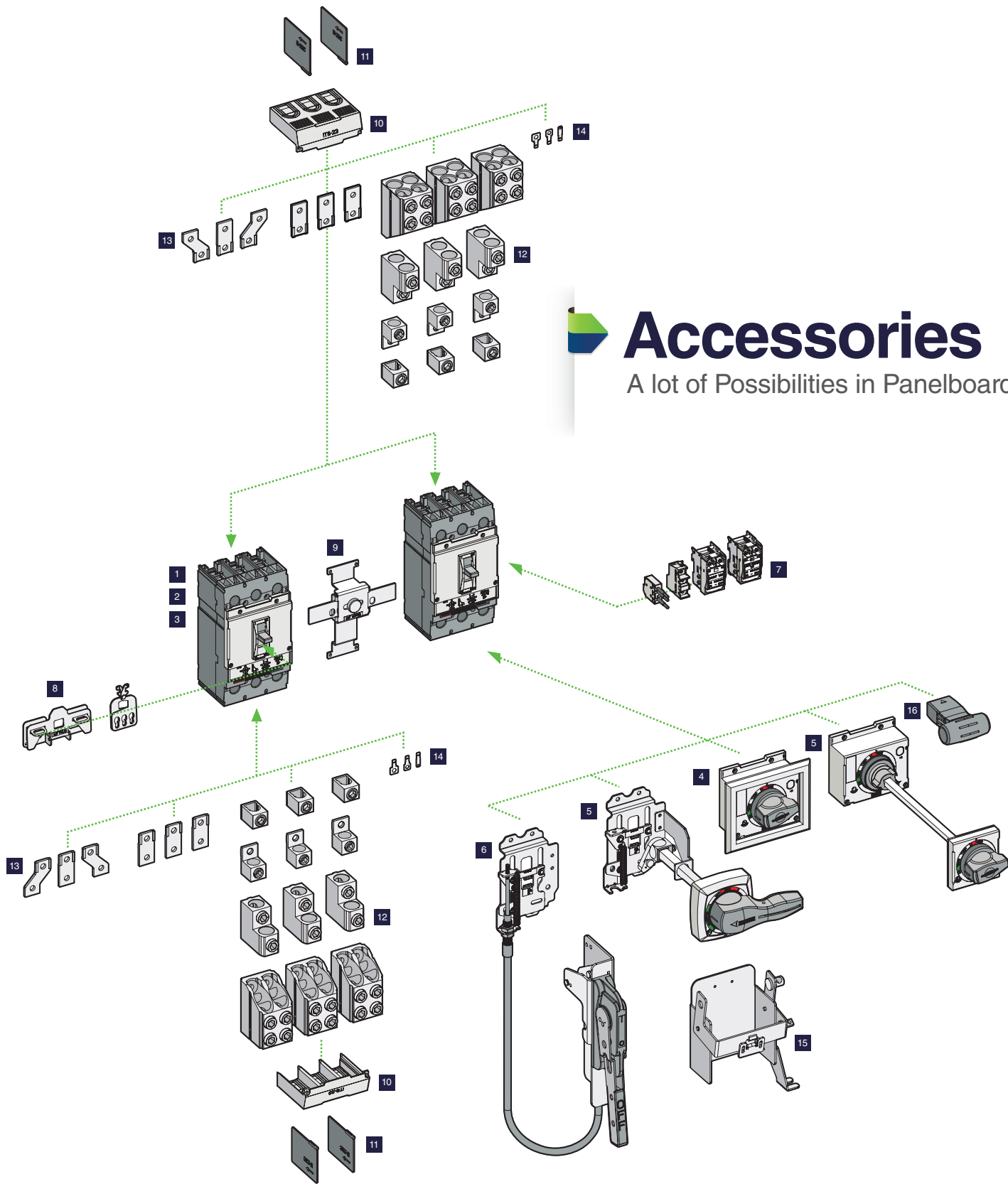
1. N, A type Knob information
2. P, S type Knob information
3. MCP800 type Knob information
4. MCP1200 type Knob information
5. MCS800/1200 type Knob information

# GREEN INNOVATORS OF INNOVATION

## FOR EXTENSIVE APPLICATIONS

Wide range of optimized auxiliaries and accessories





# Accessories

A lot of Possibilities in Panelboards

- 1 Molded Case Circuit Breaker
- 2 Motor Circuit Protector
- 3 Molded Case Switch
- 4 Direct Rotary Handle
- 5 Extended Handle
- 6 Flange Cable Handle

- 7 Inner Accessories (AL, AX, UVT, SHT)
- 8 Locking Device(Handle)
- 9 Mechanical Interlock
- 10 Terminal Shield
- 11 Interphase Barriers
- 12 Mechanical Lugs

- 13 Busbar Connectors
- 14 Control wire Terminal
- 15 Variable-depth Mechanism
- 16 Aux. Handle



# Series Overview



FRAME		UTE100		UTE100		UTS150			UTS250		
MAXIMUM RATED CURRENT		100A		100A		150A			250A		
NUMBER OF POLES		2		3		2, 3			2, 3		
BREAKER TYPE		E	N	E	N	N	H	L	N	H	L
INTERRUPTING CAPACITY (KA RMS) AC(50/60HZ) NEMA, UL	120/240V	50	65	50	65	-	-	-	-	-	-
	240V	50	65	50	65	65	100	150	65	100	150
	480V	25	35	25	35	35	65	100	35	65	100
	600V	-	-	-	-	18	35	50	18	35	50
	600Y347V	14	18	14	18	-	-	-	-	-	-
TRIP UNITS*	AMPERES	15-100A		15-100A		40-150A			150-250A		
	THERMAL MAGNETIC	ATU	-	-	-	●	-	-	●	-	-
	FMU	-	-	●	-	●	-	-	●	-	-
	FTU	●	-	●	-	●	-	-	●	-	-
	ELECTRONIC	OCR	-	-	-	-	-	-	-	-	-
MCP*	AMPERES	-	-	-	-	1.6-60A, 100A, 150A			220A		
	MCP	-	-	-	-	●	-	-	●	-	-
MCS*	AMPERES	100A	100A	100A	100A	150A			175A, 250A		
	MCS	●	-	●	-	●	-	-	●	-	-
UNIT MOUNTED		●	-	●	-	●	-	-	●	-	-
MECHANICAL LUGS		●	-	●	-	●	-	-	●	-	-
BUSBAR CONNECTORS		●	-	●	-	●	-	-	●	-	-
CONTROL WIRE TERMINAL KIT		-	-	-	-	●	-	-	●	-	-
TERMINAL SHIELDS		-	-	-	-	-	-	-	-	-	-
INTERPHASE BARRIERS		●	-	●	-	●	-	-	●	-	-
SHUNT TRIP		●	-	●	-	●	-	-	●	-	-
UNDERVOLTAGE TRIP		●	-	●	-	●	-	-	●	-	-
AUXILIARY SWITCH		●	-	●	-	●	-	-	●	-	-
ALARM SWITCH		●	-	●	-	●	-	-	●	-	-
FLANGE CABLE HANDLE		-	-	●	-	●	-	-	●	-	-
FLANGE VARIABLE-DEPTH MECHANISM		-	-	●	-	●	-	-	●	-	-
DIRECTLY-MOUNTED ROTARY OPERATING HANDLE		-	-	●	-	●	-	-	●	-	-
NEMA-DOOR-MOUNTED OPERATING MECHANISMS		●	-	●	-	●	-	-	●	-	-
IEC-DOOR-MOUNTED OPERATING MECHANISMS		●	-	●	-	●	-	-	●	-	-
MECHANICAL INTERLOCKS		-	-	●	-	●	-	-	●	-	-
HANDLE PADLOCK ATTACHMENT		●	-	●	-	●	-	-	●	-	-
DIMENSIONS Inches(mm)		W	H	D		W	H	D	W	H	D
	2-POLE	2.01(51)	5.12(130)	3.44(875)		4.13(105)	6.46(165)	3.44(875)	4.13(105)	7.48(190)	3.44(875)
	3-POLE	2.99(76)	5.12(130)	3.44(875)		4.13(105)	6.46(165)	3.44(875)	4.13(105)	7.48(190)	3.44(875)

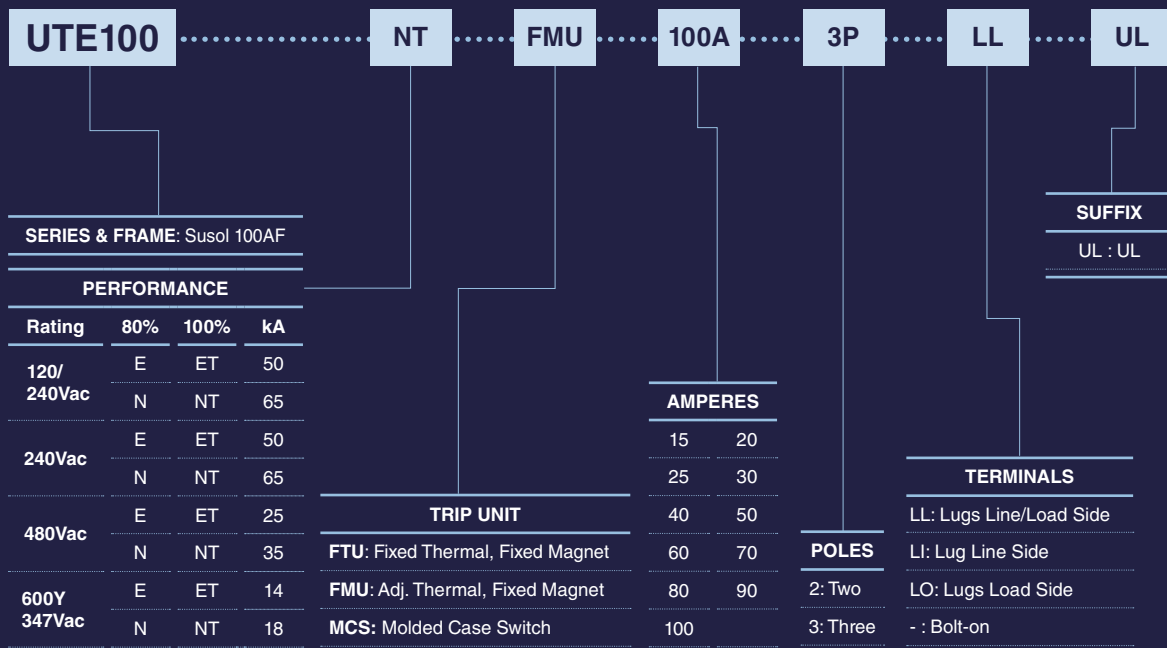


# SELECTION GUIDE

# UTE100



## CATALOG NUMBERING [PRODUCT SELECTION]





## UTE100 FRAME

- UTE100 breaker is HACR rated
- SWD switch duty rating  
(applied only to 15 and 20A /347Vac or less)
- HID high intensity discharge lighting rating  
(15~50A /480Vac or less)

### UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) VOLTS AC (50/60Hz)			
		120/240V	240V	480V	600Y 347Vac
UTE100E	2, 3	50	50	25	14
UTE100N	2, 3	65	65	35	18

### DIMENSIONS

POLES	DIMENSIONS inch (mm)		
	H	W	D
2-Pole	5.12 (130)	2.01 (51)	3.44 (87.5)
3-Pole	5.12 (130)	2.99 (76)	3.44 (87.5)

### TRIP UNIT TYPES

	THERMAL	MAGNETIC	REMARKS
FTU	Fixed	Fixed	
FMU	Adjustable, 0.8~1 x In	Fixed	
MCS	N.A	Fixed, 10 x In	Magnetic only

### CIRCUIT BREAKER

WITH FTU TRIP UNIT (FIXED THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	50kA at 120/240V, 50kA at 240Vac		65kA at 120/240V, 65kA at 240Vac	
	2-Pole	3-Pole	2-Pole	3-Pole
15A	UTE100-E-FTU-15-2	UTE100-E-FTU-15-3	UTE100-N-FTU-15-2	UTE100-N-FTU-15-3
20A	UTE100-E-FTU-20-2	UTE100-E-FTU-20-3	UTE100-N-FTU-20-2	UTE100-N-FTU-20-3
25A	UTE100-E-FTU-25-2	UTE100-E-FTU-25-3	UTE100-N-FTU-25-2	UTE100-N-FTU-25-3
30A	UTE100-E-FTU-30-2	UTE100-E-FTU-30-3	UTE100-N-FTU-30-2	UTE100-N-FTU-30-3
40A	UTE100-E-FTU-40-2	UTE100-E-FTU-40-3	UTE100-N-FTU-40-2	UTE100-N-FTU-40-3
50A	UTE100-E-FTU-50-2	UTE100-E-FTU-50-3	UTE100-N-FTU-50-2	UTE100-N-FTU-50-3
60A	UTE100-E-FTU-60-2	UTE100-E-FTU-60-3	UTE100-N-FTU-60-2	UTE100-N-FTU-60-3
70A	UTE100-E-FTU-70-2	UTE100-E-FTU-70-3	UTE100-E-FTU-70-2	UTE100-E-FTU-70-3
80A	UTE100-E-FTU-80-2	UTE100-E-FTU-80-3	UTE100-N-FTU-80-2	UTE100-N-FTU-80-3
90A	UTE100-E-FTU-90-2	UTE100-E-FTU-90-3	UTE100-N-FTU-90-2	UTE100-N-FTU-90-3
100A	UTE100-E-FTU-100-2	UTE100-E-FTU-100-3	UTE100-N-FTU-100-2	UTE100-N-FTU-100-3

**CIRCUIT BREAKER**

WITH FTU TRIP UNIT (FIXED THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	25kA at 480V, 14kA at 600Y 347Vac		35kA at 480V, 18kA at 600Y 347Vac	
	2-Pole	3-Pole	2-Pole	3-Pole
15A	UTE100-E-FTU-15-2	UTE100-E-FTU-15-3	UTE100-N-FTU-15-2	UTE100-N-FTU-15-3
20A	UTE100-E-FTU-20-2	UTE100-E-FTU-20-3	UTE100-N-FTU-20-2	UTE100-N-FTU-20-3
25A	UTE100-E-FTU-25-2	UTE100-E-FTU-25-3	UTE100-N-FTU-25-2	UTE100-N-FTU-25-3
30A	UTE100-E-FTU-30-2	UTE100-E-FTU-30-3	UTE100-N-FTU-30-2	UTE100-N-FTU-30-3
40A	UTE100-E-FTU-40-2	UTE100-E-FTU-40-3	UTE100-N-FTU-40-2	UTE100-N-FTU-40-3
50A	UTE100-E-FTU-50-2	UTE100-E-FTU-50-3	UTE100-N-FTU-50-2	UTE100-N-FTU-50-3
60A	UTE100-E-FTU-60-2	UTE100-E-FTU-60-3	UTE100-N-FTU-60-2	UTE100-N-FTU-60-3
70A	UTE100-E-FTU-70-2	UTE100-E-FTU-70-3	UTE100-E-FTU-70-2	UTE100-E-FTU-70-3
80A	UTE100-E-FTU-80-2	UTE100-E-FTU-80-3	UTE100-N-FTU-80-2	UTE100-N-FTU-80-3
90A	UTE100-E-FTU-90-2	UTE100-E-FTU-90-3	UTE100-N-FTU-90-2	UTE100-N-FTU-90-3
100A	UTE100-E-FTU-100-2	UTE100-E-FTU-100-3	UTE100-N-FTU-100-2	UTE100-N-FTU-100-3

WITH FMU TRIP UNIT (ADJUSTABLE THERMAL, FIXED MAGNETIC)			
Ampere Rating, In	50kA at 120/240V, 50kA at 240Vac		Thermal range
	3-Pole		
25A	UTE100-E-FMU-25-3	UTE100-N-FMU-25-3	20-25A
40A	UTE100-E-FMU-40-3	UTE100-N-FMU-40-3	32-40A
60A	UTE100-E-FMU-60-3	UTE100-N-FMU-60-3	48-60A
80A	UTE100-E-FMU-80-3	UTE100-N-FMU-80-3	64-80A
100A	UTE100-E-FMU-100-3	UTE100-N-FMU-100-3	80-100A

Ampere Rating, In	25kA at 480V, 14kA at 600Y 347Vac		Thermal range
	3-Pole		
25A	UTE100-E-FMU-25-3	UTE100-N-FMU-25-3	20-25A
40A	UTE100-E-FMU-40-3	UTE100-N-FMU-40-3	32-40A
60A	UTE100-E-FMU-60-3	UTE100-N-FMU-60-3	48-60A
80A	UTE100-E-FMU-80-3	UTE100-N-FMU-80-3	64-80A
100A	UTE100-E-FMU-100-3	UTE100-N-FMU-100-3	80-100A

**MOLDED CASE SWITCH**

WITH MCS TRIP UNIT				
Ampere Rating, In	50kA at 120/240V, 50kA at 240V		65kA at 120/240V, 65kA at 240V	
	2-Pole	3-Pole	2-Pole	3-Pole
100A	UTE100-E-MCS-100-2	UTE100-E-MCS-100-3	UTE100-N-MCS-100-2	UTE100-N-MCS-100-3

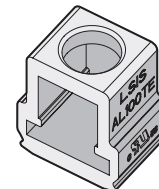
Ampere Rating, In	25kA at 480V, 14kA at 600Y 347Vac		35kA at 480V, 18kA at 600Y 347Vac	
	2-Pole	3-Pole	2-Pole	3-Pole
100A	UTE100-E-MCS-100-2	UTE100-E-MCS-100-3	UTE100-N-MCS-100-2	UTE100-N-MCS-100-3

## ACCESSORIES FOR UTE100

### MECHANICAL LUGS

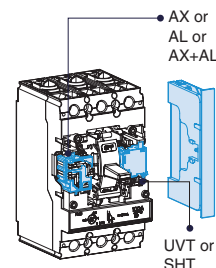
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
100A	Aluminum	Cu/Al	AL100TE

AL100TE 15-100A Lug



### INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
AX + AL		
Shunt Trip, SHT	AC/DC 12V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 60V	
	AC/DC 100~130V	
	AC/DC 200~250V	
	AC 380~450V	
Undervoltage Trip, UVT	AC/DC 24V	
	AC/DC 48V	
	AC/DC 100~110V	
	AC/DC 200~220V	
	AC 380~440V	



Type	Left(R)	Right(T)
AX	1	1
AL	1	1
AX+AL	1	1
SHT		1
UVT		1

- Applicable in indicated pole position-not synchronous  
- 2P : Right only

### PADLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" position	PL0



<Pad Lock>

### PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" or "ON" position	PHL0



<Plate Handle Lock>

### MECHANICAL INTERLOCKING DEVICE

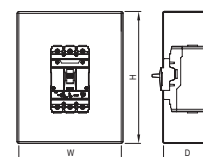
DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT03



<Mechanical Interlock>

### ENCLOSURE

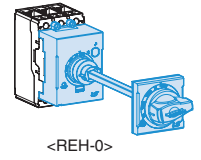
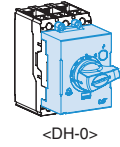
ENCLOSURE DIMENSION (W X H X D) inch(mm)	ORDERING TYPE
8.27(210) x 17.3(439.4) x 4.0(101.6)	-





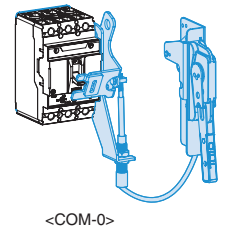
**ROTARY OPERATING HANDLES**

DESCRIPTION	TYPE	ORDERING TYPE
Directly Mounted	NEMA Type 1	DH-0
Extended (Door-Mounted)	NEMA Type 1	REH-0
	NEMA Type 1	REH-0C
NEMA Door-Mounted	NEMA Type 1, 12	EHU-0
	NEMA Type 3, 3R, 4	EHV-0
	NEMA Type 3, 4, 4X	EHX-0
	NEMA Type 1, 12	EHU-0C
	NEMA Type 3, 3R, 4	EHV-0C
	NEMA Type 3, 4, 4X	EHX-0C



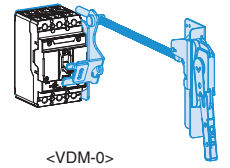
**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-0
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-S
	NEMA Type 4, 4X	FHX-S
Cable	36 inch	FH2-36
	48 inch	FH2-48
	60 inch	FH2-60
	72 inch	FH2-72



**FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod without handle		VDM-0
Standard type handle without operating mechanism	NEMA Type 1, 12, 3, 3R, 4	FHU-S
	NEMA Type 4, 4X	FHX-S



Description	Directly Mounted	Door Mounted	Flange Handle with Cable Operation Mechanism	Flange Handle with Variable Depth Mechanism
NEMA Type 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

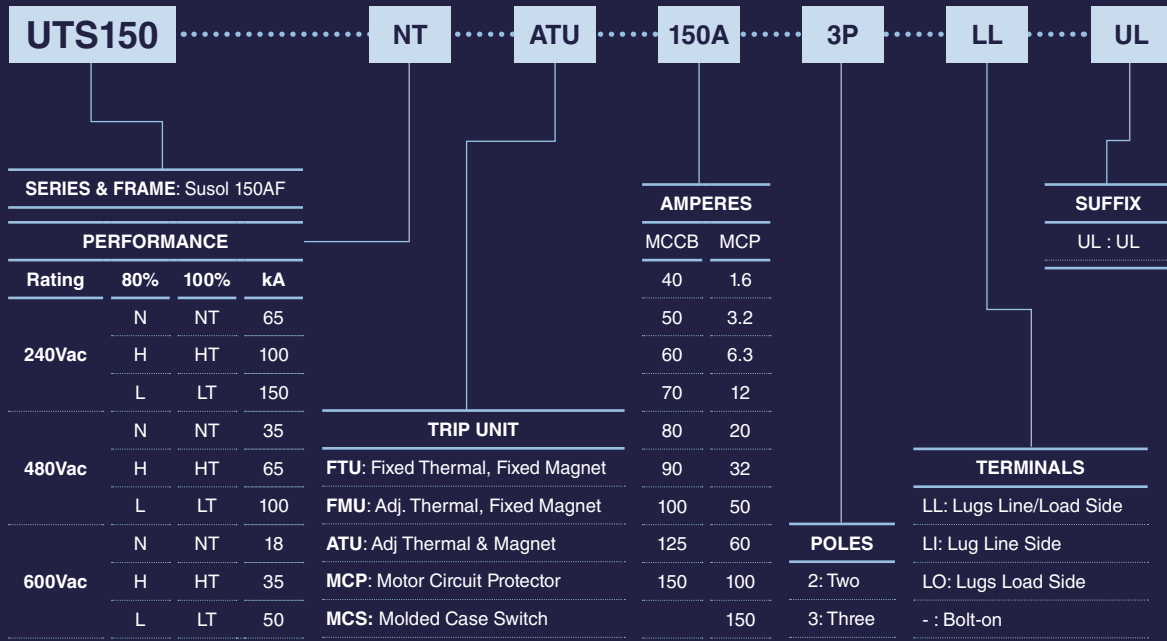
\* Only 3 Pole

# SELECTION GUIDE

# UTS150



## CATALOG NUMBERING [PRODUCT SELECTION]



## UTS150 FRAME

- UTS150 breaker is HACR rated

### UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) VOLTS AC (50/60Hz)		
		240V	480V	600V
UTS150N	2, 3	65	35	18
UTS150H	2, 3	100	65	35
UTS150L	2, 3	150	100	50

### DIMENSIONS

POLES	DIMENSIONS inch (mm)		
	H	W	D
2-Pole	6.46 (165)	4.13 (105)	3.44 (87.5)
3-Pole			

### TRIP UNIT TYPES

	THERMAL	MAGNETIC	REMARKS
FTU	Fixed	Fixed	
FMU	Adjustable, 0.8-1 x In	Fixed	
ATU	Adjustable, 0.8-1 x In	Adjustable, 5-10 x In	
MCS	N.A.	Fixed, 10xIn	Magnetic only
MCP	N.A.	Adjustable, 6-12 x In	Magnetic only

\* MCP 60A: 6.7 ~ 13.3 x In

### CIRCUIT BREAKER

Ampere Rating, In	WITH FTU TRIP UNIT (FIXED THERMAL, FIXED MAGNETIC)					
	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	
	2-Pole	3-Pole	2-Pole	3-Pole	2-Pole	3-Pole
40A	UTS150-N-FTU-40-2	UTS150-N-FTU-40-3	UTS150-H-FTU-40-2	UTS150-H-FTU-40-3	UTS150-L-FTU-40-2	UTS150-L-FTU-40-3
50A	UTS150-N-FTU-50-2	UTS150-N-FTU-50-3	UTS150-H-FTU-50-2	UTS150-H-FTU-50-3	UTS150-L-FTU-50-2	UTS150-L-FTU-50-3
60A	UTS150-N-FTU-60-2	UTS150-N-FTU-60-3	UTS150-H-FTU-60-2	UTS150-H-FTU-60-3	UTS150-L-FTU-60-2	UTS150-L-FTU-60-3
70A	UTS150-N-FTU-70-2	UTS150-N-FTU-70-3	UTS150-H-FTU-70-2	UTS150-H-FTU-70-3	UTS150-L-FTU-70-2	UTS150-L-FTU-70-3
80A	UTS150-N-FTU-80-2	UTS150-N-FTU-80-3	UTS150-H-FTU-80-2	UTS150-H-FTU-80-3	UTS150-L-FTU-80-2	UTS150-L-FTU-80-3
90A	UTS150-N-FTU-90-2	UTS150-N-FTU-90-3	UTS150-H-FTU-90-2	UTS150-H-FTU-90-3	UTS150-L-FTU-90-2	UTS150-L-FTU-90-3
100A	UTS150-N-FTU-100-2	UTS150-N-FTU-100-3	UTS150-H-FTU-100-2	UTS150-H-FTU-100-3	UTS150-L-FTU-100-2	UTS150-L-FTU-100-3
125A	UTS150-N-FTU-125-2	UTS150-N-FTU-125-3	UTS150-H-FTU-125-2	UTS150-H-FTU-125-3	UTS150-L-FTU-125-2	UTS150-L-FTU-125-3
150A	UTS150-N-FTU-150-2	UTS150-N-FTU-150-3	UTS150-H-FTU-150-2	UTS150-H-FTU-150-3	UTS150-L-FTU-150-2	UTS150-L-FTU-150-3



**CIRCUIT BREAKER**

WITH FMU TRIP UNIT (ADJUSTABLE THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
40A	UTS150-N-FMU-40-2	UTS150-N-FMU-40-3	UTS150-H-FMU-40-2	UTS150-H-FMU-40-3
60A	UTS150-N-FMU-60-2	UTS150-N-FMU-60-3	UTS150-H-FMU-60-2	UTS150-H-FMU-60-3
80A	UTS150-N-FMU-80-2	UTS150-N-FMU-80-3	UTS150-H-FMU-80-2	UTS150-H-FMU-80-3
100A	UTS150-N-FMU-100-2	UTS150-N-FMU-100-3	UTS150-H-FMU-100-2	UTS150-H-FMU-100-3
150A	UTS150-N-FMU-150-2	UTS150-N-FMU-150-3	UTS150-H-FMU-150-2	UTS150-H-FMU-150-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Thermal range
	2-Pole	3-Pole	
40A	UTS150-L-FMU-40-2	UTS150-L-FMU-40-3	32-40A
60A	UTS150-L-FMU-60-2	UTS150-L-FMU-60-3	48-60A
80A	UTS150-L-FMU-80-2	UTS150-L-FMU-80-3	64-80A
100A	UTS150-L-FMU-100-2	UTS150-L-FMU-100-3	80-100A
150A	UTS150-L-FMU-150-2	UTS150-L-FMU-150-3	120-150A

WITH ATU TRIP UNIT (ADJUSTABLE THERMAL, ADJUSTABLE MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
100A	UTS150-N-ATU-100-2	UTS150-N-ATU-100-3	UTS150-H-ATU-100-2	UTS150-H-ATU-100-3
150A	UTS150-N-ATU-150-2	UTS150-N-ATU-150-3	UTS150-H-ATU-150-2	UTS150-H-ATU-150-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Adjustable range	
	2-Pole	3-Pole	Thermal	Magnetic
100A	UTS150-L-ATU-100-2	UTS150-L-ATU-100-3	80-100A	500-1000A
150A	UTS150-L-ATU-150-2	UTS150-L-ATU-150-3	120-150A	750-1500A

**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	
	2-Pole	3-Pole	2-Pole	3-Pole
150A	UTS150-N-MCS-150-2	UTS150-N-MCS-150-3	UTS150-H-MCS-150-2	UTS150-H-MCS-150-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V	
	2-Pole	3-Pole
150A	UTS150-L-MCS-150-2	UTS150-L-MCS-150-3

**MOTOR CIRCUIT PROTECTOR**

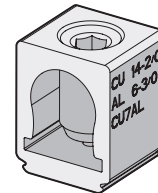
WITH MCP TRIP UNIT (ADJUSTABLE MAGNETIC ONLY)				
Ampere Rating, In	3-Pole	3-Pole	3-Pole	Magnetic range
1.6A	UTS150-N-MCP-1.6-3	UTS150-H-MCP-1.6-3	UTS150-L-MCP-1.6-3	10-20A
3.2A	UTS150-N-MCP-3.2-3	UTS150-H-MCP-3.2-3	UTS150-L-MCP-3.2-3	20-40A
6.3A	UTS150-N-MCP-6.3-3	UTS150-H-MCP-6.3-3	UTS150-L-MCP-6.3-3	40-80A
12A	UTS150-N-MCP-12-3	UTS150-H-MCP-12-3	UTS150-L-MCP-12-3	70-140A
20A	UTS150-N-MCP-20-3	UTS150-H-MCP-20-3	UTS150-L-MCP-20-3	120-240A
32A	UTS150-N-MCP-32-3	UTS150-H-MCP-32-3	UTS150-L-MCP-32-3	190-380A
50A	UTS150-N-MCP-50-3	UTS150-H-MCP-50-3	UTS150-L-MCP-50-3	300-600A
60A	UTS150-N-MCP-60-3	UTS150-H-MCP-60-3	UTS150-L-MCP-60-3	400-800A
100A	UTS150-N-MCP-100-3	UTS150-H-MCP-100-3	UTS150-L-MCP-100-3	600-1200A
150A	UTS150-N-MCP-150-3	UTS150-H-MCP-150-3	UTS150-L-MCP-150-3	900-1800A

## ACCESSORIES FOR UTS150

### MECHANICAL LUGS

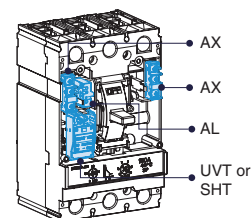
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
150A	Aluminum	Cu/Al	AL150TS

AL150TS 1.6~150A Lug



### INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
Shunt Trip, SHT	DC 12V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC 220~240V/DC 250V	
Undervoltage Trip, UVT	AC 380~500V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC 220~240V/DC 250V	
	AC 380~440V	
	AC 440~480V	



Type	Left(R)	Right(T)
AX	1	1
AL	1	-
SHT	1*	-
UVT	1*	-

\* Applicable in indicated pole position-not synchronous

### PADLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" position	PL2



<Pad Lock>

### PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "ON" "OFF" or "ON"	PHL2



<Plate Handle Lock>

### MECHANICAL INTERLOCKING DEVICE

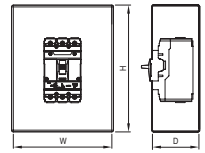
DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT23



<Mechanical Interlock>

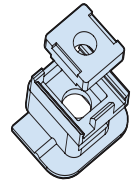
**ENCLOSURE**

ENCLOSURE DIMENSION (W X H X D) Inch (mm)	ORDERING TYPE
8.58 (218) x 18.11 (460) x 4.02 (102)	-



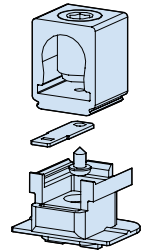
**TERMINAL PLATES FOR BUSBAR CONNECTION**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For 2-Pole breaker	2	SP22a
For 3-Pole breaker	3	SP23a



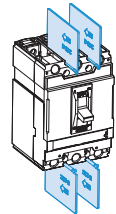
**CONTROL WIRE TERMINALS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For Mechanical Lugs and Terminal Plate	2	CWT



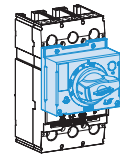
**INSULATION BARRIERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For 2-Pole breaker		B22
For 3-Pole breaker		B23

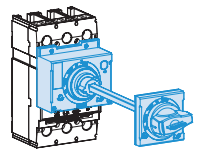


**ROTARY OPERATING HANDLES**

DESCRIPTION	TYPE	ORDERING TYPE
Directly Mounted	NEMA Type 1	DH-2
Directly Mounted (with Key lock)	NEMA Type 1	DHK-2
Extended (Door-Mounted)	NEMA Type 1	REH-2
	NEMA Type 1, 12	EHU-2
NEMA Door-Mounted	NEMA Type 3, 3R, 4	EHV-2
	NEMA Type 3, 4, 4X	EHX-2



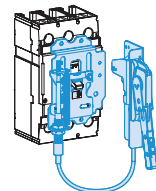
<DH-2>



<REH-2>

**FLANGE HANDLES WITH SLIDING OPERATING MECHANISM**

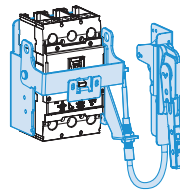
DESCRIPTION	TYPE	ORDERING TYPE
Handle (with sliding mechanism and cable)	NEMA Type 1, 12	FHU2
	NEMA Type 1, 12, 3, 3R, 4, 4X	FHX2



<FHU2>

**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

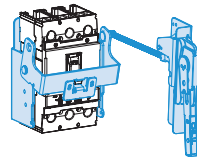
DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-2
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-S
	NEMA Type 4, 4X	FHX-S
Cable	36 inch	FH2-36
	48 inch	FH2-48
	60 inch	FH2-60
	72 inch	FH2-72



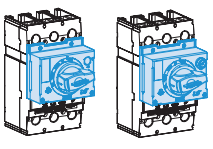
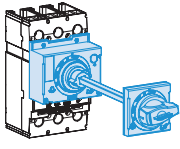
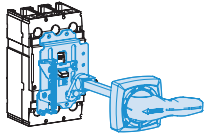
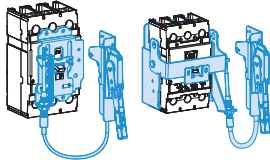
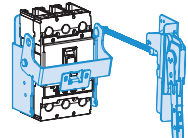
<COM-2>

**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod without handle		VDM-2
Standard type handle without operating mechanism	NEMA Type 1, 12, 3, 3R, 4	FHU-S
	NEMA Type 4, 4X	FHX-S



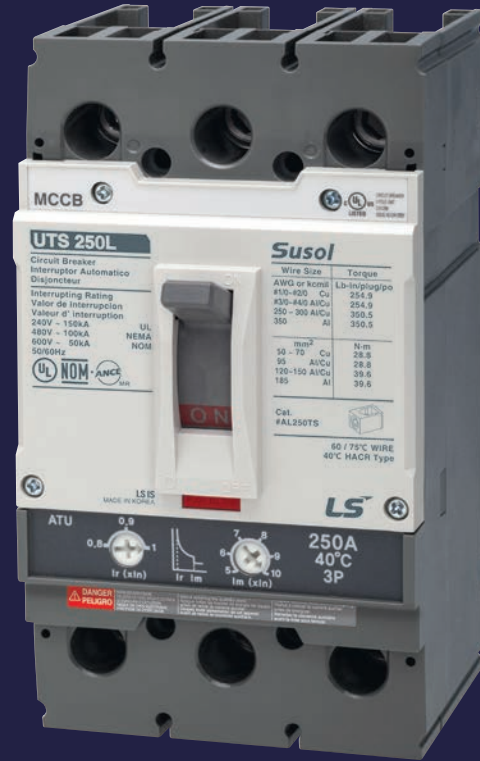
<VDM-2>

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

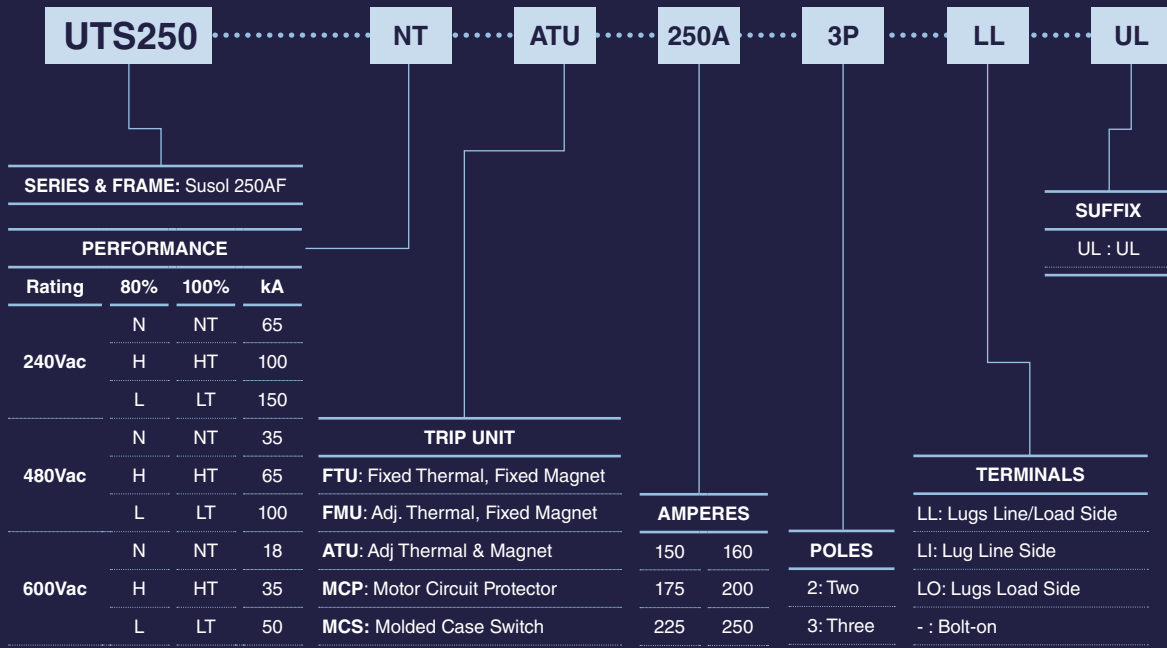


# SELECTION GUIDE

# UTS250



## CATALOG NUMBERING [PRODUCT SELECTION]



## UTS250 FRAME

UTS250 breaker is HACR rated

### UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) VOLTS AC (50/60Hz)		
		240V	480V	600V
UTS250N	2, 3	65	35	18
UTS250H	2, 3	100	65	35
UTS250L	2, 3	150	100	50

### DIMENSIONS

POLES	DIMENSIONS inch (mm)		
	H	W	D
2-Pole	7.48 (190)	4.13 (105)	3.44 (87.5)
3-Pole			

### TRIP UNIT TYPES

	THERMAL	MAGNETIC	REMARKS
FTU	Fixed	Fixed	
FMU	Adjustable, 0.8~1 x In	Fixed	
ATU	Adjustable, 0.8~1 x In	Adjustable, 5~10 x In	
MCS	N.A.	Fixed, 10 x In	Magnetic only
MCP	N.A.	Adjustable, 6~12 x In	Magnetic only

### CIRCUIT BREAKER

WITH FTU TRIP UNIT (FIXED THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
150A	UTS250-N-FTU-150-2	UTS250-N-FTU-150-3	UTS250-H-FTU-150-2	UTS250-H-FTU-150-3
175A	UTS250-N-FTU-175-2	UTS250-N-FTU-175-3	UTS250-H-FTU-175-2	UTS250-H-FTU-175-3
200A	UTS250-N-FTU-200-2	UTS250-N-FTU-200-3	UTS250-H-FTU-200-2	UTS250-H-FTU-200-3
225A	UTS250-N-FTU-225-2	UTS250-N-FTU-225-3	UTS250-H-FTU-225-2	UTS250-H-FTU-225-3
250A	UTS250-N-FTU-250-2	UTS250-N-FTU-250-3	UTS250-H-FTU-250-2	UTS250-H-FTU-250-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V	
	2-Pole	3-Pole
150A	UTS250-L-FTU-150-2	UTS250-L-FTU-150-3
175A	UTS250-L-FTU-175-2	UTS250-L-FTU-175-3
200A	UTS250-L-FTU-200-2	UTS250-L-FTU-200-3
225A	UTS250-L-FTU-225-2	UTS250-L-FTU-225-3
250A	UTS250-L-FTU-250-2	UTS250-L-FTU-250-3

**CIRCUIT BREAKER**

WITH FMU TRIP UNIT (ADJUSTABLE THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
160A	UTS250-N-FMU-160-2	UTS250-N-FMU-160-3	UTS250-H-FMU-160-2	UTS250-H-FMU-160-3
200A	UTS250-N-FMU-200-2	UTS250-N-FMU-200-3	UTS250-H-FMU-200-2	UTS250-H-FMU-200-3
250A	UTS250-N-FMU-250-2	UTS250-N-FMU-250-3	UTS250-H-FMU-250-2	UTS250-H-FMU-250-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Thermal range
	2-Pole	3-Pole	
160A	UTS250-L-FMU-160-2	UTS250-L-FMU-160-3	128-160A
200A	UTS250-L-FMU-200-2	UTS250-L-FMU-200-3	160-200A
250A	UTS250-L-FMU-250-2	UTS250-L-FMU-250-3	200-250A

WITH ATU TRIP UNIT (ADJUSTABLE THERMAL, ADJUSTABLE MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
160A	UTS250-N-ATU-160-2	UTS250-N-ATU-160-3	UTS250-H-ATU-160-2	UTS250-H-ATU-160-3
200A	UTS250-N-ATU-200-2	UTS250-N-ATU-200-3	UTS250-H-ATU-200-2	UTS250-H-ATU-200-3
250A	UTS250-N-ATU-250-2	UTS250-N-ATU-250-3	UTS250-H-ATU-250-2	UTS250-H-ATU-250-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Adjustable range	
	2-Pole	3-Pole	Thermal	Magnetic
160A	UTS250-L-ATU-160-2	UTS250-L-ATU-160-3	128-160A	800-1600A
200A	UTS250-L-ATU-200-2	UTS250-L-ATU-200-3	160-200A	1000-2000A
250A	UTS250-L-ATU-250-2	UTS250-L-ATU-250-3	200-250A	1250-2500A

**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	
	2-Pole	3-Pole	2-Pole	2-Pole
175A	UTS250-N-MCS-175-2	UTS250-N-MCS-175-3	UTS250-H-MCS-175-2	UTS250-H-MCS-175-3
250A	UTS250-N-MCS-250-2	UTS250-N-MCS-250-3	UTS250-H-MCS-250-2	UTS250-H-MCS-250-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V	
	2-Pole	2-Pole
175A	UTS250-L-MCS-175-2	UTS250-L-MCS-175-3
250A	UTS250-L-MCS-250-2	UTS250-L-MCS-250-3

**MOTOR CIRCUIT PROTECTOR**

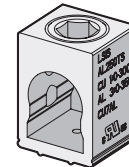
WITH MCP TRIP UNIT (ADJUSTABLE MAGNETIC ONLY)				
Ampere Rating, In	3-Pole	3-Pole	3-Pole	Magnetic range
220A	UTS250-N-MCP-220-3	UTS250-H-MCP-220-3	UTS250-L-MCP-220-3	1320-2640A

## ACCESSORIES FOR UTS250

### MECHANICAL LUGS

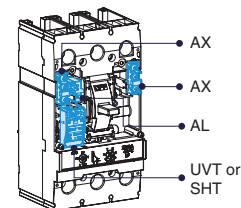
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
250A	Aluminum	Cu/Al	AL250TS

AL250TS 150~250A Lug



### INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
Shunt Trip, SHT	DC 12V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC 220~240V/DC 250V	
Undervoltage Trip, UVT	AC 380~500V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC 220~240V/DC 250V	
	AC 380~440V	
	AC 440~480V	



Type	Left(R)	Right(T)
AX	1	1
AL	1	-
SHT	1*	-
UVT	1*	-

\* Applicable in indicated pole position-not synchronous

### PADLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" position	PL2



<Pad Lock>

### PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" or "ON" position	PHL2



<Plate Handle Lock>

### MECHANICAL INTERLOCKING DEVICE

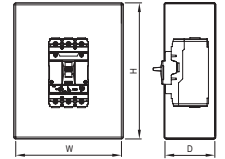
DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT23



<Mechanical Interlock>

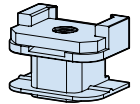
**ENCLOSURE**

ENCLOSURE DIMENSION (W X H X D) Inch (mm)	ORDERING TYPE
12.13 (308) x 28.5 (724) x 5.35 (136)	-



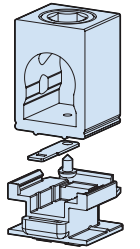
**TERMINAL PLATES FOR BUSBAR CONNECTION**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For 2-Pole breaker	2	SP22a
For 3-Pole breaker	3	SP23a



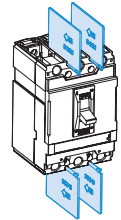
**CONTROL WIRE TERMINALS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For Mechanical Lugs and Terminal Plate	2	CWT



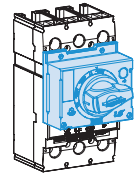
**INSULATION BARRIERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For 2-Pole breaker		B22
For 3-Pole breaker		B23

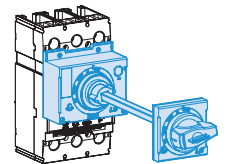


**ROTARY OPERATING HANDLES**

DESCRIPTION	TYPE	ORDERING TYPE
Directly Mounted	NEMA Type 1	DH-2
Directly Mounted (with Key lock)	NEMA Type 1	DHK-2
Extended (Door-Mounted)	NEMA Type 1	REH-2
	NEMA Type 1, 12	EHU-2
NEMA Door-Mounted	NEMA Type 3, 3R, 4	EHV-2
	NEMA Type 3, 4, 4X	EHX-2



<DH-2>

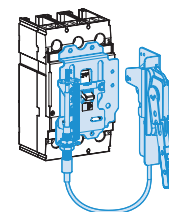


<REH-2>



**FLANGE HANDLES WITH SLIDING OPERATING MECHANISM**

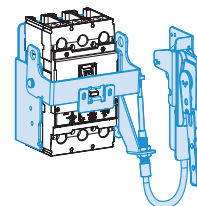
DESCRIPTION	TYPE	ORDERING TYPE
Handle (with sliding mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU2
	NEMA Type 4, 4X	FHX2



<FHU2>

**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

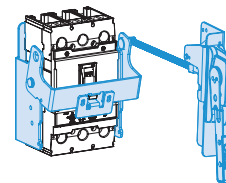
DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-2
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-S
	NEMA Type 4, 4X	FHX-S
Cable	36 inch	FH2-36
	48 inch	FH2-48
	60 inch	FH2-60
	72 inch	FH2-72



<COM-2>

**FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod without handle		VDM-2
Standard type handle without operating mechanism	NEMA Type 1, 12	FHU-S
	NEMA Type 1, 12, 3, 3R, 4, 4X	FHX-S



