

# TD / TS Series Molded Case Circuit Breakers UL489 Listed

## Molded Case Circuit Breaker



- 4 Frame Sizes
- Compact Design
- Thermal Magnetic
- 240, 480, 600VAC
- 3 Poles
- Up to 100kA Short Circuit Interrupting Capacity
- **Circuit Breakers are supplied with line and load terminals**
- HACR rated
- CE version (without UL approval) available upon request



## SPECIFICATIONS

|              | Current Rating     | Wire Ratings      | Calibration Temperature |
|--------------|--------------------|-------------------|-------------------------|
| <b>TD125</b> | 15-125A / 600V AC  | 60°/ 75°C Cu only | 40°C (104°F)            |
| <b>TS250</b> | 150-250A / 600V AC | 60°/ 75°C Cu only |                         |
| <b>TS400</b> | 300-400A / 600V AC | 75°C Cu only      |                         |
| <b>TS800</b> | 500-800A / 600V AC | 75°C Cu only      |                         |

## INTERRUPTING CAPACITY

|      | TD125 |     | TS250 |     | TS400 |     | TS800 |     |
|------|-------|-----|-------|-----|-------|-----|-------|-----|
|      | NU    | HU  | NU    | HU  | NU    | HU  | NU    | HU  |
| 240V | 50    | 100 | 50    | 100 | 50    | 100 | 50    | 100 |
| 480V | 35    | 65  | 35    | 65  | 35    | 65  | 35    | 65  |
| 600V | 10    | 14  | 10    | 18  | 14    | 20  | 18    | 25  |

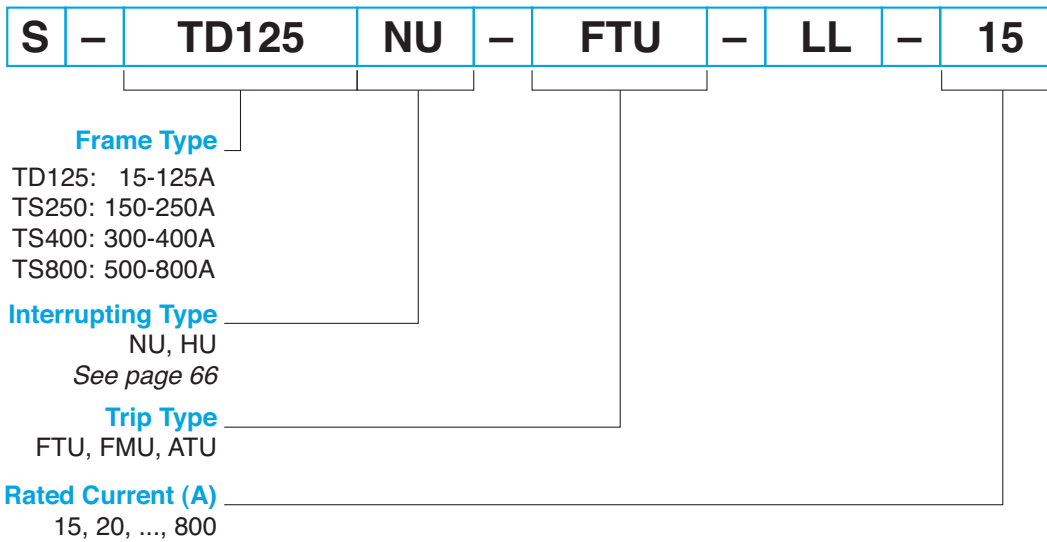
## TERMINAL SIZE ACCEPTABILITY AND TERMINAL TORQUE

| Frame Types        | Wire Range                 |                         | Tightening Torque<br>[lb.in.] |
|--------------------|----------------------------|-------------------------|-------------------------------|
|                    | Conductor<br>Cross-section | Number of<br>Conductors |                               |
| TD125 (15 - 125A)  | 14 - 8 AWG                 | 1                       | 60                            |
|                    | 6 - 1/0 AWG                | 1                       | 90                            |
| TS250 (150 - 250A) | 1 AWG                      | 1                       | 150                           |
|                    | 1/0 - 2/0 AWG              | 1                       | 180                           |
|                    | 3/0 - 4/0 AWG              | 1                       | 250                           |
|                    | 300 - 400 kcmil            | 1                       | 325                           |
| TS400 (300 - 400A) | 250 - 400 kcmil            | 1                       | 325                           |
|                    | 500 kcmil                  | 1                       | 375                           |
|                    | 3/0 AWG                    | 2                       | 250                           |
| TS800 (500 - 600A) | 250 - 500 kcmil            | up to 2                 | 375                           |
| TS800 (700 - 800A) | 300 - 500 kcmil            | up to 2                 | 500                           |
|                    | 300 - 400 kcmil            | up to 3                 | 500                           |