<VDM-2>

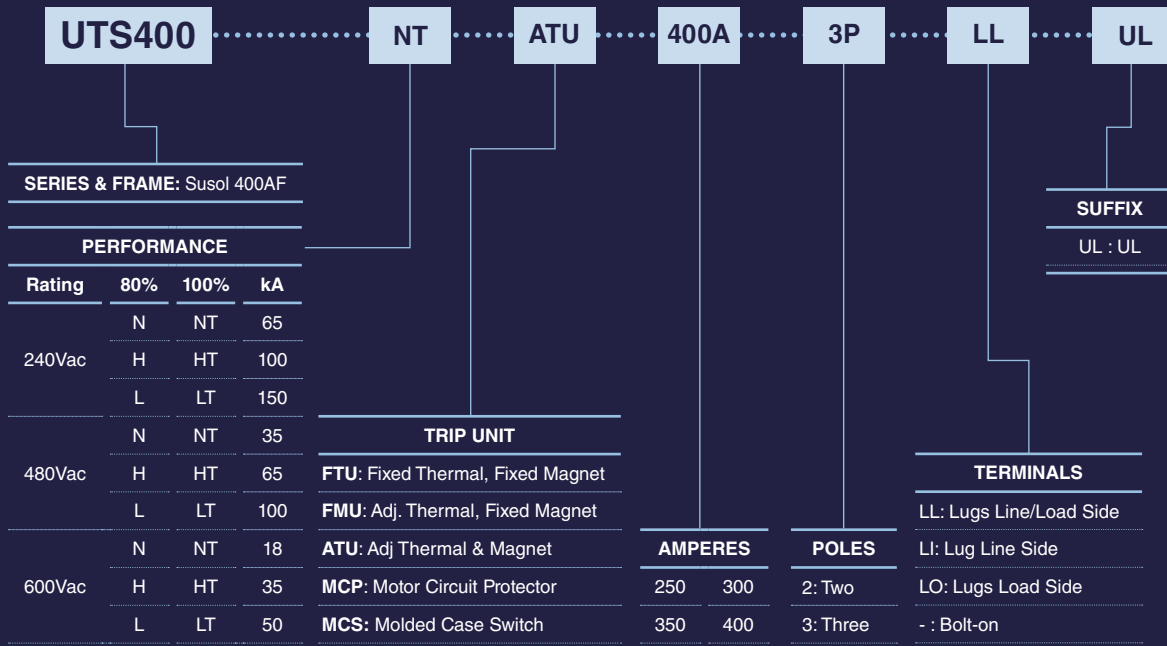
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA TYPE 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

# SELECTION GUIDE

# UTS400



## CATALOG NUMBERING [PRODUCT SELECTION]



## UTS400 FRAME

UTS400 breaker is HACR rated

### UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) VOLTS AC (50/60Hz)		
		240V	480V	600V
UTS400N	2, 3	65	35	18
UTS400H	2, 3	100	65	35
UTS400L	2, 3	150	100	50

### DIMENSIONS

POLE	DIMENSIONS inch (mm)		
	H	W	D
2-Pole	11.42 (290)	5.51 (140)	4.33 (110)
3-Pole			

### TRIP UNIT TYPES

	THERMAL	MAGNETIC	REMARKS
FTU	Fixed	Fixed	
FMU	Adjustable, 0.8-1 x In	Fixed	
ATU	Adjustable, 0.8-1 x In	Adjustable, 5-10 x In	
MCS	N.A.	Fixed, 10 x In	Magnetic only
MCP	N.A.	Adjustable, 6-12 x In	Magnetic only

### CIRCUIT BREAKER

WITH FTU TRIP UNIT (FIXED THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
250A	UTS400-N-FTU-250-2	UTS400-N-FTU-250-3	UTS400-H-FTU-250-2	UTS400-H-FTU-250-3
300A	UTS400-N-FTU-300-2	UTS400-N-FTU-300-3	UTS400-H-FTU-300-2	UTS400-H-FTU-300-3
350A	UTS400-N-FTU-350-2	UTS400-N-FTU-350-3	UTS400-H-FTU-350-2	UTS400-H-FTU-350-3
400A	UTS400-N-FTU-400-2	UTS400-N-FTU-400-3	UTS400-H-FTU-400-2	UTS400-H-FTU-400-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V	
	2-Pole	3-Pole
250A	UTS400-L-FTU-250-2	UTS400-L-FTU-250-3
300A	UTS400-L-FTU-300-2	UTS400-L-FTU-300-3
350A	UTS400-L-FTU-350-2	UTS400-L-FTU-350-3
400A	UTS400-L-FTU-400-2	UTS400-L-FTU-400-3

**CIRCUIT BREAKER**

WITH FMU TRIP UNIT (ADJUSTABLE THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
300A	UTS400-N-FMU-300-2	UTS400-N-FMU-300-3	UTS400-H-FMU-300-2	UTS400-H-FMU-300-3
400A	UTS400-N-FMU-400-2	UTS400-N-FMU-400-3	UTS400-H-FMU-400-2	UTS400-H-FMU-400-3

Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		Thermal range
	2-Pole	3-Pole	
300A	UTS400-L-FMU-300-2	UTS400-L-FMU-300-3	240-300A
400A	UTS400-L-FMU-400-2	UTS400-L-FMU-400-3	320-400A

WITH ATU TRIP UNIT (ADJUSTABLE THERMAL, ADJUSTABLE MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
300A	UTS400-N-ATU-300-2	UTS400-N-ATU-300-3	UTS400-H-ATU-300-2	UTS400-H-ATU-300-3
400A	UTS400-N-ATU-400-2	UTS400-N-ATU-400-3	UTS400-H-ATU-400-2	UTS400-H-ATU-400-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Adjustable range	
	2-Pole	3-Pole	Thermal	Magnetic
300A	UTS400-L-ATU-300-2	UTS400-L-ATU-300-3	240-300A	1500-3000A
400A	UTS400-L-ATU-400-2	UTS400-L-ATU-400-3	320-400A	2000-4000A

**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	
	2-Pole	3-Pole	2-Pole	3-Pole
400A	UTS400-N-MCS-400-2	UTS400-N-MCS-400-3	UTS400-H-MCS-400-2	UTS400-H-MCS-400-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V	
	2-Pole	3-Pole
400A	UTS400-L-MCS-400-2	UTS400-L-MCS-400-3

**MOTOR CIRCUIT PROTECTOR**

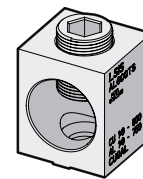
WITH MCP TRIP UNIT (ADJUSTABLE MAGNETIC ONLY)				
Ampere Rating, In	3-Pole	3-Pole	3-Pole	Magnetic Range
320A	UTS400-N-MCP-320-3	UTS400-H-MCP-320-3	UTS400-L-MCP-320-3	1920-3840A

## ACCESSORIES FOR UTS400

### MECHANICAL LUGS

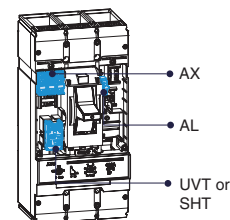
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
400A	Aluminum	Cu/Al	AL400TS

AL400TS 250~400A Lug



### INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
Shunt Trip, SHT	DC 12V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC 220~240V/DC 250V	
Undervoltage Trip, UVT	AC 380~500V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC 220~240V/DC 250V	
	AC 380~440V	
	AC 440~480V	



Type	Left(R)	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	PL3



<Pad Lock>

### PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" or "ON" position	PHL3



<Plate Handle Lock>

### MECHANICAL INTERLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT33

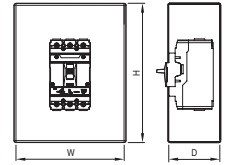


<Mechanical Interlock>



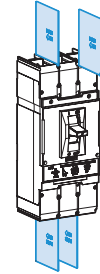
**ENCLOSURE**

ENCLOSURE DIMENSION (W X H X D) inch (mm)	ORDERING TYPE
13.78 (350) x 40.16 (1020) x 5.98 (152) : 80% rated	-
13.78 (350) x 40.16 (1020) x 7.17 (182) : 100% rated	-



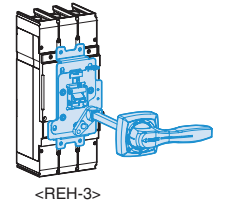
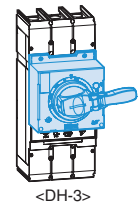
**INSULATION BARRIERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For 2-Pole breaker		B32
For 3-Pole breaker		B33



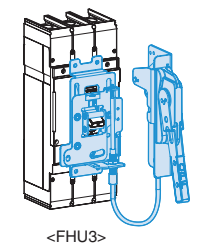
**ROTARY OPERATING HANDLES**

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



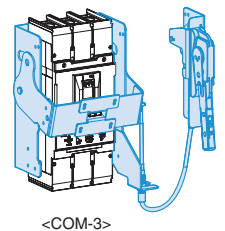
**FLANGE HANDLES WITH SLIDING OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Handle (with sliding mechanism and cable)	NEMA Type 1, 12	FHU3
	NEMA Type 1, 12, 3, 3R, 4, 4X	FHX3



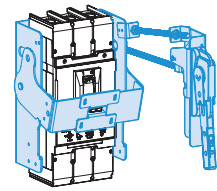
**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-3
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L
Cable	36 inch	FH3-36
	48 inch	FH3-48
	60 inch	FH3-60
	72 inch	FH3-72



**FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod without handle		VDM-3
Standard type handle without operating mechanism	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L



<VDM-3>

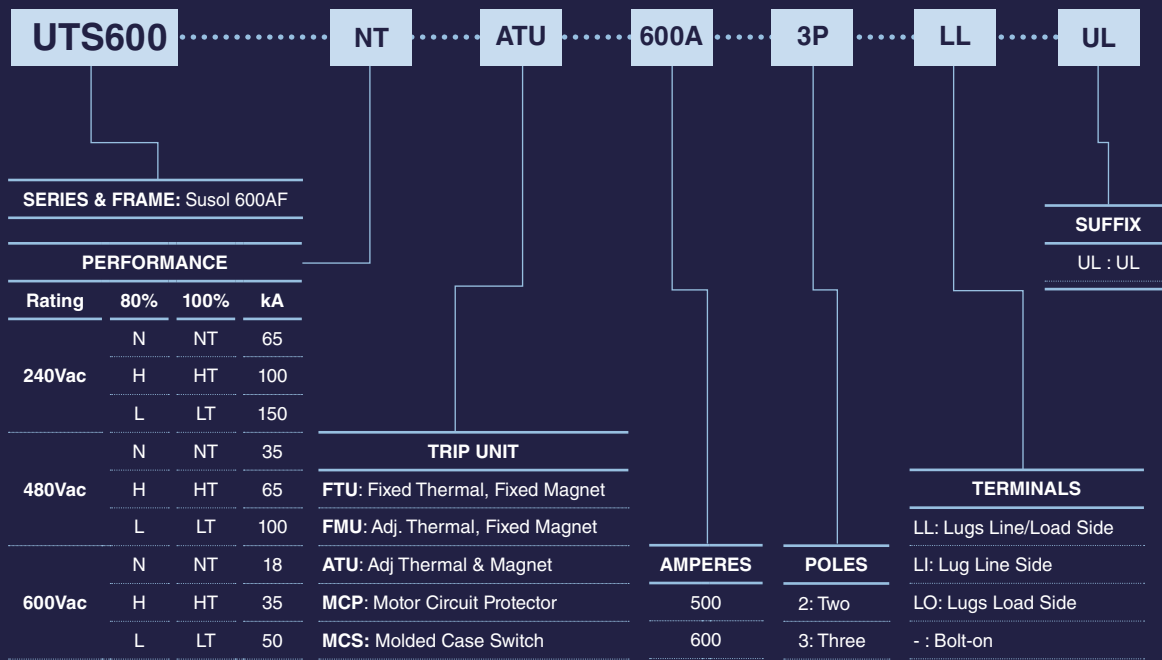
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA TYPE 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

# SELECTION GUIDE

# UTS600



## CATALOG NUMBERING [PRODUCT SELECTION]



## UTS600 FRAME

UTS600 breaker is HACR rated

### UL489 RATINGS

BREAKER TYPE	NUMBER OF POLES	INTERRUPTING CAPACITY (kA rms) VOLTS AC (50/60Hz)		
		240V	480V	600V
UTS600N	2, 3	65	35	18
UTS600H	2, 3	100	65	35
UTS600L	2, 3	150	100	50

### DIMENSIONS

POLE	DIMENSIONS inch (mm)		
	H	W	D
2-Pole	13.39 (340)	5.51 (140)	4.33 (110)
3-Pole			

### TRIP UNIT TYPES

	THERMAL	MAGNETIC	REMARKS
FTU	Fixed	Fixed	
FMU	Adjustable, 0.8~1 x In	Fixed	
ATU	Adjustable, 0.8~1 x In	Adjustable, 5~10 x In	
MCS	N.A.	Fixed, 10 x In	Magnetic only
MCP	N.A.	Adjustable, 6~12 x In	Magnetic only

### CIRCUIT BREAKER

WITH FTU TRIP UNIT (FIXED THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
500A	UTS600-N-FTU-500-2	UTS600-N-FTU-500-3	UTS600-H-FTU-500-2	UTS600-H-FTU-500-3
600A	UTS600-N-FTU-600-2	UTS600-N-FTU-600-3	UTS600-H-FTU-600-2	UTS600-H-FTU-600-3
Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V			
	2-Pole		3-Pole	
500A	UTS600-L-FTU-500-2		UTS600-L-FTU-500-3	
600A	UTS600-L-FTU-600-2		UTS600-L-FTU-600-3	

**CIRCUIT BREAKER**

WITH FMU TRIP UNIT (ADJUSTABLE THERMAL, FIXED MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
500A	UTS600-N-FMU-500-2	UTS600-N-FMU-500-3	UTS600-H-FMU-500-2	UTS600-H-FMU-500-3
600A	UTS600-N-FMU-600-2	UTS600-N-FMU-600-3	UTS600-H-FMU-600-2	UTS600-H-FMU-600-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Thermal Range
	2-Pole	3-Pole	
500A	UTS600-L-FMU-500-2	UTS600-L-FMU-500-3	400-500A
600A	UTS600-L-FMU-600-2	UTS600-L-FMU-600-3	480-600A

WITH ATU TRIP UNIT (ADJUSTABLE THERMAL, ADJUSTABLE MAGNETIC)				
Ampere Rating, In	65kA at 240V, 35kA at 480V, 18kA at 600V		100kA at 240V, 65kA at 480V, 35kA at 600V	
	2-Pole	3-Pole	2-Pole	3-Pole
500A	UTS600-N-ATU-500-2	UTS600-N-ATU-500-3	UTS600-H-ATU-500-2	UTS600-H-ATU-500-3
600A	UTS600-N-ATU-600-2	UTS600-N-ATU-600-3	UTS600-H-ATU-600-2	UTS600-H-ATU-600-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V		Adjustable range	
	2-Pole	3-Pole	Thermal	Magnetic
500A	UTS600-L-ATU-500-2	UTS600-L-ATU-500-3	400-500A	2500-5000A
600A	UTS600-L-ATU-600-2	UTS600-L-ATU-600-3	480-600A	3000-6000A

**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	
	2-Pole	3-Pole	2-Pole	3-Pole
600A	UTS600-N-MCS-600-2	UTS600-N-MCS-600-3	UTS600-H-MCS-600-2	UTS600-H-MCS-600-3

Ampere Rating, In	150kA at 240V, 100kA at 480V, 50kA at 600V	
	2-Pole	3-Pole
600A	UTS600-L-MCS-600-2	UTS600-L-MCS-600-3

**MOTOR CIRCUIT PROTECTOR**

WITH MCP TRIP UNIT (ADJUSTABLE MAGNETIC ONLY)		
Ampere Rating, In	3-Pole	3-Pole
500A	UTS600-N-MCP-500-3	UTS600-H-MCP-500-3

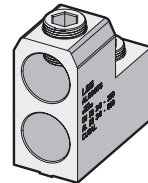
Ampere Rating, In	3-Pole	Magnetic Range
500A	UTS600-L-MCP-500-3	3000-6000A

## ACCESSORIES FOR UTS600

### MECHANICAL LUGS

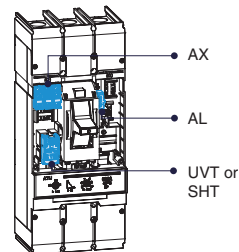
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
600A	Aluminum	Cu/Al	AL600TS

AL600TS 500~600A Lug



### INNER ACCESSORIES

DESCRIPTION	CONTROL VOLTAGE	ORDERING TYPE
Auxiliary Switch, AX		
Alarm Switch, AL		
Shunt Trip, SHT	DC 12V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC220~240V/DC250V	
Undervoltage Trip, UVT	AC 380~500V	
	AC/DC 24V	
	AC/DC 48V	
	AC/DC 110~130V	
	AC220~240V/DC250V	
	AC 380~440V	
	AC 440~480V	



Type	Left(R)	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	PL3



<Pad Lock>

### PLATE HANDLE LOCKING DEVICE

DESCRIPTION	ORDERING TYPE
Lock in "OFF" or "ON" position	PHL3



<Plate Handle Lock>

### MECHANICAL INTERLOCKING DEVICE

DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT33

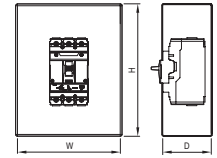


<Mechanical Interlock>



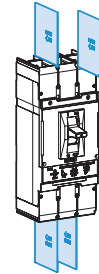
**ENCLOSURE**

ENCLOSURE DIMENSION(W X H X D) inch(mm)	ORDERING TYPE
13.78(350) x 40.16(1020) x 5.98(152) : 80% rated	-
14.17(360) x 41.34(1050) x 7.17(182) : 100% rated	-



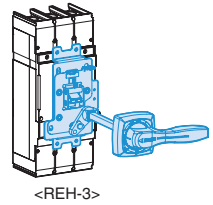
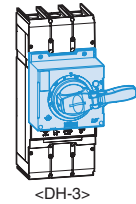
**INSULATION BARRIERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
For 2-Pole breaker		B32
For 3-Pole breaker		B33



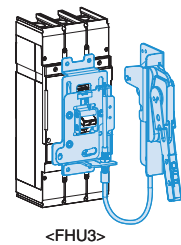
**ROTARY OPERATING HANDLES**

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



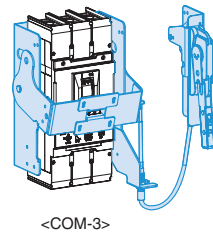
**FLANGE HANDLES WITH SLIDING OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Handle(with sliding mechanism and cable)	NEMA Type 1, 12	FHU3
	NEMA Type 1, 12, 3, 3R, 4, 4X	FHX3



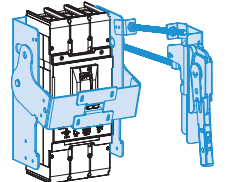
**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-3
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L
Cable	36 inch	FH3-36
	48 inch	FH3-48
	60 inch	FH3-60
	72 inch	FH3-72



**FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod without handle		VDM-3
Standard type handle without operating mechanism	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L



<VDM-3>

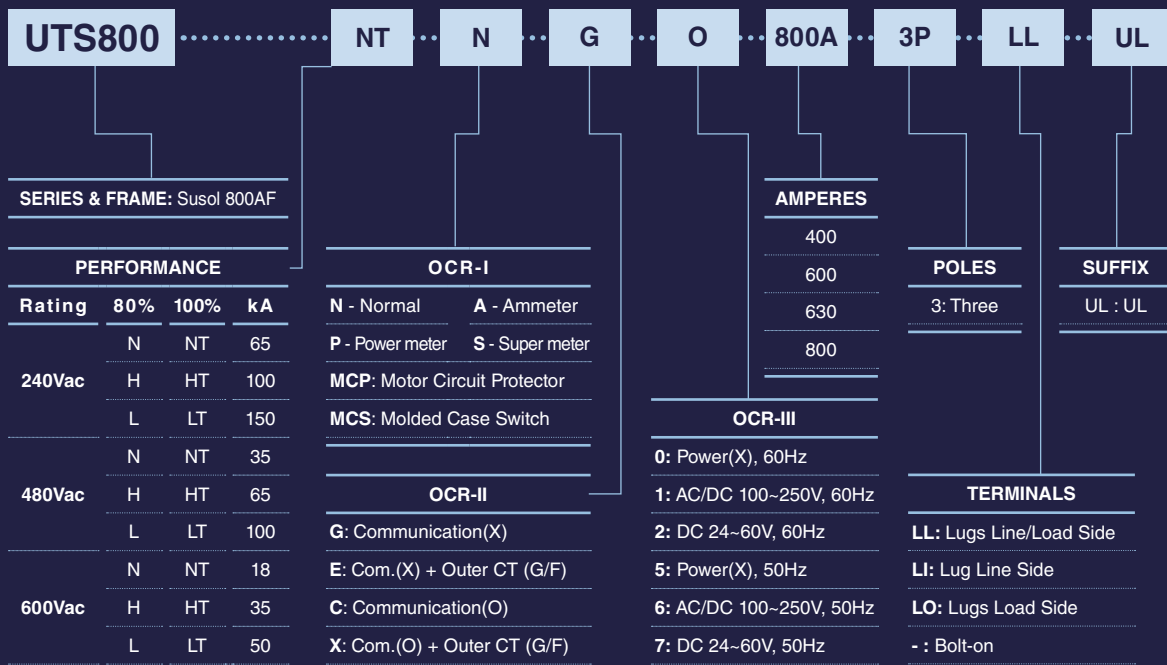
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA Type 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

# SELECTION GUIDE

# UTS800



## CATALOG NUMBERING [PRODUCT SELECTION]



## UTS800 FRAME

UTS800 breaker is HACR rated

### UL489 RATINGS

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

### DIMENSIONS

POLE	DIMENSIONS inch (mm)		
	H	W	D
3-Pole	13 (330)	8.27 (210)	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	
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	
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	
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) <sup>a)</sup> Measuring (V/A/WP/F/PF) <sup>b)</sup> 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

**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	

**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			MCP type trip unit
800A	UTS800-N-MCP●■-800-3	UTS800-H-MCP●■-800-3	UTS800-L-MCP●■-800-3	Magnetic range : 2~12In

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 )

ITEM	SETTING RANGE
<b>I<sub>r</sub></b> (rated current)	0.4-1.0 In
<b>T<sub>r</sub></b> (long time tripping delay)	0.5-20 (s)
<b>I<sub>sd</sub></b> (short time current)	1.5-10 I <sub>r</sub>
<b>T<sub>sd</sub></b> (short time tripping delay)	0.05-0.4 (s)

ITEM	SETTING RANGE
<b>I<sub>i</sub></b> (instantaneous current)	2-15 In
<b>T<sub>g</sub></b> (ground fault tripping delay)	0.05-0.4 (s)
<b>I<sub>g</sub></b> (ground fault current)	0.2-1In

●	OCR-II
	<b>G:</b> Communication(X)
	<b>E:</b> Com.(X)+Outer CT(G/F)
	<b>C:</b> Communication(O)
	<b>X:</b> COM.(O)+Outer CT(G/F)

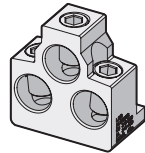
■	OCR-III
	<b>0:</b> Power(X), 60Hz
	<b>1:</b> AC/DC 100-250V, 60Hz
	<b>2:</b> DC 24-60V, 60Hz
	<b>5:</b> Power(X), 50Hz
	<b>6:</b> AC/DC 100-250V, 50Hz
	<b>7:</b> DC 24-60V, 50Hz

## ACCESSORIES FOR UTS800

### MECHANICAL LUGS

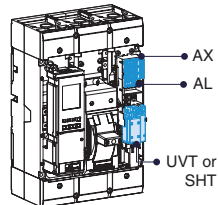
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	WIRE TYPE	ORDERING TYPE
800A	Aluminum	Cu/Al	AL800TS

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	
Undervoltage Trip, UVT	AC 380~480V	
	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

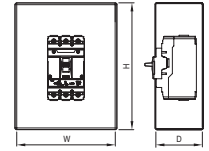


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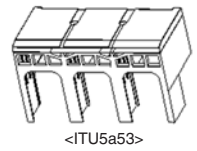
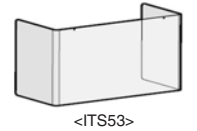
**ENCLOSURE**

ENCLOSURE DIMENSION (W X H X D) inch (mm)	ORDERING TYPE
20.25 (514.4) x 51.9 (1318.4) x 7.75 (196.9)	-



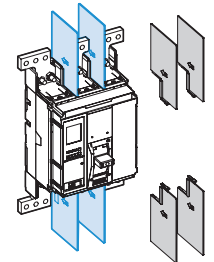
**TERMINAL COVERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
Terminal Cover(800AF)		ITU5a3
Terminal Cover(800,1200AF)		ITS53



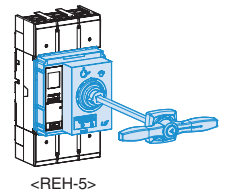
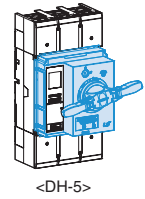
**INSULATION BARRIERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
Standard type		B53
Rear type		BR53
Extended type		BE53



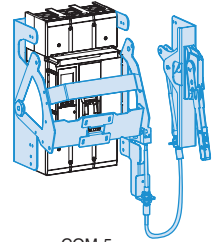
**ROTARY OPERATING HANDLES**

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 Type 1, 12	EHU-5
NEMA Door-Mounted	NEMA Type 3, 3R, 4	EHV-5
	NEMA Type 3, 4, 4X	EHX-5



**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

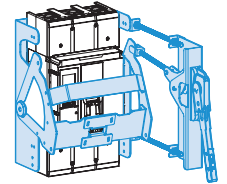
DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-5
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L
Cable	60 inch	FH5-60
	84 inch	FH5-84
	120 inch	FH5-120



<COM-5>

**FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM**

Description	Type	Ordering type
Variable depth operating mechanism with threaded-rod without handle		VDM-5
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L



<VDM-5>

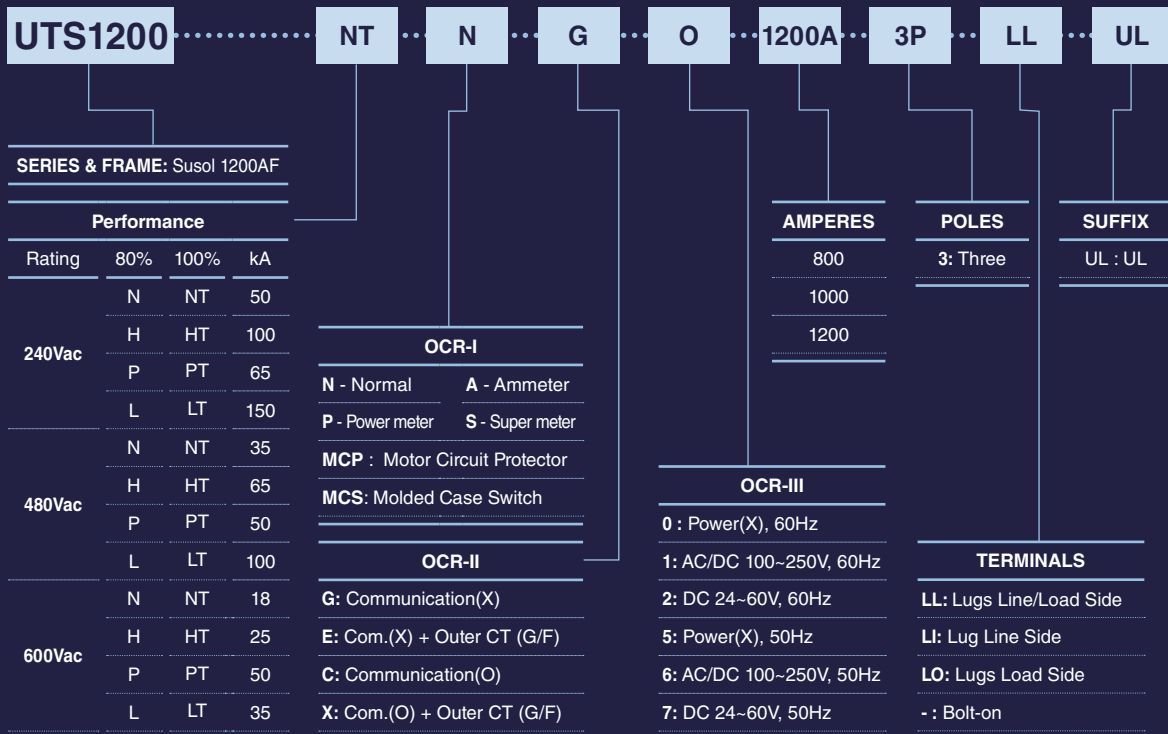
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA TYPE 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

# SELECTION GUIDE

# UTS1200



## CATALOG NUMBERING [PRODUCT SELECTION]



## UTS1200 FRAME

UTS1200 breaker is HACR rated

### UL489 RATINGS

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

### DIMENSIONS

POLE	DIMENSIONS inch (mm)		
	H	W	D
3-Pole	16.26 (413)	8.27 (210)	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
1000A	UTS1200-L-N●■-1000-3	Instantaneous / Ground faults / Self power
1200A	UTS1200-L-N●■-1200-3	*LCD/SMPS is Removed from A type

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)
1000A	UTS1200-L-A●■-1000-3	ZSI / COMM. (MODBUS, Profibus)
1200A	UTS1200-L-A●■-1200-3	AC 110~220V / DC 24~48V Fault Recording 10ea

\* ●: OCR-II, ■: OCR-III

**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) <sup>a)</sup> Measuring (V/A/W/P/F/PF) <sup>b)</sup> 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	

**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

**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 )

ITEM	SETTING RANGE	●	OCR-II
Ir (rated current)	0.4~1.0 In	●	G: Communication(X)
Tr (long time tripping delay)	0.5~20 (s)		E: Com.(X)+Outer CT(G/F)
Isd (short time current)	1.5~10 Ir		C: Communication(O)
Tsd (short time tripping delay)	0.05~0.4 (s)		X: COM.(O)+Outer CT(G/F)

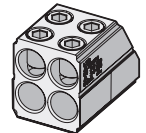
ITEM	SETTING RANGE	■	OCR-III
Ii (instantaneous current)	2~15 In	■	0: Power(X), 60Hz
Tg (ground fault tripping delay)	0.05~0.4 (s)		1: AC/DC 100~250V, 60Hz
Ig (ground fault current)	0.2~1In		2: DC 24~60V, 60Hz
			5: Power(X), 50Hz
			6: AC/DC 100~250V, 50Hz
			7: DC 24~60V, 50Hz

**ACCESSORIES FOR UTS1200**

**MECHANICAL LUGS**

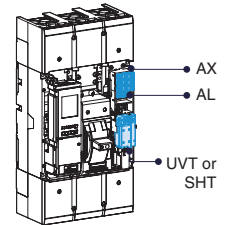
MAXIMUM BREAKER AMPERES	TERMINAL BODY MATERIAL	Wire type	Ordering type
1200A	Aluminum	Cu/Al	AL1200TS

AL 1200TS 800~1200 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	
Undervoltage Trip, UVT	AC 380~480V	
	DC 24~30V	
	AC 48V/DC 48~60V	
	AC/DC 100~130V	
Undervoltage Trip, UVT	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**

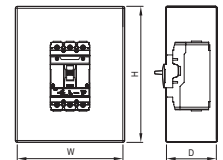
DESCRIPTION	ORDERING TYPE
For 3-Pole breaker	MIT53



<Mechanical Interlock>

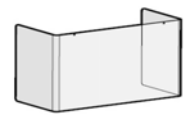
**ENCLOSURE**

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	-

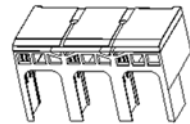


**TERMINALS COVERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
Terminal Cover(1200AF)		ITU5b3
Terminal Cover(800/1200AF)		ITS53



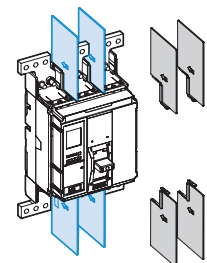
<ITS53>



<ITU5b53>

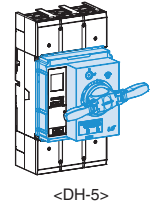
**INSULATION BARRIERS**

DESCRIPTION	QTY PER KIT	ORDERING TYPE
Standard type		B53
Rear type		BR53
Extended type		BE53

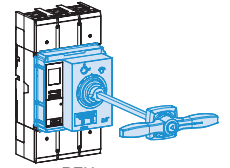


**ROTARY OPERATING HANDLES**

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 Type 1, 12	EHU-5
NEMA Door-Mounted	NEMA Type 3, 3R, 4	EHV-5
	NEMA Type 3, 4, 4X	EHX-5



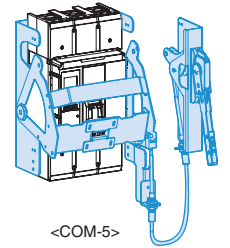
<DH-5>



<REH-5>

**FLANGE HANDLES WITH CABLE OPERATING MECHANISM**

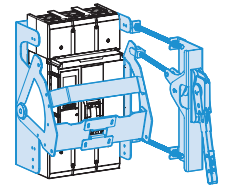
DESCRIPTION	TYPE	ORDERING TYPE
Cable operating mechanism (without handle and cable)		COM-5
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L
Cable	60 inch	FH4-60
	84 inch	FH4-84
	120 inch	FH4-120



<COM-5>

**FLANGE HANDLES WITH VARIABLE-DEPTH OPERATING MECHANISM**

DESCRIPTION	TYPE	ORDERING TYPE
Variable depth operating mechanism with threaded-rod without handle		VDM-5
Standard type handle (without operating mechanism and cable)	NEMA Type 1, 12, 3, 3R, 4	FHU-L
	NEMA Type 4, 4X	FHX-L



<VDM-5>

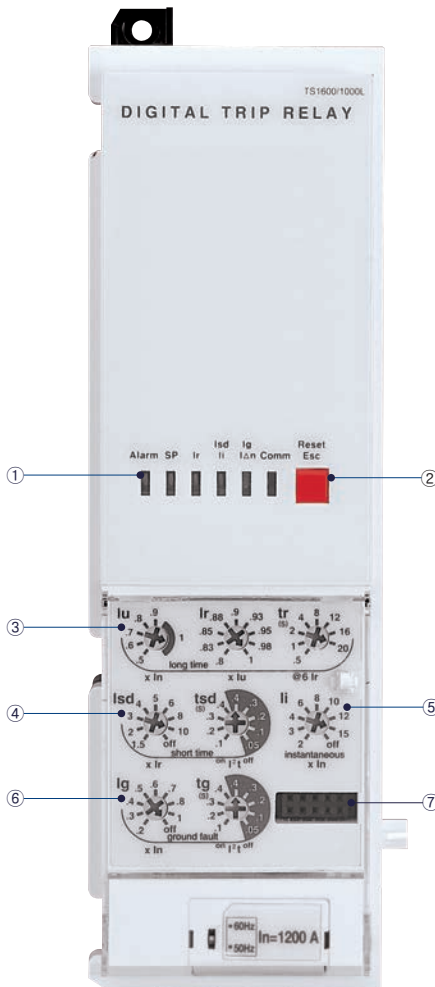
TYPE	DIRECTLY MOUNTED	DOOR MOUNTED	FLANGE HANDLE WITH CABLE OPERATION MECHANISM	FLANGE HANDLE WITH VARIABLE DEPTH MECHANISM
NEMA TYPE 1			-	-
NEMA Type 1, 12, 3, 3R, 4, 4X	-			

## TRIP UNITS FOR UTS800 AND UTS1200

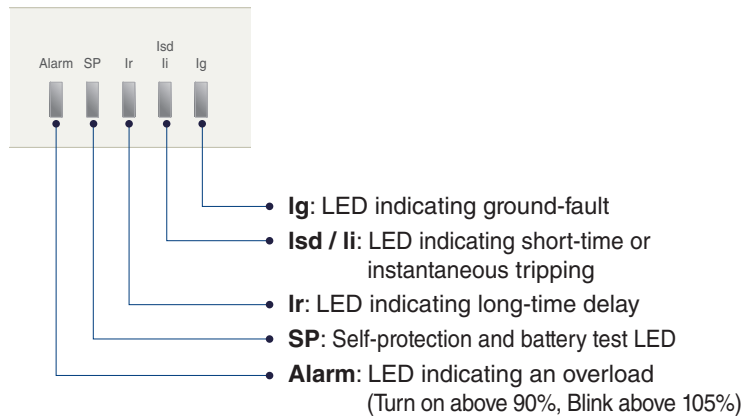
Circuit breaker includes factory-installed internal trip units. Be careful not to interchange trip units in the field. There are various kinds of trip units according to rated current and function as follows.

### 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<sup>2</sup>t On/Off optional (for short-time delay)
- Ground fault protection
  - I<sup>2</sup>t On/Off optional
- Self-Power



① LED: Indication of trip info, and overload state

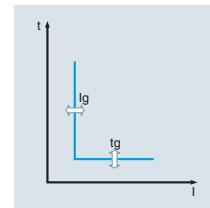
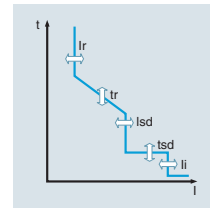


② Reset Key: Fault reset or battery check

- ③ **lu, lr**: Long-time current setting, **tr**: Long-time tripping delay setting
- ④ **Isd**: Short-time current setting, **tsd**: Short-time tripping delay setting
- ⑤ **li**: 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**

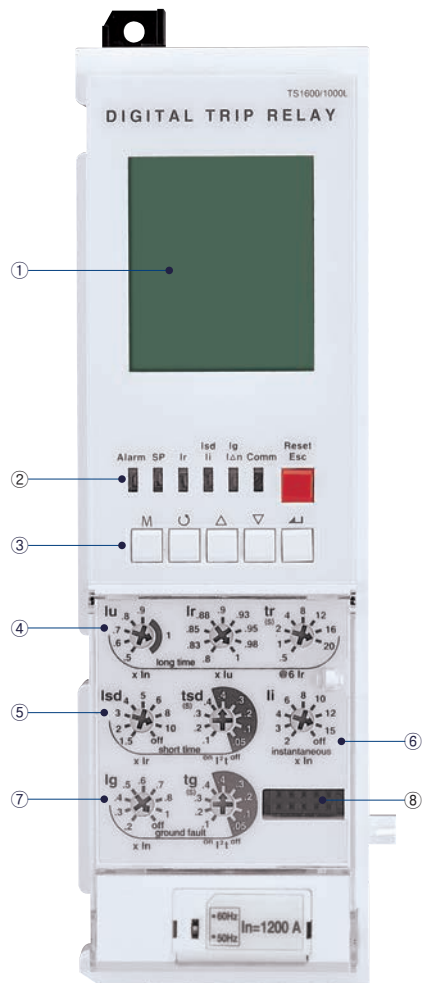
LONG TIME											
Current setting (A)	$I_u = I_n \times \dots$	0.5	0.6	0.7	0.8	0.9	1.0				
	$I_r = I_u \times \dots$	0.8	0.83	0.85	0.88	0.9	0.93	0.95	0.98	1.0	
Time delay (s) Accuracy: $\pm 15\%$ or below 100ms	$t_r @ (1.5 \times I_r)$	12.5	25	50	100	200	300	400	500		
	$t_r @ (6.0 \times I_r)$	0.5	1	2	4	8	12	16	20		
	$t_r @ (7.2 \times I_r)$	0.34	0.69	1.38	2.7	5.5	8.3	11	13.8		
SHORT TIME											
Current setting (A) Accuracy: $\pm 10\%$	$I_{sd} = I_r \times \dots$	1.5	2	3	4	5	6	8	10	Off	
	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					
Time delay (s) @ $10 \times I_r$	$(I^2t \text{ Off})$	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				
INSTANTANEOUS											
Current setting (A)	$I_i = I_n \times \dots$	2	3	4	6	8	10	12	15	Off	
Tripping time		below 50ms									
GROUND FAULT											
Pick-up (A) Accuracy: $\pm 10\%$ ( $I_g > 0.4I_n$ ) $\pm 20\%$ ( $I_g < 0.4I_n$ )	$I_g = I_n \times \dots$	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off	
	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					
Time delay (s) @ $1 \times I_n$	$(I^2t \text{ Off})$	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				



## TRIP UNITS FOR UTS800 AND UTS1200

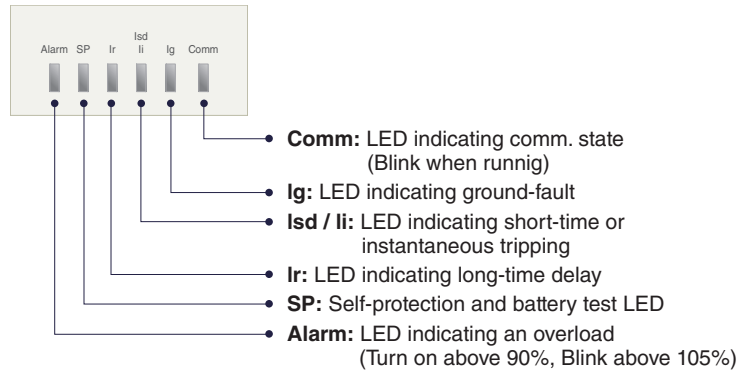
### A type: Ammeter type

- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  - Short-time delay/ Instantaneous
  - I<sup>2</sup>t On/Off optional (for short-time delay)
- Ground fault protection
  - I<sup>2</sup>t On/Off optional
- Realization of protective coordination by ZSI (Zone Selective Interlocking)
- High-performance and high-speed MCU built-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

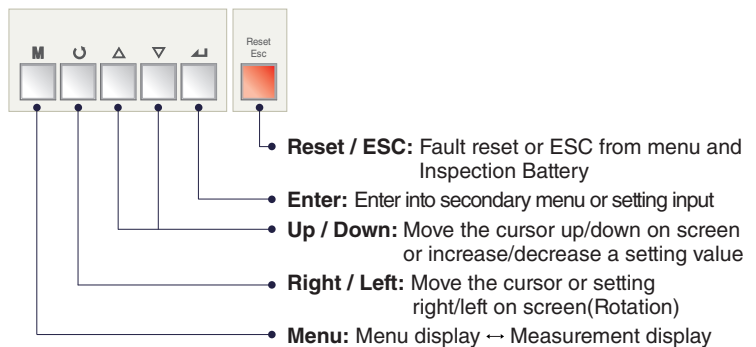


① LCD: Indication of measurement and information

② LED: Indication of trip info, and overload state



③ Key: Move to menu of reset



④ lu, lr: Long-time current setting, tr: Long-time tripping delay setting

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

⑥ li: Instantaneous current setting

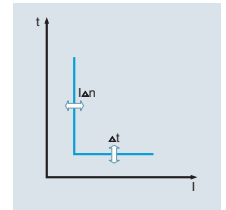
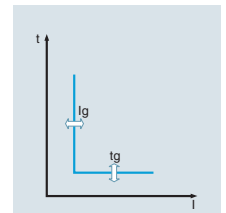
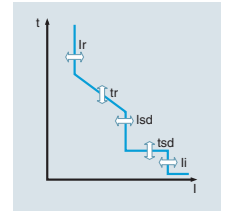
⑦ Ig: Ground fault setting, tg: Ground fault tripping delay setting

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

**PROTECTION**

LONG TIME											
Current setting (A)	$I_u = I_n \times \dots$	0.5	0.6	0.7	0.8	0.9	1.0				
	$I_r = I_u \times \dots$	0.8	0.83	0.85	0.88	0.9	0.93	0.95	0.98	1.0	
Time delay (s) Accuracy: $\pm 15\%$ or below 100ms	$t_r @ (1.5 \times I_r)$	12.5	25	50	100	200	300	400	500		
	$t_r @ (6.0 \times I_r)$	0.5	1	2	4	8	12	16	20		
	$t_r @ (7.2 \times I_r)$	0.34	0.69	1.38	2.7	5.5	8.3	11	13.8		
SHORT TIME											
Current setting (A) Accuracy: $\pm 10\%$	$I_{sd} = I_r \times \dots$	1.5	2	3	4	5	6	8	10	Off	
	$t_{sd}$	$I^2t$ Off	0.05	0.1	0.2	0.3	0.4				
$I^2t$ On			0.1	0.2	0.3	0.4					
Time delay (s) @ $10 \times I_r$	Min. Trip Time (ms)	20	80	160	260	360					
	$(I^2t \text{ Off})$ Max. Trip Time (ms)	80	140	240	340	440					
INSTANTANEOUS											
Current setting (A)	$I_l = I_n \times \dots$	2	3	4	6	8	10	12	15	Off	
Tripping time		below 50ms									
GROUND FAULT											
Pick-up (A) Accuracy: $\pm 10\%$ ( $I_g > 0.4I_n$ ) $\pm 20\%$ ( $I_g < 0.4I_n$ )	$I_g = I_n \times \dots$	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off	
	$t_g$	$I^2t$ Off	0.05	0.1	0.2	0.3	0.4				
$I^2t$ On			0.1	0.2	0.3	0.4					
Time delay (s) @ $1 \times I_n$	Min. Trip Time (ms)	20	80	160	260	360					
	$(I^2t \text{ Off})$ Max. Trip Time (ms)	80	140	240	340	440					
EARTH LEAKAGE (OPTION)											
Current setting (A)	$I_{\Delta n}$	0.5	1	2	3	5	10	20	30	Off	
Time delay (ms) Accuracy: $\pm 15\%$	$\Delta t$	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

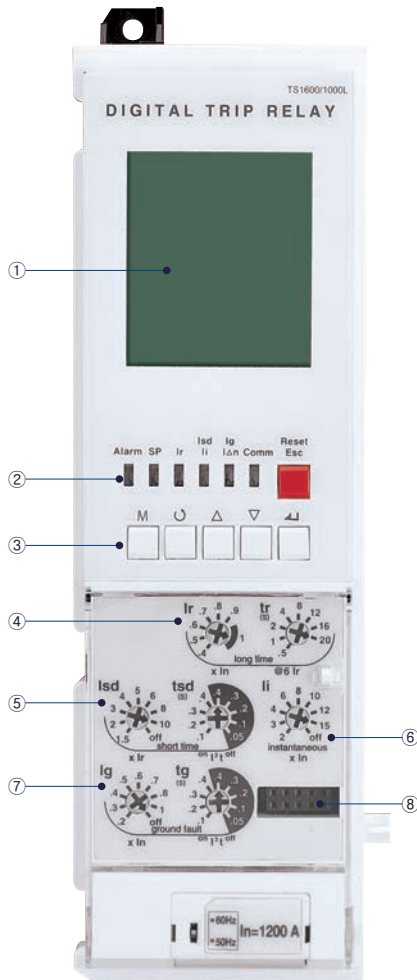




## TRIP UNITS FOR UTS800 AND UTS1200

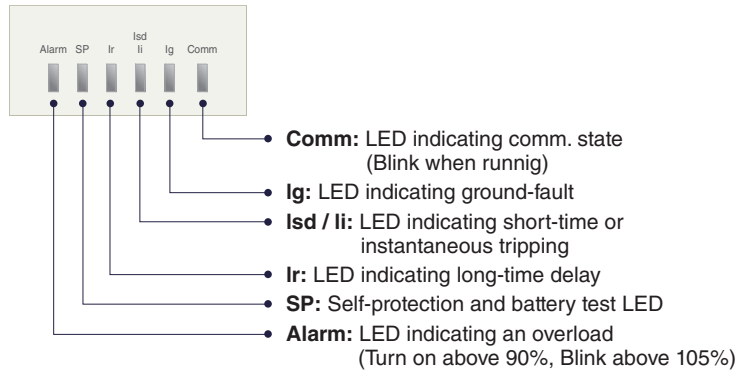
### P type: Power meter type

- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  - Short-time delay/ Instantaneous
  - I<sup>2</sup>t On/Off optional (for short-time delay)
- Ground fault protection
  - I<sup>2</sup>tOn/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 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
- 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

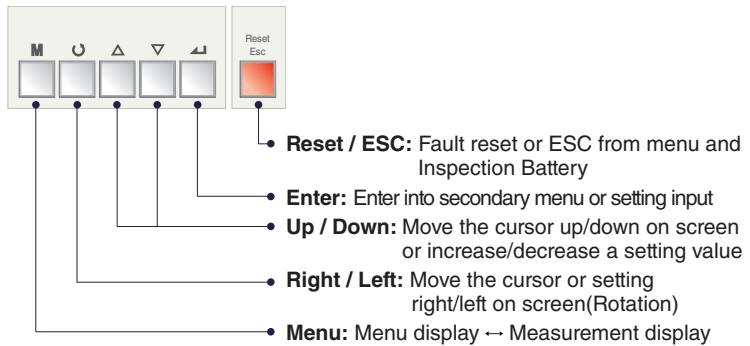


① **Graphic LCD:** Indication of measurement and information

② **LED:** Indication of trip info, and overload state



③ **Key:** Move to menu of reset



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

⑤ **lsd:** Short-time current setting, **tsd:** Short-time tripping delay setting

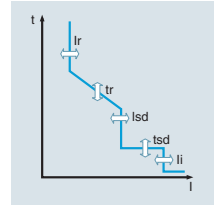
⑥ **li:** Instantaneous current setting

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

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

**PROTECTION**

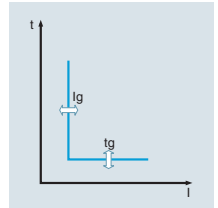
LONG TIME										
<b>Current setting (A)</b>	$I_u = I_n \times \dots$	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
<b>Time delay (s)</b>	$t_r @ (1.5 \times I_r)$	12.5	25	50	100	200	300	400	500	
<b>Accuracy: ±15% or below 100ms</b>	$t_r @ (6.0 \times I_r)$	0.5	1	2	4	8	12	16	20	
	$t_r @ (7.2 \times I_r)$	0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	



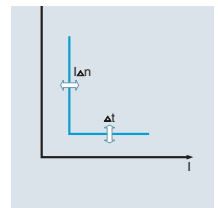
SHORT TIME											
<b>Current setting (A)</b>	$I_{sd} = I_r \times \dots$	1.5	2	3	4	5	6	8	10	Off	
<b>Time delay (s) @ 10 x Ir</b>	tsd	$I^2 t$ Off	0.05	0.1	0.2	0.3	0.4				
		$I^2 t$ On		0.1	0.2	0.3	0.4				
	$(I^2 t \text{ Off})$	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

INSTANTANEOUS										
<b>Current setting (A)</b>	$I_i = I_n \times \dots$	2	3	4	6	8	10	12	15	Off
<b>Tripping time</b>		below 50ms								

GROUND FAULT											
<b>Pick-up (A)</b>											
<b>Accuracy: ±10% (<math>I_g &gt; 0.4I_n</math>) ±20% (<math>I_g &lt; 0.4I_n</math>)</b>	$I_g = I_n \times \dots$	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off	
<b>Time delay (s) @ 1 x In</b>	tg	$I^2 t$ Off	0.05	0.1	0.2	0.3	0.4				
		$I^2 t$ On		0.1	0.2	0.3	0.4				
	$(I^2 t \text{ Off})$	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				



EARTH LEAKAGE (OPTION)											
<b>Current setting (A)</b>	$I_{\Delta n}$	0.5	1	2	3	5	10	20	30	Off	
<b>Time delay (ms) Accuracy: ±15%</b>	$\Delta t$	Alarm Time(ms)	140	230	350	800	950				
		Trip Time(ms)	140	230	350	800					



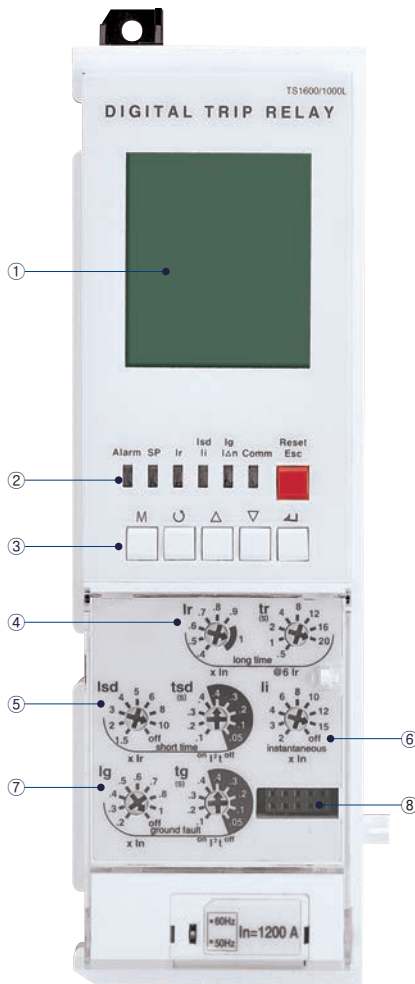
Note) Earth leakage function is available with ZCT or external CT

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

## TRIP UNITS FOR UTS800 AND UTS1200

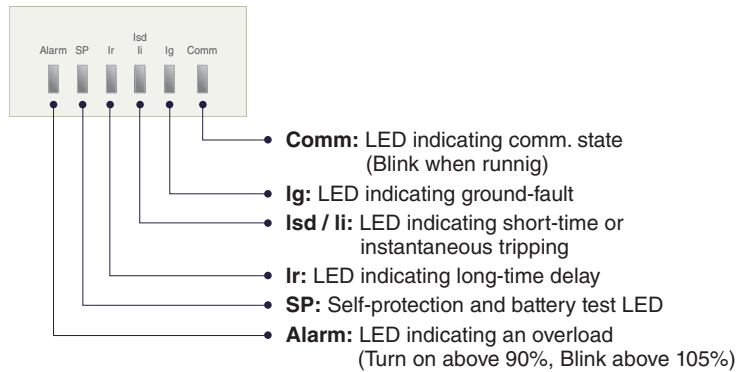
### S type: Supreme meter type

- Overload protection
  - Long-time delay
  - Thermal
- Short-circuit protection
  - Short-time delay/ Instantaneous
  - I<sup>2</sup>t On/Off optional (for short-time delay)
- Ground fault protection
  - I<sup>2</sup>tOn/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

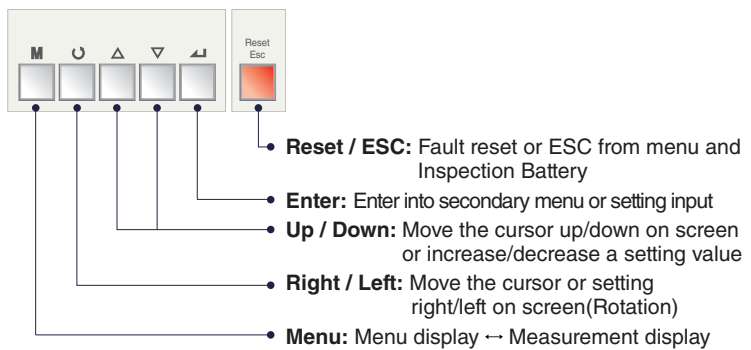


① **Graphic LCD:** Indication of measurement and information

② **LED:** Indication of trip info, and overload state



③ **Key:** Move to menu of reset



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

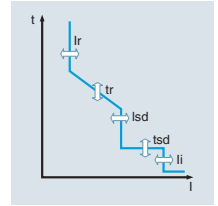
⑥ **li:** Instantaneous current setting

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

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

**PROTECTION**

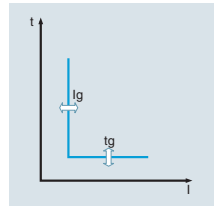
LONG TIME										
<b>Current setting (A)</b>	$I_u = I_n \times \dots$	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
<b>Time delay (s)</b>	$t_r @ (1.5 \times I_r)$	12.5	25	50	100	200	300	400	500	
<b>Accuracy: ±15% or below 100ms</b>	$t_r @ (6.0 \times I_r)$	0.5	1	2	4	8	12	16	20	
	$t_r @ (7.2 \times I_r)$	0.34	0.69	1.38	2.7	5.5	8.3	11	13.8	



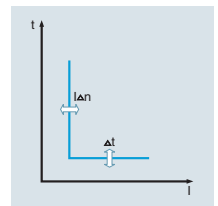
SHORT TIME											
<b>Current setting (A)</b>	$I_{sd} = I_r \times \dots$	1.5	2	3	4	5	6	8	10	Off	
<b>Time delay (s) @ 10 x Ir</b>	tsd	$I^2t$ Off	0.05	0.1	0.2	0.3	0.4				
		$I^2t$ On		0.1	0.2	0.3	0.4				
	$(I^2t \text{ Off})$	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				

INSTANTANEOUS										
<b>Current setting (A)</b>	$I_i = I_n \times \dots$	2	3	4	6	8	10	12	15	Off
<b>Tripping time</b>		below 50ms								

GROUND FAULT											
<b>Pick-up (A)</b>	$I_g = I_n \times \dots$	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	Off	
<b>Time delay (s) @ 1 x In</b>	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				
	$(I^2t \text{ Off})$	Min. Trip Time(ms)	20	80	160	260	360				
		Max. Trip Time(ms)	80	140	240	340	440				



EARTH LEAKAGE (OPTION)											
<b>Current setting (A)</b>	$I_{\Delta n}$	0.5	1	2	3	5	10	20	30	Off	
<b>Time delay (ms)</b>	$\Delta t$	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
<b>Under Voltage</b>	80V-0V_Pick-up	1V	±5%			
<b>Over Voltage</b>	UV_Pick-up~980V	1V	±5%	1.2~40 (s)		
<b>Voltage Unbalance</b>	6%~99%	1%	±2.5% or (*±10%)			
<b>Reverse Power</b>	10~500kW	1kW	±10%			
<b>Over Power</b>	500~5000W	1kW	±10%	0.2~40 (s)		
<b>Current Unbalance</b>	6%~99%	1%	±2.5% or (*±10%)		0.1 (s)	±0.1 (s)
<b>Over Frequency</b>	60Hz	UF_Pick-up~65	1Hz	±0.1Hz		
	50Hz	UF_Pick-up~55	1Hz	±0.1Hz	1.2~40 (s)	
<b>Under Frequency</b>	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	<ul style="list-style-type: none"> <li>L / S / I / G Thermal</li> </ul>	<ul style="list-style-type: none"> <li>L / S / I / G / Thermal</li> <li>ZSI(Protective coordination)</li> </ul>	<ul style="list-style-type: none"> <li>L / S / I / G / Thermal(Continuous)</li> <li>ZSI(Protective coordination)</li> </ul>	<ul style="list-style-type: none"> <li>L / S / I / G / Thermal(Continuous)</li> <li>ZSI(Protective coordination)</li> </ul>
Other protection	-	<ul style="list-style-type: none"> <li>Earth leakage (Option)</li> </ul>	<ul style="list-style-type: none"> <li>Earth leakage (Option)</li> <li>Over/Under current</li> <li>Unbalance(Voltage/Current)</li> <li>Reverse power/Over power</li> </ul>	<ul style="list-style-type: none"> <li>Earth leakage (Option)</li> <li>Over/Under current</li> <li>Unbalance(Voltage/Current)</li> <li>Reverse power/Over power</li> </ul>
Measurement function	-	<ul style="list-style-type: none"> <li>Current (R / S / T )</li> </ul>	<ul style="list-style-type: none"> <li>3 Phase Voltage/Current RMS/Vector</li> <li>Power(P, Q, S), PF(3-Phase)</li> <li>Energy(Positive/Negative)</li> <li>Frequency, Demand</li> </ul>	<ul style="list-style-type: none"> <li>3 Phase Voltage/Current RMS/Vector</li> <li>Power(P, Q, S), PF(3-Phase)</li> <li>Energy(Positive/Negative)</li> <li>Frequency, Demand</li> <li>Voltage/Current harmonics (1st-63th)</li> <li>3 Phase Waveforms</li> <li>THD, TDD, K-Factor</li> </ul>
Fine adjustment	-	-	<ul style="list-style-type: none"> <li>Fine adjustment for long/short time delay/instantaneous/ ground</li> </ul>	<ul style="list-style-type: none"> <li>Fine adjustment for long/short time delay/instantaneous/ ground</li> </ul>
Digital Output	-	<ul style="list-style-type: none"> <li>3DO (Fixed)</li> <li>L, S/I, G Alarm</li> </ul>	<ul style="list-style-type: none"> <li>3DO (Programmable)</li> <li>Trip, Alarm, General</li> </ul>	<ul style="list-style-type: none"> <li>3DO (Programmable)</li> <li>Trip, Alarm, General</li> </ul>
IDMTL setting	-	-	<ul style="list-style-type: none"> <li>Compliance with IEC60255-3</li> <li>SIT, VIT, EIT, DT</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with IEC60255-3</li> <li>SIT, VIT, EIT, DT</li> </ul>
Communication	-	<ul style="list-style-type: none"> <li>Modbus/RS-485</li> <li>Profibus-DP</li> </ul>	<ul style="list-style-type: none"> <li>Modbus/RS-485</li> <li>Profibus-DP</li> </ul>	<ul style="list-style-type: none"> <li>Modbus/RS-485</li> <li>Profibus-DP</li> </ul>
Power supply	<ul style="list-style-type: none"> <li>Self Power</li> <li>- Power source works over 20% of load current.</li> </ul>	<ul style="list-style-type: none"> <li>Self Power</li> <li>- Power source works over 20% of oad current.</li> <li>- External power source are required for comm.</li> <li>AC/DC 100~250V</li> <li>DC 24~60V</li> </ul>	<ul style="list-style-type: none"> <li>AC/DC 100~250V</li> <li>DC 24~60V</li> </ul>	<ul style="list-style-type: none"> <li>AC/DC 100~250V</li> <li>DC 24~60V</li> </ul>
RTC timer	-	<ul style="list-style-type: none"> <li>Available</li> </ul>	<ul style="list-style-type: none"> <li>Available</li> </ul>	<ul style="list-style-type: none"> <li>Available</li> </ul>
LED for trip info.	<ul style="list-style-type: none"> <li>Long time delay</li> <li>Short time delay/Instantaneous</li> <li>Ground fault</li> </ul>	<ul style="list-style-type: none"> <li>Long time delay</li> <li>Short time delay/Instantaneous</li> <li>Ground fault</li> </ul>	<ul style="list-style-type: none"> <li>Long time delay</li> <li>Short time delay/Instantaneous</li> <li>Ground fault</li> </ul>	<ul style="list-style-type: none"> <li>Long time delay</li> <li>Short time delay/Instantaneous</li> <li>Ground fault</li> </ul>
Fault recording	-	<ul style="list-style-type: none"> <li>10 records (Fault/Current/Date and Time)</li> </ul>	<ul style="list-style-type: none"> <li>256 records (Fault/Current/Date and Time)</li> </ul>	<ul style="list-style-type: none"> <li>256 records (Fault/Current/Date and Time)</li> </ul>
Event recording	-	-	<ul style="list-style-type: none"> <li>256 records (Content, Status, Date)</li> </ul>	<ul style="list-style-type: none"> <li>256 records (Content, Status, Date)</li> </ul>
Operating button	<ul style="list-style-type: none"> <li>Reset button</li> </ul>	<ul style="list-style-type: none"> <li>Reset, Menu Up/Down, Left/Right, Enter</li> </ul>	<ul style="list-style-type: none"> <li>Reset, Menu Up/Down, Left/Right, Enter</li> </ul>	<ul style="list-style-type: none"> <li>Reset, Menu Up/Down, Left/Right, Enter</li> </ul>

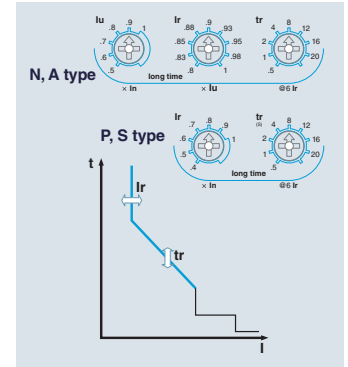
Basic protection function(L / S / I / G) is still under normal operation without control power.

## OPERATION CHARACTERISTIC

### LONG-TIME DELAY (L)

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

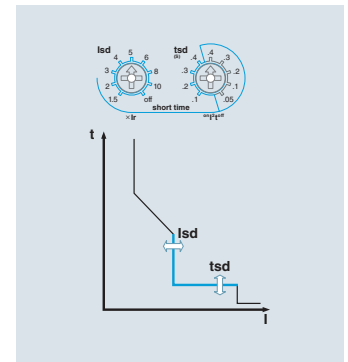
- Standard current setting knob:  $I_r$ 
  - Setting range in P type and S type:  $(0.4-0.5-0.6-0.7-0.8-0.9-1.0) \times I_n$
  - Setting range in N type and A type:  $(0.4-1.0) \times I_n$ 
    - $I_u$ :  $(0.5-0.6-0.7-0.8-0.9-1.0) \times I_n$
    - $I_r$ :  $(0.8-0.83-0.85-0.88-0.9-0.93-0.95-0.98-1.0) \times I_u$
- Time delay setting knob:  $t_r$ 
  - Standard operating time is based on the time of  $6 \times I_r$
  - Setting range: 0.5-1-2-4-8-12-16-20 (s)
- Relay pick-up current
  - When current over  $(1.15) \times I_r$  flows in, relay is picked up.
- 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.

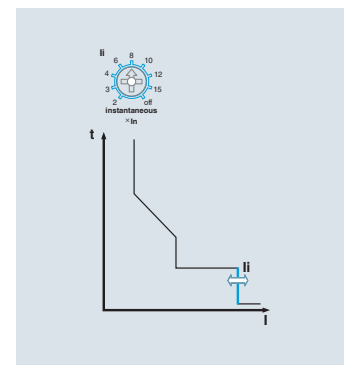
- Standard current setting knob:  $I_{sd}$ 
  - Setting range:  $(1.5-2-3-4-5-6-8-10-Off) \times I_r$
- Time delay setting knob:  $t_{sd}$ 
  - Standard operating time is based on the time of  $10 \times I_r$
  - Inverse time ( $I^2 t$  On): 0.1 - 0.2 - 0.3 - 0.4 (s)
  - Definite time ( $I^2 t$  Off): 0.05 - 0.1 - 0.2 - 0.3 - 0.4 (s)
- Relay operates based on the largest load current among R/S/T phase.
- 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.



### INSTANTANEOUS (I)

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

- Standard current setting knob:  $I_i$ 
  - Setting range:  $(2-3-4-6-8-10-12-15-Off) \times I_n$
- Relay operates based on the largest load current among R/S/T phase.
- Total breaking time is below 50ms.

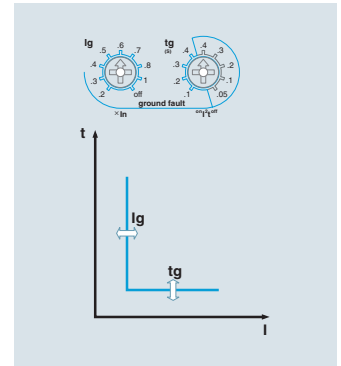


## OPERATION CHARACTERISTIC

### GROUND FAULT (G)

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

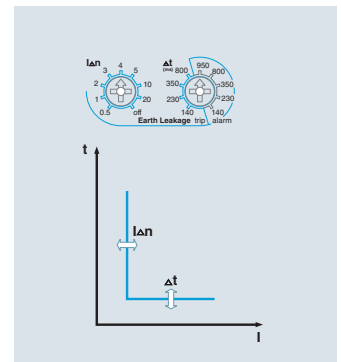
- Standard setting current knob:  $I_g$ 
  - Setting range: (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 1.0 - Off) x  $I_n$
- Time delay setting knob:  $t_g$ 
  - Inverse time ( $I^2t$  On): 0.1 - 0.2 - 0.3 - 0.4 (s)
  - Definite time ( $I^2t$  Off): 0.05 - 0.1 - 0.2 - 0.3 - 0.4 (s)
- Ground fault current is the vector sum of each phase current. Therefore, 3Pole products may operate under its phase-unbalance including ground fault situation. (R+S+T Phase)
- 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.
- 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)

- Standard setting current knob:  $I_{\Delta n}$ 
  - Setting range: 0.5 - 1 - 2 - 3 - 5 - OFF
- Time delay setting knob:  $\Delta t$ 
  - Trip time: 140-230-350-800 ms
  - Alarm time: 140-230-350-800-950 ms
- Settings within its alarm range will prevent its breaker from tripping but activating its alarm.
- This function is enabled and can be used only with private external CT(secondary output 5A) selected by customers.
- 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.

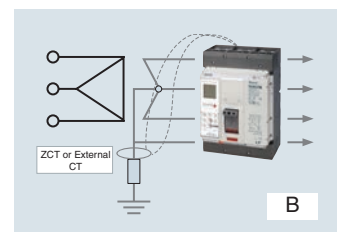
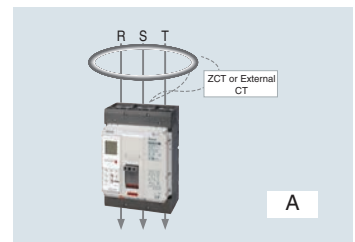


#### ※ USE CAUTIONS WITH EARTH-LEAKAGE CURRENT SETTINGS

- 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.



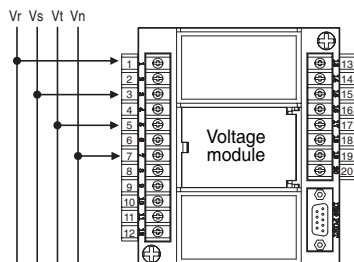
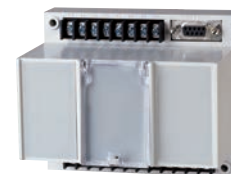


## MEASUREMENT FUNCTION

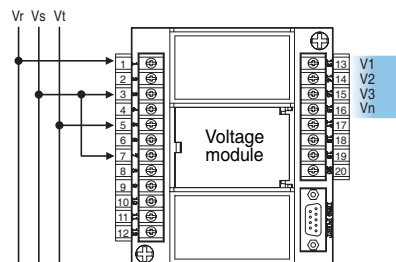
	CLASS.	MEASUREMENT ELEMENT	DETAILED ELEMENT	UNIT	DISPLAY RANGE	ACCURACY
A type	Current	Line current	Ia, Ib, Ic	A	80A~65,535A	±3%
		Normal current	I <sub>1</sub>			
		Reverse current	I <sub>2</sub>			
P type	Voltage	Line voltage	Vab, Vbc, Vca	V	60~690V	±1%
		Phase voltage	Va, Vb, Vc			±1%
		Normal voltage	V <sub>1</sub>			
		Reverse voltage	V <sub>2</sub>			
P type	Angle	Line-to-line	∠ VabIa, ∠ VabIb, ∠ VabIc,	°	0~360°	±1°
		Line-to-current	∠ VabVbc, ∠ VabVca			±1°
		Phase-to-phase	∠ VaVb, ∠ VaVc			±1°
		Phase-to-current	∠ VaIa, ∠ VbIb, ∠ VcIc			±1°
P type	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%
P type	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%
P type	Freq.	Frequency	F	Hz	45~65Hz	
P type	Power factor	Power factor(PF)	PFa(ab), PFb(bc), PFc(ca), PF		+: Lead, -: Lag	
P type	Unbalance	Unbalance rate	Iunbalance, Vunbalance	%	0.0~100.0	
P type	Demand	Active power demand	Peak demand	kW	1kW~99999kW	
		Current demand	Peak demand	A	80A~65,535A	
S type	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



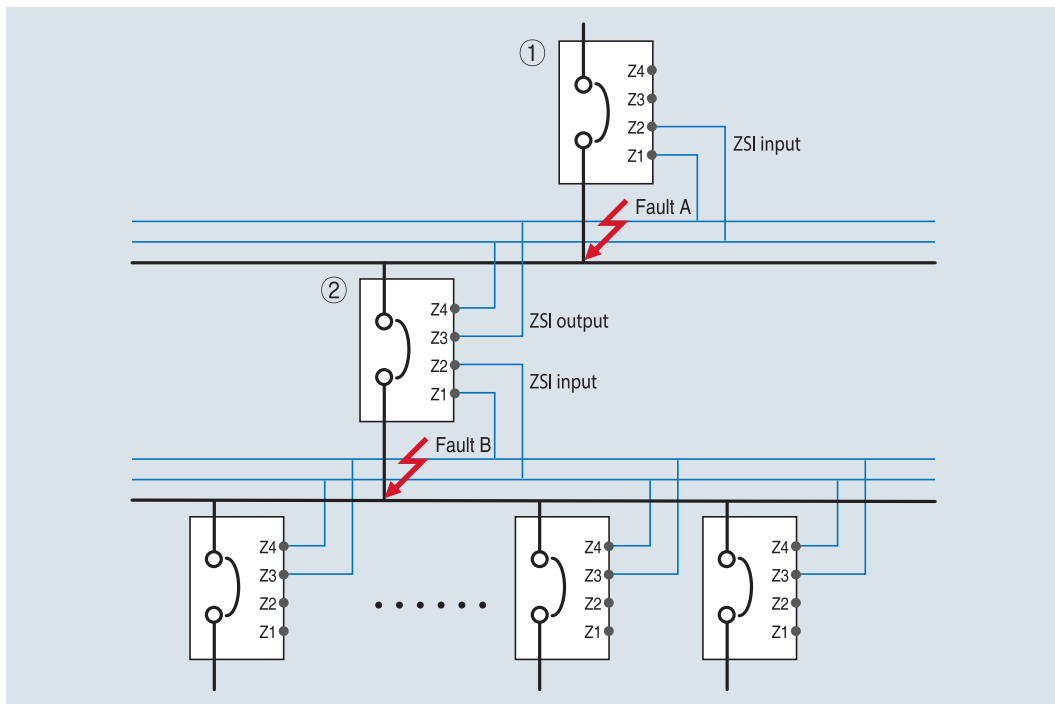
3P3W wiring



## 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 that short time-delay or ground fault accident occurs at ZSI built in system, the breaker at accident site sends ZSI signal to halt upstream breaker's operation.
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.

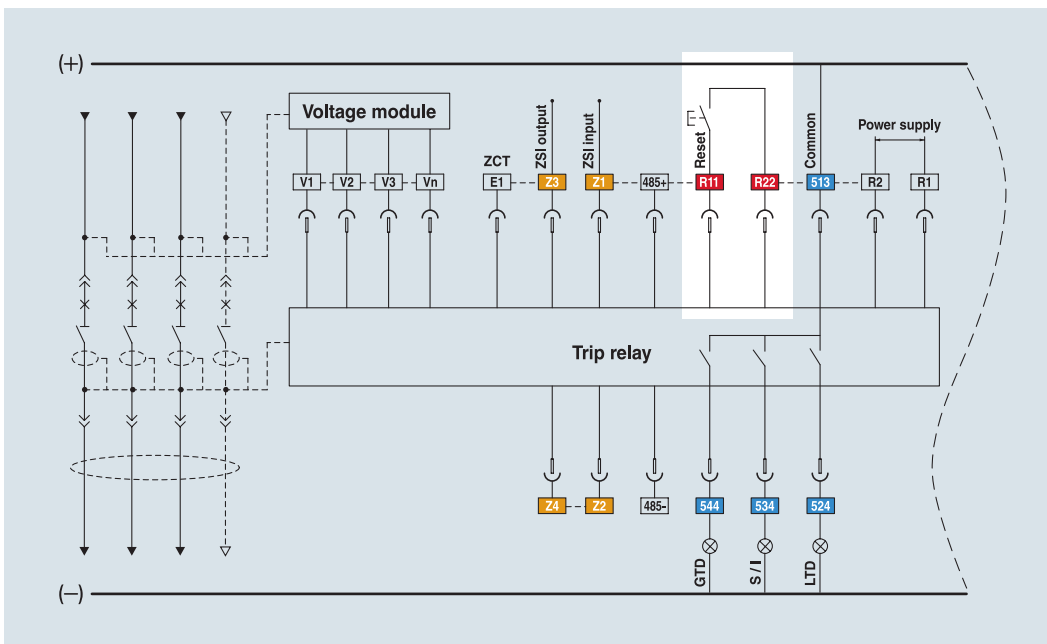


- 1) Occurrence of fault A
  - Only breaker ① performs instantaneous trip operation.
- 2) Occurrence of fault B
  - Breaker ② performs instantaneous trip operation, breaker ① performs trip operation after prearranged delay time
  - But if breaker ② did not break the fault normally, breaker ① performs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

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

In case of that MCCB operates due to accidents or over current, Trip relay indicates the information of the accident through the LED and LCD. Trip relay A, P and S type is possible to perform the remote reset by digital input, and have 3 DO(Digital output).

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: Z akage 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, lunbal (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.

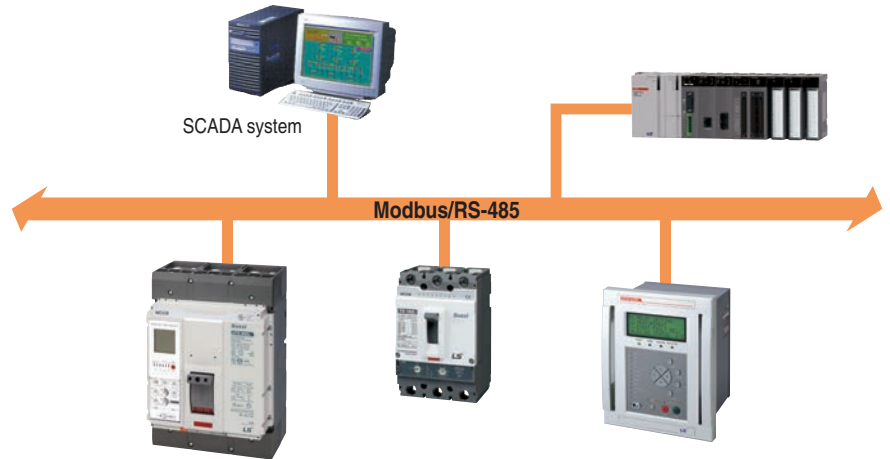


Trip Relay	Digital Output	Long time	Short time	Instantaneous	Ground	Overload Alarm	OVR	UVR	rPower	Vunbal	lunbal	OFR	UFR	OPR	Note
P, S type	DO1(524)	●	○	○	○	○	○	○	○	○	○	○	○	○	Programmable
	DO2(534)	○	●	●	○	○	○	○	○	○	○	○	○	○	
	DO3(544)	○	○	○	●	○	○	○	○	○	○	○	○	○	
A type	DO1(524)	●	x	x	x	Not available		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

## 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

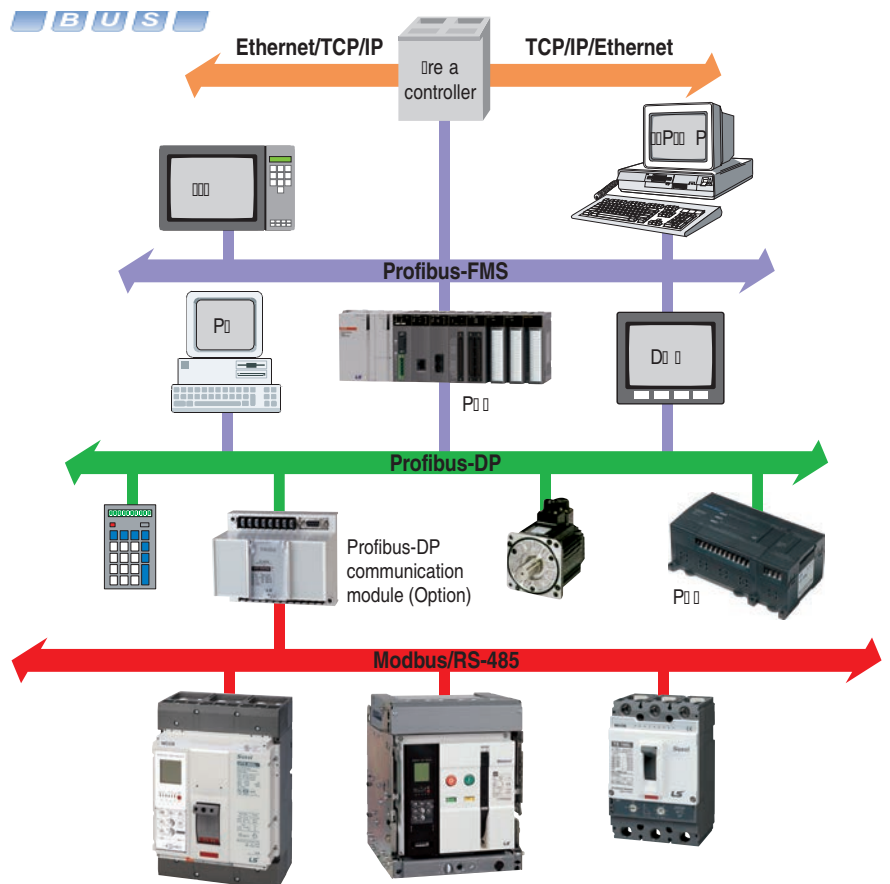


### Profibus-DP

- 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



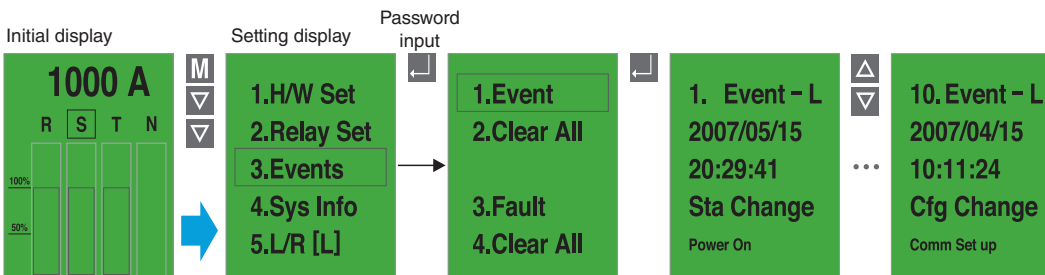
Profibus-DP communication module (Option)



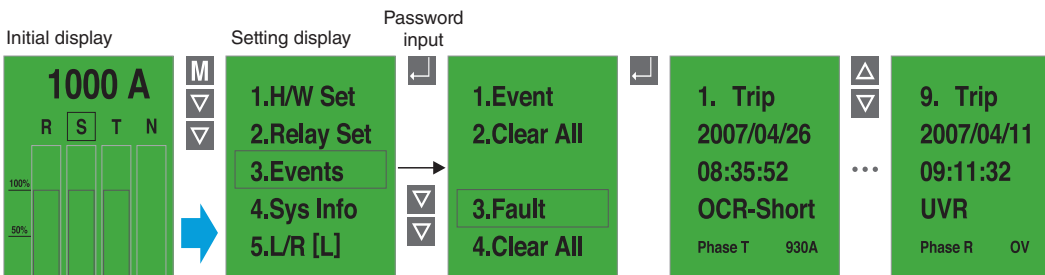
## EVENT & FAULT RECORDING (P, S TYPE)

When there are events such as setting change, Info. change, error of self-diagnose, state change, P and S type record Max. up to 256 information of the events in accordance with time(ms). In addition, they can record Max. up to 256(up to 10 for A type) information of the faults such as fault cause, fault phase, fault value and so on in accordance with time(ms).

### Event information display



### Fault information display

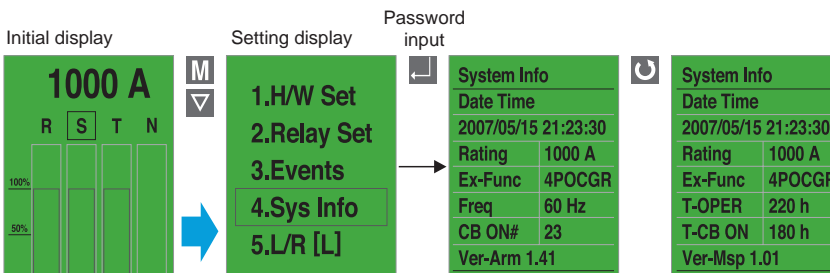


## SYSTEM INFORMATION

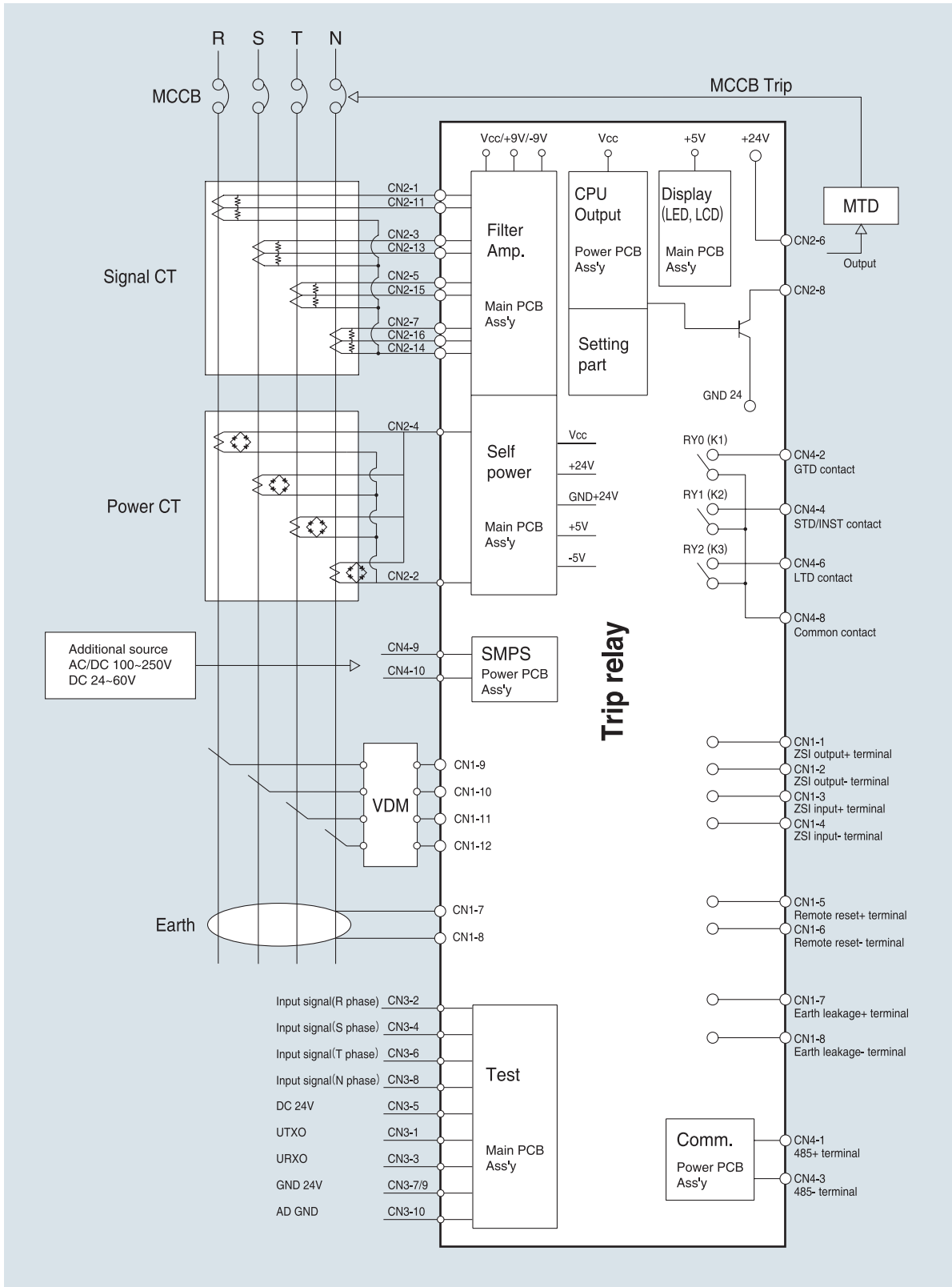
P and S type can indicate information as followings with the information of the MCCB.

- 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

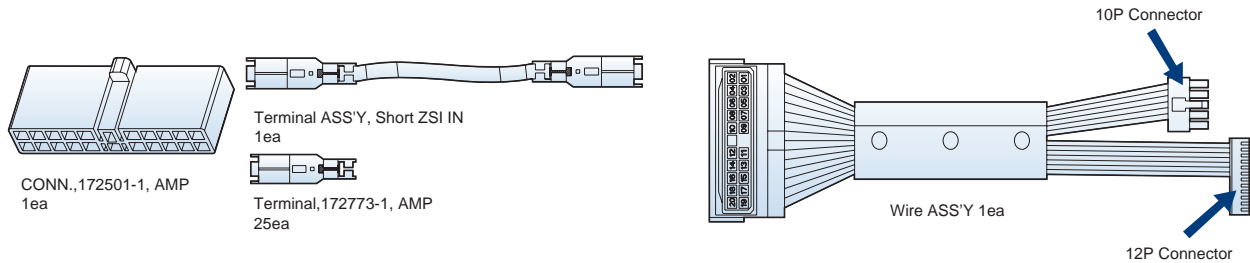


## INSTALLATION AND HANDLING

### Withdrawal Wiring for Trip Relay

**⚠ Caution**

1. In case of disassembling and assembling the main cover, screw should be tightened in specific torque of 1.5N.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.



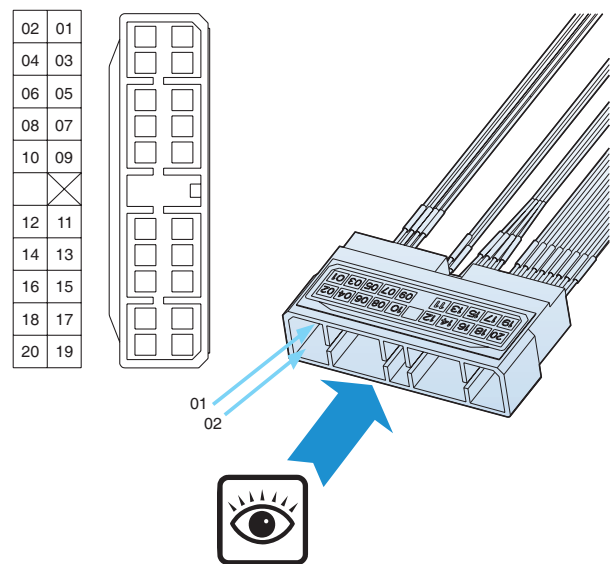
#### WIRE ASS'Y OCR types

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

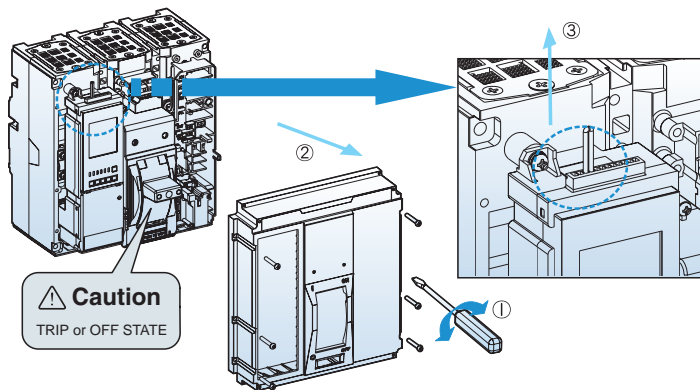
#### Terminal number and Description

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

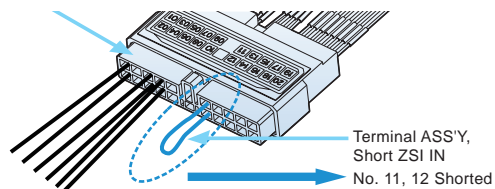


# INSTALLATION AND HANDLING

## 1. Disassembling cover and short connector

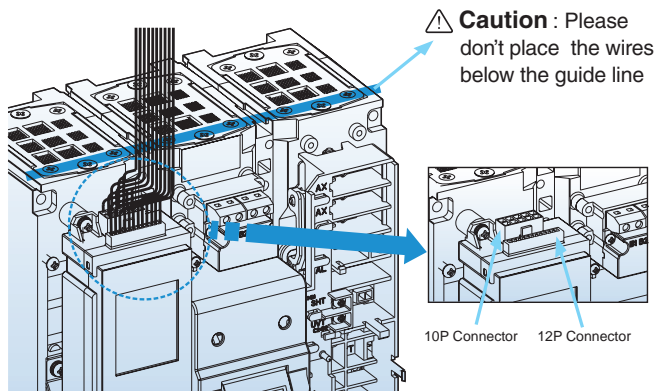


### In case of not using ZSI function



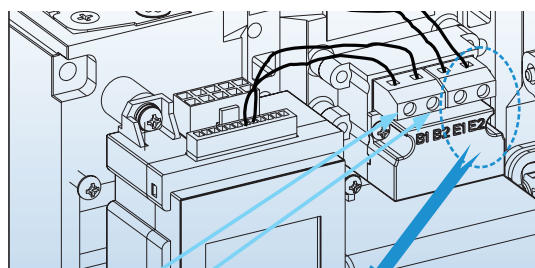
**Caution :** If not using ZSI function of Trip Relay (OCR), please short ZSI INPUT of terminal No.11,12 (ZSI IN +, ZSI IN -) by using the "TERMINAL ASS'Y, SHORT ZSI IN"

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



### In case of the wiring of Earth Leakage $\geq 30A$

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



No. 15, B1

No. 16, B2

User wiring E1, E2

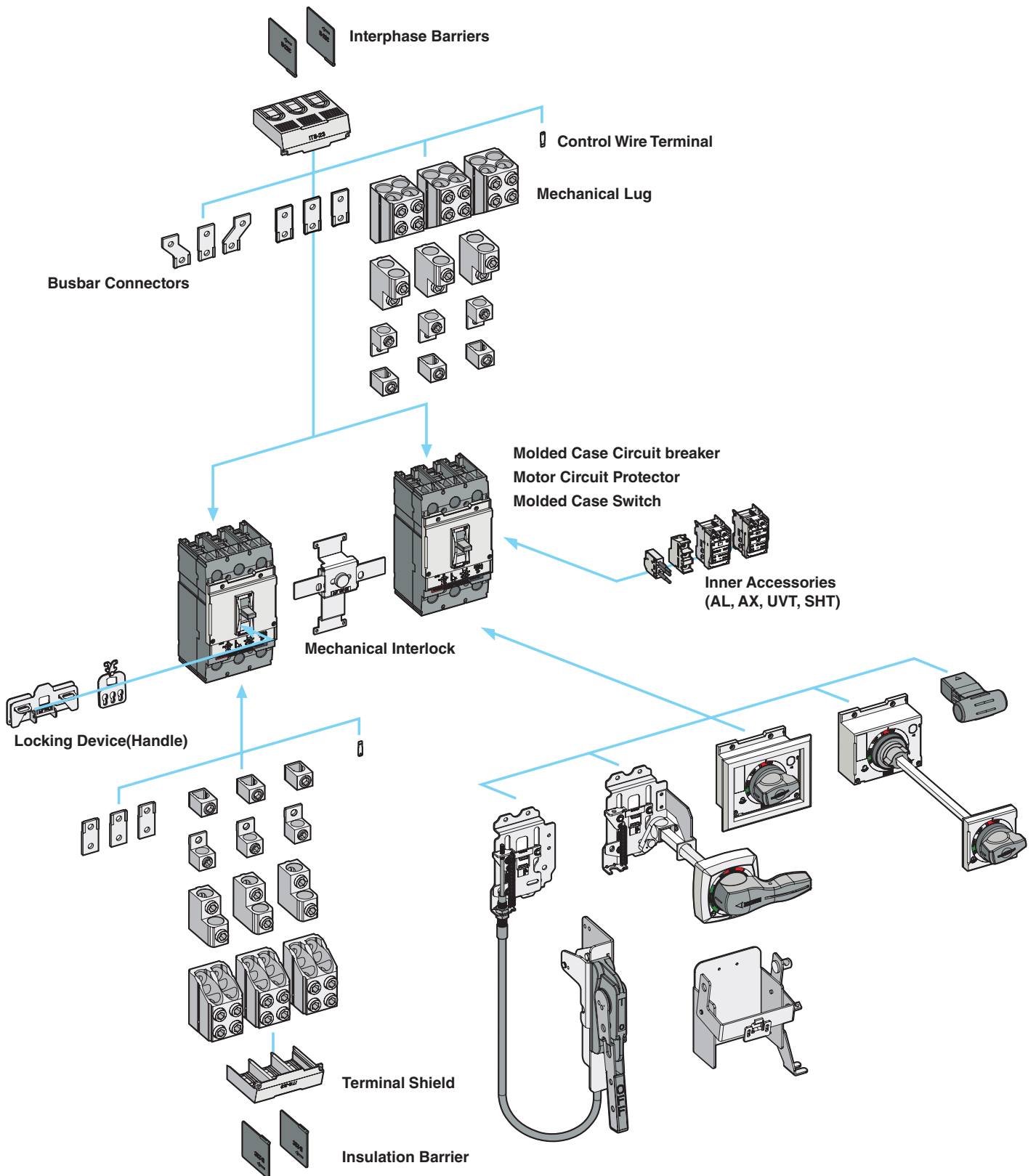
## Installation of withdrawal wiring for Trip Relay

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

No	Type	WIRE ASS'Y, [ ], OCR, UTS1200			No	Type	WIRE ASS'Y, [ ], OCR, UTS1200		
		[AG AC]	[A ZK PS CKA]	[AE AX PX SX]			[AG AC]	[A ZK PS CKA]	[AE AX PX SX]
		76671176310	766711762311	76671176312			76671176310	766711762311	76671176312
1	NG0				20	AX2			■
2	NG5				21	AX6			■
3	AG0				22	AX7			■
4	AG1	■			23	PC1		■	
5	AG2	■			24	PC2		■	
6	AG5				25	PC6		■	
7	AG6	■			26	PC7		■	
8	AG7	■			27	PX1			■
9	AE0				28	PX2			■
10	AE1			■	29	PX6			■
11	AE2			■	30	PX7			■
12	AE5				31	SC1		■	
13	AE6			■	32	SC2		■	
14	AE7			■	33	SC6		■	
15	AC1	■			34	SC7		■	
16	AC2	■			35	SX1			■
17	AC6	■			36	SX2			■
18	AC7	■			37	SX6			■
19	AX1			■	38	SX7			■

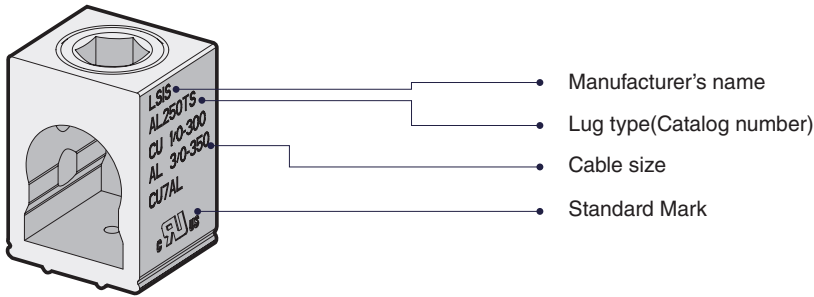


# ACCESSORIES



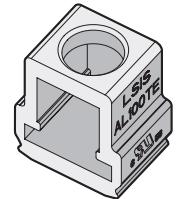
## MECHANICAL LUG OVERVIEW

To UTE100 from UTS1200 frame circuit breakers can be ordered with mechanical line and load side lugs. The standard lugs can be removed for the installation of bus connections. All lugs are UL/cUL Listed Certified for their proper application and marked for use with aluminum and copper (Al/Cu) or copper only (Cu) conductors. Lugs suitable for copper and aluminum conductors are made of tin-plated aluminum. Mechanical lugs are sold either factory installed or as field installable kits.