## TRIP CHARACTERISTICS

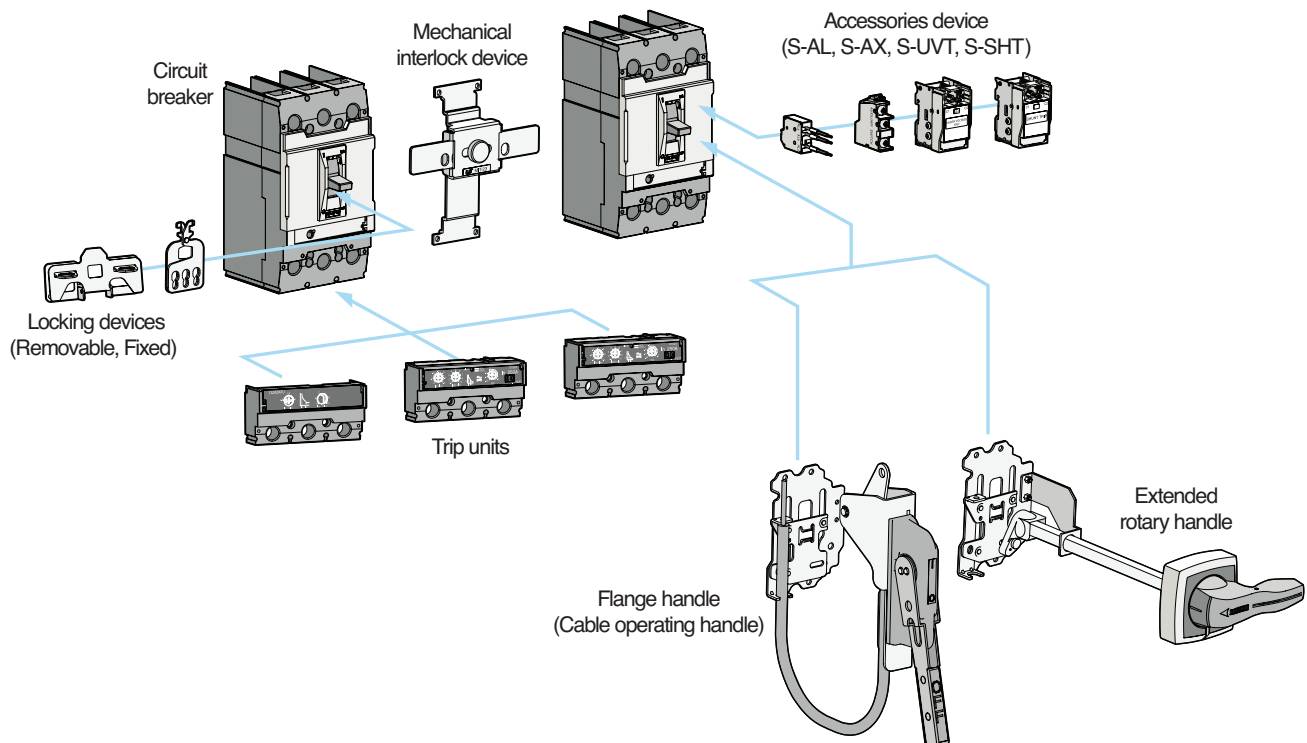
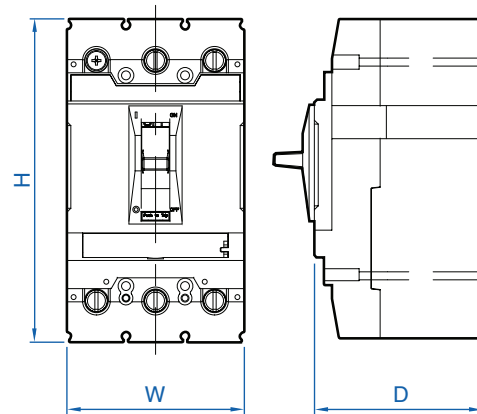
|     |                     | Rated current                |
|-----|---------------------|------------------------------|
| FTU | Fixed-Thermal       | See trip curve pages 76-77   |
|     | Fixed-Magnetic      |                              |
| FMU | Adjustable-Thermal  | 0.8 - 1 x current adjustable |
|     | Fixed-Magnetic      | See trip curve pages 76-77   |
| ATU | Adjustable-Thermal  | 0.8 - 1 x current adjustable |
|     | Adjustable-Magnetic | 5 - 10 x current adjustable  |