### MECHANICAL LUG KITS FOR UTE100 CIRCUIT BREAKERS

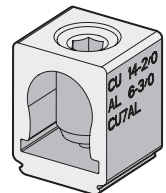
LUG TYPE	TERMINAL BODY MATERIAL	WIRE TYPE	BREAKER AMP RANGE	APPLICABLE WIRE (AWG)	TORQUE N-m (lb-in)	
AL 100TE	Aluminum	CU	15~30A	14~10	3.6 (31.9)	
			40A	8	4.5 (39.9)	
			50~80A	6~3	5.4 (47.8)	
			90~100A	2~1	6.3 (55.7)	
			15~30A	14~10	3.6 (31.9)	
			40~50A	8	4.5 (39.9)	
		AL	60 °C	60~100A	6~3	5.4 (47.8)
			60 °C	40~60A	6~3	5.4 (47.8)
				70~80A	2~1	6.3 (55.7)
				50~70A	6~3	5.4 (47.8)
			75 °C	80~100A	2~1/0	6.3 (55.7)



**AL100TE**  
15~100A LUG

### MECHANICAL LUG KITS FOR UTS150 CIRCUIT BREAKERS

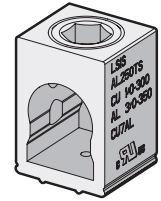
LUG TYPE	TERMINAL BODY MATERIAL	BREAKER AMP RANGE	WIRE TYPE	APPLICABLE WIRE (AWG)	TORQUE N-m (lb-in)
AL150TS	Aluminum	1.6~15A	Cu	14	4.1 (36.1)
		20~30A	Cu	12~10	5.4 (47.8)
		40~175A	Cu	8~2/0	15.1 (133.6)
		50~70A	Al	6~3	5.4 (47.8)
		90~150A	Al	2~3/0	15.7 (138.6)



**AL150TS**  
1.6~150A LUG

**MECHANICAL LUG KITS FOR UTS250 CIRCUIT BREAKERS**

LUG TYPE	TERMINAL BODY MATERIAL	BREAKER AMP RANGE	WIRE TYPE	APPLICABLE WIRE (AWG)	TORQUE N·m (lb·in)
AL250TS	Aluminum	150 ~ 175A	Cu	1/0 ~ 2/0 AWG	28.8 (254.9)
		150 ~ 175A (Al) 200 ~ 225A (Cu)	Cu/Al	3/0 ~ 4/0 AWG	
		200 ~ 225A (Al) 250A (Cu)	Cu/Al	250-300kcmil	39.8 (350.5)
		250A	Al	350kcmil	

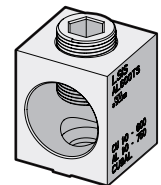


**AL250TS**  
150~250A LUG

**MECHANICAL LUG KITS FOR UTS400 CIRCUIT BREAKERS**

LUG TYPE	TERMINAL BODY MATERIAL	BREAKER AMP RANGE	WIRE TYPE	APPLICABLE WIRE (AWG)	TORQUE N·m (lb·in)
AL400TS	Aluminum	250A 300A 350A 400A	Cu/Al	1/0AWG ~ 300kcmil	40.5 (358.5)
			Cu/Al	350 ~ 600kcmil	54 (477.9)
			Al *	700~750kcmil	54 (477.9)

\* Compact wire only (700~750kcmil)

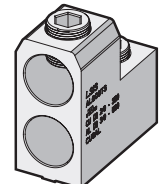


**AL400TS**  
250~400A LUG

**MECHANICAL LUG KITS FOR UTS600 CIRCUIT BREAKERS**

LUG TYPE	TERMINAL BODY MATERIAL	BREAKER AMP RANGE	WIRE TYPE	APPLICABLE WIRE (AWG)	TORQUE N·m (lb·in)
AL600TS	Aluminum	500A 600A	Cu	2/0AWG ~ 350kcmil	40.5 (358.5)
			Al *	3/0AWG ~ 500kcmil	40.5 (358.5)

\* Compact wire only (400~500kcmil)

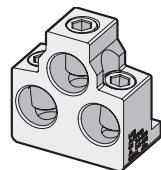


**AL600TS**  
500~600A LUG

**MECHANICAL LUG KITS FOR UTS800 CIRCUIT BREAKERS**

LUG TYPE	TERMINAL BODY MATERIAL	BREAKER AMP RANGE	WIRE TYPE	APPLICABLE WIRE (AWG)	TORQUE N·m (lb·in)
AL800TS	Aluminum	400A 600A 630A 800A	Cu	3/0AWG ~ 300kcmil	45 (398.3)
			Al *	3/0AWG ~ 400kcmil	45 (398.3)

\* Compact wire only (350~400kcmil)

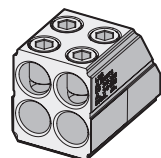


**AL800TS**  
400~800A LUG

**MECHANICAL LUG KITS FOR UTS1200 CIRCUIT BREAKERS**

LUG TYPE	TERMINAL BODY MATERIAL	BREAKER AMP RANGE	WIRE TYPE	APPLICABLE WIRE (AWG)	TORQUE N·m (lb·in)
AL1200TS	Aluminum	800A 1000A 1200A	Cu	3/0AWG ~ 350kcmil	45 (398.3)
			Al *	3/0AWG ~ 500kcmil	45 (398.3)

\* Compact wire only (400~500kcmil)

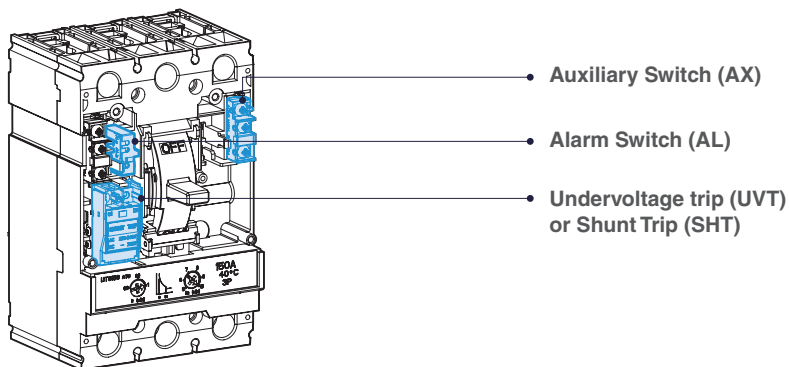


**AL1200TS**  
800~1200A LUG

## INTERNAL ACCESSORIES OVERVIEW

Field-installable accessories provide flexibility for installation at the point of use. Auxiliary switches, alarm switches, shunt trip, and undervoltage release accessories are easy to install, reliable, and common to all Susol molded case circuit breakers. The internal accessories comply with requirements of Underwriters Laboratories® Inc. UL 489 Standards

### ACCESSORY LOCATIONS

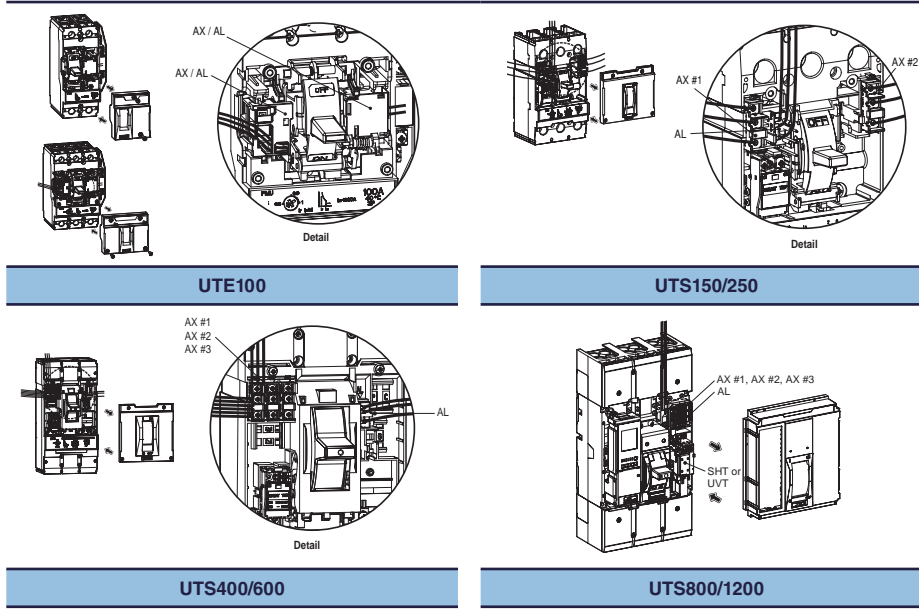


FRAME	INTERNAL ACCESSORIES LOCATIONS	TYPE	LEFT(R)	RIGHT(T)
UTE 100		AX	1	1
		AL	1	1
		AX+AL	1	1
		SHT	-	1
		UVT	-	1
UTS150 UTS250		AX	1	1
		AL	1	-
		SHT	1	-
		UVT	1	-
UTS400 UTS600		AX	3	-
		AL	-	1
		SHT	1	-
		UVT	1	-
UTS800 UTS1200		AX	-	3
		AL	-	1
		SHT	-	1
		UVT	-	1

\* Applicable in indicated pole position-not synchronous

### ACCESSORY CONNECTIONS

Electrical accessories are fitted with numbered terminal blocks for wires. Auxiliary circuit wiring exits fixed mounted devices through a knock-out in the front cover. The internal accessories comply with requirements of Underwriters Laboratories® Inc. UL 489 Standards



### AUXILIARY SWITCH (AX) AND ALARM SWITCH (AL)

Auxiliary switches provide remote information of the circuit breaker status and can be used for indications, electrical locking, relays, etc.

#### AUXILIARY SWITCH (AX):



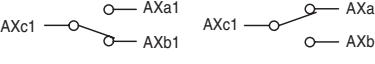

Indicates the position of the circuit breaker contacts (Open/Closed)  
Auxiliary switch is for applications requiring remote "ON" and "OFF" indication.  
Each switch contains two contacts having a common connection.  
One is open and the other closed when the circuit breaker is open, and vice-versa.

AX	BREAKER TYPE	WIRE SIZE	ON	OFF/TRIP
	UTE100	24 AWG (0.2 mm <sup>2</sup> )		
	UTS150 UTS250 UTS400 UTS600	18 AWG (0.82 mm <sup>2</sup> )		
	UTS800 UTS1200	18 AWG (0.82 mm <sup>2</sup> )		

### ALARM SWITCH (AL):

Alarm switches indicate that the circuit breaker has tripped due to an overload, short circuit, shunt trip, or undervoltage trip or the “push-to-trip” button.

They are particularly useful in automated plants where operators must be signaled about changes in the electrical distribution system. 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. Its contact is open when the circuit breaker is reset.

AL	BREAKER TYPE	WIRE SIZE	ON/OFF	OFF/TRIP
	UTE100	24 AWG (0.2 mm <sup>2</sup> )		
	UTS150 UTS250 UTS400 UTS600	26 AWG (0.82 mm <sup>2</sup> )		
	UTS800 UTS1200	18 AWG (0.82 mm <sup>2</sup> )		

### SHUNT TRIP (SHT) AND UNDERVOLTAGE TRIP (UVT) SWITCHES

A voltage release can be used to trip the circuit breaker via a control signal.

#### SHUNT TRIP (SHT):

The shunt trip opens the mechanism in response to an externally applied voltage signal. The releases include coil clearing contacts that automatically clear the signal circuit when the mechanism has tripped.

#### UTE100 SHT

CONTROL VOLTAGE, UE	POWER CONSUMPTION			
	AC (VA)	DC (W)	mA	
VOLTAGE	AC/DC 12V	0.35	0.36	30
	AC/DC 24V	0.64	0.65	27
	AC/DC 48V	1.09	1.1	23
	AC/DC 60V	1.2	1.22	20
	AC/DC 100~130V	0.73	0.75	5.8
	AC/DC 200~250V	1.21	1.35	5.4
	AC 380~450V	1.67	-	3.8
	AC 440~500V	1.68	-	3.5
<b>Max. opening time</b>	50ms (max.)			
<b>Tightening torque of terminal screw</b>	8.2 kgf-cm			
<b>Operating voltage range</b>	AC : 0.7~1.1Vn, DC : 0.8~1.1Vn			
<b>Frequency</b>	45Hz ~ 65 Hz (Only AC)			
<b>Wire size</b>	26AWG (0.13 mm <sup>2</sup> )			



UTE100 SHT

**UTS150/250/400/600 SHT**

CONTROL VOLTAGE, UE		POWER CONSUMPTION		
		AC (VA)	DC (W)	mA
VOLTAGE	DC 12V	-	0.36	30
	AC/DC 24V	0.58	0.58	24
	AC/DC 48V	1.22	1.23	25
	AC/DC 110~130V	1.36	1.37	10.5
	AC 220~240V/DC 250V	1.8	1.88	7.5
	AC 380~500V	1.15	-	2.3
<b>Max.opening time</b>		50ms (max.)		
<b>Tightening torque of terminal screw</b>		8.2 kgf-cm		
<b>Operating voltage range</b>		0.7~1.1Vn		
<b>Frequency</b>		45Hz ~ 65 Hz (Only AC)		
<b>Wire size</b>		18AWG (0.82 mm <sup>2</sup> )		



UTS150/250/400/600 SHT

**UTS800/1200 SHT**

CONTROL VOLTAGE, UE		OPERATING VOLTAGE RANGE	POWER CONSUMPTION (VA or W)	
			INRUSH	STEADY-STATE
VOLTAGE	DC 24~30V	0.6~1.1VN		
	AC 48V/DC 48~60V	0.6~1.1VN		
	AC/DC 100~130V	0.56~1.1VN	200	5
	AC/DC 200~250V	0.56~1.1VN		
	AC 380~480V	0.56~1.1VN		
<b>Max.opening time</b>		40ms (max.)		
<b>Frequency</b>		45Hz~65Hz (Only AC)		
<b>Wire size</b>		16AWG (1.31mm <sup>2</sup> )~14AWG (2.08mm <sup>2</sup> )		



UTS800/1200 SHT

**UNDERVOLTAGE TRIP (UVT) :**

The undervoltage release automatically opens a circuit breaker when voltage drops to a setting value of the line voltage. The operation is instantaneous, and after tripping, the circuit breaker cannot be re-closed again until the voltage returns to a recover value of line voltage.

Continuously energized, the undervoltage release must be operating before the circuit breaker can be closed.

**UTE100 UVT**

CONTROL VOLTAGE, U <sub>e</sub>		POWER CONSUMPTION		
		AC (VA)	DC (W)	mA
VOLTAGE	AC/DC 24V	0.64	0.65	27
	AC/DC 48V	1.09	1.1	23
	AC/DC 100~110V	0.73	0.75	5.8
	AC/DC 200~220V	1.21	1.35	5.4
	AC 380~440V	1.67	-	3.8
	AC 440~480V	1.68	-	3.5
Max.opening time		50ms (max.)		
Tightening torque of terminal screw		8.2 kgf-cm		
Operating voltage range	Trip	20~70% V <sub>n</sub>		
	Reset/Closing	≥ 0.85V <sub>n</sub>		
Frequency		45Hz ~ 65Hz (Only AC)		
Wire size		26AWG (0.13 mm <sup>2</sup> )		



UTE100 UVT

**UTS150/250/400/600 UVT**

CONTROL VOLTAGE, U <sub>E</sub>		POWER CONSUMPTION		
		AC (VA)	DC (W)	mA
VOLTAGE	AC/DC 24V	0.64	0.65	27
	AC/DC 48V	1.09	1.1	23
	AC/DC 110~130V	0.73	0.75	5.8
	AC 220~240V/DC 250V	1.21	1.35	5.4
	AC 380~440V	1.67	-	3.8
	AC 440~480V	1.68	-	3.5
Max.opening time		50ms (max.)		
Tightening torque of terminal screw		8.2 kgf-cm		
Operating voltage range	Trip	35~70% V <sub>n</sub>		
	Reset/Closing	≥ 0.85V <sub>n</sub>		
Frequency		45Hz ~ 65 Hz (Only AC)		
Wire size		18AWG (0.82 mm <sup>2</sup> )		



UTS150/250/400/600 UVT

**UTS800/1200 UVT**

CONTROL VOLTAGE, U <sub>E</sub>		POWER CONSUMPTION (VA or W)		MAX.OPENING TIME (ms)
		INRUSH	STEADY-STATE	
VOLTAGE	DC 24~30V	200	5	50 (max.)
	AC 48V/DC 48~60V			
	AC/DC 100~130V			
	AC/DC 200~250V			
	AC 380~480V			
Operating voltage range	Trip	0.44~0.6V <sub>n</sub>		
	Reset/Closing	0.65~0.85V <sub>n</sub>		
Frequency		45Hz~65Hz (Only AC)		
Wire size		16AWG (1.31mm <sup>2</sup> )~ 14AWG (2.08mm <sup>2</sup> )		



UTS800/1200 UVT

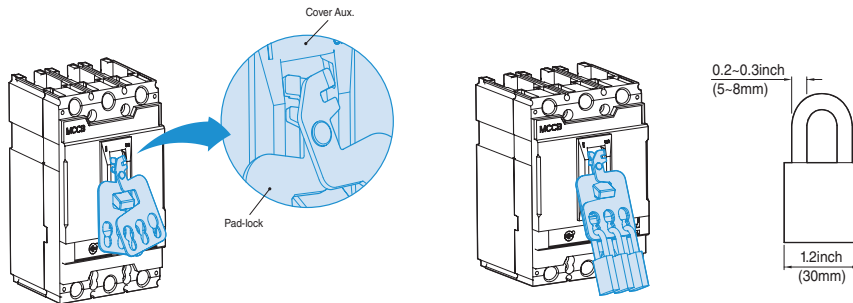


## LOCKING SYSTEMS OVERVIEW

### PADLOCKING DEVICE

Padlocking device is available for to UTE100 from UTS1200 circuit breakers. The locking device is designed to be easily attached to the circuit breaker. This device allows the handle to be locked in the “OFF” position. The locking device for the toggle handle can be installed in circuit breakers. Maximum three (3) padlocks with shackle diameters of 0.19~0.31 in. (5~8mm) may be used. (Padlocks are not supplied.)

DESCRIPTION	CIRCUIT BREAKERS	FUNCTION
PL0	UTE100	Lock in “OFF” position
PL2	UTS150/250	
PL3	UTS400/600	
PL5	UTS800/1200	



Pad Lock

### PLATE HANDLE LOCKING DEVICE

Fixed Plate Handle locking device is available for to UTE100 from UTS1200 circuit breakers. This device allows the handle to be locked in the “ON” and “OFF” position. The locking device for the toggle handle can be installed in 2-pole and 3-pole circuit breakers. Maximum three (3) padlocks with shackle diameters ranging from 0.19 to 0.31in (5~8mm) may be used. (Plate handle locks are not supplied)

DESCRIPTION	CIRCUIT BREAKERS	FUNCTION
PHL0	UTE100	Lock in “OFF” or “ON” position
PHL2	UTS150/250	
PHL3	UTS400/600	
PHL5	UTS800/1200	

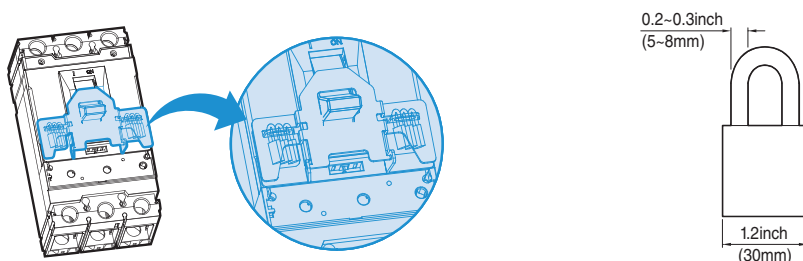


Plate Handle Lock

## INTERLOCKING SYSTEMS OVERVIEW

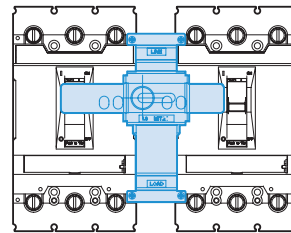
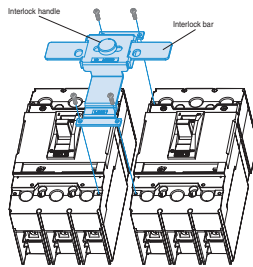
### MECHANICAL INTERLOCKING DEVICE

The mechanical interlock (MIT) can be applied on the front of two breakers mounted side by side, in either the 2-pole or 3-pole version and prevents simultaneous closing of the two breakers. Fixing is carried out directly on the cover of the breakers. The front interlocking plate allows installation of a padlock in order to fix the position. (Possibility of locking in the O-O position as well) This mechanical interlocking device is very useful and simple for consisting of manual source-changeover system.

DESCRIPTION	CIRCUIT BREAKERS	POLE
MIT03	UTE100	3
MIT23	UTS150/250	2 or 3
MIT33	UTS400/600	2 or 3
MIT53	UTS800/1200	3



Mechanical Interlock



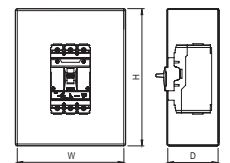
## ENCLOSURE DIMENSIONS OVERVIEW

The short circuit rating of an enclosed circuit breaker is equal to the rating of the circuit breaker installed, except as footnoted.

Circuit breakers are ordered and shipped separately for field installation

### ENCLOSURE DIMENSIONS

CIRCUIT BREAKER	AMPERAGE	ENCLOSURE DIMENSIONS (W X H X D) inch (mm)	
		80%	100%
UTE100	15~100A	8.27 (210) X 17.3 (439.4) X 4.0 (101.6)	
UTS150	40~150A	8.58 (218) X 18.11 (460) X 4.02 (102)	
UTS250	150~250A	12.13 (308) X 28.5 (724) X 5.35 (136)	
UTS400	250~400A	13.78 (350) X 40.16 (1020) X 5.98 (152)	13.78 (350) X 40.16 (1020) X 7.17 (182)
UTS600	500~600A	13.78 (350) X 40.16 (1020) X 5.98 (152)	14.17 (360) X 41.34 (1050) X 7.17 (182)
UTS800	400~800A	20.25 (514.4) X 51.9 (1318.4) X 7.75 (196.9)	
UTS1200	800~1200A	20.25 (514.4) X 51.9 (1318.3) X 7.75 (196.9)	23.0 (584.2) X 62.25 (1581.2) X 14.75 (374.7)



Enclosure Dimensions

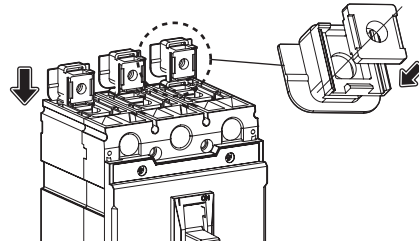
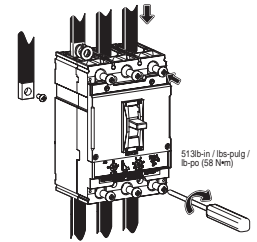
## BUSBAR CONNECTIONS OVERVIEW

To UTE100 from UTS250 frame circuit breakers may be equipped with captive nuts and screws for direct connection to bars.

Terminal plates are needed for replacement of lug connections with busbar connections. And to UTS400 from UTS1200 frame circuit breakers may be equipped without terminal plates

### TERMINAL PLATE FOR BUSBAR CONNECTION OF UTE100, UTS150 AND UTS250 CIRCUIT BREAKERS

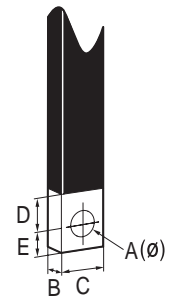
DESCRIPTION	CIRCUIT BREAKERS	TOOL	QTY PER KIT	TORQUE
Terminal Plate,UTE100-2P Terminal Plate,UTE100-3P	UTE100	+Driver	2 3	159 lb-in (18 N•m)
Terminal Plate,UTS150-2P Terminal Plate,UTS150-3P	UTS150	+Driver	2 3	513lb-in (58 N•m)
Terminal Plate,UTS250-2P Terminal Plate,UTS250-3P	UTS250	Hex 1/4 inch	2 3	1,195 lb-in (136 N•m)



### BUSBAR DIMENSION OF TO UTE100 FROM UTS1200 CIRCUIT BREAKER

Dimensions: inch(mm)

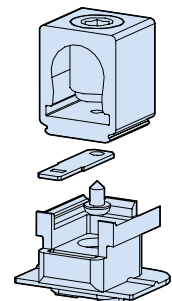
CIRCUIT BREAKERS	A	B	C	D	E
UTE100	0.164 (4.2)	0.08~0.28 (2~7.2)	0.35(9)	0.47 (12)	0.29 (7.4)
UTS150	0.26 (6.5)	0.122~0.24 (3.1~6)	0.51~0.63 (13~16)	0.49 (12.5)	0.35 (8)
UTS250	0.33 (8.5)	0.122~0.31 (3.1~8)	0.51~0.79 (13~20)	0.98 (25)	0.35 (8)
UTS400	0.39 (10)	0.118~0.32 (3~8)	1.26 (32)	1.18 (30)	0.55 (14)
UTS600	0.39 (10)	0.118~0.48 (3~12)	1.26 (32)	1.18 (30)	0.55 (14)
UTS800	0.35 (9)	0.26~0.31 (6.5~8)	2.52 (64)	1.18 (30)	0.59 (15)
UTS1200	0.43 (11)	0.32~0.39 (8~10)	3.03 (77)	1.18 (30)	0.59 (15)



### CONTROL WIRE TERMINAL FOR MECHANICAL LUGS AND TERMINAL PLATE

Mechanical lugs may be equipped with a separate control wire termination. The kit is available as a field installable kit. The adaptor is secured underneath the lug and has a tab extension suitable for attachment of a 1/4 inch slip-on connector. Fully insulated type connectors must be used to prevent live parts from extending into the wiring gutter area.

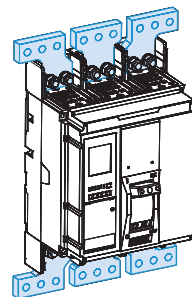
DESCRIPTION	CIRCUIT BREAKERS	QTY PER KIT
Control wire Terminal CWT	UTS150/250	2



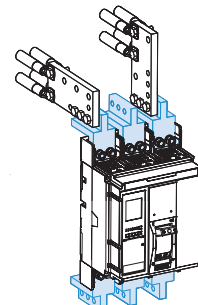
## BUSBAR CONNECTIONS

Fixed, front-connection busbars are equipped with terminals comprising captive screws for direct connection of bars. Other connection possibilities for bars include vertical-connection adapters for edgewise bars and spreaders to increase the pole pitch.

DESCRIPTION	CIRCUIT BREAKERS	POLE
SP22a	UTS150	2P
SP23a	UTS150	3P
SP22b	UTS250	2P
SP23b	UTS250	3P
SP32a	UTS400/600	2P
SP33a	UTS400/600	3P
SP53a		
SP53e	UTS800/1200	3P
SP53V		



Busbar(a)

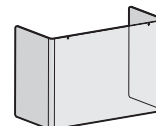


Extension Busbar(e)  
Vertical Busbars(v)

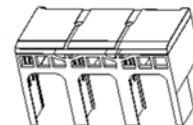
## TERMINAL COVER

Mounted on fixed, front-connection devices, it insulates power-connection points.

DESCRIPTION	CIRCUIT BREAKERS	POLE
ITU5a3 ITU5b3 ITS53	UTS800/1200	3P



Terminal Cover ITS53

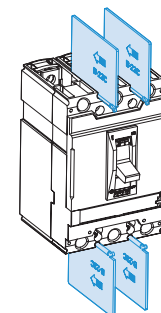


Terminal Cover ITS5b3

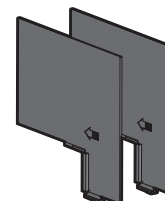
## INSULATION BARRIER

These barriers are insulated between the phases for increase insulation level. The barriers can be easily installed, even on breakers that are already mounted, by inserting them into the corresponding slots. They are incompatible with both the insulating terminal covers. It is possible to mount the phase separating partitions between two side by side circuit breakers.

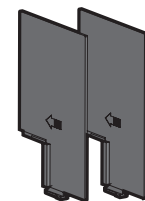
DESCRIPTION	CIRCUIT BREAKERS	POLE
B02		2P
B03	UTE 100	3P
B22		2P
B23	UTS150/250	3P
B32		2P
B33	UTS 400/600	3P
B53 BR53 BE53	UTS800/1200	3P



Standard Type

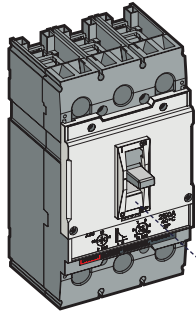


Rear Type(BR53)

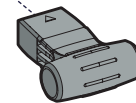


Extended Type(BE53)

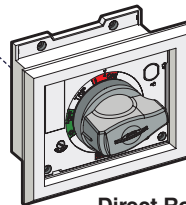
# HANDLES



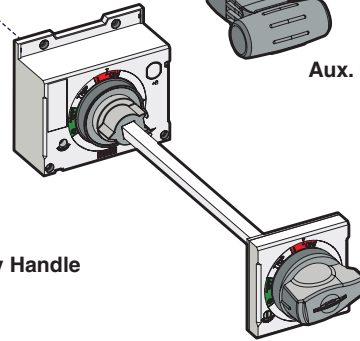
Molded Case Circuit Breaker  
Motor Circuit Protector  
Molded Case Switch



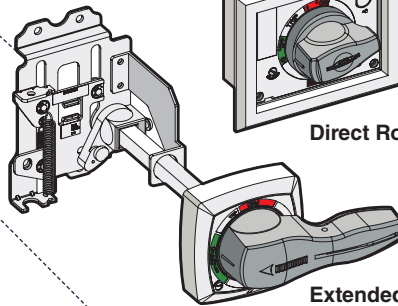
Aux. Handle



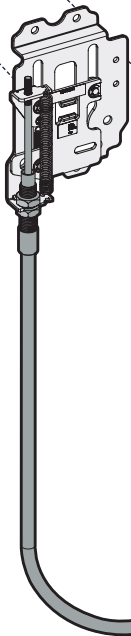
Direct Rotary Handle



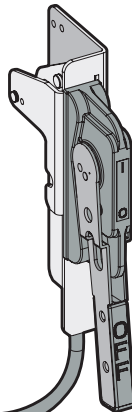
Extended Handle



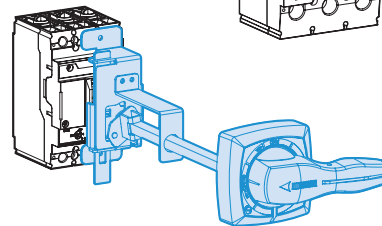
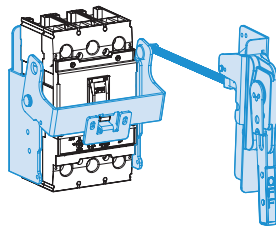
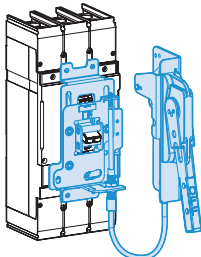
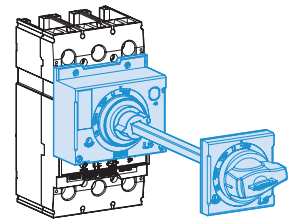
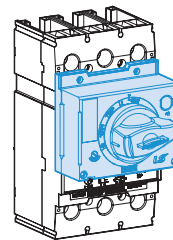
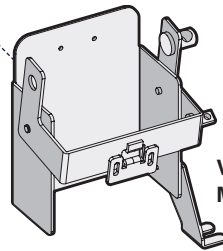
Extended Handle



Flange Cable Handle



Variable-depth  
Mechanism



## HANDLE MECHANISMS OVERVIEW

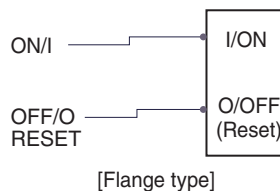
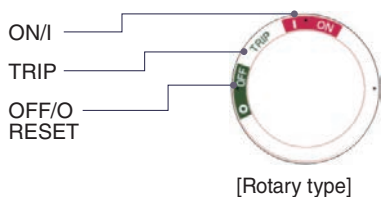
All kinds of handles are suitable for field installation in LSIS molded case circuit breakers, molded case switches and motor circuit protectors. These are directly mounted rotary, door mounted and flange handles for installation of above noted products for 2 and 3 poles. In case of extended rotary handle, Base assembly should be installed to circuit breaker, Handle should be mounted on panel door and they are interconnected by shaft. In case of flange mounting rotary handle, Base assembly should be installed to circuit breaker, Handle should be mounted on panel door and they are connected by cable.

### CONSTRUCTION DETAIL:

#### Corrosion Protection:

All iron and steel parts are protected against corrosion by painting or equivalent means.

**Handle indication Making:** The following making are provided



#### CAUTION Markings:

The following markings are provided:



## SELECTION FOR HANDLES

### • Catalog Numbering [Product Selection]

**EHU**

**0**

**12**

DESCRIPTION		MODEL SIZE PER CIRCUIT BREAKER FRAME		SHAFT & CABLE SIZE PER HANDLES	
<b>EHU</b>	Extended Hatndle (Type 1,12)	<b>0</b>	100AF(for all type)	<b>12</b>	12inch (Shaft)
<b>EHV</b>	Extended Handle (Type 3,3R,4)	<b>0C</b>	100AF(for all type & Compact base)	<b>16</b>	16inch (Shaft)
<b>EHX</b>	Extended Handle (Type 3,4,4X)	<b>2</b>	150/250 AF (for all type)	<b>24</b>	24inch (Shaft)
<b>FHU</b>	Flange Mounting Handle (Type1,3,3R,4,12)	<b>3</b>	400/600 AF(for all type)	<b>36</b>	36inch (Cable)
<b>FHX</b>	Flange Mounting Handle (Type 4, 4X)	<b>5</b>	800/1200 AF (UTS Type) (for all type)	<b>48</b>	48inch (Cable)
<b>REH</b>	Extended Rotary Handle (Type 1)	<b>S</b>	Standard Type(Only Flange handle without mechanism)	<b>60</b>	60inch (Cable)
<b>DH</b>	Direct Rotary Handle(Type 1)	<b>L</b>	Long type (Only Flange handle mechanism)	<b>72</b>	72inch (Cable)
<b>DHK</b>	Direct Rotary Handle Keylock type(Type 1) UTS400			<b>84</b>	84inch (Cable)
<b>VDM</b>	Variable Depth Mechanism			<b>120</b>	120inch (Cable)
<b>COM</b>	Cable Operating Mechanism			<b>BLANK</b>	No type

## APPLICATION FOR HANDLES

Handle mechanisms are used to operate molded case circuit breakers, molded case switches and motor circuit protectors. They are available in three basic configurations-Directly mounted, Door mounted and Flange mounted for providing safe, easy installation and dependable operation.

OPERATION HANDLE TYPE NAME	APPLIED TO UL489 MCCB/MCS	
	CIRCUIT BREAKER & SWITCH	TYPE
EHU0-12-24 EHV0-12-24 EHX0-12-24 EHU0C-12-24 EHV0C-12-24 EHX0C-12-24 REH0-12-24 REH0C-12-24	MCCB	UTE 100 (100AF, 2 or 3Pole)
DH0 VDM0 COM0	MCS	UTE 100 (100AF, 3Pole)
EHU2-12-24 EHV2-12-24 EHX2-12-24 FHU2-36-72 FHX2-36-72 REH2-12-24	MCCB MCP	UTS 150 (150AF, 2 or 3 Pole) UTS 250 (250AF, 2 or 3 Pole)
DH2 DHK2 VDM2 COM2	MCS	UTS 150 (150AF, 3 Pole) UTS 250 (250AF, 3 Pole)
EHU3-12-24 EHV3-12-24 EHX3-12-24 FHU3-36-72 FHX3-36-72 REH3-12-24	MCCB MCP	UTS 400 (400AF, 2 or 3 Pole) UTS 600 (600AF, 2 or 3 Pole)
DH3 DHK3 VDM3 COM3	MCS	UTS 400 (400AF, 3 Pole) UTS 600 (600AF, 3 Pole)
EHU5-12-24 EHV5-12-24 EHX5-12-24 REH5-12-24	MCCB MCP	UTS 800 (800AF, 3 Pole) UTS 1200 (1200AF, 3 Pole)
DH5 DHK5 VDM5 COM5	MCS	UTS 800 (800AF, 3 Pole) UTS 1200 (1200AF, 3 Pole)
FHU-S FHX-S	MCCB MCP MCS	UTE100, UTS150, UTS250
FHU-L FHX-L	MCCB MCP MCS	UTS400, UTS600, UTS800, UTS1200

**MCCB:** Molded Case Circuit Breaker  
**MCP:** Motor Circuit Protector  
**MCS:** Molded Case Switch

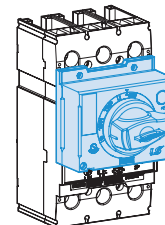
## ROTARY OPERATING HANDLES

### DIRECTLY MOUNTED ROTARY OPERATING HANDLE

The directly mounted rotary operating handle replaces the circuit breaker front accessory cover. UTE100 don't need to replace the front cover.

The direct rotary handle maintains:

- Suitability for isolation
- Indication of three positions: I (ON), Tripped and O (OFF)
- Access to the “push-to-trip” button
- Visibility of, and access to, trip unit settings
- The circuit breaker may be locked in the ON/OFF position by using padlock (not supplied)



Directly Mounted Rotary Operating Handle

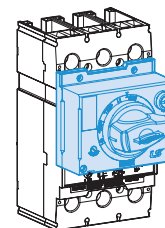
### MODELS

- Standard with dark gray handle
- Field installable (secured by screws)

UTE 100	UTS150/250	UTS 400/600	UTS 800/1200
DH-0	DH-2	DH-3	DH-5

- Field installable with Key lock (secured by screws)

UTS150/250	UTS400/600	UTS800/1200
DHK-2	DHK-3	DHK-5



Directly Mounted Rotary Operating Handle with key lock.

Accessories transform the standard direct rotary handle for the following situations:

- Opening of door prevented when circuit breaker is on
- Closing of circuit breaker inhibited when door is open

### STANDARDS

The directly-mounted rotary operating handle is UL Listed under file E223241 Degree of protection NEMA Type 1



### EXTENDED (DOOR-MOUNTED) ROTARY OPERATING HANDLE

The extended rotary operating handle replaces the front accessory cover of the circuit breaker (secured by screws). UTE100 don't need to replace the front cover.

The extended rotary operating handle consists of:

- A handle assembly with front plate on the door that is always secured in the same position, whether the circuit breaker is installed vertically or horizontally
- An adjustable extension shaft
- The handle mechanism can be used in NEMA Type 1 enclosure applications

The extended rotary operating handle makes it possible to operate circuit breakers installed in enclosure from the front.

- Suitability for isolation
- Indication of the three positions OFF (O), ON (I) and tripped
- Visibility of and access to trip unit settings when the door is open
- Degree of protection: NEMA Type 1
- Defeatable interlock prevents opening of door when circuit breaker is on

The circuit breaker may be locked in the off position by using padlock, padlock shackle diameter 0.2~0.3 inch(5~8mm); padlocks are not supplied; locking prevents opening of the enclosure door

#### MODELS

- Standard with dark gray handle
- Field installable (secured by screws)

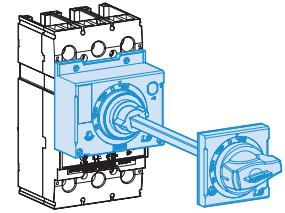
UTE 100		UTS150/250	UTS 400/600	UTS 800/1200
REH-0	REH-0C	REH-2	REH-3	REH-5

The shaft length is the distance between the back of the circuit breaker and the door:

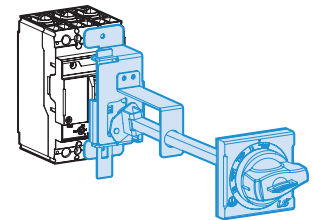
- Minimum mounting depth is 5.51 in. (140 mm) in UTE100
- Minimum shaft length is 12 in. (305 mm) with standard shaft
- Maximum shaft length is 24 in. (600 mm) with long shaft
- Extended shaft length must be adjusted

#### STANDARDS

The door-mounted rotary operating handle is UL Listed under file E223241  
Degree of protection NEMA Type 1



Door-Mounted Rotary Operating Handle (REH-0, 2, 3, 5)



Door-Mounted Rotary Operating Handle (REH-0C)

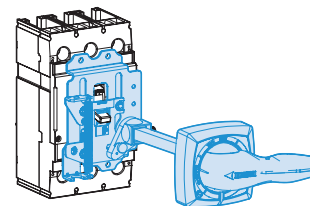
## NEMA DOOR-MOUNTED ROTARY OPERATING HANDLE

The extended rotary operating handle consists of:

- A mounting plate that provides a rotary actuator for a standard toggle circuit breaker
- Handle assemblies available for NEMA Type 1, 12, 3, 3R, 4, 4X
- Available in standard or long (12~24 in.) handle assemblies

The door mounted operating handle makes it possible to operate circuit breakers installed in enclosure from the front.

- Indication of three positions: I (ON), Tripped and O (OFF) : NEMA Type 1, 12
- Provides ON (I) and OFF (O) indication : NEMA Type 3, 3R, 4, 4X
- The circuit breaker may be locked in the ON/OFF position

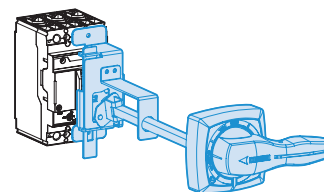


Door Mounted rotary operating handle  
[EHU, V, X-0, 2, 3, 5]

### MODELS

- Standard with dark gray handle(NEMA Type 1, 12)
- Out door with black handle(NEMA Type 3, 3R, 4, 4X)
- Field installable (secured by screws)

UTE100		UTS150/250	UTS 400/600	UTS 800/1200
EHU-0	EHU-0C	EHU-2	EHU-3	EHU-5
EHV-0	EHV-0C	EHV-2	EHV-3	EHV-5
EHX-0	EHX-0C	EHX-2	EHX-3	EHX-5



Door Mounted rotary operating handle  
[EHU, V, X-0C]

The shaft length is the distance between the back of the circuit breaker and door:

- Minimum mounting depth is 5.51 in. (140mm) in UTE 100
- Minimum shaft length is 12 in. (305mm) with long shaft
- Minimum shaft length is 24 in. (600mm) with long shaft
- Extended shaft length must be adjusted

### STANDARDS

The door-mounted rotary operating handle is UL Listed under file E223241

Degree of protection NEMA Type 1, 12, 3, 3R, 4, 4X

## FLANGE HANDLE

### FLANGE HANDLE WITH SLIDING OPERATING MECHANISM

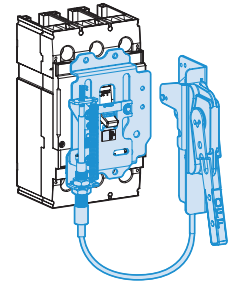
Flange handle with sliding operating mechanism is for use with cable

The cable operator maintains:

- Suitability for isolation
- Indication of two positions: O (OFF) and I (ON)
- The circuit breaker may be locked in the off position by one to three padlocks
- Door can be locked closed due to interlocking features of the handle operator
- Operating Mechanism has one type
  - Cable operating type with sliding mechanism

Handle is mounted on flange of enclosure using specified mounting dimensions while circuit breaker and operating mechanism are mounted to inside of enclosure using screws

- Handles are available in FHU (NEMA Type 1, 12, 3, 3R, 4) and FHX (NEMA Type 4, 4x)
- All circuit breaker operating mechanisms are suitable for right-hand flange mounting on the job.