## PART NUMBERING SYSTEM



## DIMENSIONS

| Dimensions<br>Frame types | Basic Dimensions W x H x D [inch/mm] |
|---------------------------|--------------------------------------|
| TD125                     | 3.54 x 6.46 x 3.39/90 x 164 x 86     |
| TS250                     | 4.13 x 7.01 x 3.39/105 x 178 x 86    |
| TS400                     | 5.51 x 11.5 x 4.33/140 x 292 x 110   |
| TS800                     | 8.27 x 16.85 x 5.31/210 x 428 x 135  |



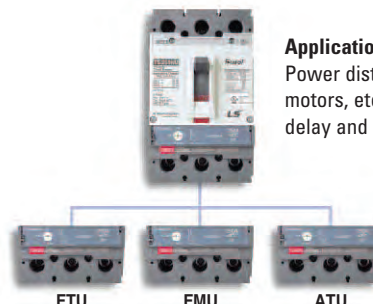
# TD / TS Series Circuit Breakers

Normal Interrupting  
Capacity (NU)

Circuit Breakers are supplied with line and load terminals

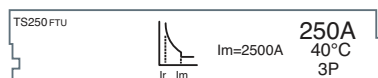
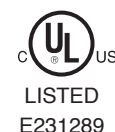
## Interrupting Capacity

|      | TD125 | TS250 | TS400 | TS800 |
|------|-------|-------|-------|-------|
| 240V | 50    | 50    | 50    | 50    |
| 480V | 35    | 35    | 35    | 35    |
| 600V | 10    | 10    | 14    | 18    |



## Application Examples:

Power distribution, power generation, motors, etc. Relatively short thermal trip delay and medium magnetic trip point.



## FTU

Fixed-thermal,  
Fixed-magnetic

| Rated Current | Type/<br>Cat. No.    |
|---------------|----------------------|
| 15A           | S-TD125NU-FTU-LL-15  |
| 20A           | S-TD125NU-FTU-LL-20  |
| 30A           | S-TD125NU-FTU-LL-30  |
| 40A           | S-TD125NU-FTU-LL-40  |
| 50A           | S-TD125NU-FTU-LL-50  |
| 60A           | S-TD125NU-FTU-LL-60  |
| 80A           | S-TD125NU-FTU-LL-80  |
| 100A          | S-TD125NU-FTU-LL-100 |
| 125A          | S-TD125NU-FTU-LL-125 |
| 150A          | S-TS250NU-FTU-LL-150 |
| 160A          | S-TS250NU-FTU-LL-160 |
| 175A          | S-TS250NU-FTU-LL-175 |
| 200A          | S-TS250NU-FTU-LL-200 |
| 225A          | S-TS250NU-FTU-LL-225 |
| 250A          | S-TS250NU-FTU-LL-250 |
| 300A          | S-TS400NU-FTU-LL-300 |
| 350A          | S-TS400NU-FTU-LL-350 |
| 400A          | S-TS400NU-FTU-LL-400 |
| 500A          | S-TS800NU-FTU-LL-500 |
| 600A          | S-TS800NU-FTU-LL-600 |
| 700A          | S-TS800NU-FTU-LL-700 |
| 800A          | S-TS800NU-FTU-LL-800 |

Standard Pack: 1

Weight:

TD125: 2.65 lb.

TS250: 4.19 lb.

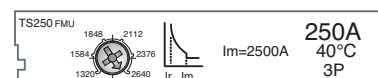
TS400: 12.57 lb.

TS800: 29.98 lb.

**Accessories** (see pages 70-72)

**Dimensions** (see pages 73-75)

**Trip Curves** (see pages 76-77)



## FMU\*

Adjustable-  
thermal, Fixed-  
magnetic

| Rated Current | Type/<br>Cat. No.    |
|---------------|----------------------|
| 40A           | S-TD125NU-FMU-LL-40  |
| 50A           | S-TD125NU-FMU-LL-50  |
| 60A           | S-TD125NU-FMU-LL-60  |
| 80A           | S-TD125NU-FMU-LL-80  |
| 100A          | S-TD125NU-FMU-LL-100 |
| 125A          | S-TD125NU-FMU-LL-125 |
| 160A          | S-TS250NU-FMU-LL-160 |
| 200A          | S-TS250NU-FMU-LL-200 |
| 250A          | S-TS250NU-FMU-LL-250 |
| 300A          | S-TS400NU-FMU-LL-300 |
| 400A          | S-TS400NU-FMU-LL-400 |
| 500A          | S-TS800NU-FMU-LL-500 |
| 600A          | S-TS800NU-FMU-LL-600 |
| 800A          | S-TS800NU-FMU-LL-800 |

Standard Pack: 1

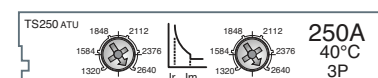
Weight:

TD125: 2.65 lb.

TS250: 4.19 lb.

TS400: 12.57 lb.

TS800: 29.98 lb.



## ATU\*

Adjustable-  
thermal,  
Adjustable-  
magnetic

| Rated Current | Type/<br>Cat. No.    |
|---------------|----------------------|
| 160A          | S-TS250NU-ATU-LL-160 |
| 200A          | S-TS250NU-ATU-LL-200 |
| 250A          | S-TS250NU-ATU-LL-250 |
| 300A          | S-TS400NU-ATU-LL-300 |
| 400A          | S-TS400NU-ATU-LL-400 |
| 500A          | S-TS800NU-ATU-LL-500 |
| 600A          | S-TS800NU-ATU-LL-600 |
| 800A          | S-TS800NU-ATU-LL-800 |

Standard Pack: 1

Weight:

TD125: 2.65 lb.

TS250: 4.19 lb.

TS400: 12.57 lb.

TS800: 29.98 lb.

\* Not a stock item, please consult Altech for availability.

# TD / TS Series Circuit Breakers

High Interrupting  
Capacity (HU)

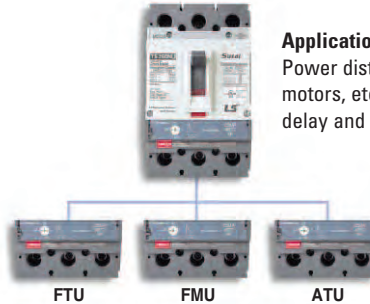
Circuit Breakers are supplied with line and load terminals

## Interrupting Capacity

|      | TD125 | TS250 | TS400 | TS800 |
|------|-------|-------|-------|-------|
| 240V | 100   | 100   | 100   | 100   |
| 480V | 65    | 65    | 65    | 65    |
| 600V | 14    | 18    | 20    | 25    |

## Application Examples:

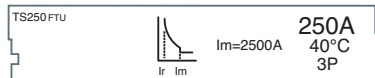
Power distribution, power generation, motors, etc. Relatively short thermal trip delay and medium magnetic trip point.



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E231289

## FTU

Fixed-thermal,  
Fixed-magnetic



| Rated Current | Type/<br>Cat. No.    |
|---------------|----------------------|
| 15A           | S-TD125HU-FTU-LL-15  |
| 20A           | S-TD125HU-FTU-LL-20  |
| 30A           | S-TD125HU-FTU-LL-30  |
| 40A           | S-TD125HU-FTU-LL-40  |
| 50A           | S-TD125HU-FTU-LL-50  |
| 60A           | S-TD125HU-FTU-LL-60  |
| 80A           | S-TD125HU-FTU-LL-80  |
| 100A          | S-TD125HU-FTU-LL-100 |
| 125A          | S-TD125HU-FTU-LL-125 |
| 150A          | S-TS250HU-FTU-LL-150 |
| 160A          | S-TS250HU-FTU-LL-160 |
| 175A          | S-TS250HU-FTU-LL-175 |
| 200A          | S-TS250HU-FTU-LL-200 |
| 225A          | S-TS250HU-FTU-LL-225 |
| 250A          | S-TS250HU-FTU-LL-250 |
| 300A          | S-TS400HU-FTU-LL-300 |
| 350A          | S-TS400HU-FTU-LL-350 |
| 400A          | S-TS400HU-FTU-LL-400 |
| 500A          | S-TS800HU-FTU-LL-500 |
| 600A          | S-TS800HU-FTU-LL-600 |
| 700A          | S-TS800HU-FTU-LL-700 |
| 800A          | S-TS800HU-FTU-LL-800 |

Standard Pack: 1

Weight:

TD125: 2.65 lb.