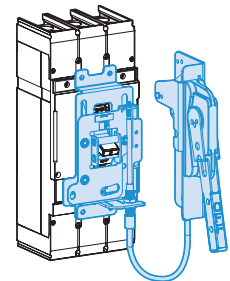


Flange handle with sliding operating mechanism and Cable [FHU2, FHX2]

### MODELS

- Standard with painted handle (NEMA Type 1, 12, 3, 3R, 4)
- Out door with nickel plating handle (NEMA Type 4, 4X)
- Field installable (secured by screws)

UTE100	UTS150/250	UTS 400/600	UTS 800/1200
-	FHU2 FHX2	FHU3 FHX3	-



Flange handle with sliding operating mechanism and Cable [FHU3, FHX3]

FHU : Standard type handle (NEMA Type1, 12, 3, 3R, 4) with slicing mechanism and cable

FHX : Outdoor type handle (NEMA Type 4, 4X) with sliding mechanism and cable

- Cable lengths available in 36-72 in. to UTS600 from UTS150 lengths to accommodate a variety of mounting locations

### STANDARDS

Flange cable operating handle is UL Listed under file E223241

NEMA Type 1, 12, 3, 3R, 4X

## FLANGE-MOUNTED CABLE OPERATING MECHANISM

Flange-mounted handle cable operating mechanism is for use with FH or COM Type handle operators especially designed for tall, deep enclosures where placement flexibility is required.

The cable operator maintains:

- Suitability for isolation
- Indication of two positions: O (OFF) and I (ON)
- The circuit breaker may be locked in the off position by one to three padlocks
- Door can be locked closed due to interlocking features of the handle operator
- Operating Mechanism has one type
  - COM : Cable operating type without handle operator
- Handle operators (FHU, FHX)

Handle is mounted on flange of enclosure using specified mounting dimensions while circuit breaker and operating mechanism are mounted to inside of enclosure using screws

- Handles are available in COM and FHU NEMA Type 1, 12, 3, 3R, 4 and FHX NEMA Type 4, 4x
- All circuit breaker operating mechanisms are suitable for right-hand flange mounting on the job.
- COM frame operating mechanism does not include handle operator and cable.

### MODELS

- Standard with painted handle(NEMA Type 1, 12, 3, 3R, 4): FHU
- Out door with nickel plating handle(NEMA Type 4, 4X): FHX
- Field installable (secured by screws)

UTE100	UTS150/250	UTS400/600	UTS800/1200
FHU-S	FHU-S	FHU-L	FHU-L
FHX-S	FHX-S	FHX-L	FHX-L
COM-0	COM-2	COM-3	COM-5

FHU-S, FHX-S : Standard type handle without operating mechanism and cable

FHU-L, FHX-L : Long type handle without operating mechanism and cable

COM : Cable operating mechanism without handle and cable

Cable : only cable

### CABLE TYPE

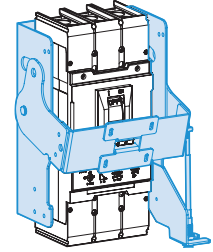
CABLE LENGTHS [inch]	UTE100 UTS150 UTS250	UTS400 UTS600	UTS800 UTS1200
36	FH2-36	FH4-36	-
48	FH2-48	FH4-48	-
60	FH2-60	FH4-60	FH5-60
72	FH2-72	FH4-72	-
84	-	-	FH5-84
120	-	-	FH5-120

- Cable lengths available in 36~72 in. to UTS600 from UTS150 and 60~128 in. to UTS1200 from UTS800 lengths to accommodate a variety of mounting locations

### STANDARDS

Flange cable operating handle is UL Listed under file E223241

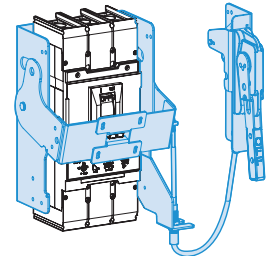
NEMA Type 1, 12, 3, 3R, 4 and 4, 4X



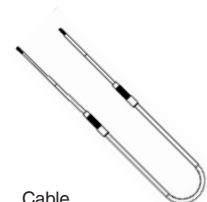
Cable Operating Mechanism without Handle and cable



Flange Handle  
[FHU, X-S, L]



Handle with cable and Cable operating mechanism  
[COM-0, 2, 3, 5]



Cable  
[FH2, 4, 5-36~120]

### FLANGE-MOUNTED VARIABLE DEPTH OPERATING MECHANISM

Designed for installation in custom built control enclosures where main or branch circuit protective devices are required.

The variable depth operator maintains:

- Suitability for isolation
- Indication of two positions: O (OFF) and I (ON)
- The circuit breaker may be locked in the off position by one to three padlocks
- Door can be locked closed due to interlocking features of the handle operator
- Operating Mechanism has one type
  - VDM : Variable depth type without handle operator
- Handle operators(FHU, FHX)
- Threaded-rod has only one type

Handle is mounted on flange of enclosure using specified mounting dimensions while circuit breaker and

operating mechanism are mounted to inside of enclosure using screws

- Handles are available in VDM and FHU NEMA Type 1,12, 3, 3R, 4 and FHX NEMA Type 4, 4x
- All circuit breaker operating mechanisms are suitable for right-hand flange mounting on the job.
- VDM frame operating mechanism does not include handle operator.

#### MODELS

- Standard with painted handle(NEMA Type 1,12,3,3R,4)
- Out door with nickel plating handle(NEMA Type 4, 4X)
- Field installable(secured by screws)

UTE100	UTS150/250	UTS400/600	UTS800/1200
FHU-S	FHU- S	FHU-L	FHU-L
FHX-S	FHX- S	FHX-L	FHX-L
VDM-0	VDM-2	VDM-3	VDM-5

FHU-S, FHX-S : Standard type handle without operating mechanism

FHU-L, FHX-L : Long type handle without operating mechanism

VDM : Variable depth operating mechanism with threaded-rod does not include handle.

The variable mounting depth length is the distance between the back of the circuit breaker and the door:

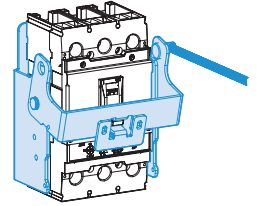
- VDM frame variable mounting depth range: 9.84~21.26 in. (250~540 mm).
- Threaded-rod length : 16 in. (406 mm)

#### STANDARDS

Flange variable depth operating handle is UL Listed under file E223241

NEMA Type 1, 12, 3, 3R, 4 and 4, 4X

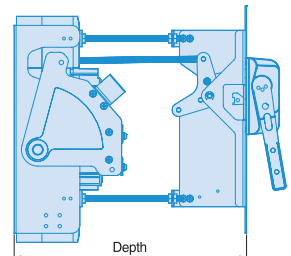
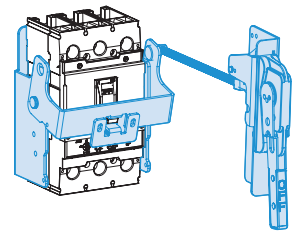
Variable-Depth operating Mechanism with Threaded-rod



Flange Handle [FHU, X-S, L]



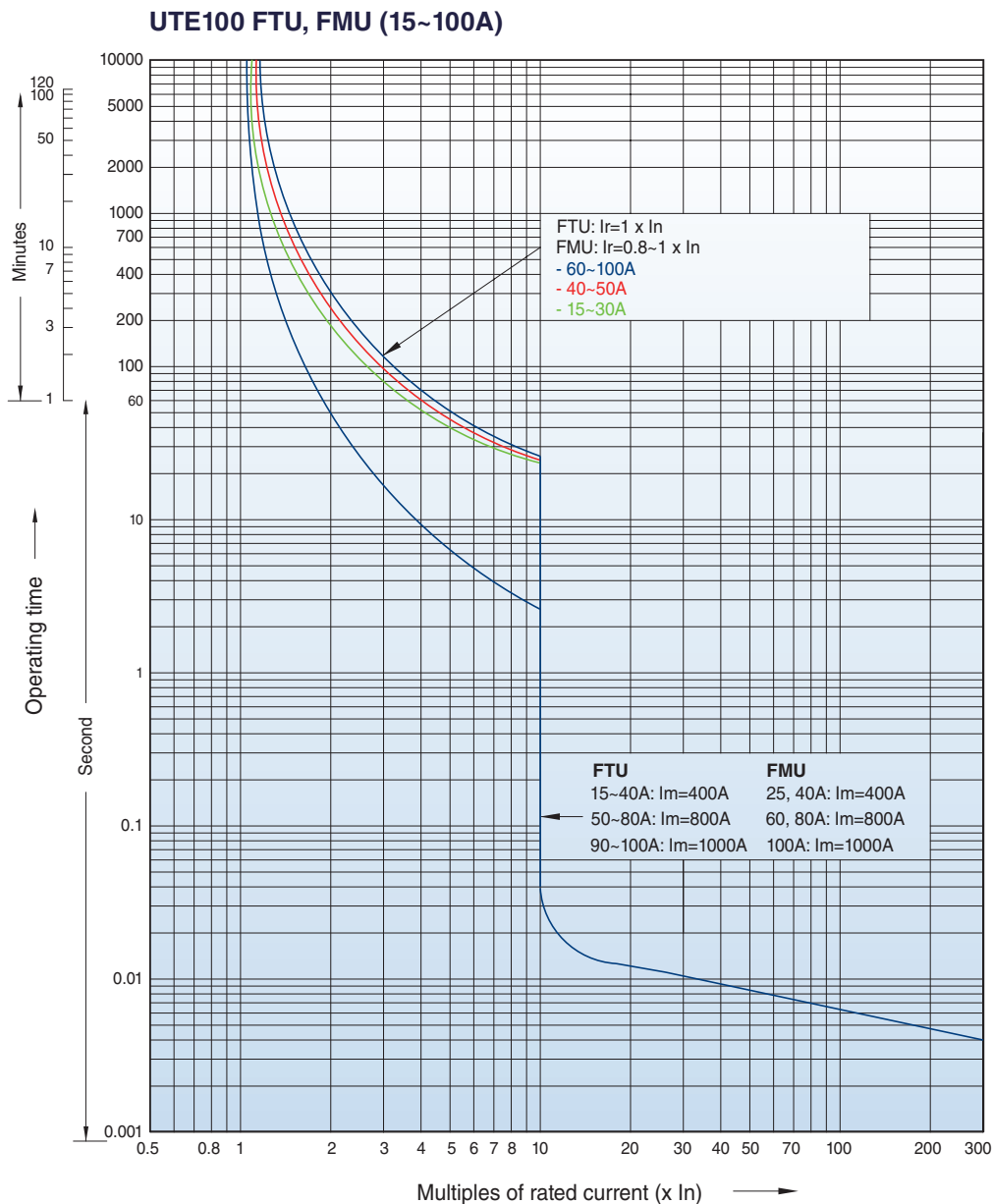
Handle with rod and Variable-Depth operating Mechanism [VDM-0, 2, 3, 5]



Variable mounting depth range

## UTE100 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.

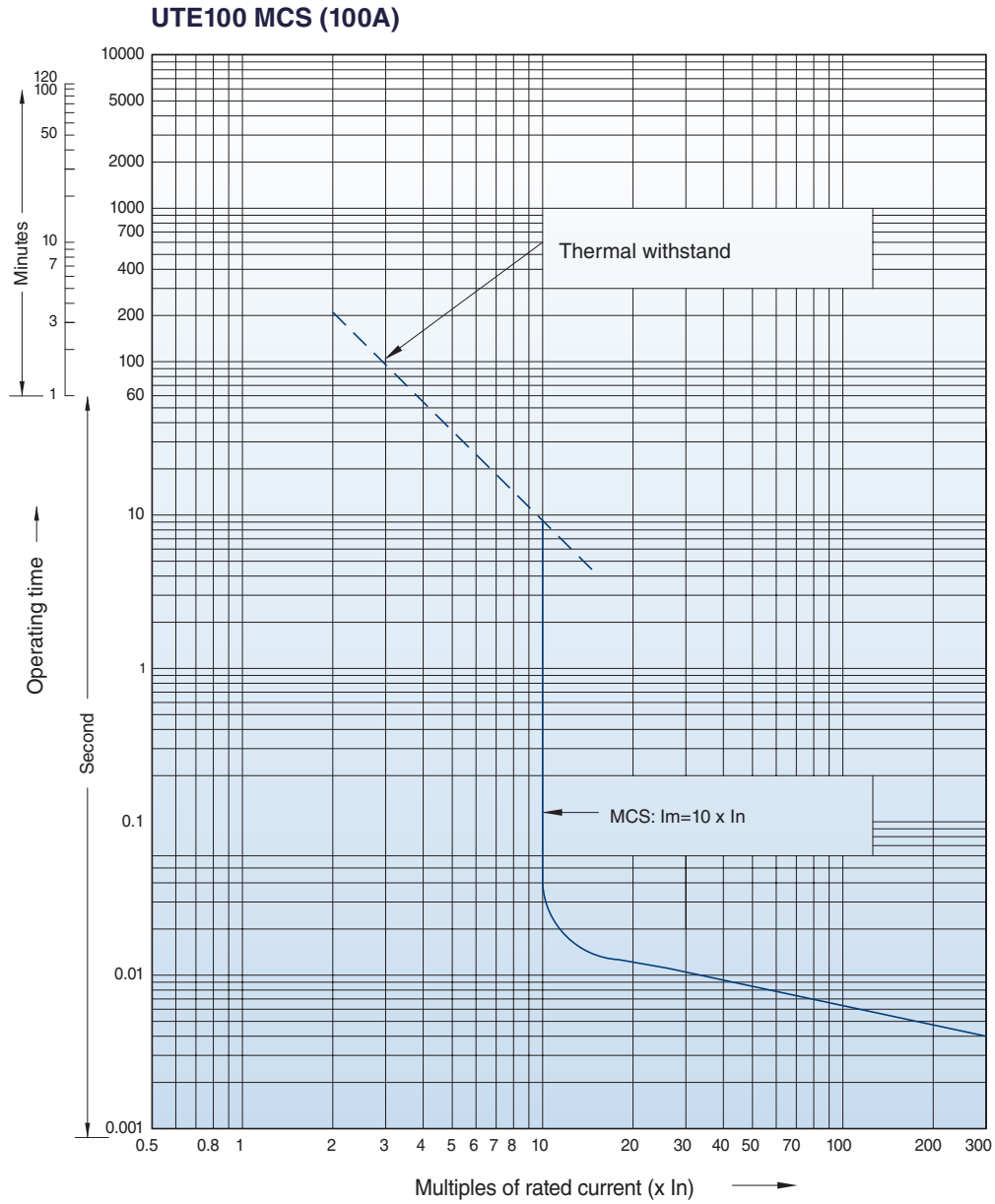


RATING UTE100	FTU	
	2P/3P	MAG TRIP (80%~130%)
15	○	
20	○	
25	○	400A
30	○	
40	○	
50	○	
60	○	800A
70	○	
80	○	
90	○	1000A
100	○	

RATING UTE100	FMU		
	3P	RATING RANGE	MAG TRIP (80%~130%)
25	○	20~25A	
40	○	32~40A	400A
60	○	48~60A	
80	○	64~80A	800A
100	○	80~100A	1000A

## UTE100 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.

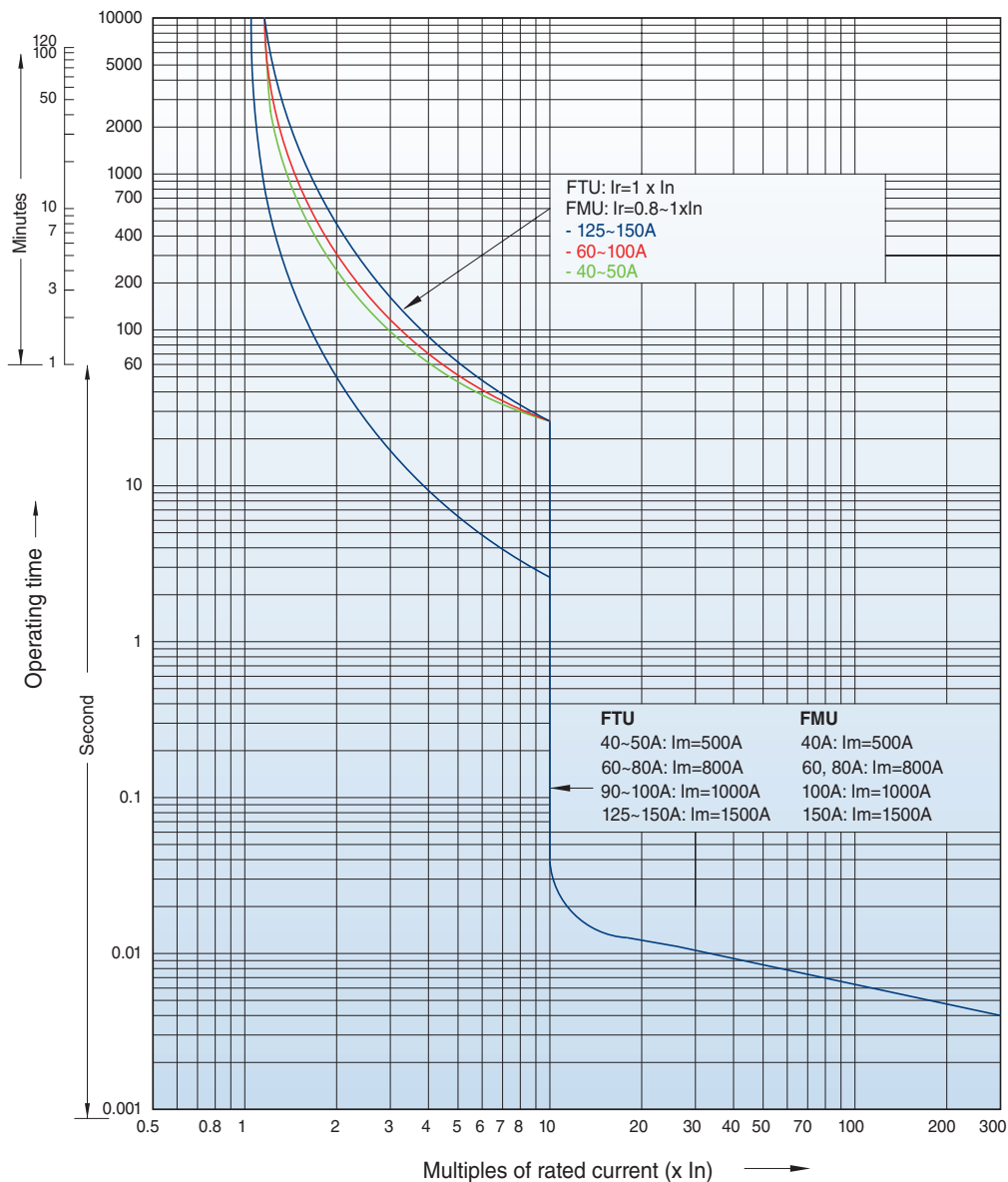


MCS (2P/3P)	
RATING	MAG TRIP
UTE100	(80%~130%)
	(10 x In)
100	1000A

## UTS150 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.

UTS150 FTU, FMU (40~150A)



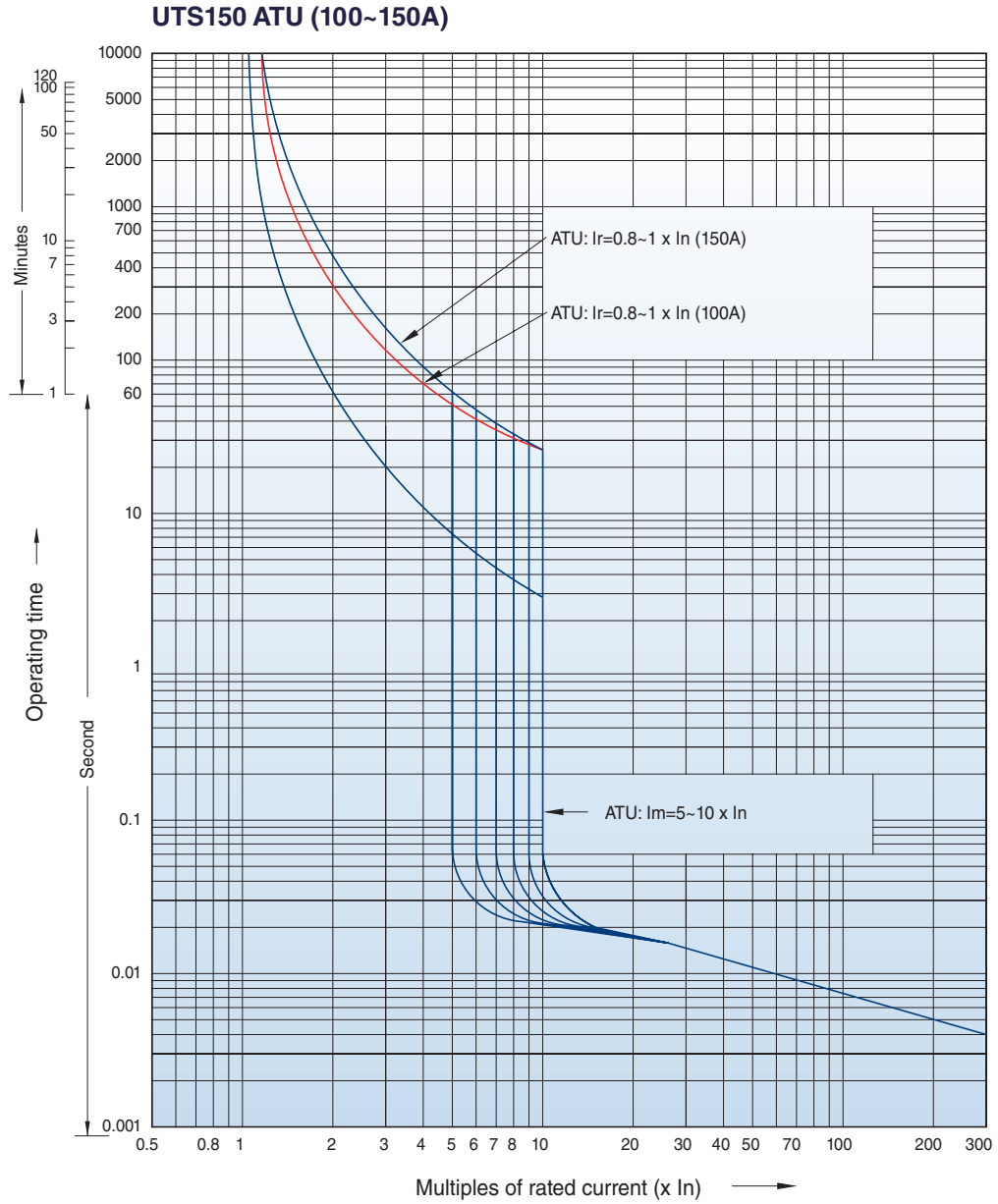
RATING UTS150	FTU	
	2P/3P	MAG TRIP (80%~130%)
40	○	500A
50	○	
60	○	
70	○	800A
80	○	
90	○	
100	○	1000A
125	○	
150	○	1500A

RATING UTS150	FMU		
	2P/3P	RATING RANGE (0.8~1 x $I_n$ )	MAG TRIP (80%~130%)
40	○	32~40A	500A
60	○	48~60A	800A
80	○	64~80A	800A
100	○	80~100A	1000A
150	○	120~150A	1500A

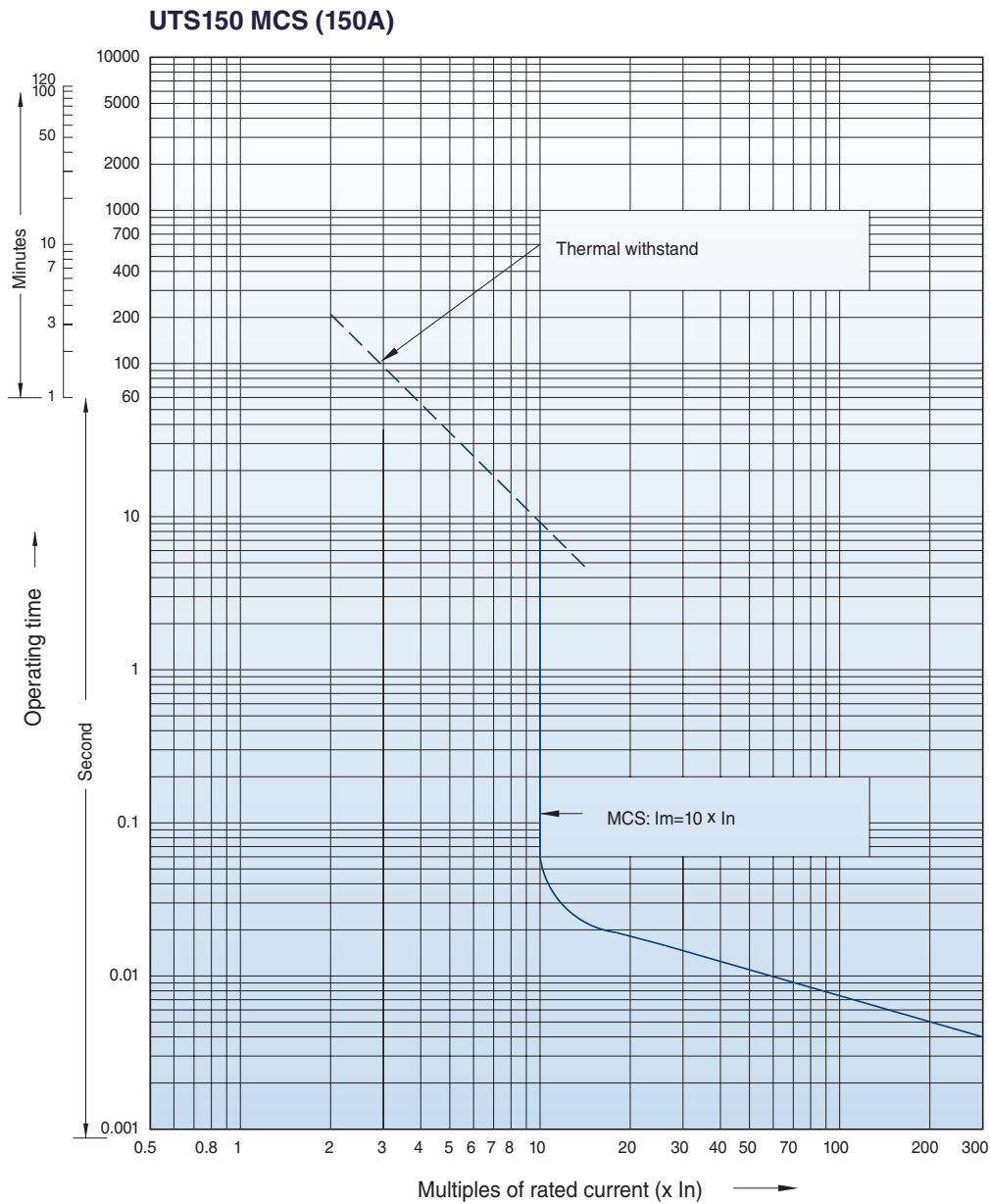


## UTS150 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



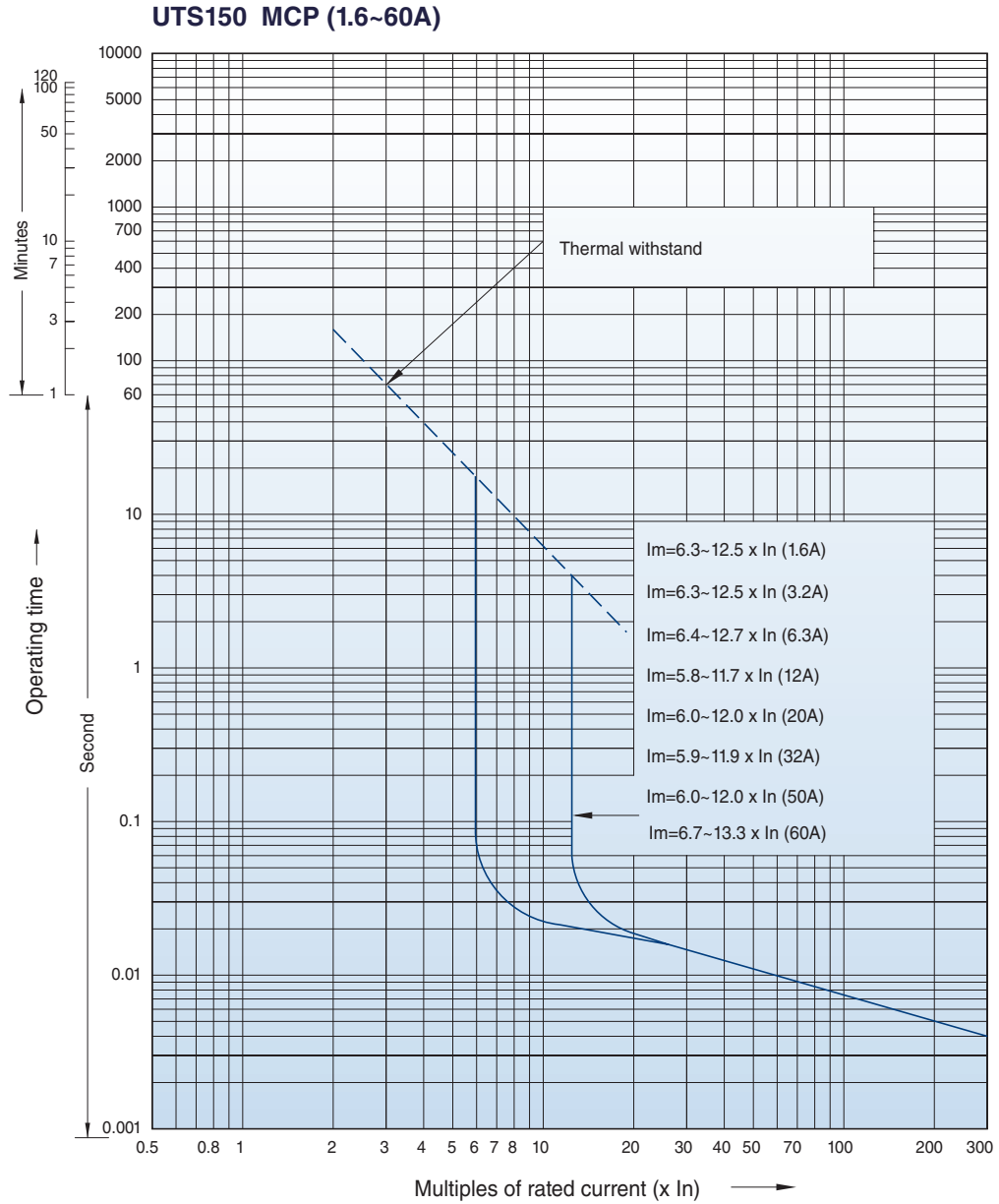
RATING UTS150	ATU		
	2P/3P	RATING RANGE ( $0.8 \sim 1 \times I_n$ )	MAG TRIP (80%~130%) ( $5 \sim 10 \times I_n$ )
100	○	80~100A	500~1000A
150	○	120~150A	750~1500A



RATING	MCS (2P/3P)
	MAG TRIP (80%~130%) (10 x $I_n$ )
UTS150	1500A

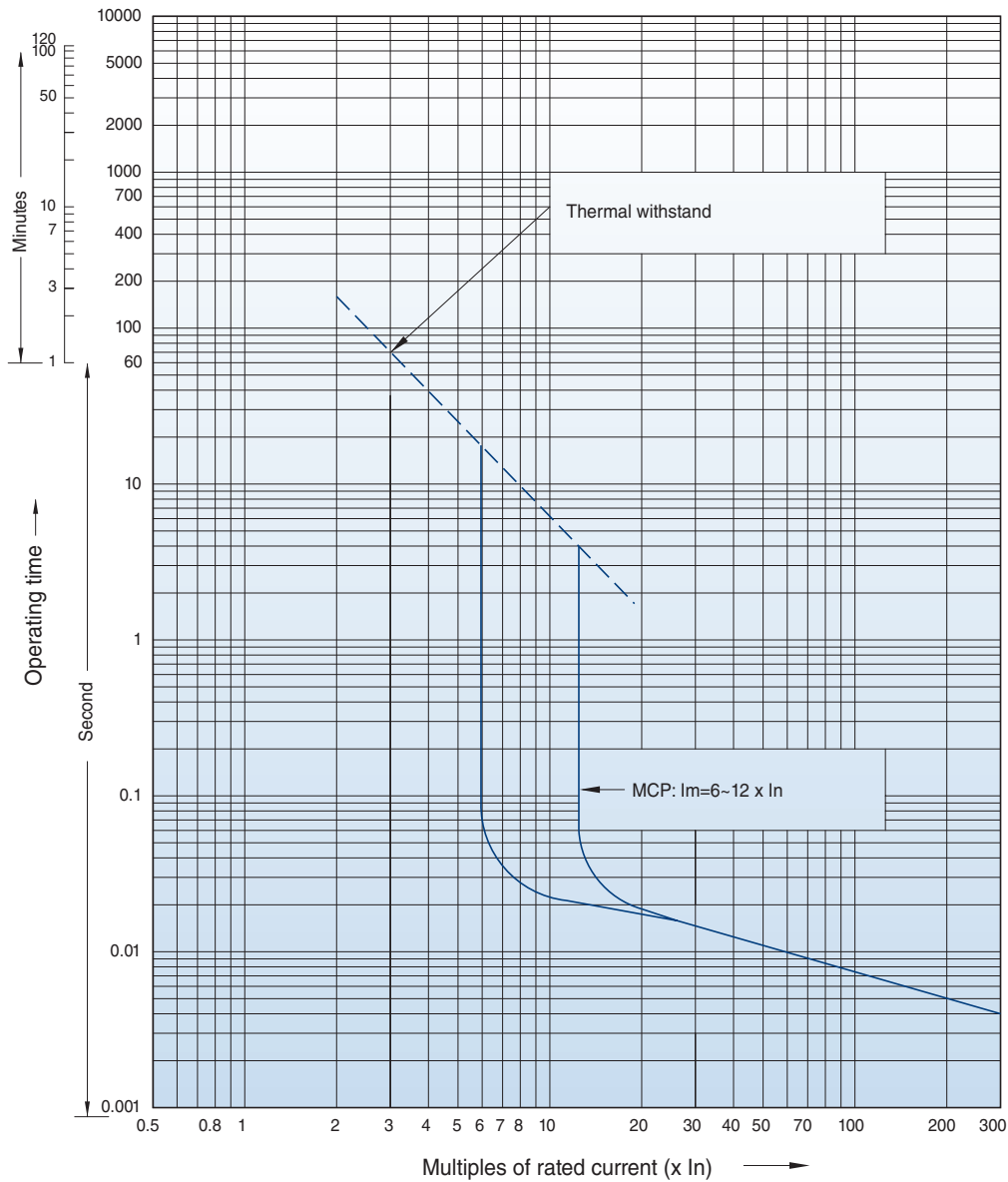
## UTS150 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



RATING UTS150	MCP (3P)
	MAC TRIP (80%~130%) (5.8~13.3 $\times I_n$ )
1.6	10~20A
3.2	20~40A
6.3	40~80A
12	70~140A
20	120~240A
32	190~380A
50	300~600A
60	400~800A

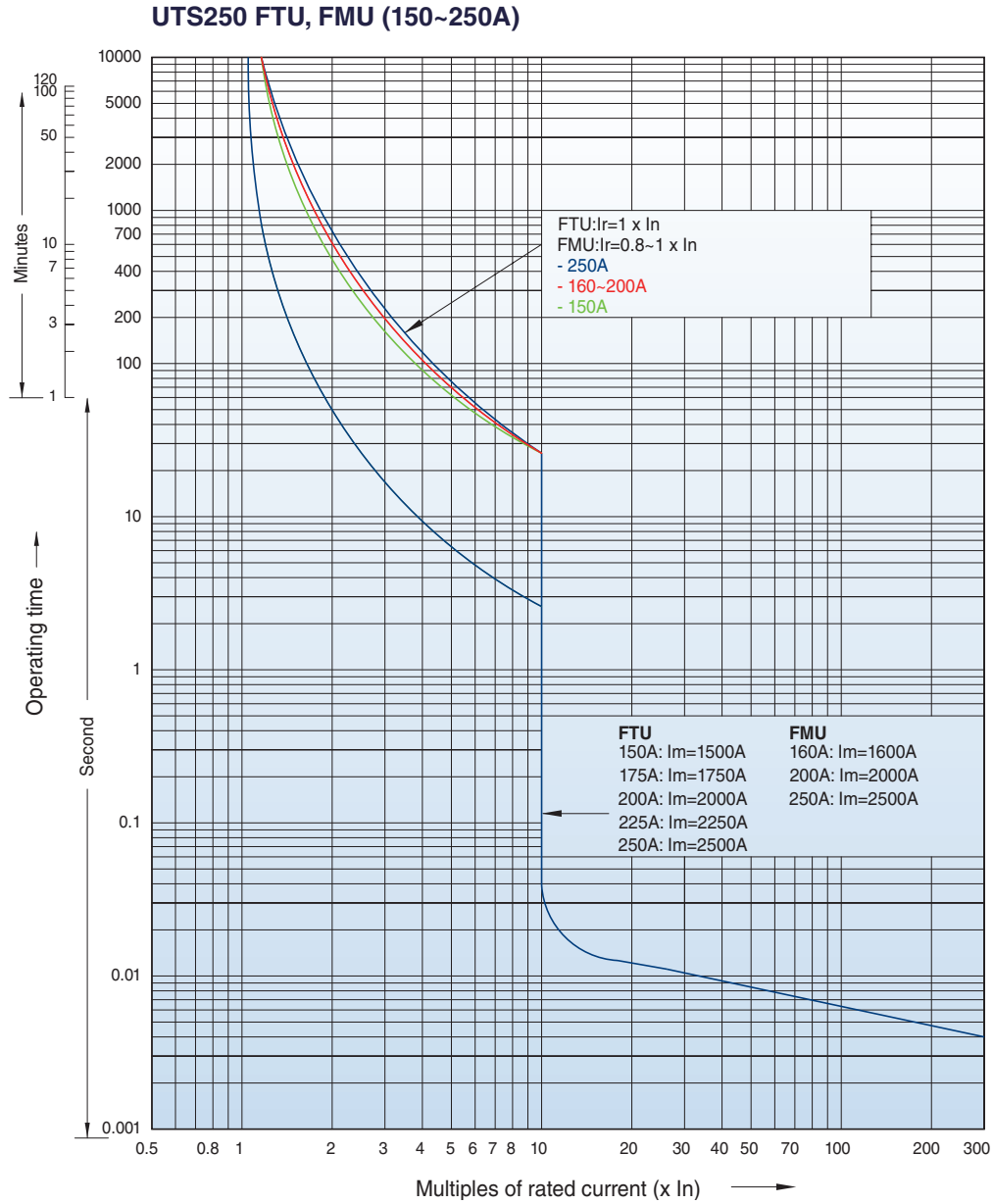
**UTS150 MCP (100~150A)**



RATING UTS150	MCP (3P)
	MAG TRIP (80~130%) (6~12 x In)
100	600~1200A
150	900~1800A

## UTS250 CHARACTERISTIC

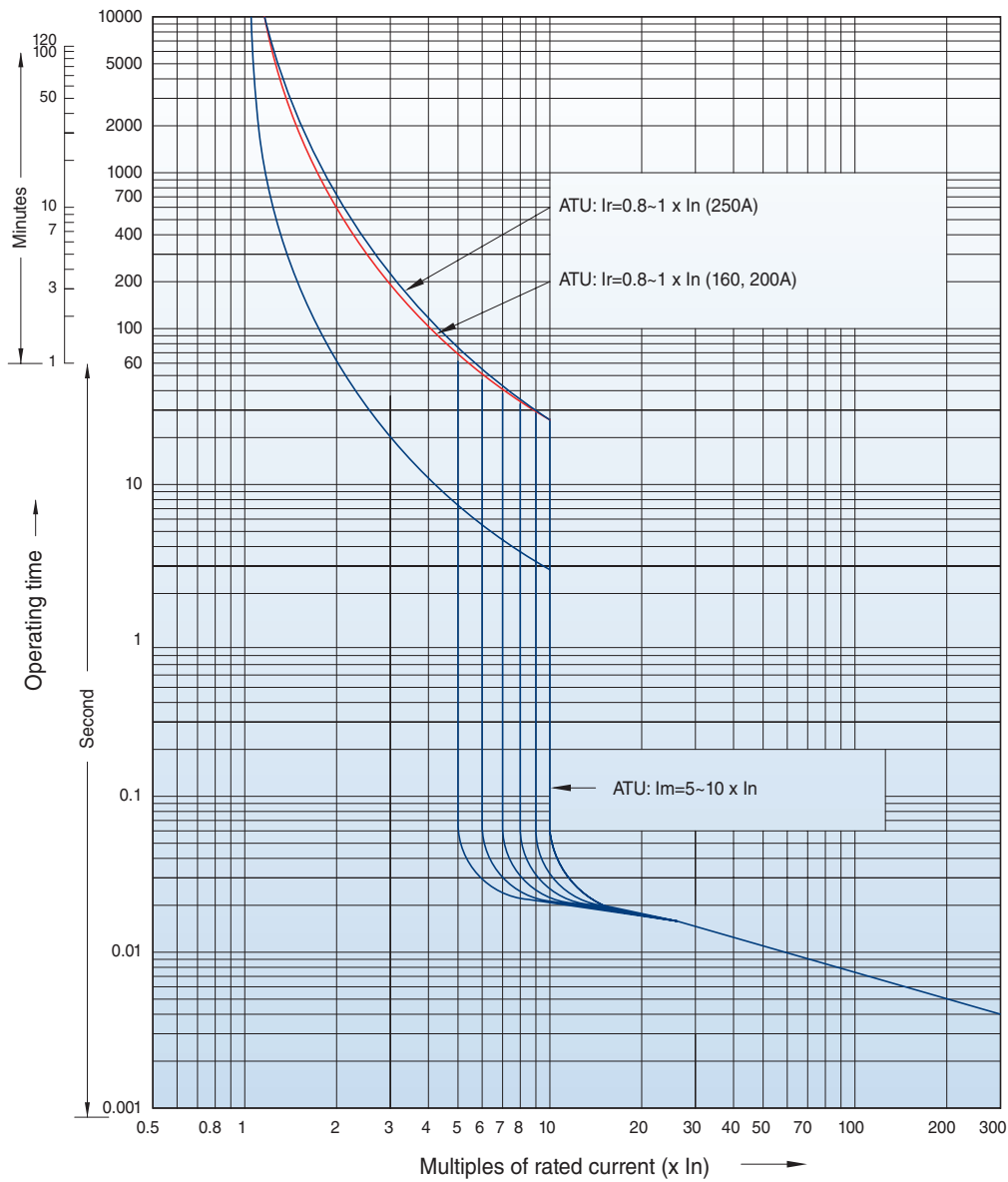
This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



RATING UTS250	FTU	
	2P/3P	MAG TRIP (80%~130%)
150	○	1500A
170	○	1750A
200	○	2000A
225	○	2250A
250	○	2500A

RATING UTS250	FMU		
	2P/3P	RATING RANGE (0.8~1 $\times I_n$ )	MAG TRIP (80%~130%)
160	○	128~160A	1600A
200	○	160~200A	2000A
250	○	200~250A	2500A

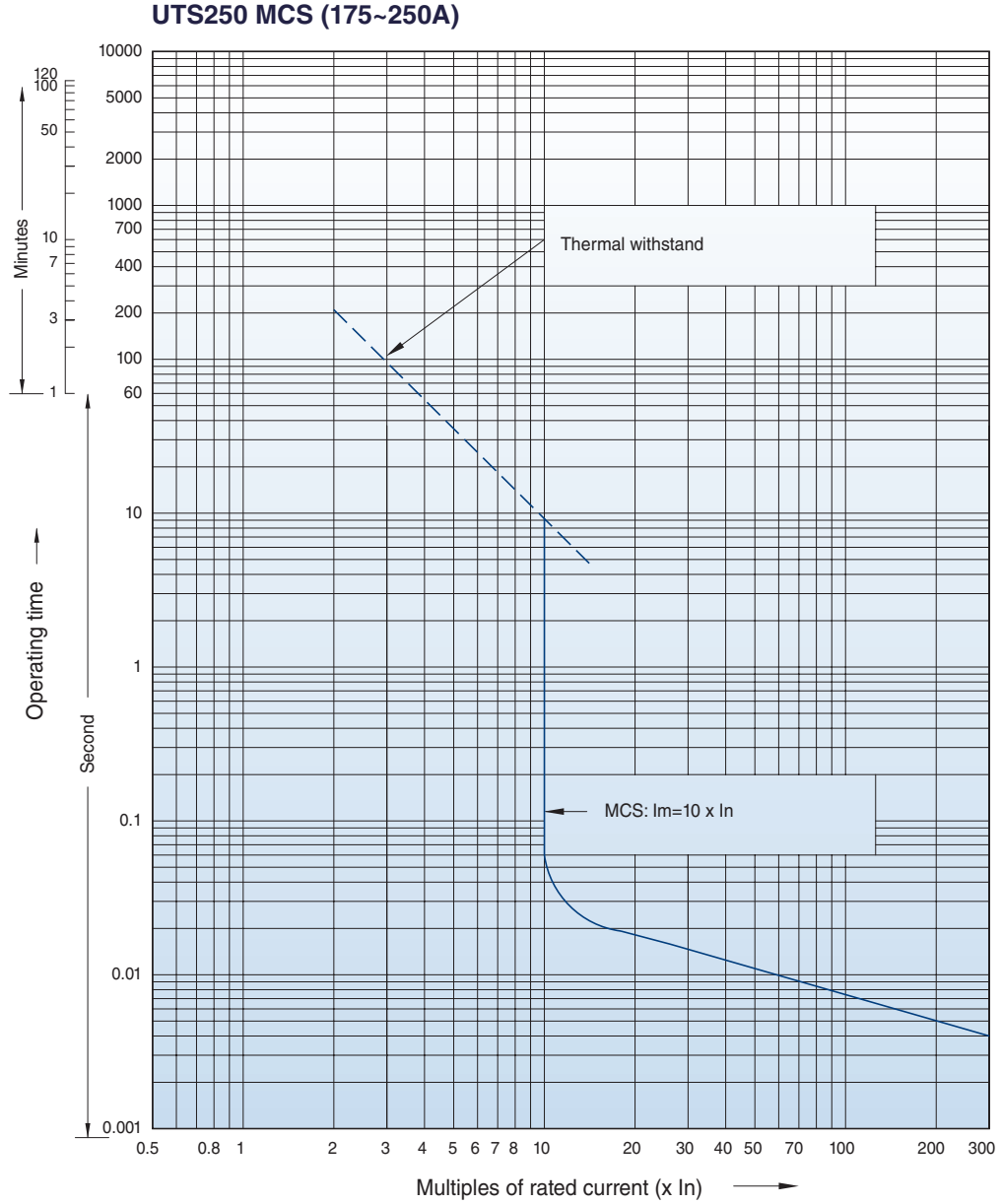
**UTS250 ATU (160~250A)**



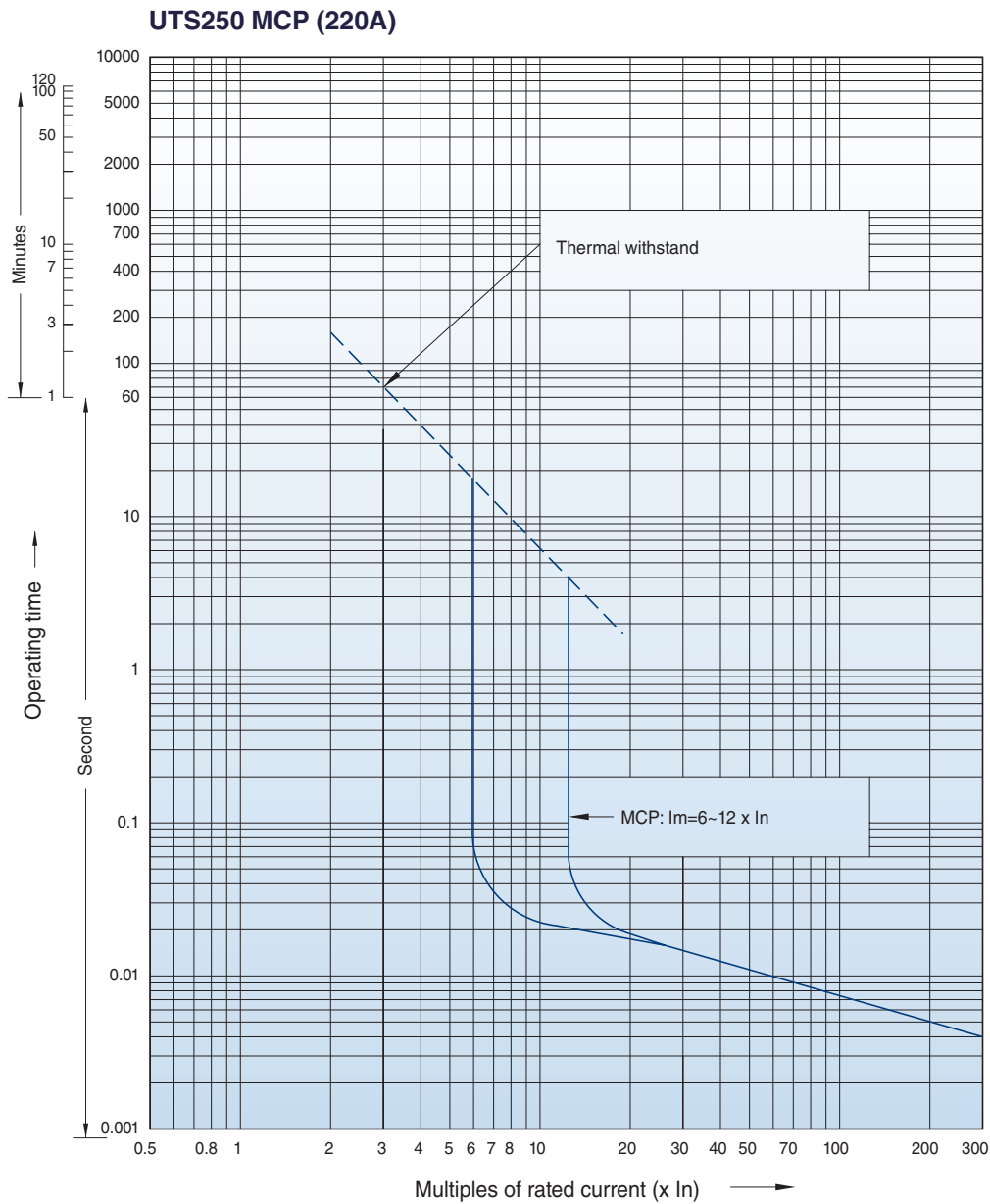
RATING UTS250	ATU		
	2P/3P	RATING RANGE (0.8~1 x In)	MAG TRIP (80%~130%) (5~10 x In)
160	○	128~160A	800~1600A
200	○	160~200A	1000~2000A
250	○	200~250A	1250~2500A

## UTS250 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



RATING UTS250	MCS (2P/3P)
	MAG TRIP (80%~130%) (10 x $I_n$ )
175	1750A
250	2500A

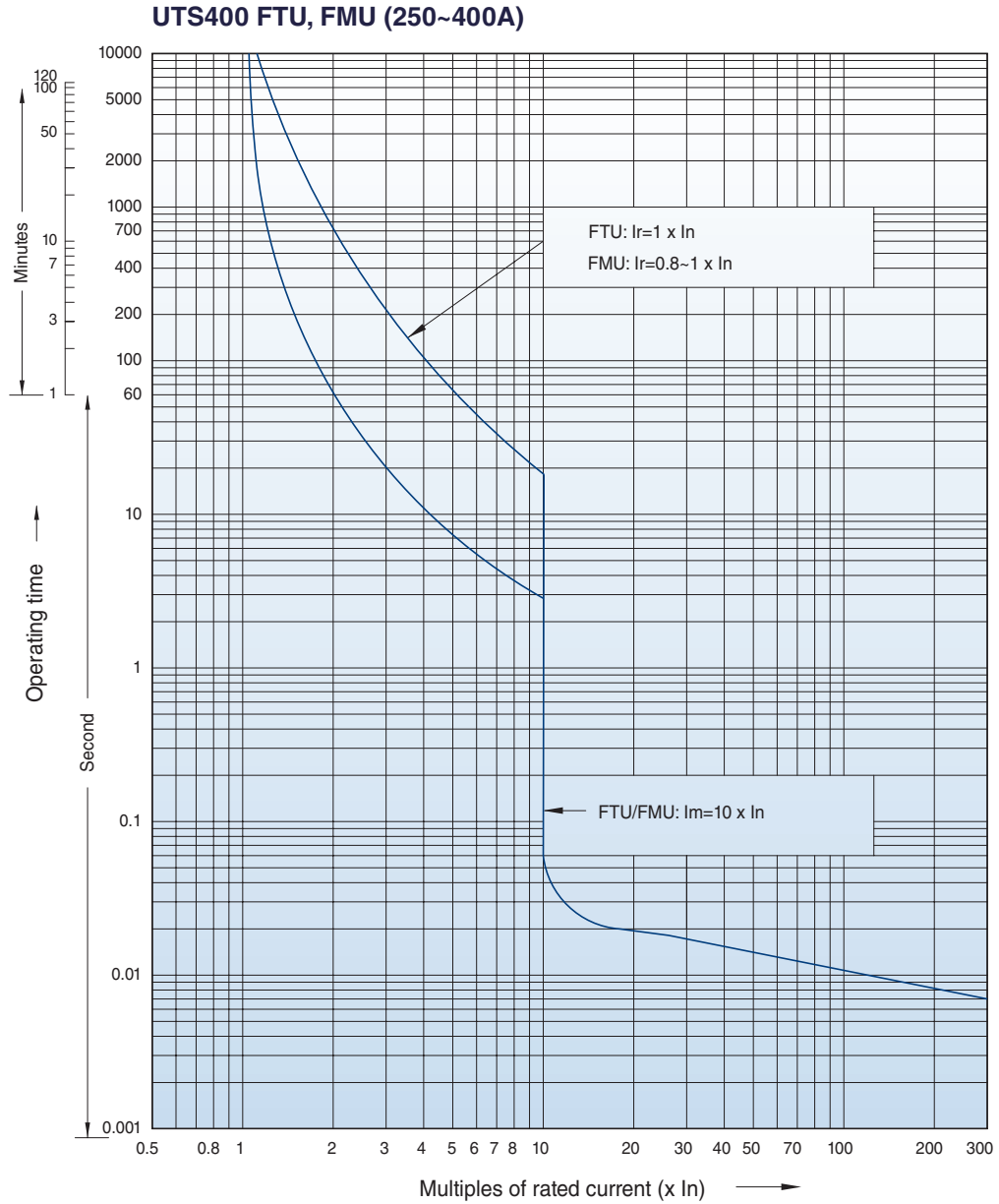


RATING UTS250	MCP (3P)
	MAG TRIP (80%~130%) (6~12 x In)
220	1320~2640A



## UTS400 CHARACTERISTIC

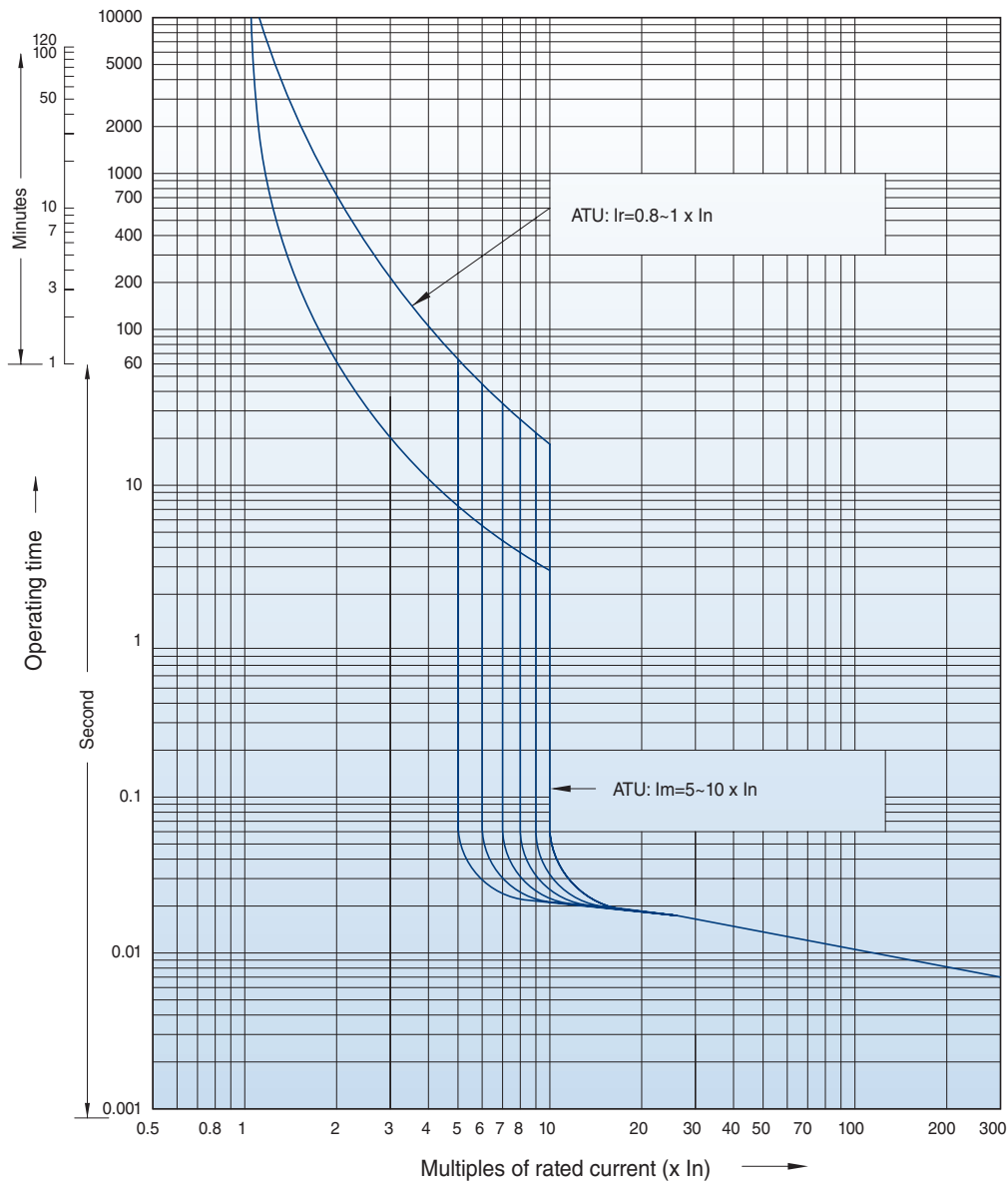
This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



RATING UTS400	FTU	
	2P/3P	MAG TRIP (80%~130%)
250	○	2500A
300	○	3000A
350	○	3500A
400	○	4000A

RATING UTS400	FMU		
	2P/3P	RATING RANGE (0.8~1xIn)	MAG TRIP (80%~130%)
300	○	240~300A	3000A
400	○	320~400A	4000A

**UTS400 ATU (300~400A)**

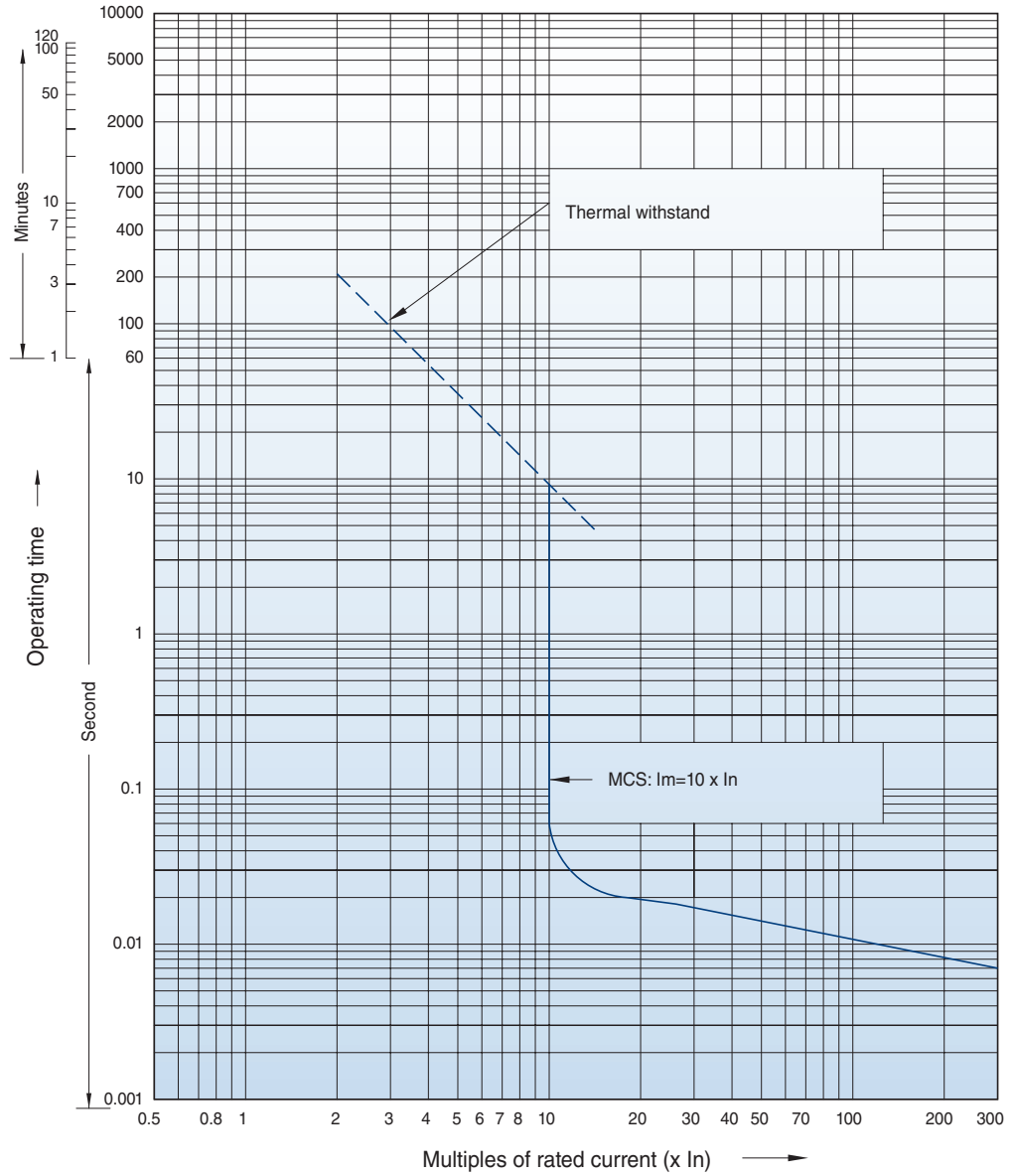


RATING UTS400	ATU		
	2P/3P	RATING RANGE (0.8~1 x $I_n$ )	MAG TRIP (80%~130%) (5~10 x $I_n$ )
300	○	240~300A	1500~3000A
400	○	320~400A	2000~4000A

## UTS400 CHARACTERISTIC

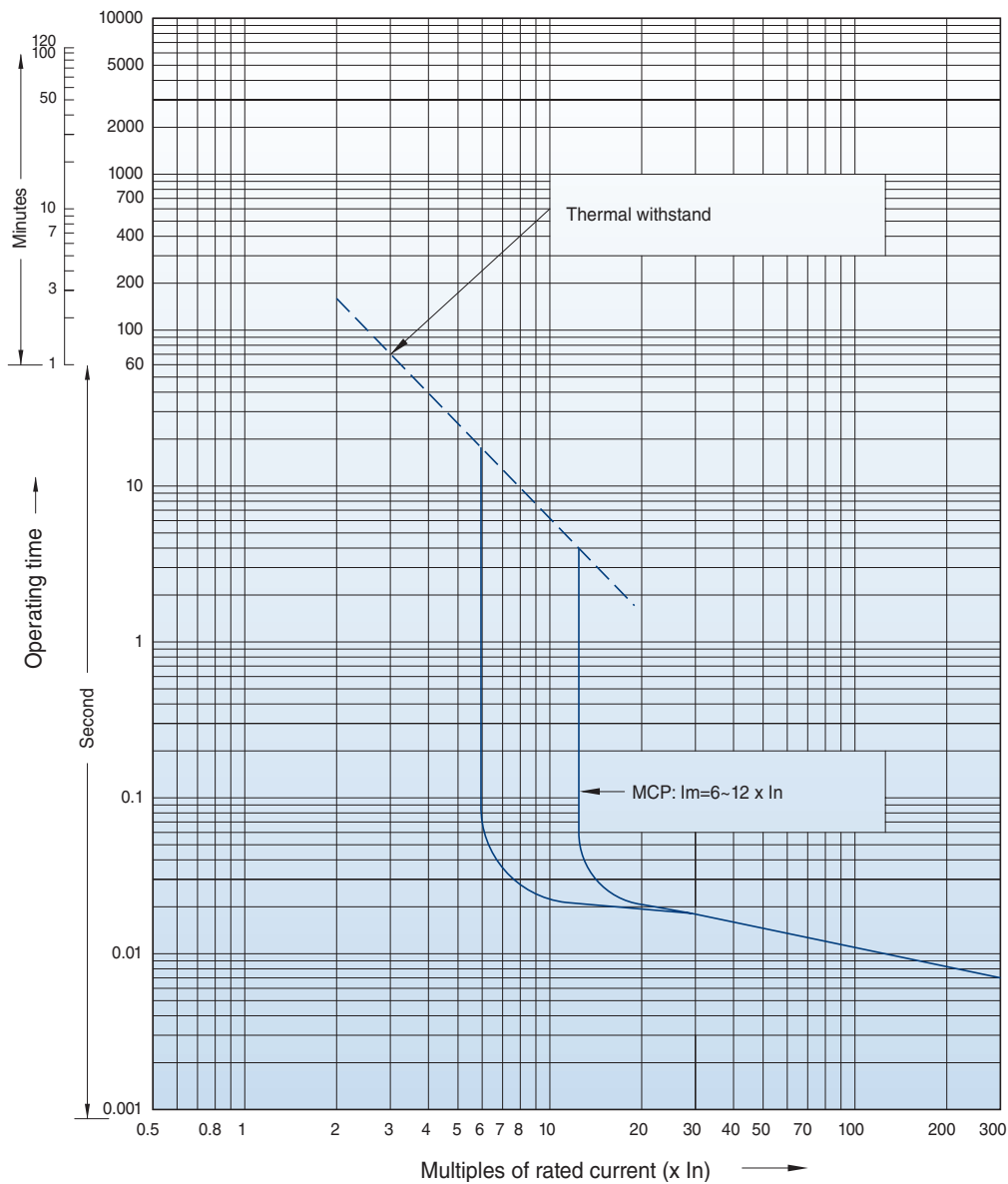
This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.

**UTS400 MCS (400A)**



RATING UTS400	MCS (2P/3P)
	MAG TRIP (80%~130%) (10 x In)
400	4000A

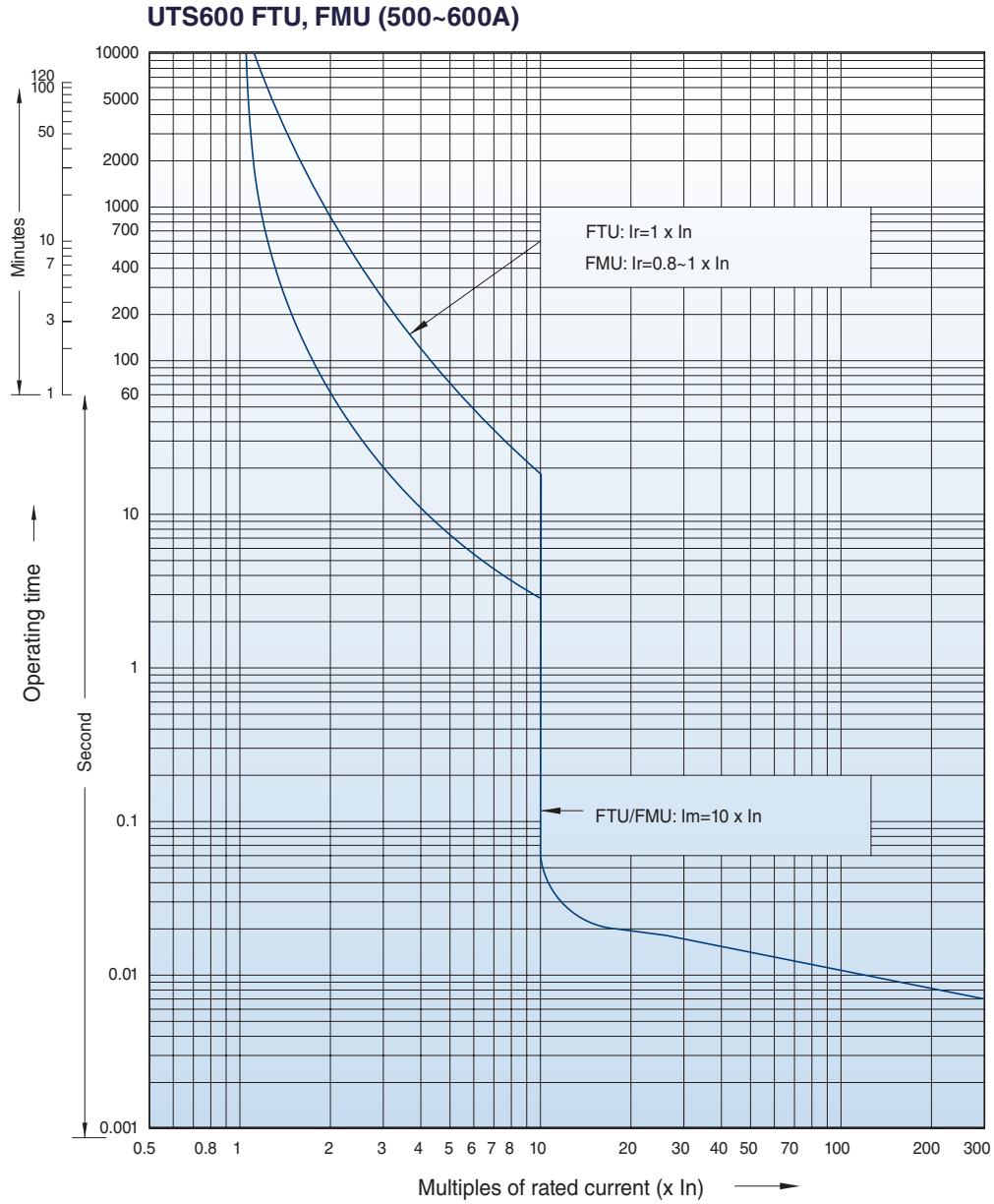
**UTS400 MCP (320A)**



RATING UTS400	MCP (3P)
	MAG TRIP (80%~130%) (6~12 x In)
320	1920~3840A

## UTS600 CHARACTERISTIC

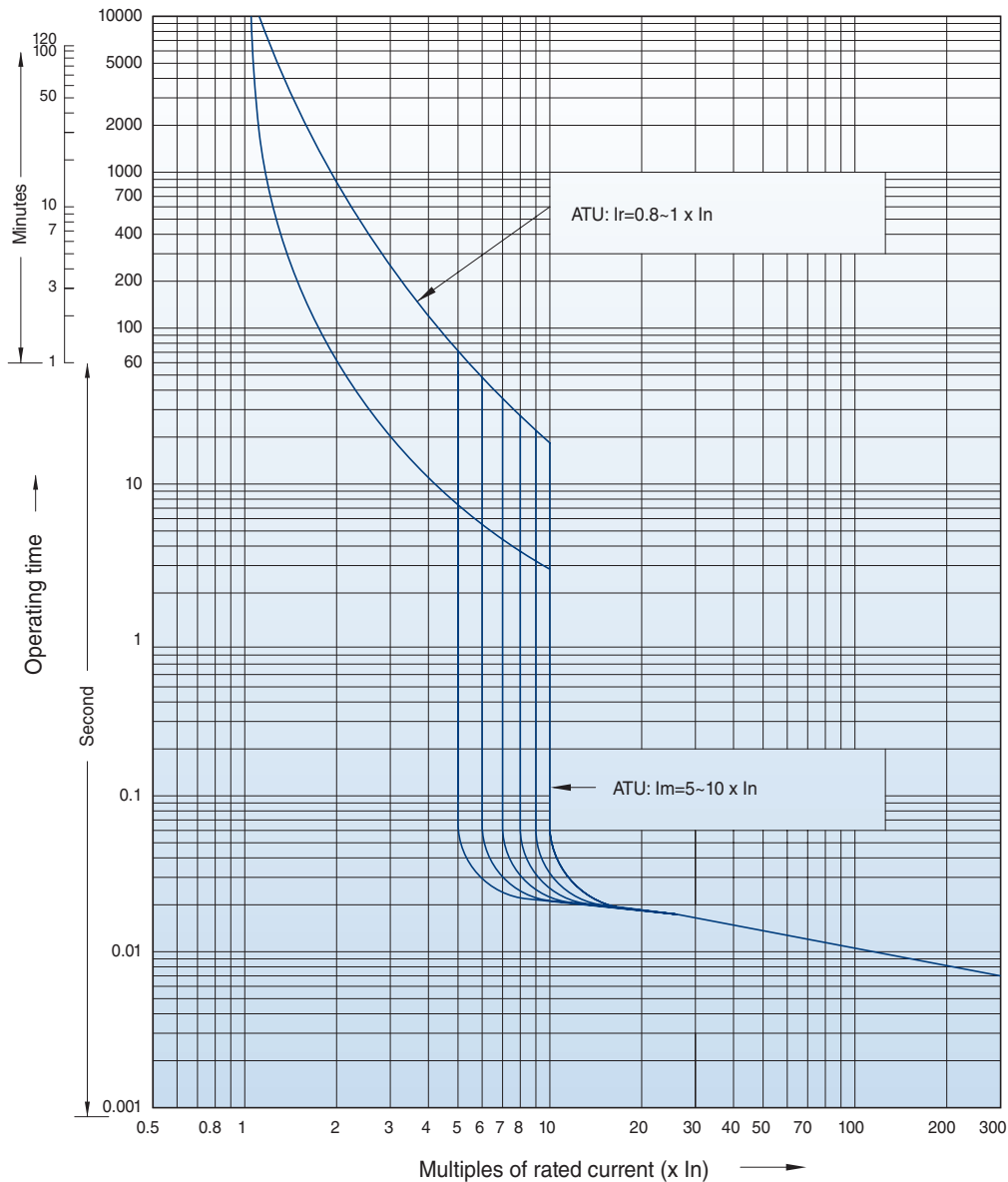
This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



RATING UTS600	FTU	
	2P/3P	MAG TRIP (80%~130%)
500	○	5000A
600	○	6000A

RATING UTS600	2P/3P	FMU	
		RATING RANGE (0.8~1xIn)	MAG TRIP (80%~130%)
500	○	400~500A	5000A
600	○	480~600A	6000A

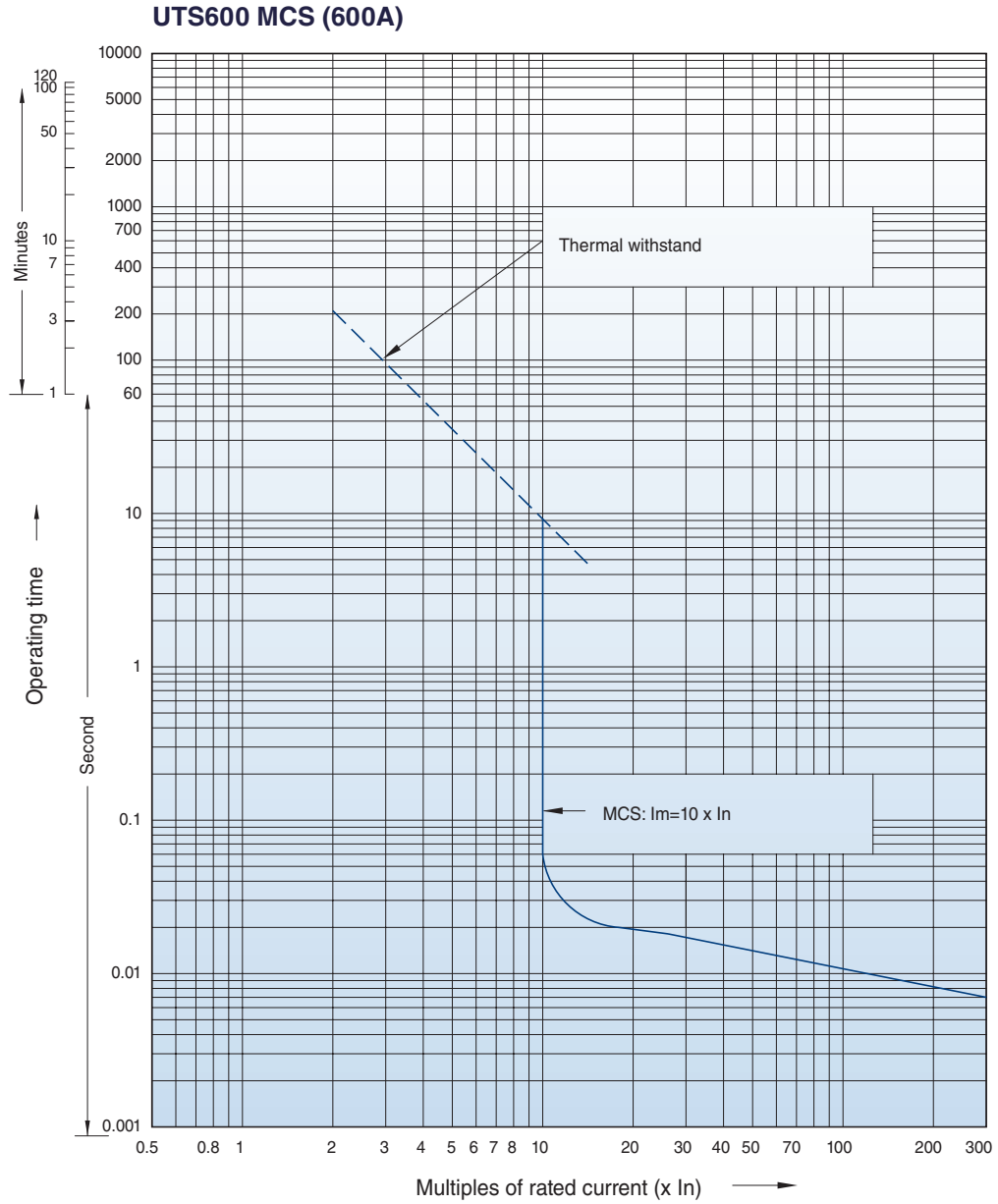
**UTS600 ATU (500~600A)**



RATING UTS600	ATU		
	2P/3P	RATING RANGE ( $0.8 \sim 1 \times I_n$ )	MAG TRIP (80%~130%) ( $5 \sim 10 \times I_n$ )
500	○	400~500A	2500~5000A
600	○	480~600A	3000~6000A

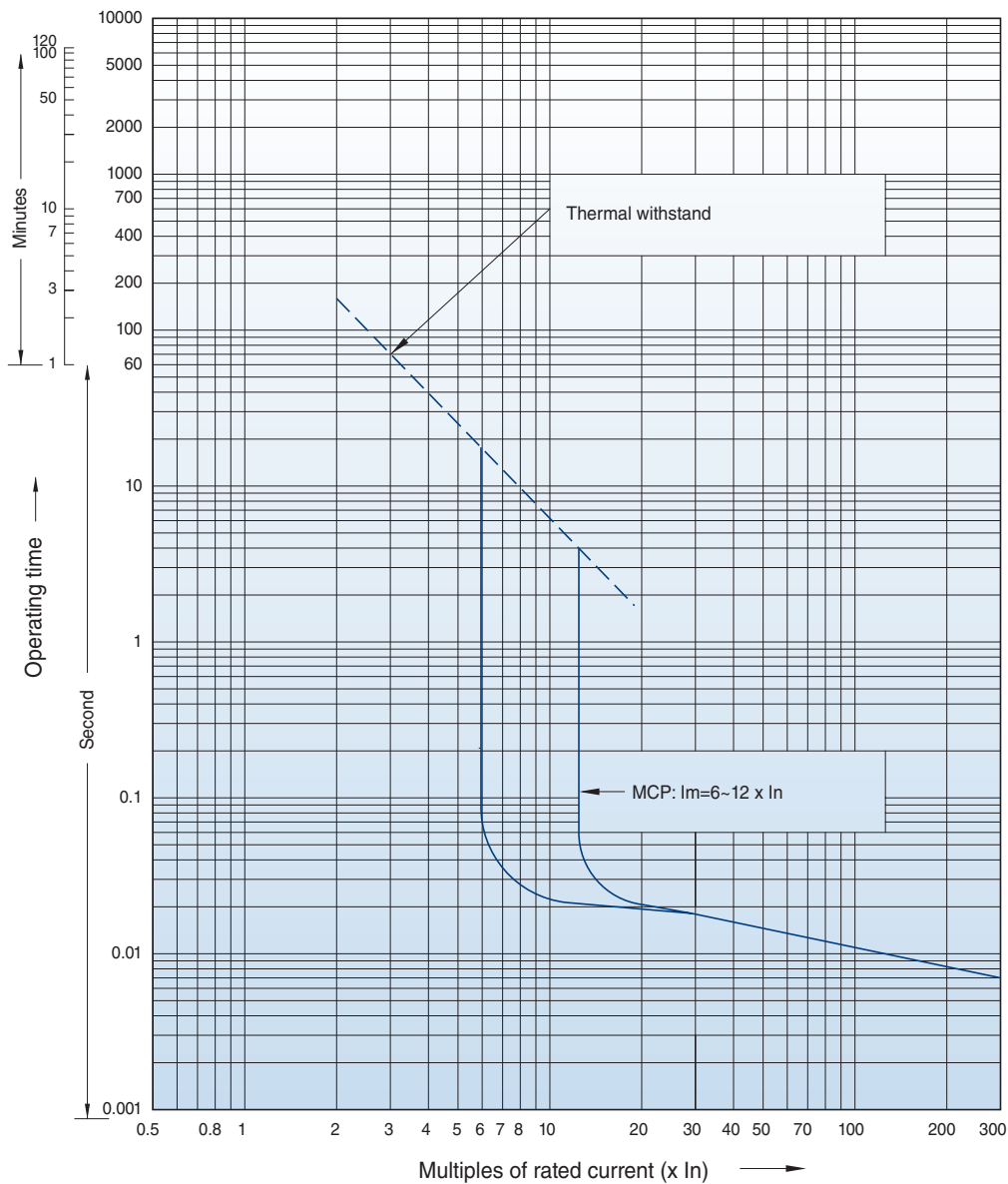
## UTS600 CHARACTERISTIC

This curve is to be used for application and coordination purposes only.  
All time/current characteristic curve data is based on 40°C ambient cold start.



RATING UTS600	MCS (2P/3P)
	MAG TRIP (80%~130%) (10 x In)
600	6000A

**UTS600 MCP (500A)**



	MCP (3P)
<b>RATING</b>	<b>MAG TRIP</b>
<b>UTS600</b>	<b>(80%~130%)</b>
	<b>(6~12xIn)</b>
500	3000~6000A

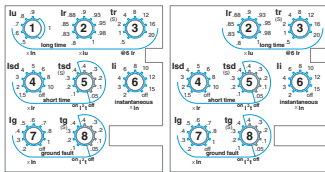


# UTS800/UTS1200 CHARACTERISTIC TRIP CURVES

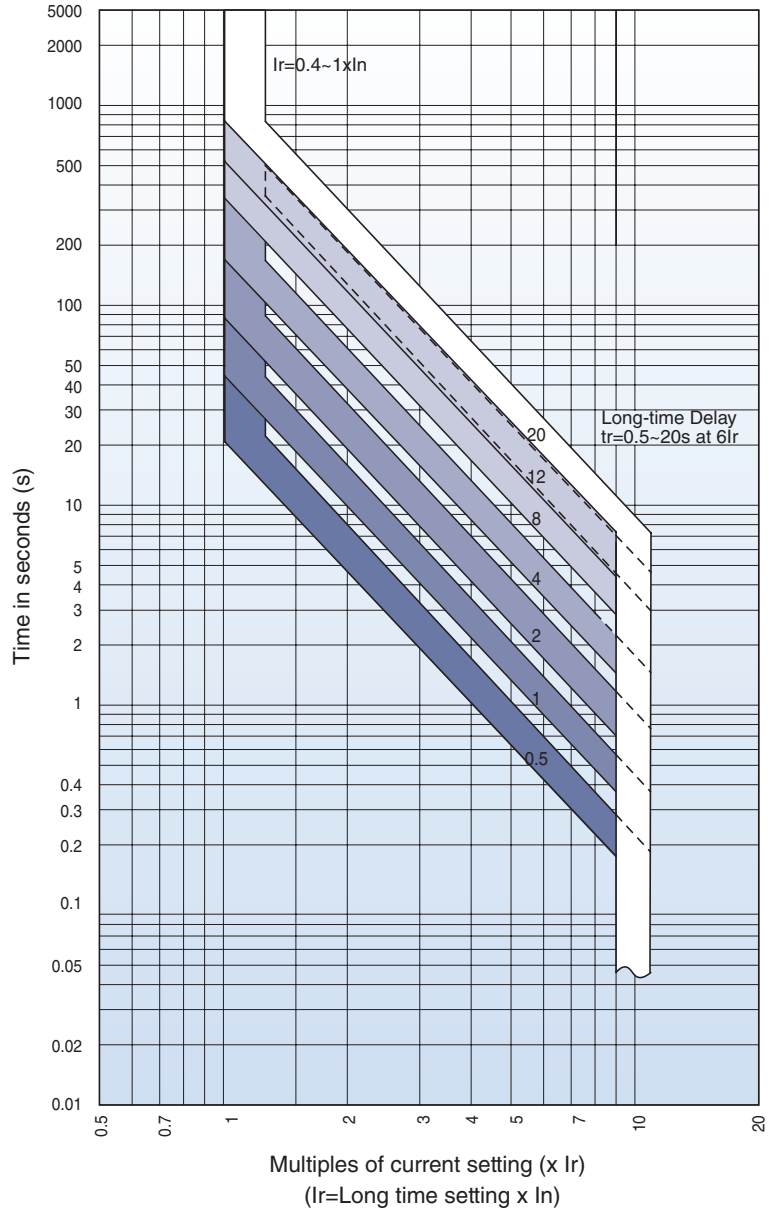
This curve is to be used for application and coordination purposes only.

## LONG-TIME DELAY (400~1200A)

Long-time pickup  $0.4 \sim 1 \times I_r$   
and delay  $0.5 \sim 20s$



①, ②, ③ - Long-time setting

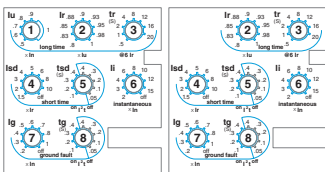


**Notes :**

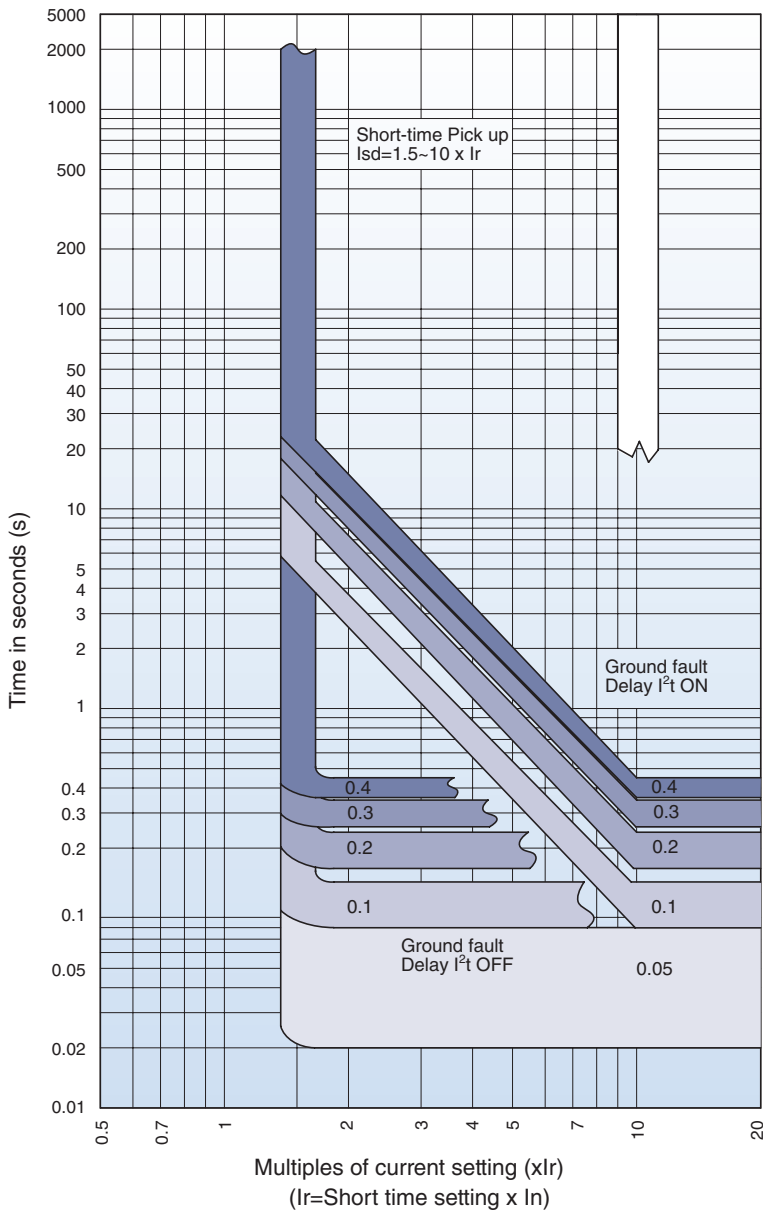
1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.

### SHORT-TIME DELAY (400~1200A)

Short-time pickup  $1.5 \sim 10 \times I_r$   
and delay 0.1~0.4s



④, ⑤ – Short-time setting

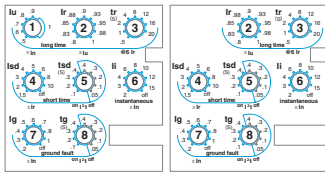


## UTS800/UTS1200 CHARACTERISTIC TRIP CURVES

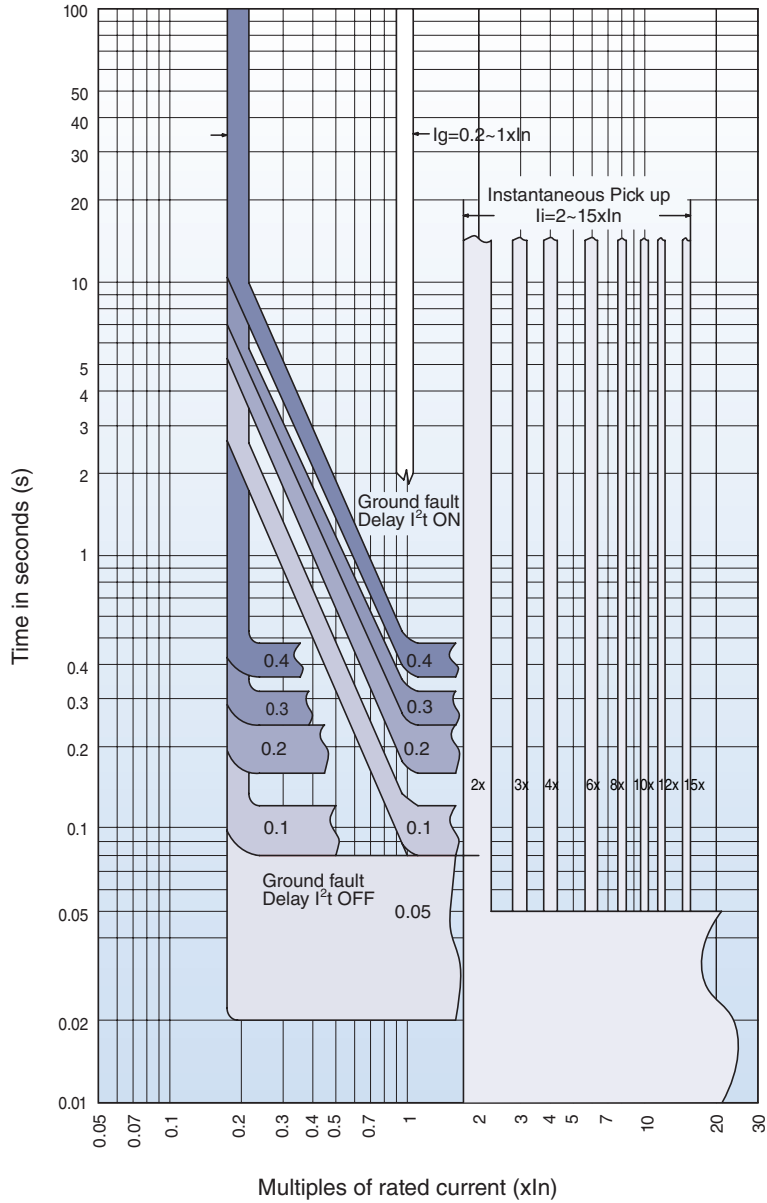
This curve is to be used for application and coordination purposes only.

### INSTANTANEOUS AND GROUND FAULT (400~1200A)

Instantaneous pickup  $2\sim 15 \times I_n$   
and Ground fault pickup  $0.2\sim 1 \times I_n$   
and delay  $0.1\sim 0.4s$

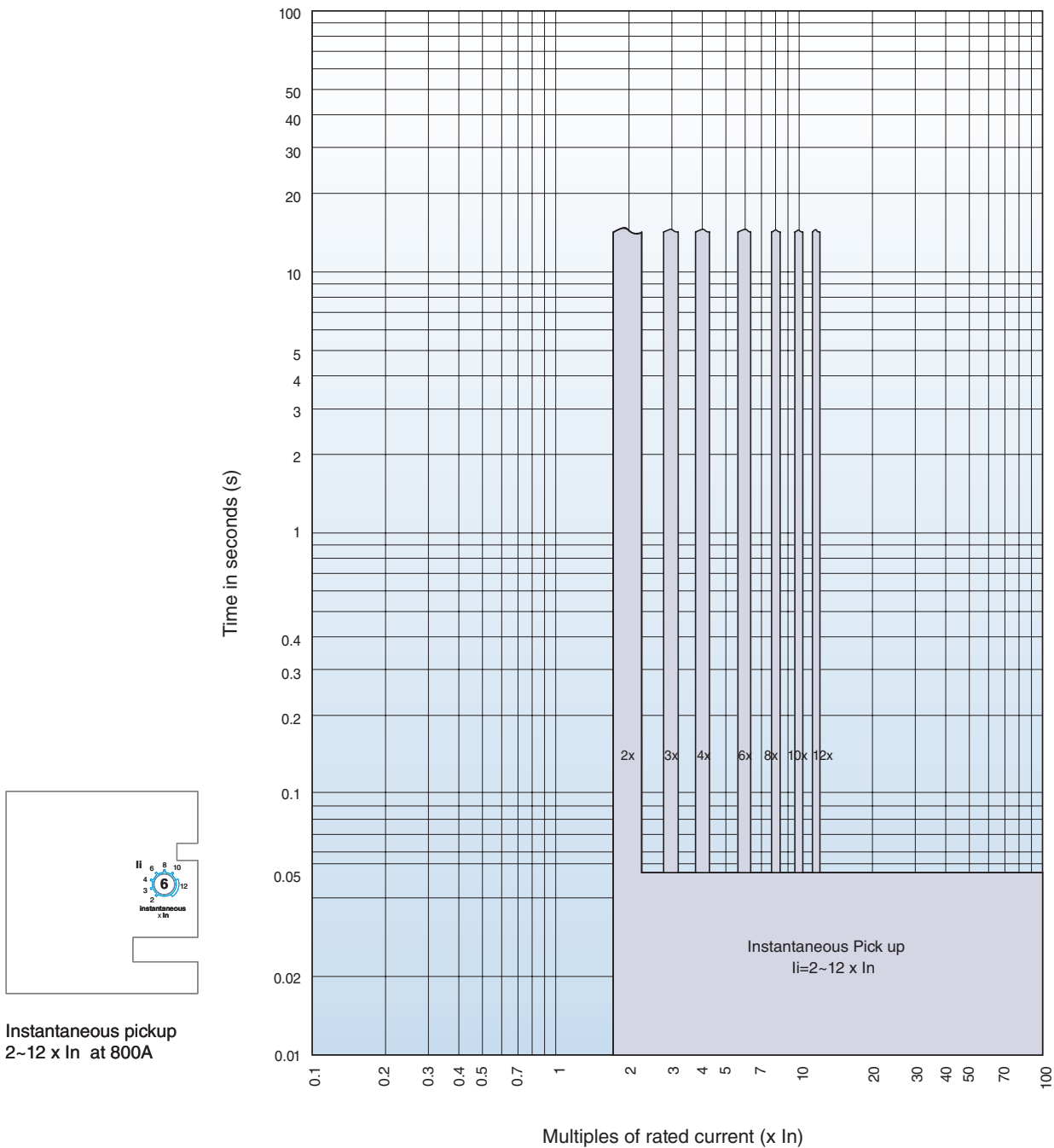


⑥, ⑦, ⑧ - Instantaneous and  
Ground fault setting



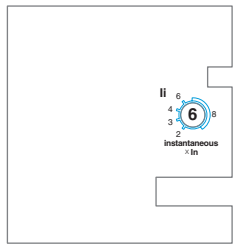
# MCP: ADJUSTABLE INSTANTANEOUS TRIP CURVE (800A)

INSTANTANEOUS PICKUP 2~12 X I<sub>n</sub> AT 800A

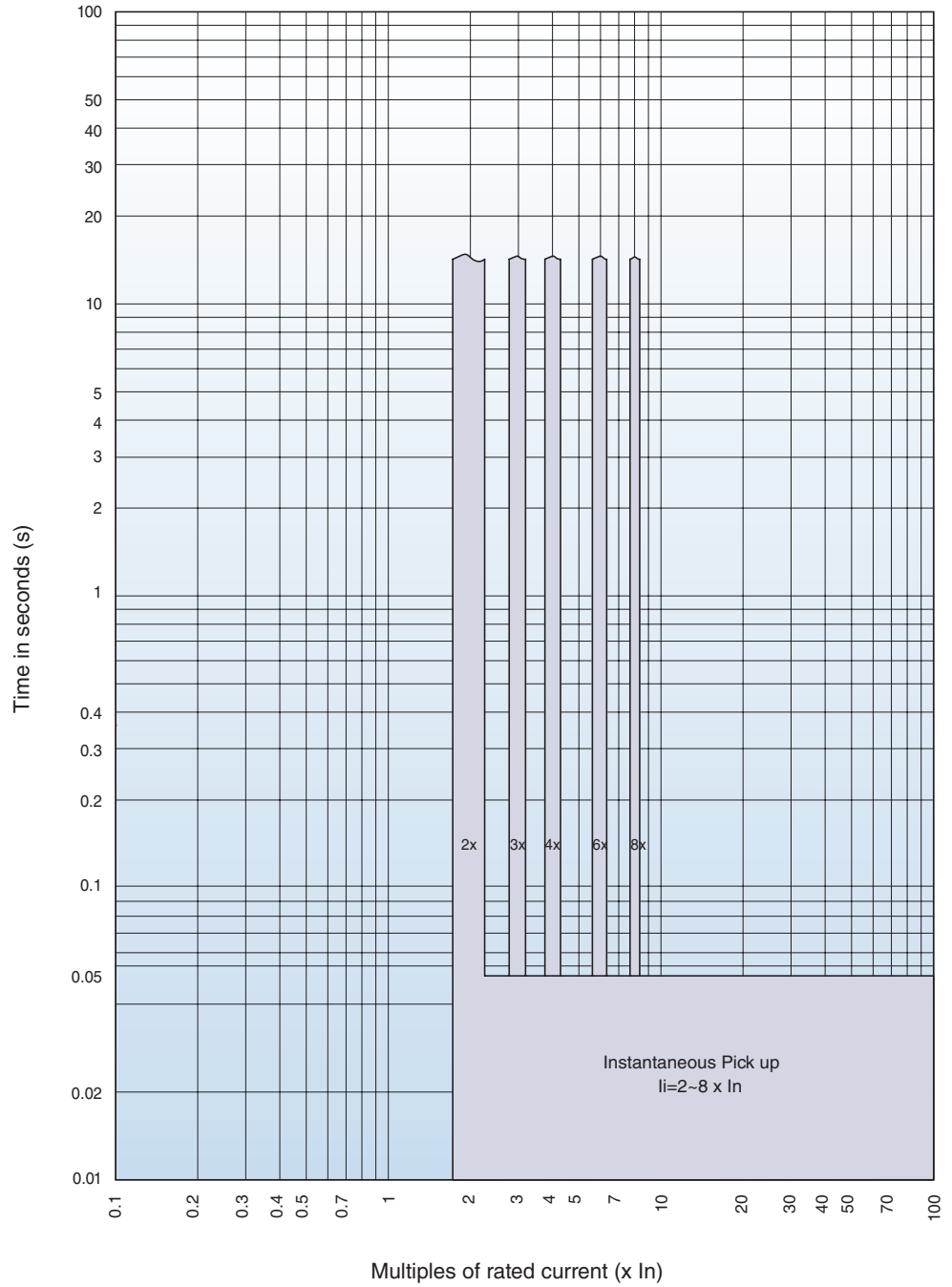


# MCP: ADJUSTABLE INSTANTANEOUS TRIP CURVE (1200A)

## INSTANTANEOUS PICKUP 2~8 X I<sub>n</sub> AT 1200A

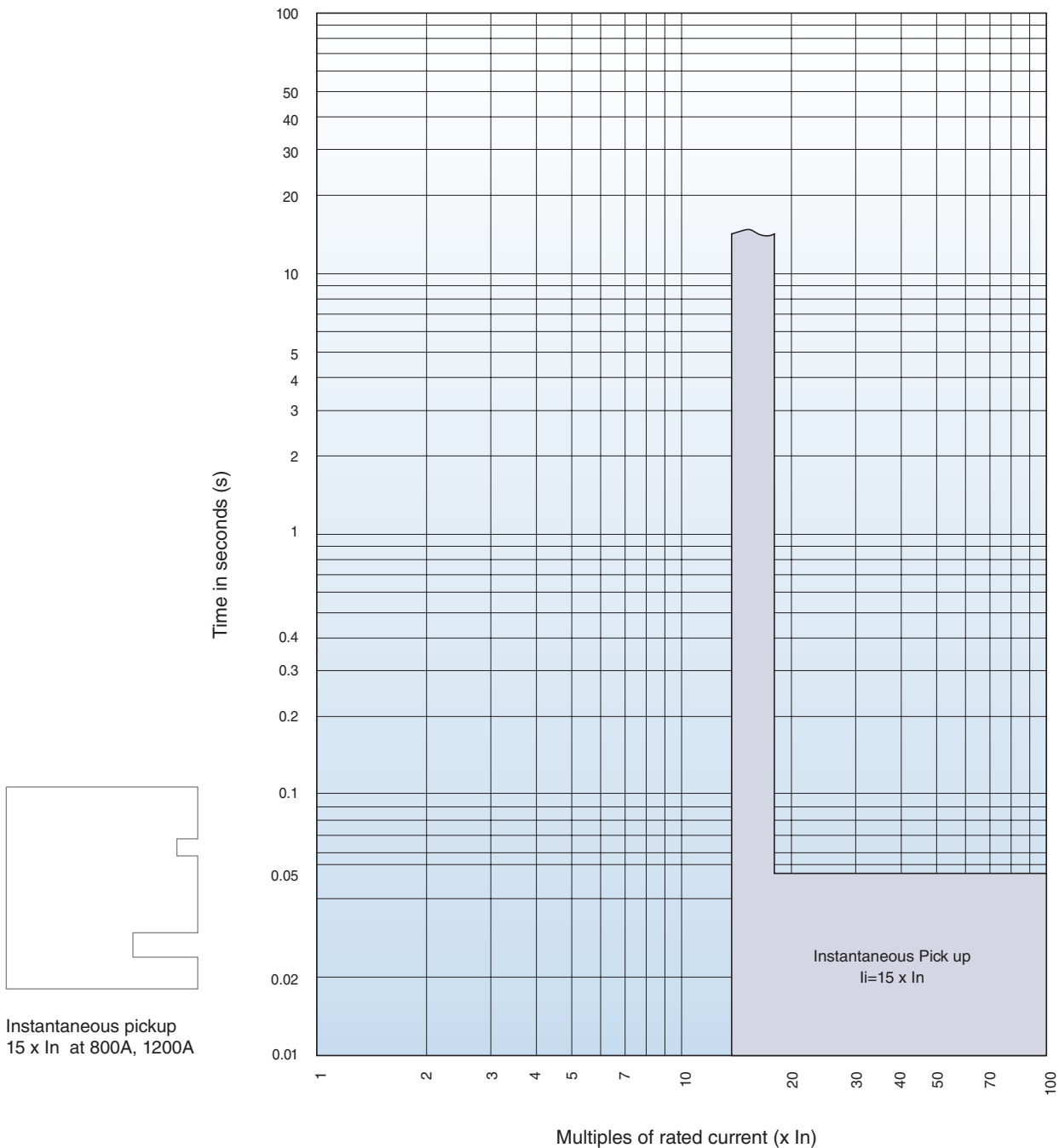


Instantaneous pickup  
2~8 x I<sub>n</sub> at 1200A



## MCS: FIXED INSTANTANEOUS TRIP CURVE (800~1200A)

### INSTANTANEOUS PICKUP 2~12 X I<sub>n</sub> AT 800A, 1200A

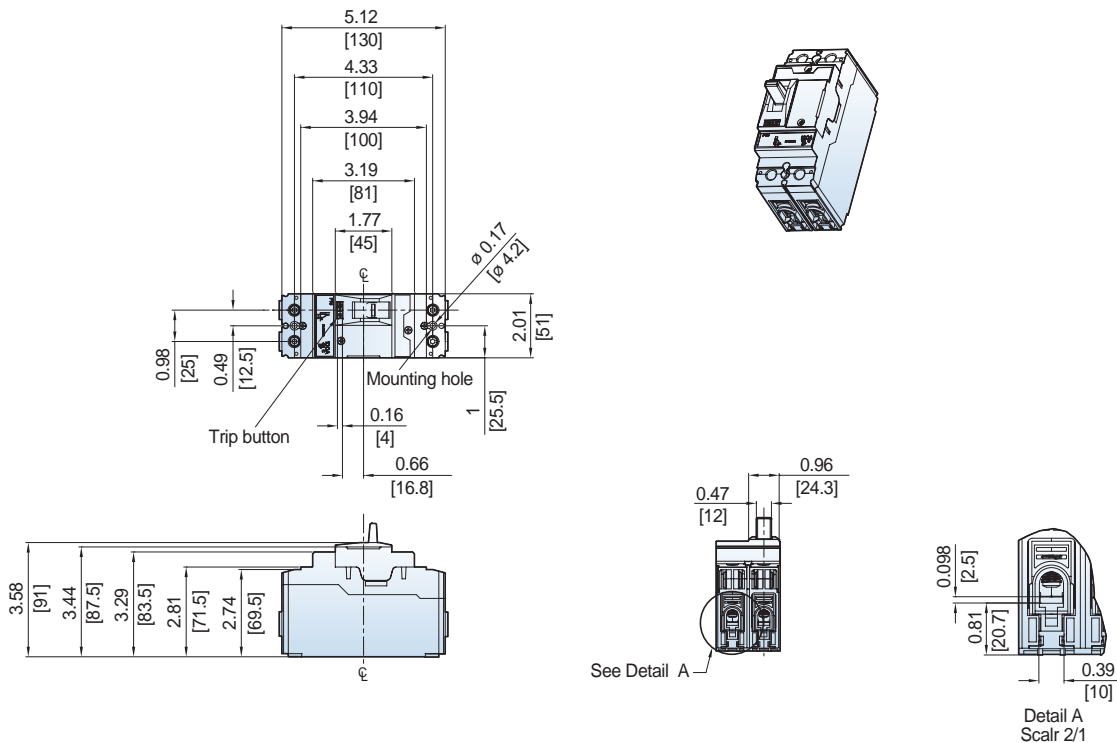




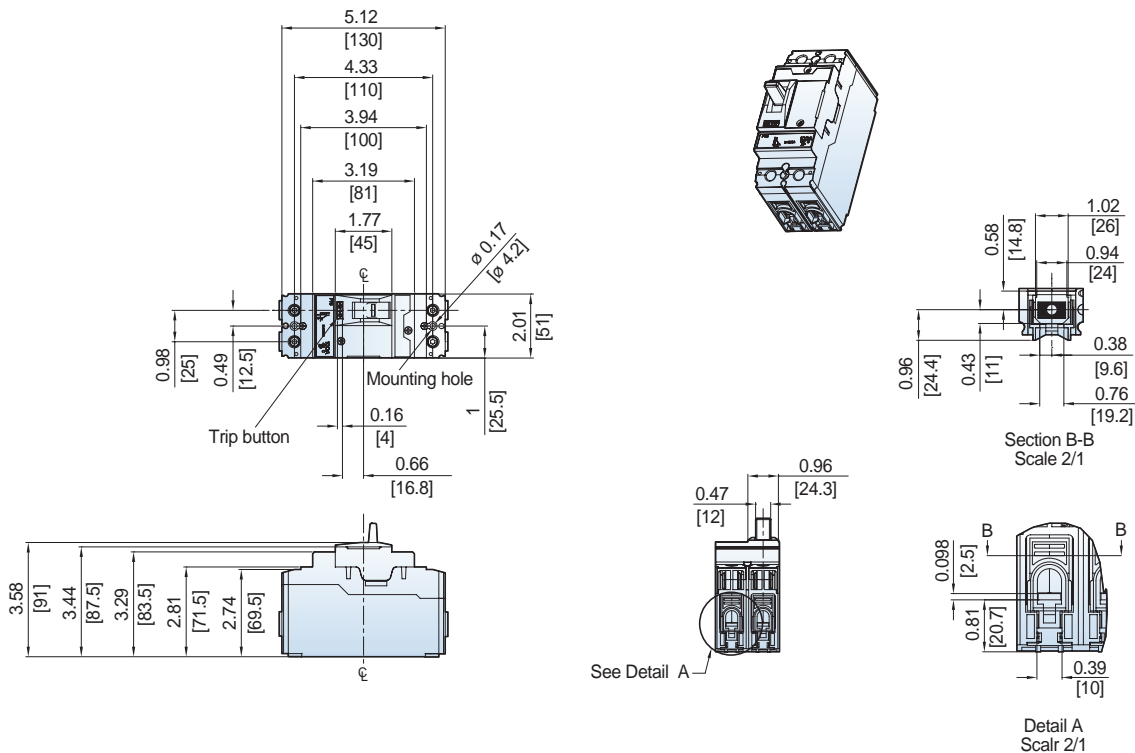
## DIMENSIONS UTE100 CIRCUIT BREAKERS

### UTE100 2P Circuit Breaker [Lug type]

Dimension: inch[mm]



### UTE100 2P Circuit Breaker [Busbar type]

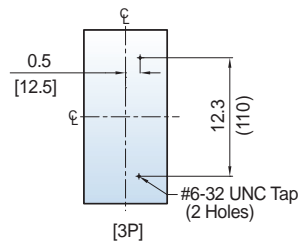
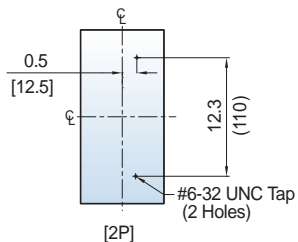




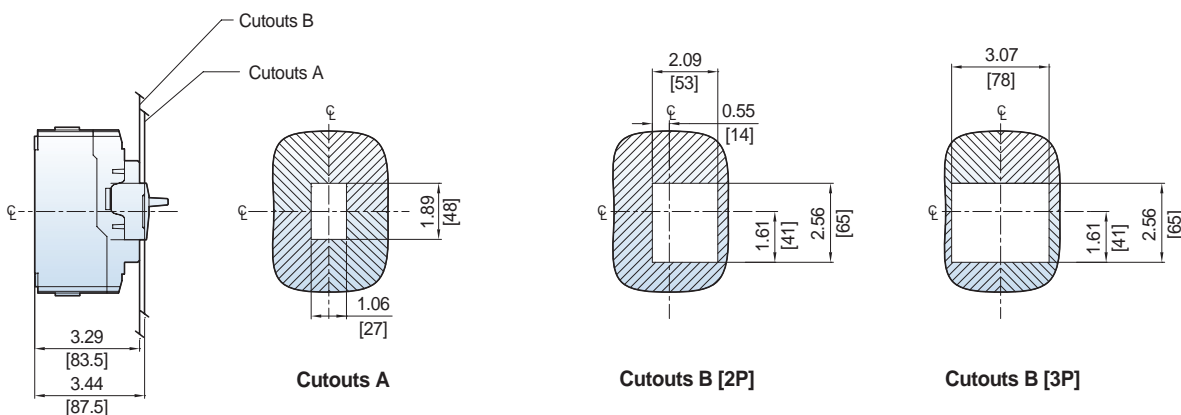


### UTE100 Circuit Breakers Mounting

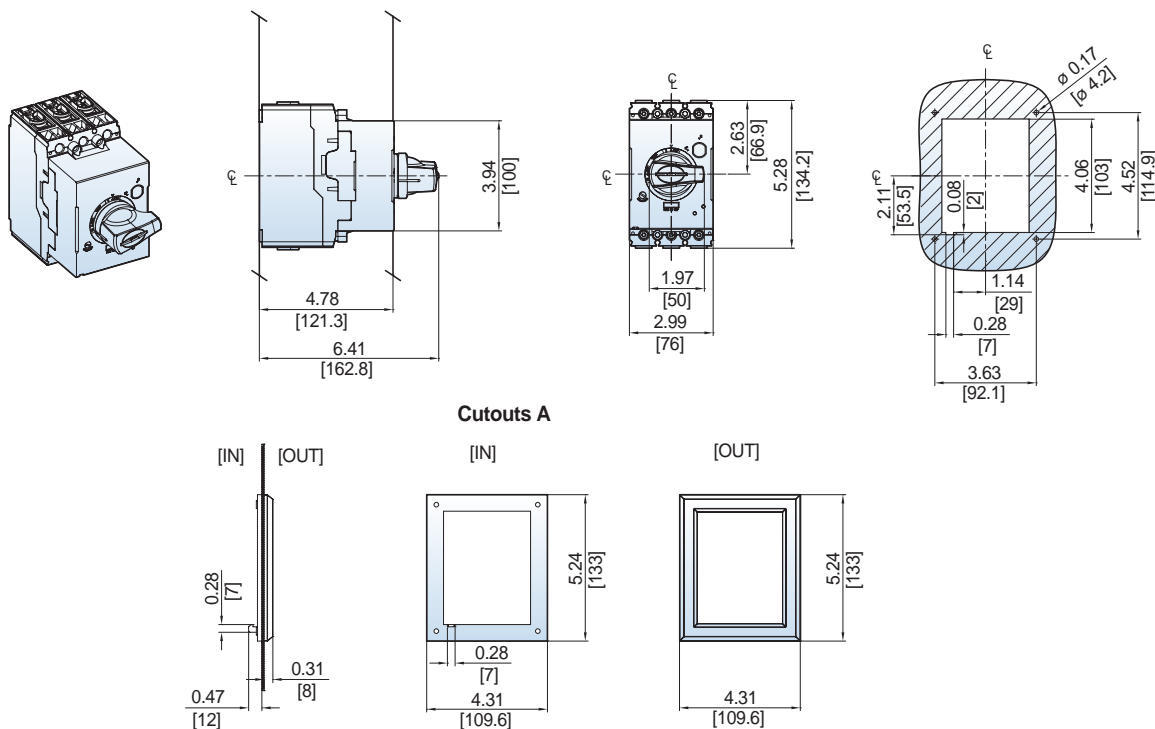
Dimension: inch[mm]



### UTE100 Circuit Breakers Door Cutouts



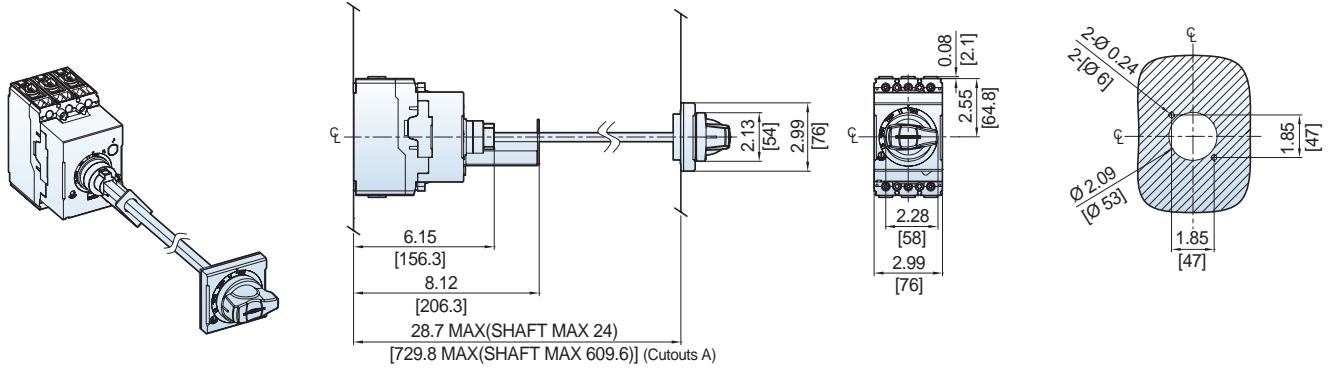
### UTE100 Directly Mounted Rotary Operating Handle [DH-0]



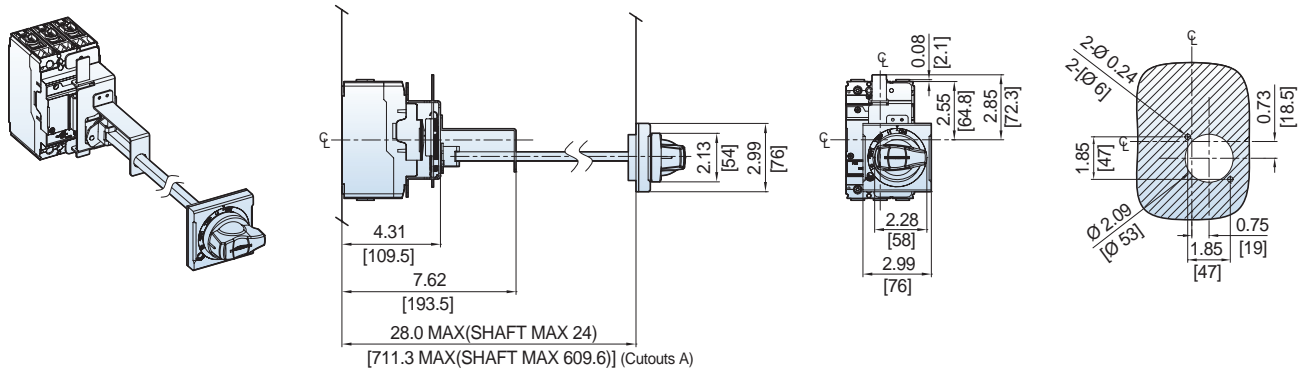
## DIMENSIONS UTE100 CIRCUIT BREAKERS

### UTE100 Door-Mounted Rotary Operating Handle [REH-0]

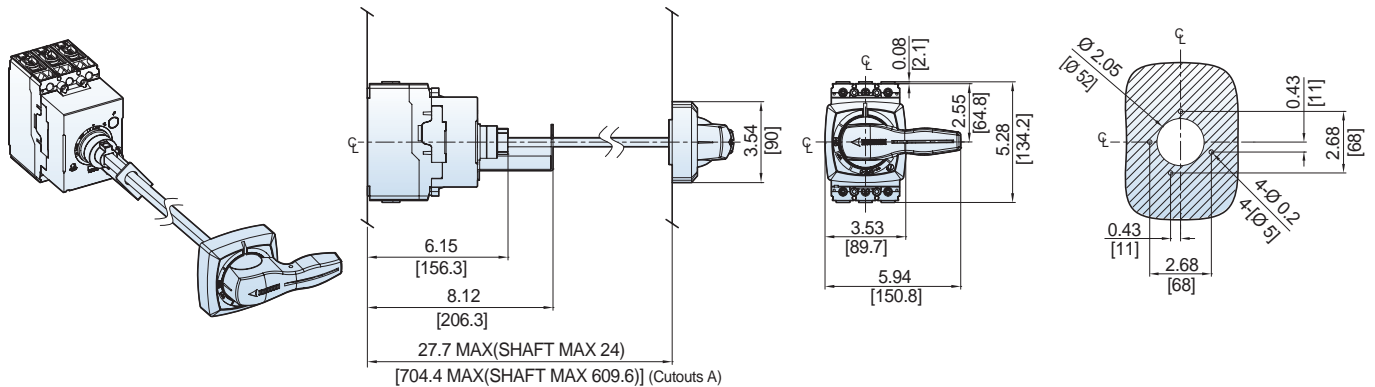
Dimension: inch[mm]



### UTE100 Door-Mounted Rotary Operating Handle [REH-0C]

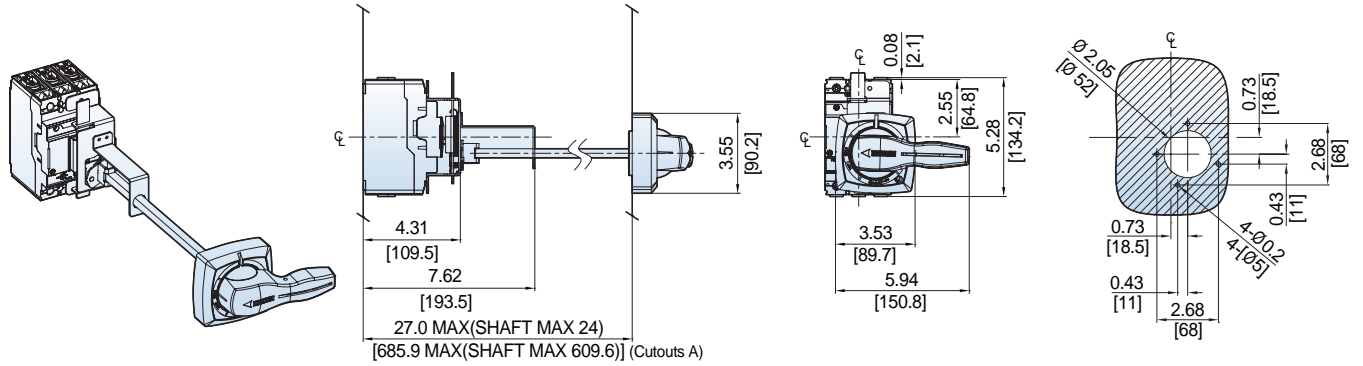


### UTE100 NEMA Door-Mounted Rotary Operating Handle [EHU-0, EHX-0]

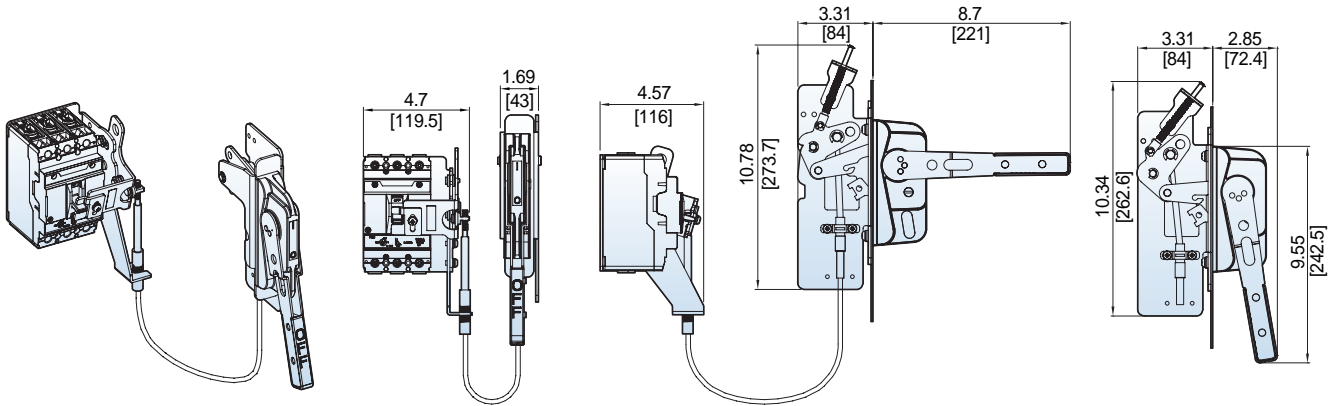


**UTE100 NEMA Door-Mounted Rotary Operating Handle [EHU-0C, EHX-0C]**

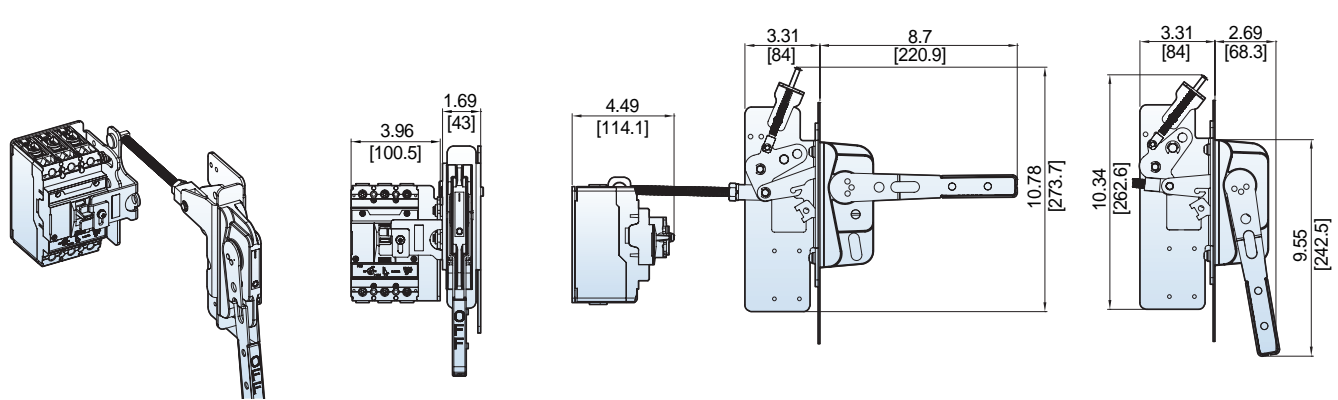
Dimension: inch[mm]



**UTE100 Flange-Mounted Cable Operating Handle [COM-0 + FHU, X-S + Cable]**



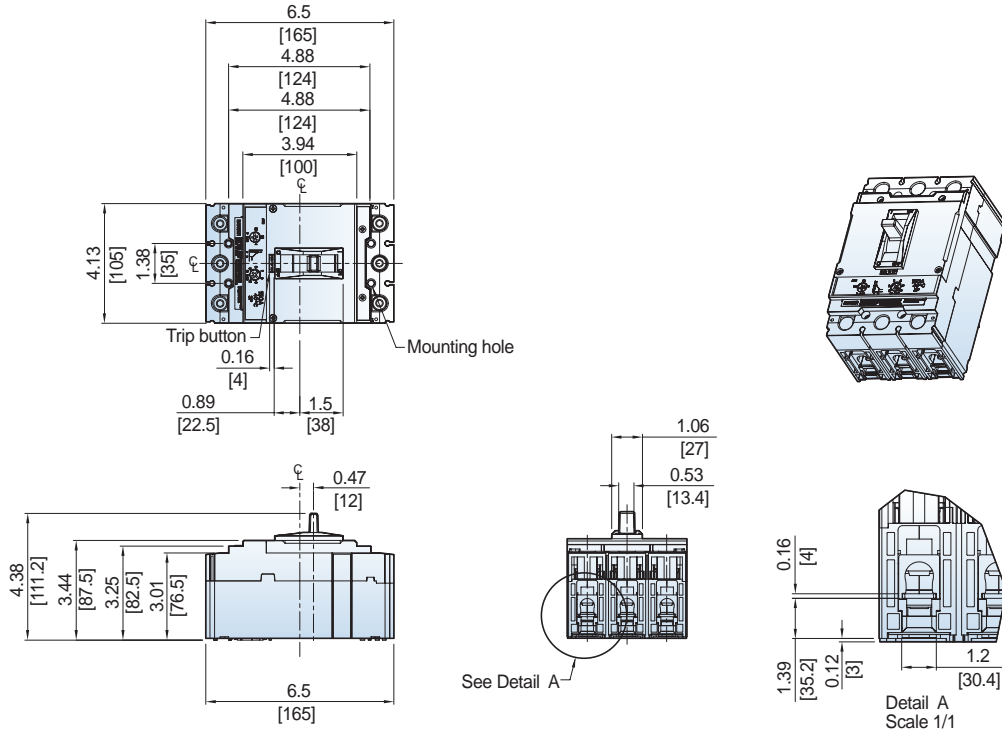
**UTE100 Flange-Mounted Variable-Depth Operating Handle [VDM-0 + FHU, X-S]**



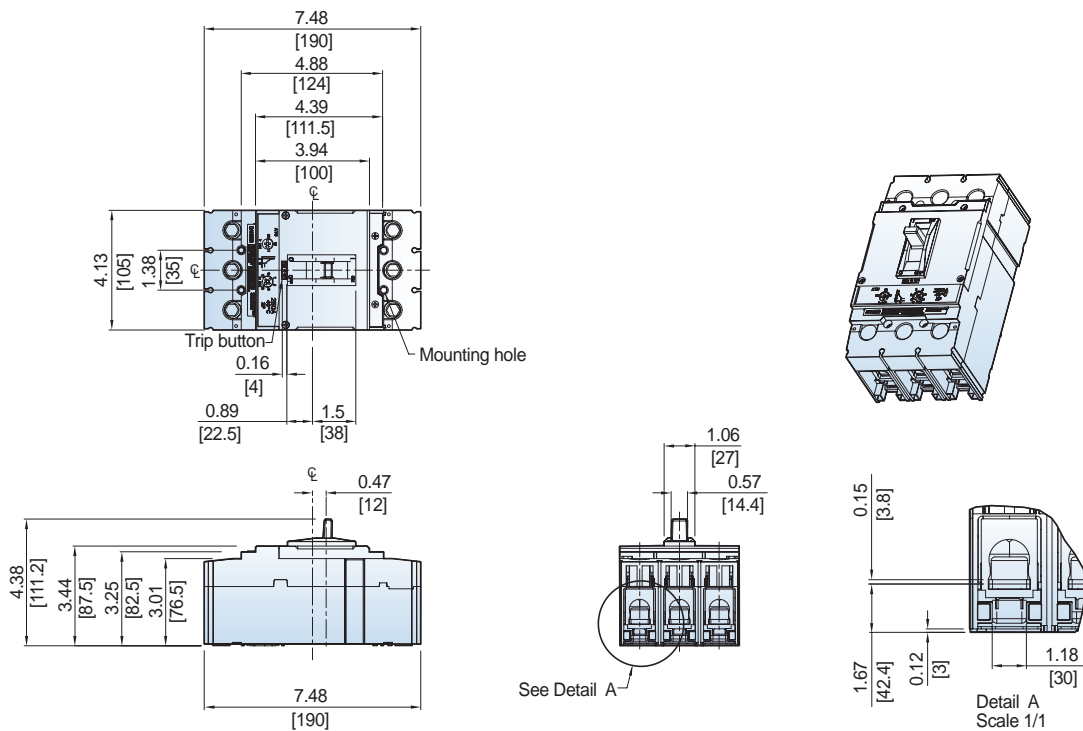
## DIMENSIONS UTS150/250 CIRCUIT BREAKERS

### UTS150 3P Circuit Breaker [Lug type]

Dimension: inch[mm]

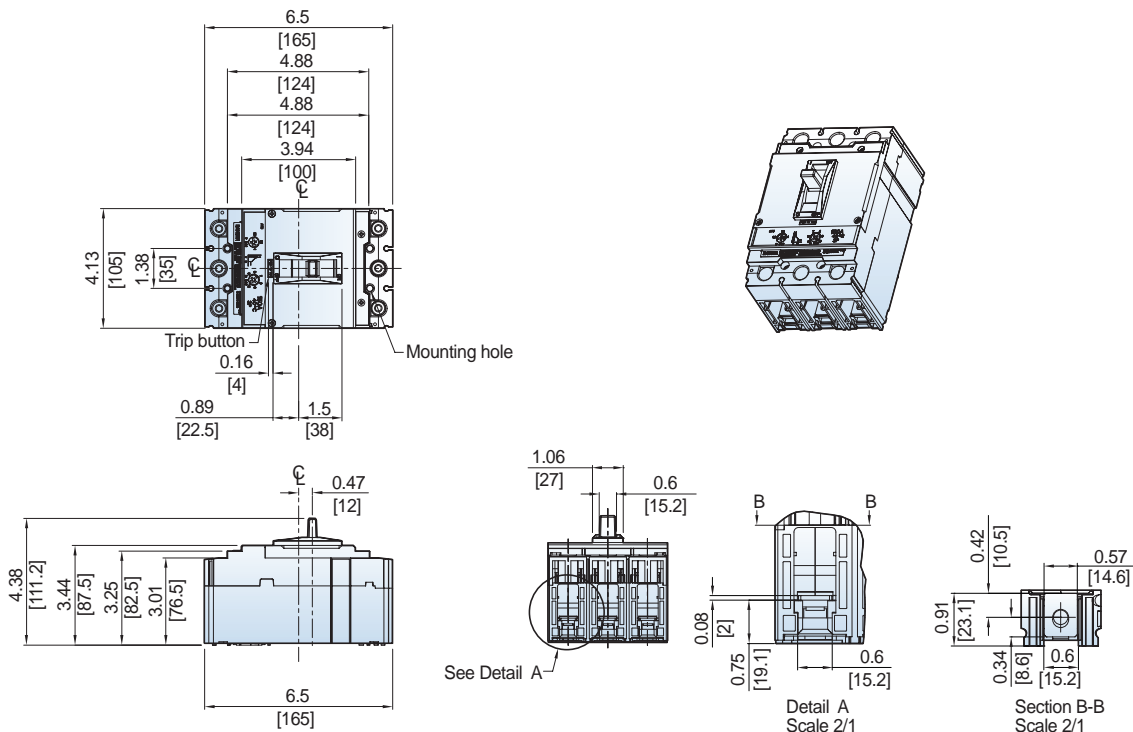


### UTS250 3P Circuit Breaker [Lug type]

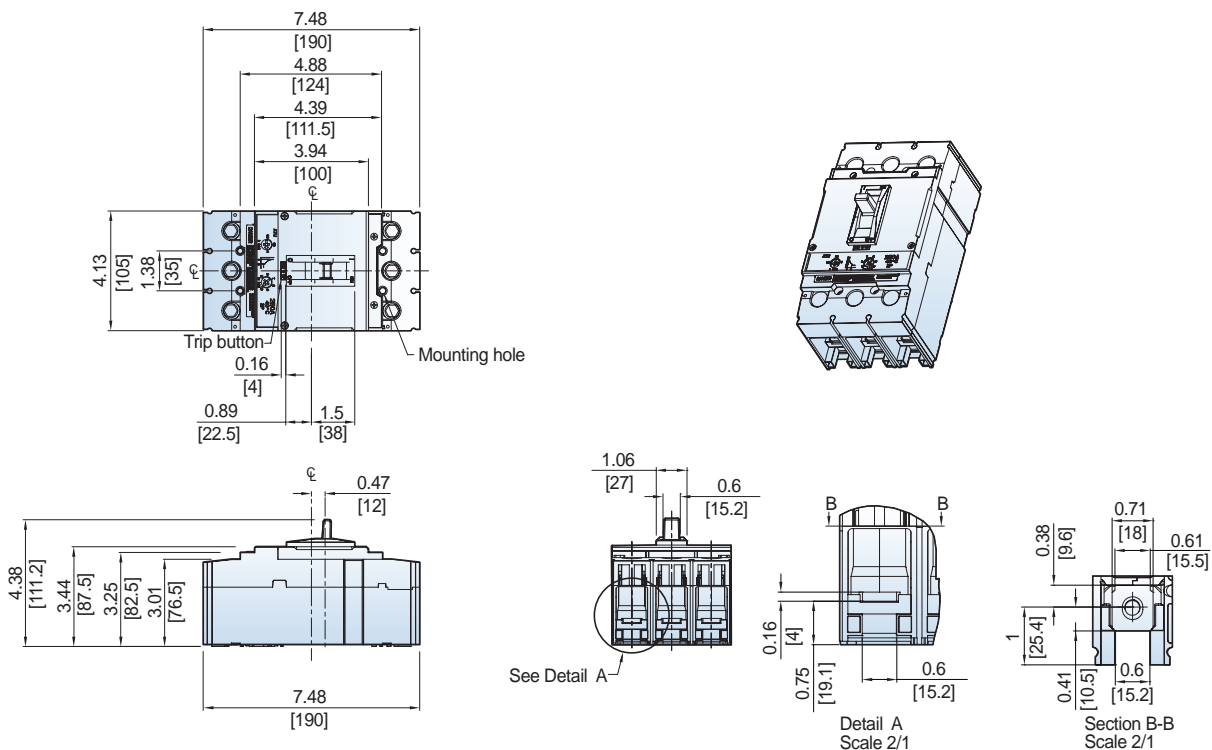


UTS150 3P Circuit Breaker [Busbar type]

Dimension: inch[mm]



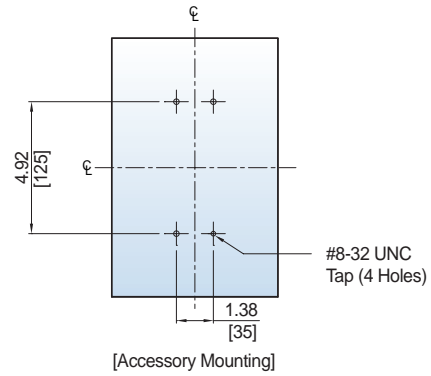
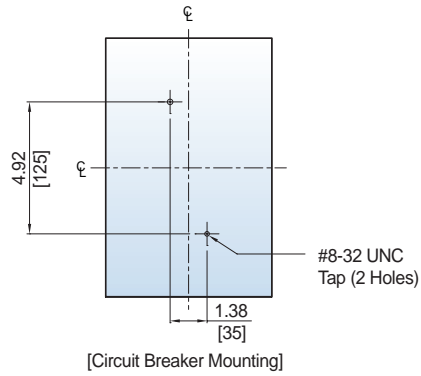
UTS250 3P Circuit Breaker [Busbar type]



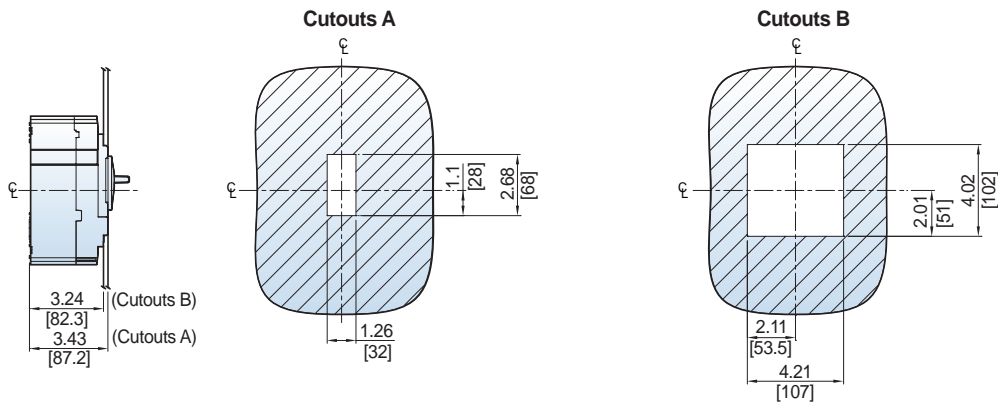
## DIMENSIONS UTS150/250 CIRCUIT BREAKERS

### UTS150/250 Circuit Breaker & Accessory Mounting

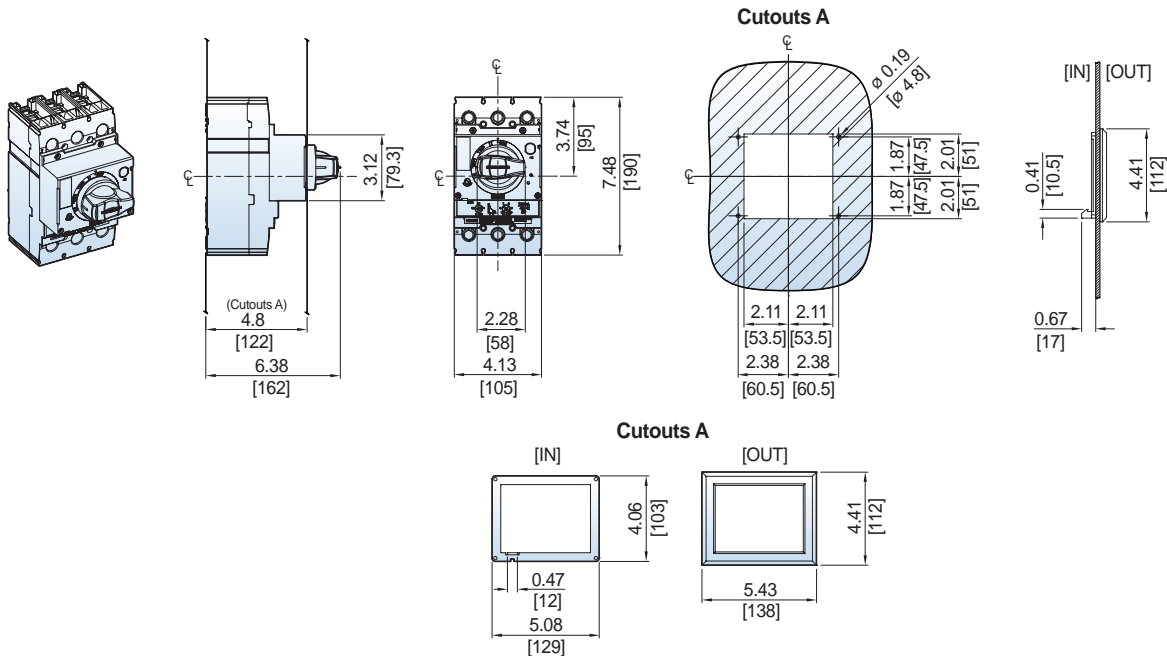
Dimension: inch[mm]



### UTS150/250 Circuit Breaker Door Cutouts

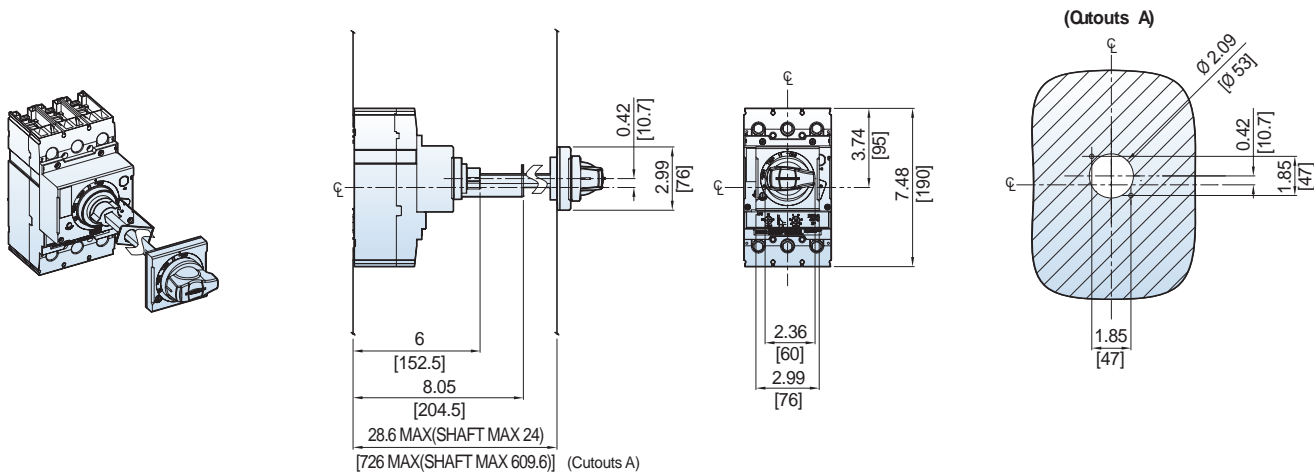


### UTS150/250 Directly Mounted Rotary Operating Handle [DH-2]

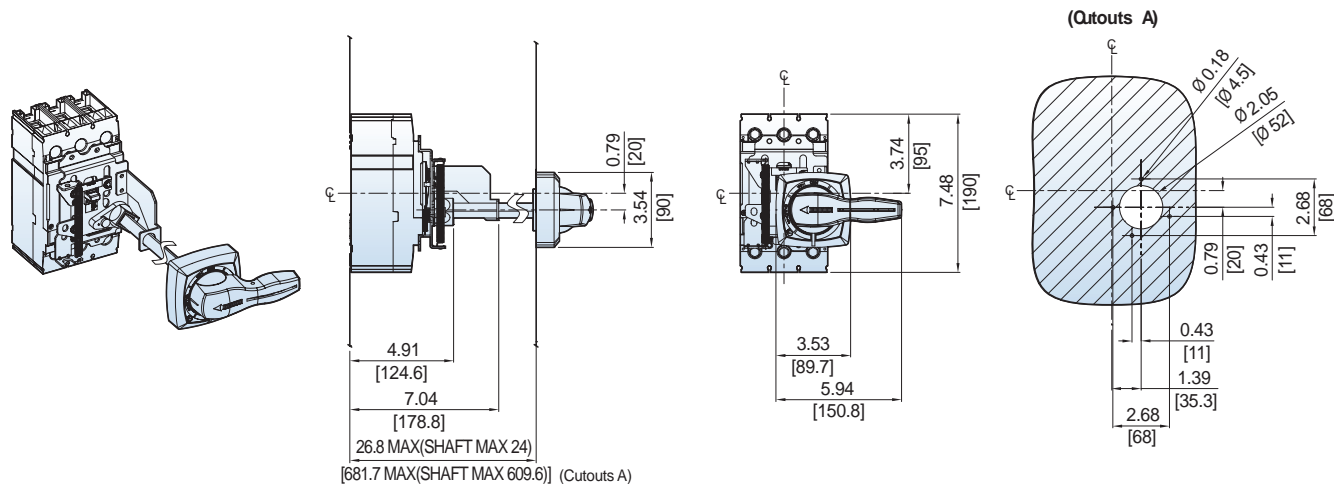


**UTS150/250 Door-Mounted Rotary Operating Handle [REH-2]**

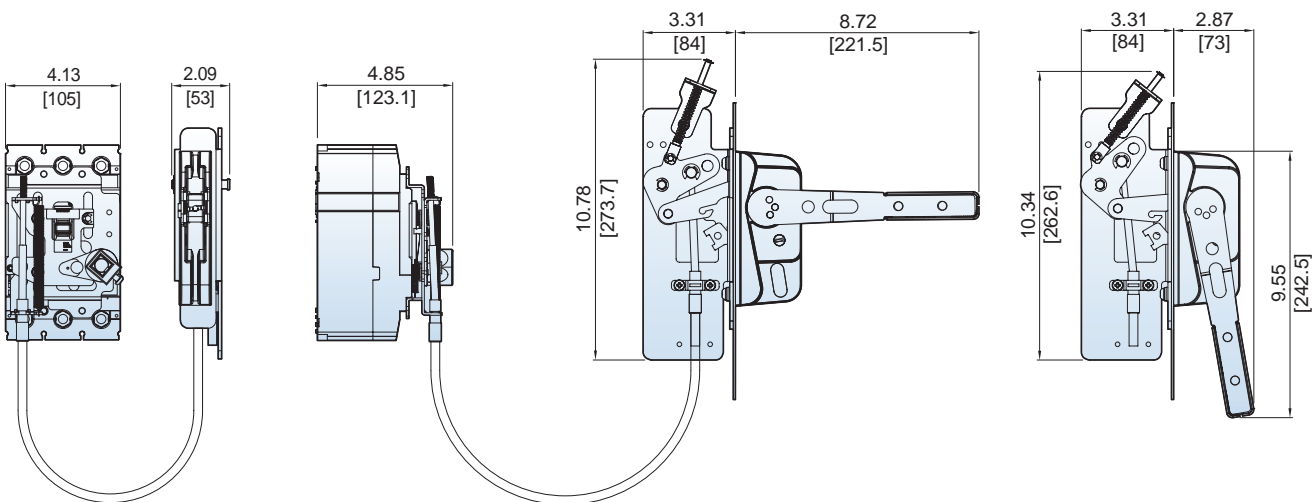
Dimension: inch[mm]



**UTS150/250 NEMA Door-Mounted Rotary Operating Handle [EHU-2, EHV-2, EHX-2]**



**UTS150/250 Flange-Mounted Cable Operating Handle [FHU-2, FHX-2 Type]**

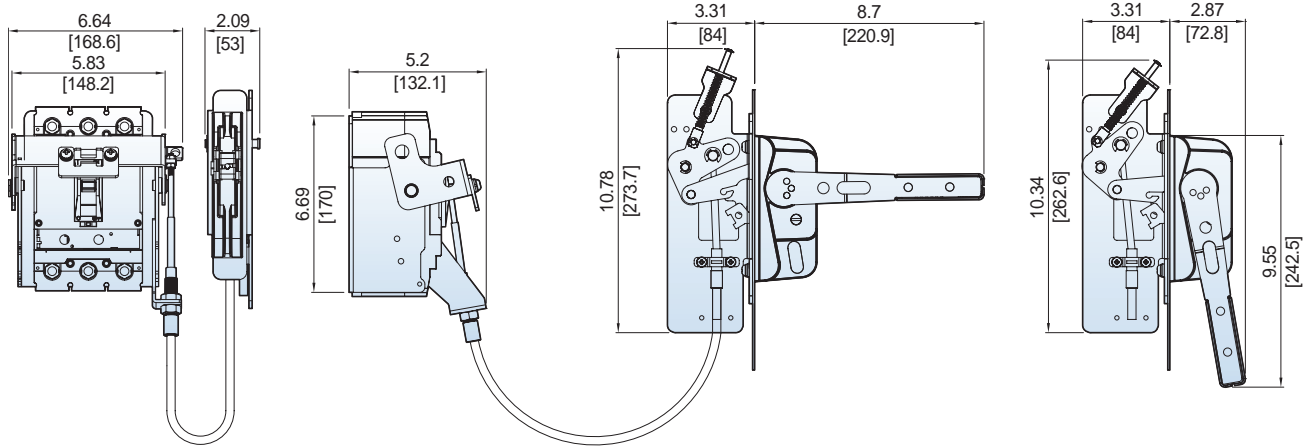




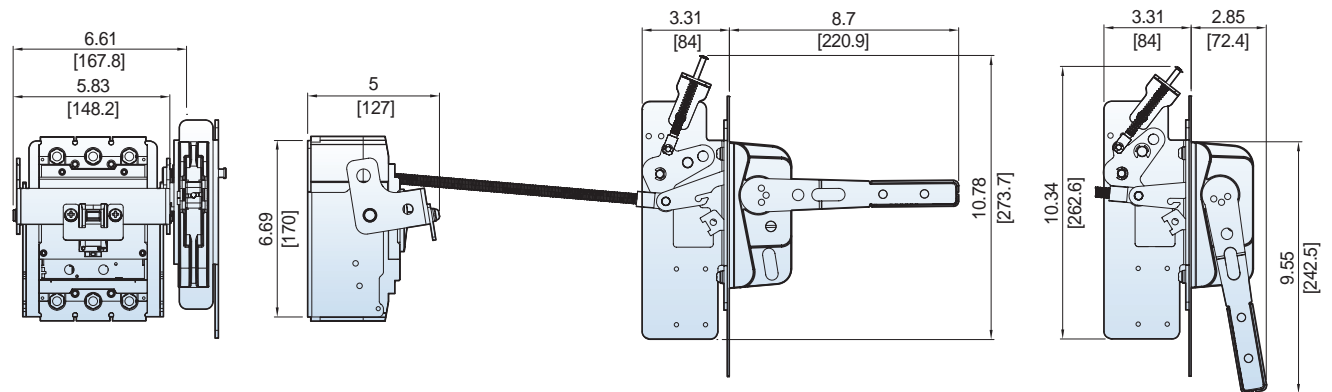
## DIMENSIONS UTS150/250 CIRCUIT BREAKERS

UTS150/250 Flange-Mounted Cable Operating Handle [COM-2 + FHU, X-S + Cable]

Dimension: inch[mm]



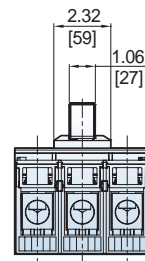
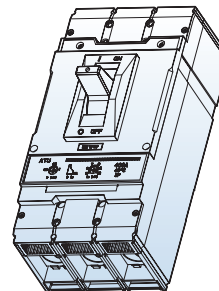
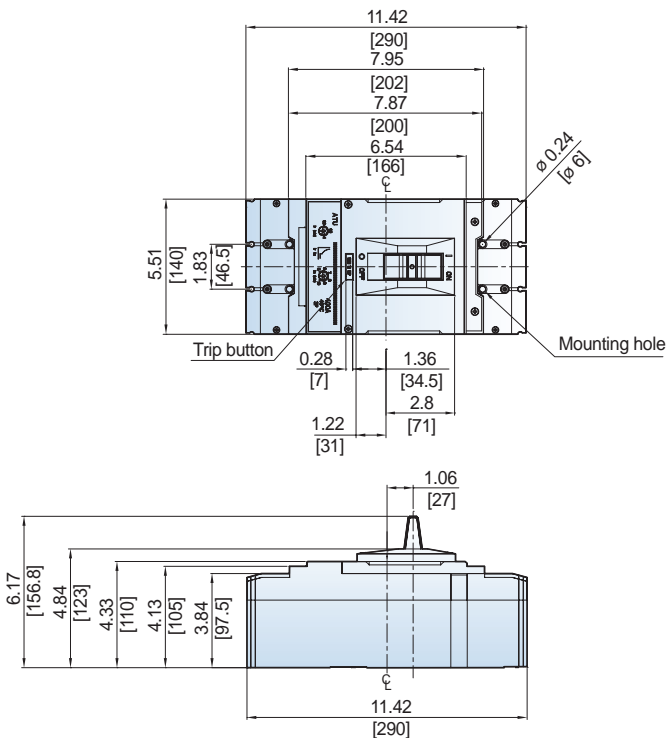
UTS150/250 Flange-Mounted Variable-Depth Operating Handle [VDM-2 + FHU, X-S]



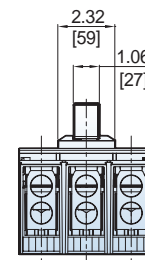
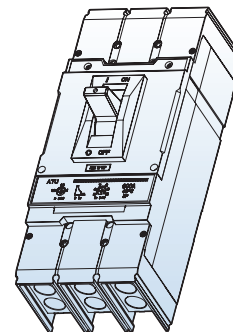
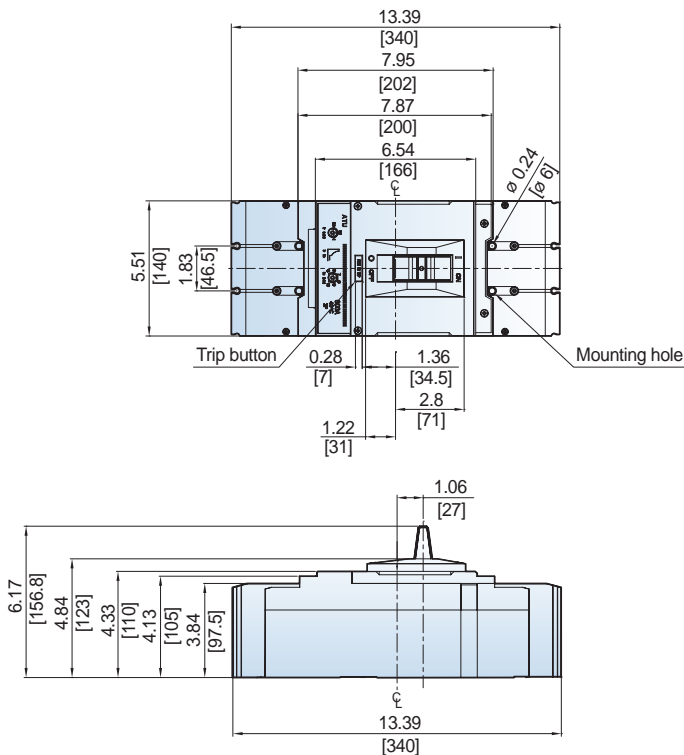
## DIMENSIONS UTS400/600 CIRCUIT BREAKERS

### UTS400 3P Circuit Breaker [Lug type]

Dimension: inch[mm]



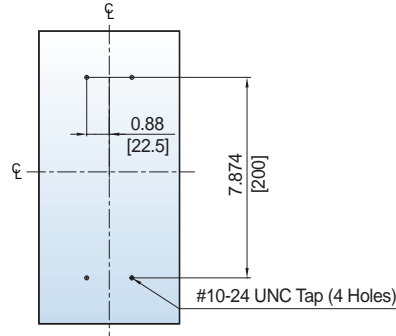
### UTS600 3P Circuit Breaker [Lug type]



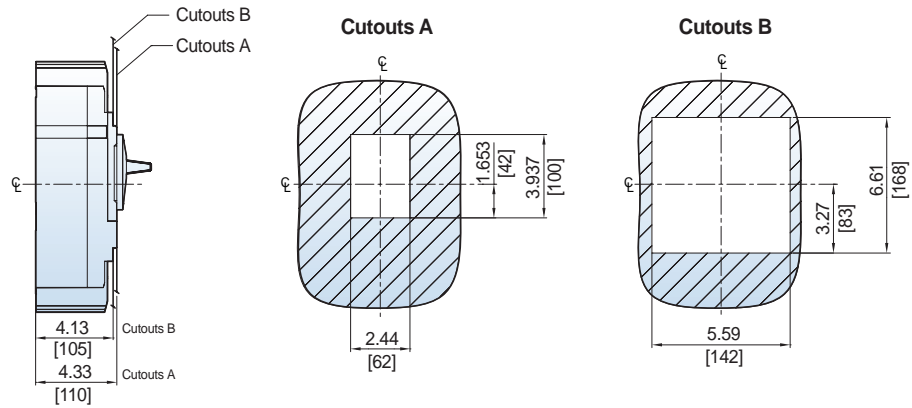
## DIMENSIONS UTS400/600 CIRCUIT BREAKERS

### UTS400/600 Circuit Breaker Mounting

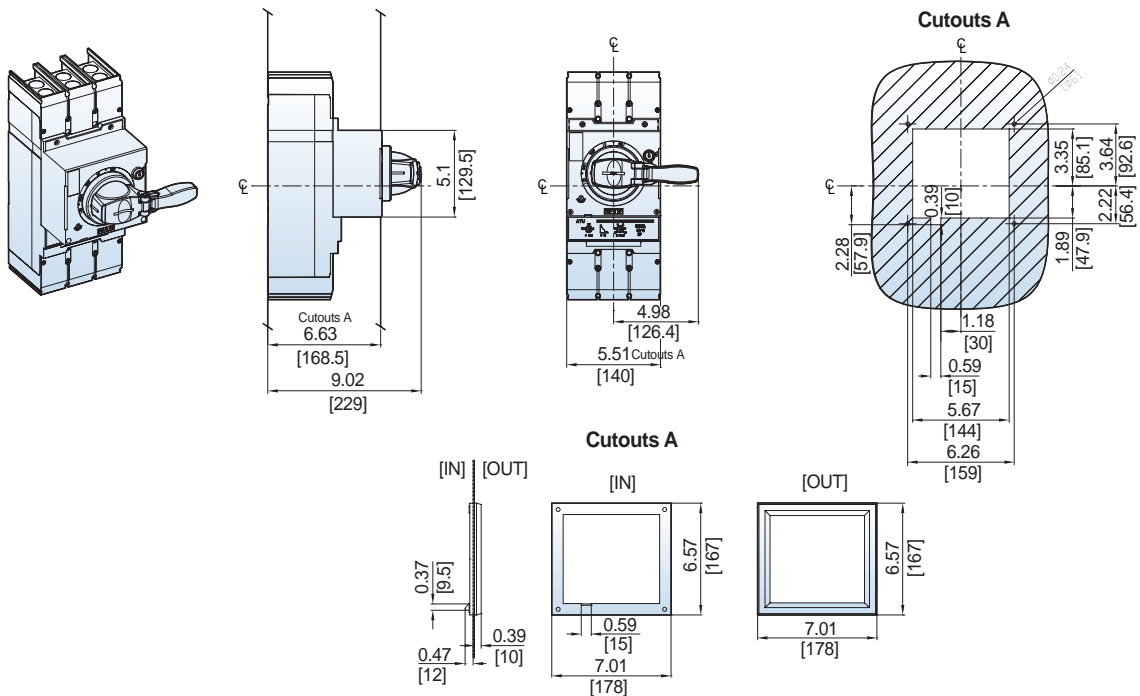
Dimension: inch[mm]



### UTS400/600 Circuit Breaker Door Cutouts

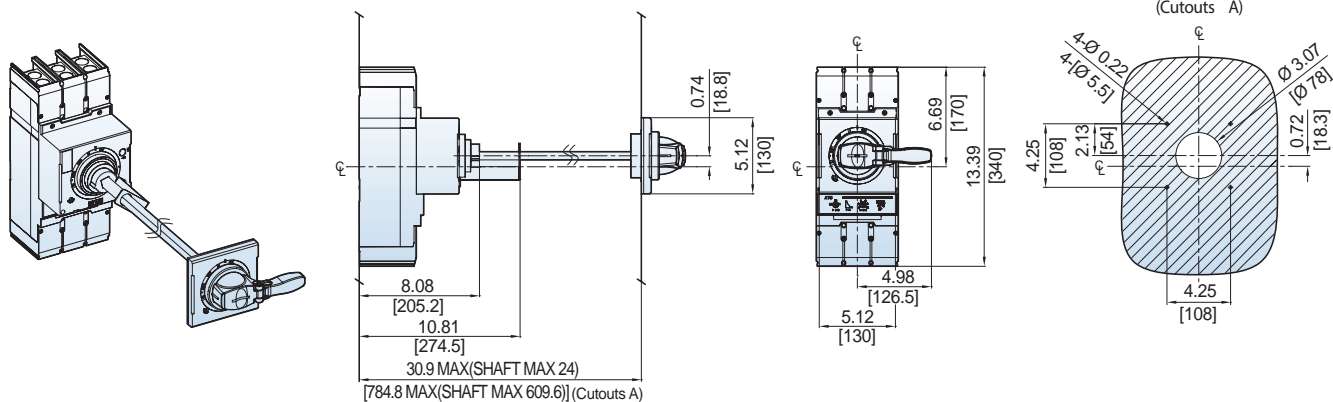


### UTS400/600 Directly Mounted Rotary Operating Handle [DH-3]

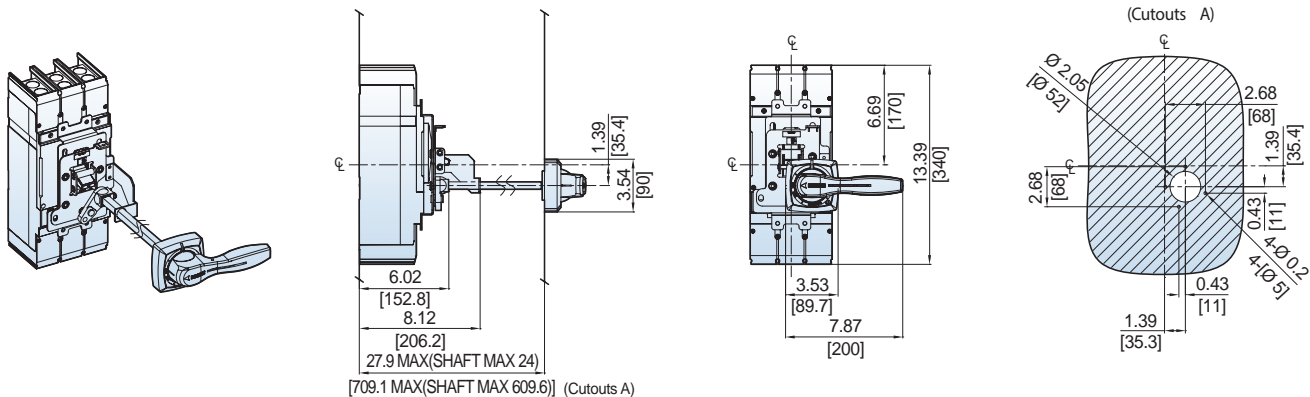


**UTS400/600 Door-Mounted Rotary Operating Handle [REH-3]**

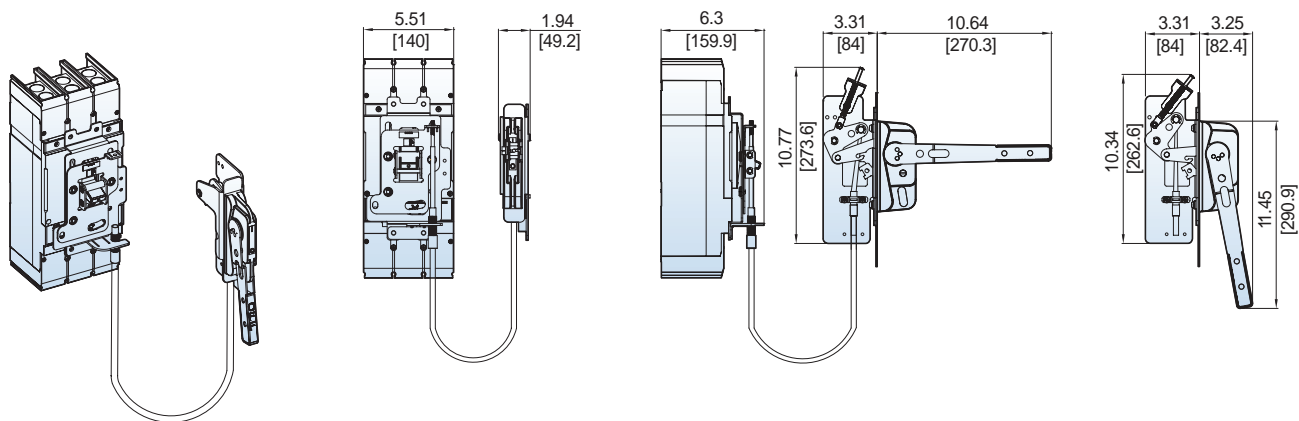
Dimension: inch[mm]



**UTS400/600 NEMA Door-Mounted Rotary Operating Handle [EHU-3, EHV-3, EHX-3]**



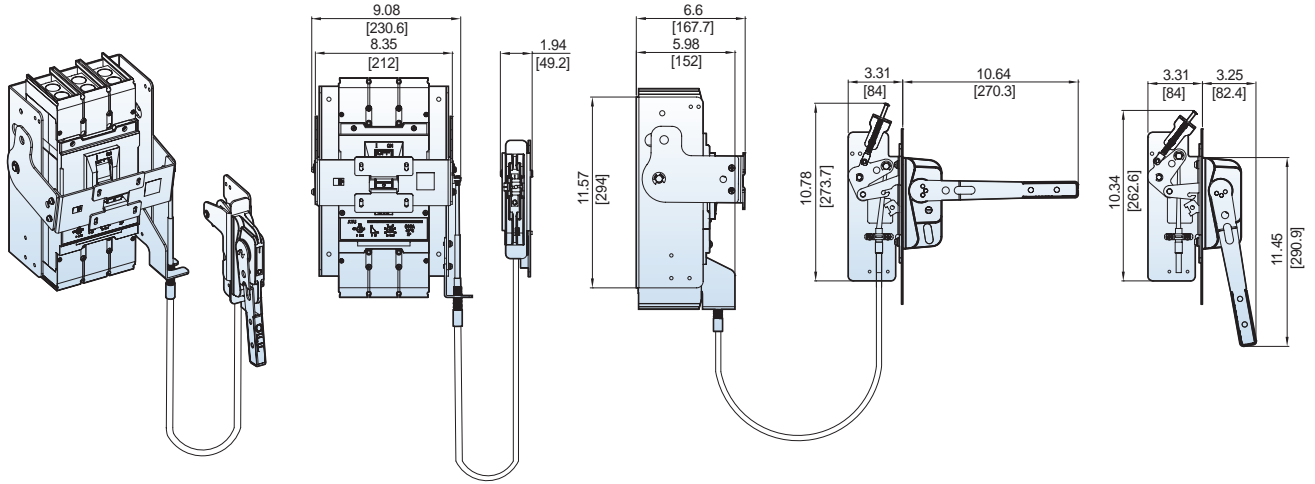
**UTS400/600 Flange-Mounted Cable Operating Handle [FHU-3, FHX-3]**



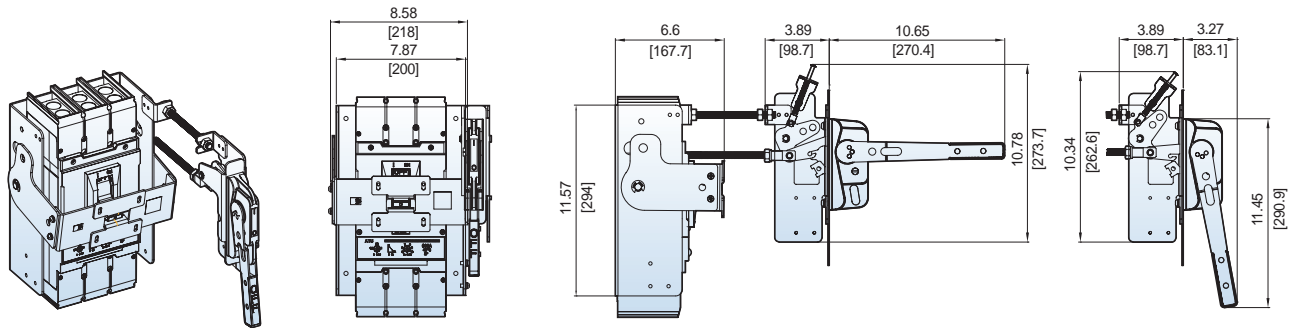
## DIMENSIONS UTS400/600 CIRCUIT BREAKERS

UTS400/600 Flange-Mounted Cable Operating Handle [COM-3 + FHU, X-L + Cable]

Dimension: inch[mm]



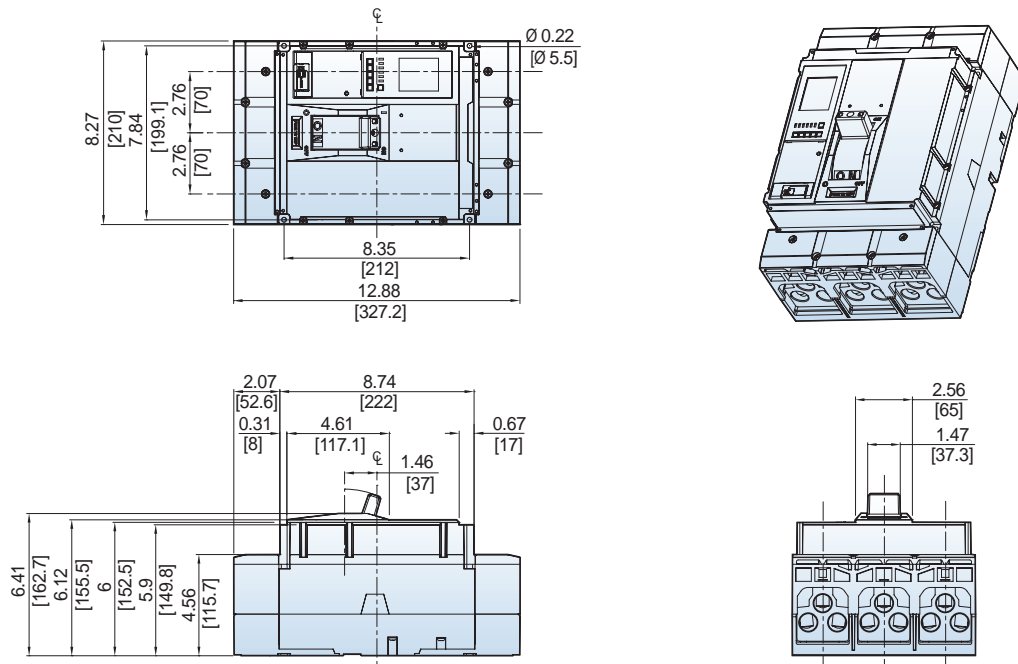
UTS400/600 Flange-Mounted Variable-Depth Operating Handle [VDM-3 +FHU, X-L]



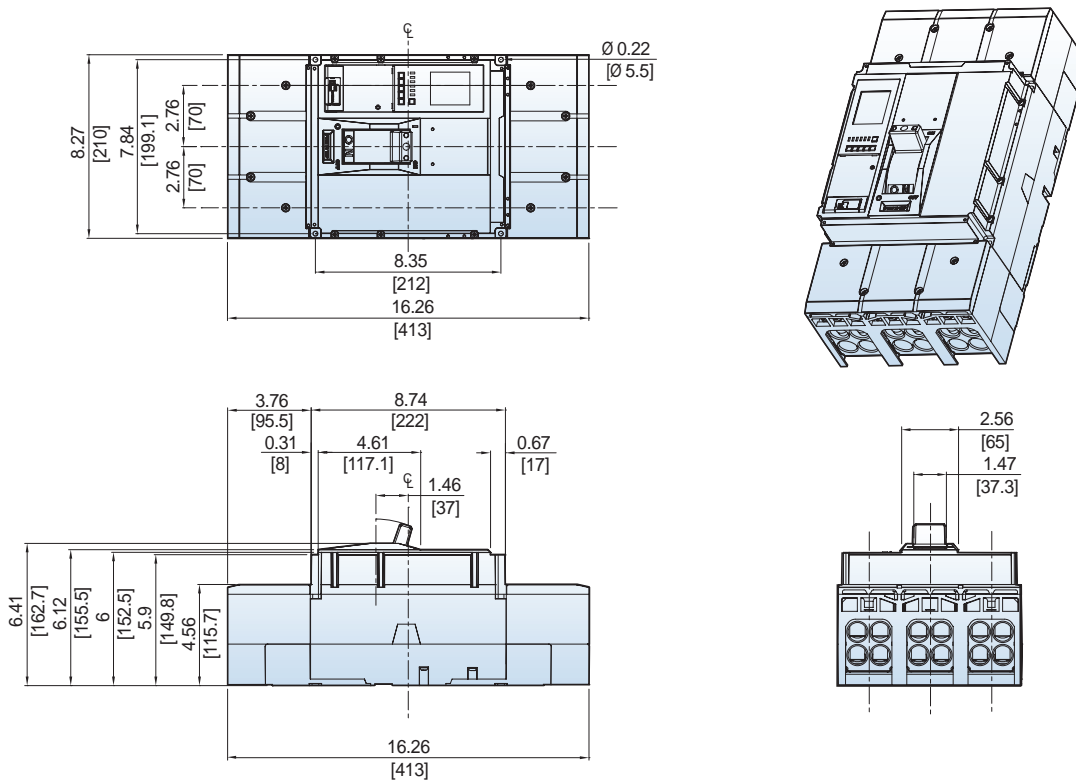
## DIMENSIONS UTS800/1200 CIRCUIT BREAKERS

UTS800 3P Circuit Breaker [Lug type]

Dimension: inch[mm]



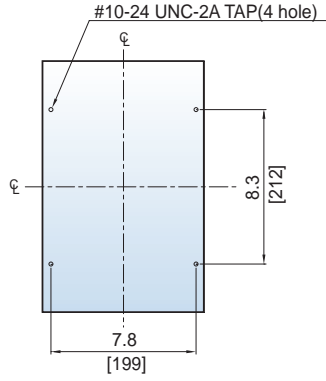
UTS1200 3P Circuit Breaker [Lug type]



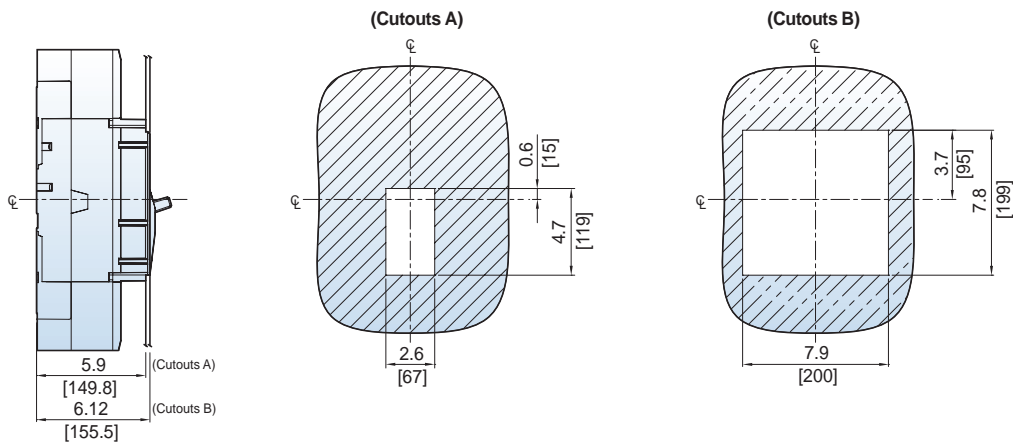
## DIMENSIONS UTS800/1200 CIRCUIT BREAKERS

### UTS800/1200 Circuit Breaker Mounting

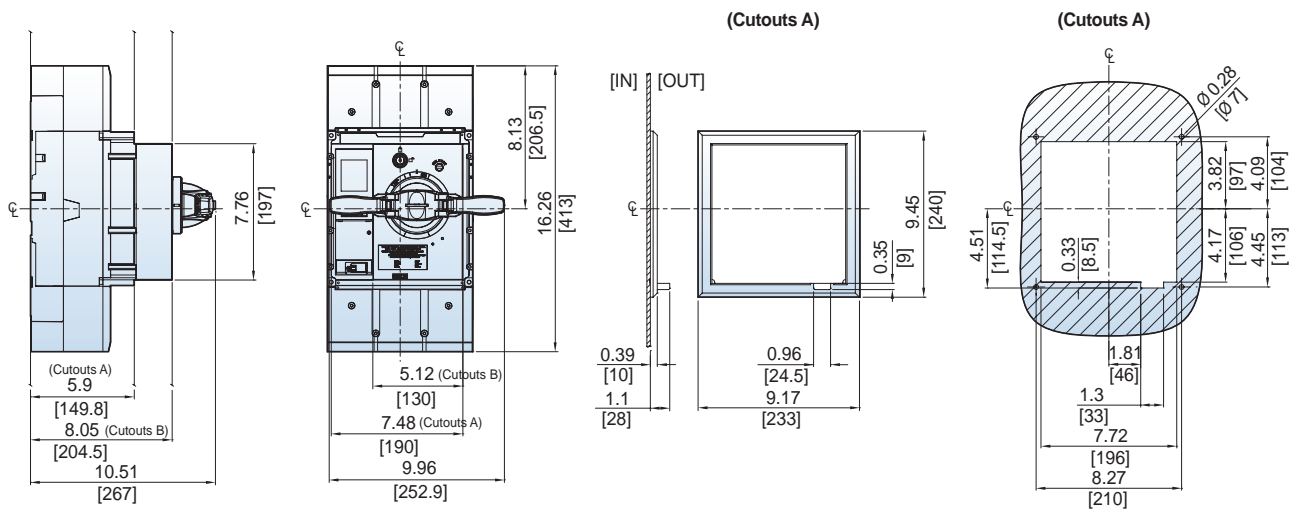
Dimension: inch[mm]



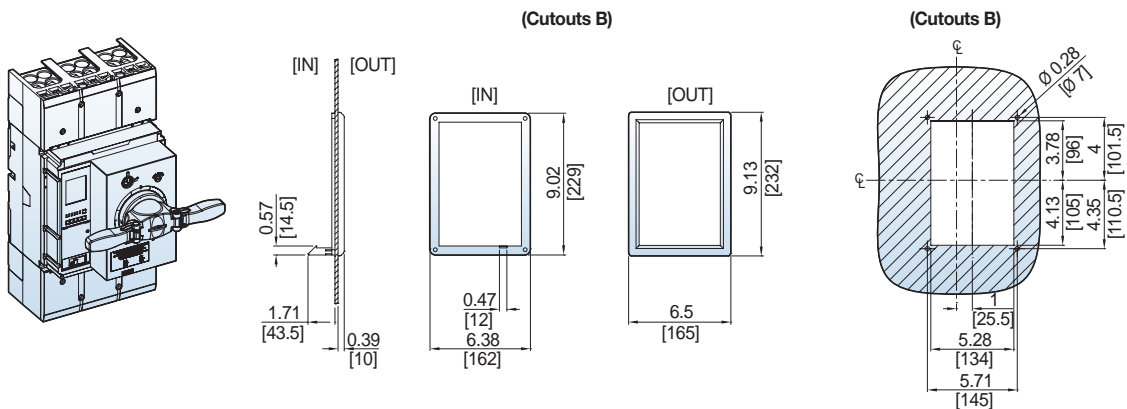
### UTS800/1200 Circuit Breaker Door Cutouts



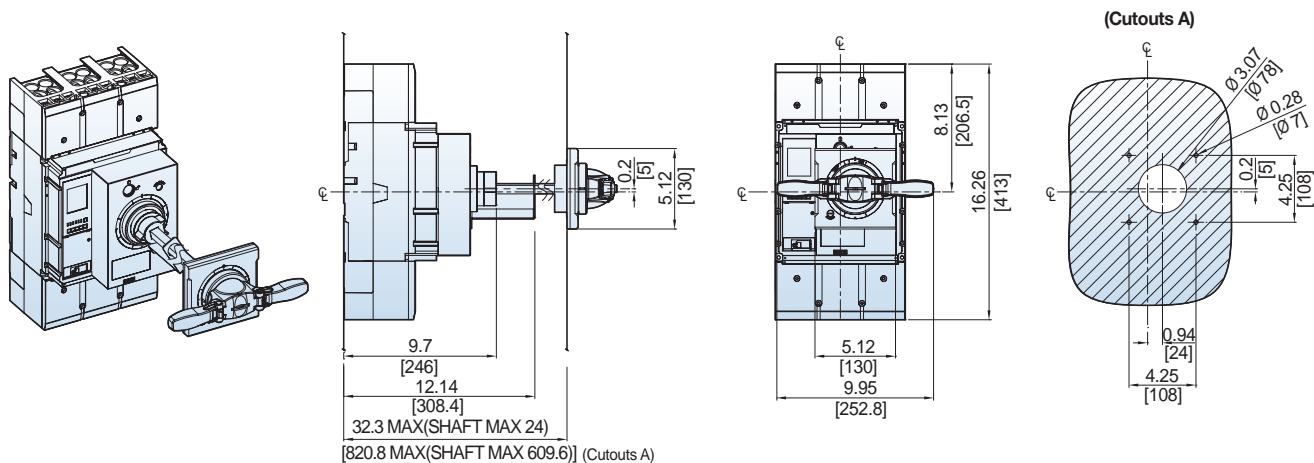
### UTS800/1200 Directly Mounted Rotary Operating Handle [DH-5]



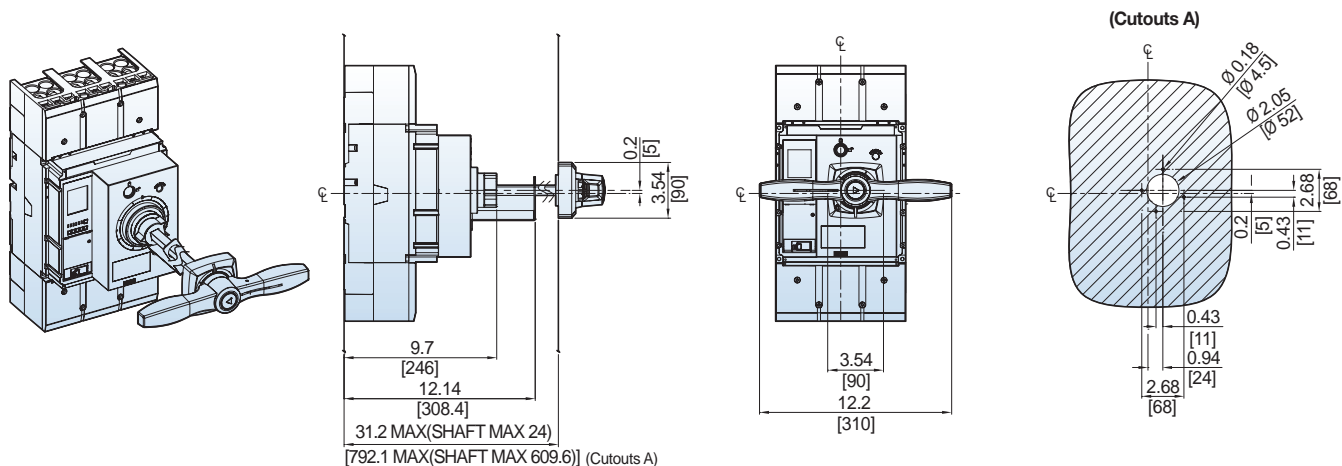
Dimension: inch[mm]



**UTS800/1200 Door-Mounted Rotary Operating Handle [REH-5]**



**UTS800/1200 NEMA Door-Mounted Rotary Operating Handle [EHU-5, EHV-5, EHX-5]**

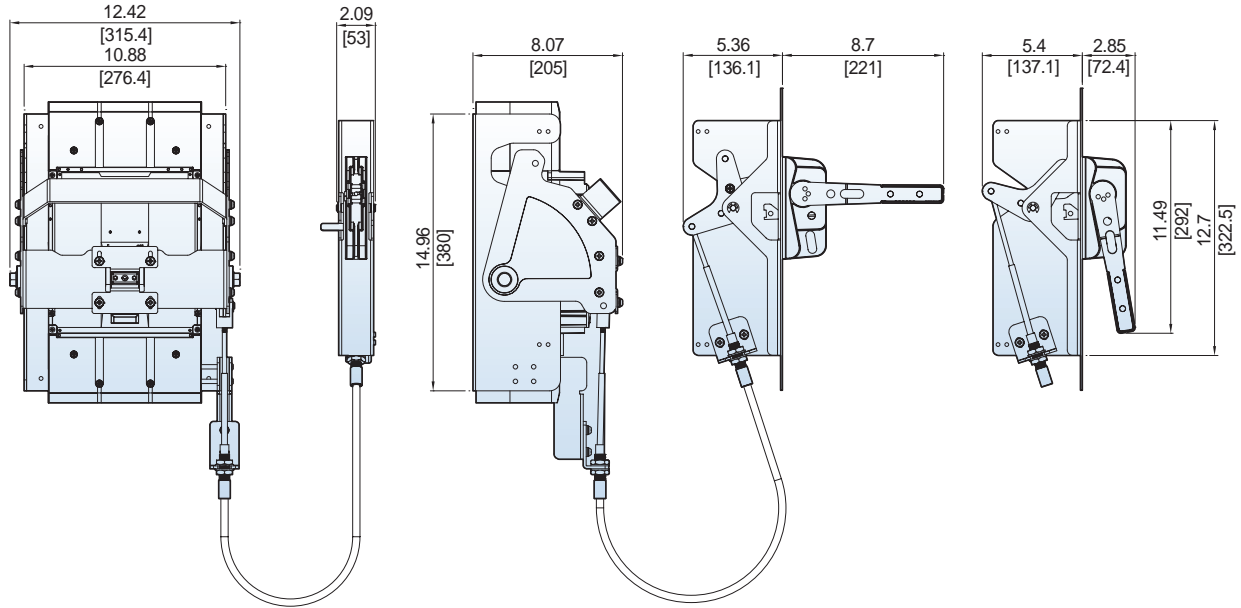




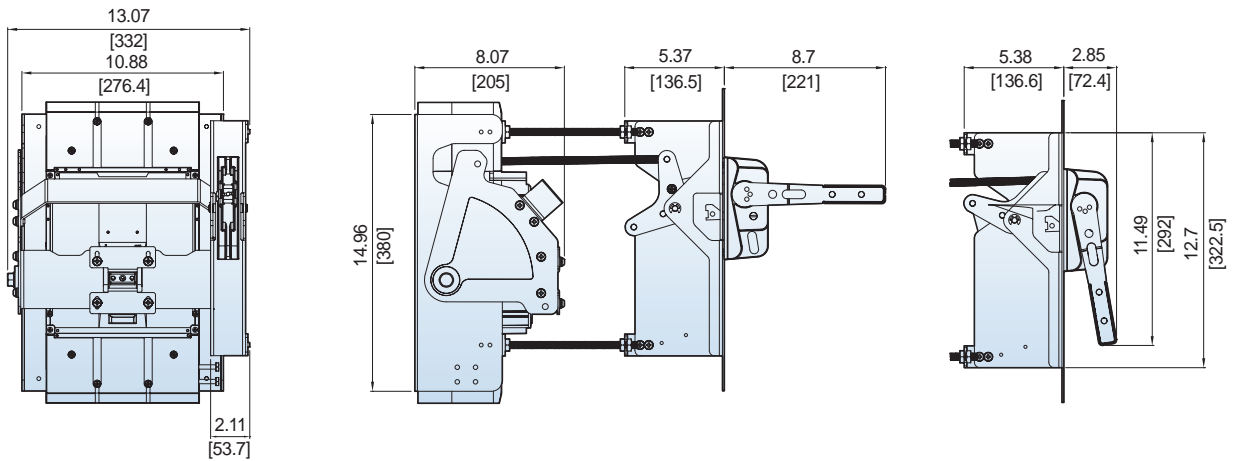
## DIMENSIONS UTS400/600 CIRCUIT BREAKERS

UTS800/1200 Flange-Mounted Cable Operating Handle [COM-5 + FHU, X-L + Cable]

Dimension: inch[mm]



UTS800/1200 Flange-Mounted Variable-Depth Operating Handle [VDM-5 + FHU, X-L]











Susol UL MCCB  
Certifications

## Green Innovators of Innovation



### Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact a qualified service technician when you need maintenance. Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

## LSIS Co., Ltd.

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