TS250: 4.19 lb.

TS400: 12.57 lb.

TS800: 29.98 lb.

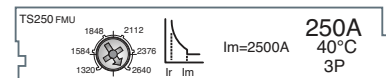
**Accessories** (see pages 70-72)

**Dimensions** (see pages 73-75)

**Trip Curves** (see pages 76-77)

## FMU\*

Adjustable-thermal,  
Fixed-magnetic



| Rated Current | Type/<br>Cat. No.    |
|---------------|----------------------|
| 40A           | S-TD125HU-FMU-LL-40  |
| 50A           | S-TD125HU-FMU-LL-50  |
| 60A           | S-TD125HU-FMU-LL-60  |
| 80A           | S-TD125HU-FMU-LL-80  |
| 100A          | S-TD125HU-FMU-LL-100 |
| 125A          | S-TD125HU-FMU-LL-125 |
| 160A          | S-TS250HU-FMU-LL-160 |
| 200A          | S-TS250HU-FMU-LL-200 |
| 250A          | S-TS250HU-FMU-LL-250 |
| 300A          | S-TS400HU-FMU-LL-300 |
| 400A          | S-TS400HU-FMU-LL-400 |
| 500A          | S-TS800HU-FMU-LL-500 |
| 600A          | S-TS800HU-FMU-LL-600 |
| 800A          | S-TS800HU-FMU-LL-800 |

Standard Pack: 1

Weight:

TD125: 2.65 lb.

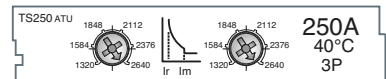
TS250: 4.19 lb.

TS400: 12.57 lb.

TS800: 29.98 lb.

## ATU\*

Adjustable-  
thermal,  
Adjustable-  
magnetic



| Rated Current | Type/<br>Cat. No.    |
|---------------|----------------------|
| 160A          | S-TS250HU-ATU-LL-160 |
| 200A          | S-TS250HU-ATU-LL-200 |
| 250A          | S-TS250HU-ATU-LL-250 |
| 300A          | S-TS400HU-ATU-LL-300 |
| 400A          | S-TS400HU-ATU-LL-400 |
| 500A          | S-TS800HU-ATU-LL-500 |
| 600A          | S-TS800HU-ATU-LL-600 |
| 800A          | S-TS800HU-ATU-LL-800 |

Standard Pack: 1

Weight:

TD125: 2.65 lb.

TS250: 4.19 lb.

TS400: 12.57 lb.

TS800: 29.98 lb.

\* Not a stock item, please consult Altech for availability.

## Accessories

### Electrical Auxiliaries

#### Auxiliary Switch (S-AX), Alarm Switch (S-AL)

- Can be installed in all frame types

##### Contact Operation

| MCCB             | ON | OFF | TRIP | Cat. No. |
|------------------|----|-----|------|----------|
| Position of S-AX |    |     |      | S-AX     |
| Position of S-AL |    |     |      | S-AL     |

Installation - see page 71



##### Technical Data

|                                                                         |         |                |                |
|-------------------------------------------------------------------------|---------|----------------|----------------|
| Conventional thermal current $I_{th}$                                   | 5A      |                |                |
| Rated operational current $I_e$<br>with rated operational voltage $U_e$ | Voltage | $I_e$ (A)      |                |
|                                                                         |         | Resistive Load | Inductive Load |
| - Alternating current 50/60Hz AC                                        | 125V    | 5              | 3              |
|                                                                         | 250V    | 3              | 2              |
| - Direct current DC                                                     | 30V     | 4              | 3              |
|                                                                         | 125V    | 0.4            | 0.4            |
|                                                                         | 250V    | 0.2            | 0.2            |

Installation - see page 71



#### Shunt Release, S-SHT

- Can be installed in all frame types
- Range of operational voltage: 0.7 - 1.1 x  $V_n$
- Frequency (only AC): 45Hz - 65Hz



##### Technical Data

|                                     | Control voltage (V) | Consumption |        |      | Cat. No.  |
|-------------------------------------|---------------------|-------------|--------|------|-----------|
|                                     |                     | AC (VA)     | DC (W) | mA   |           |
| Power consumption                   | DC 12V              | -           | 0.36   | 30   | S-SHT-12  |
|                                     | AC/DC 24V           | 0.58        | 0.58   | 24   | S-SHT-24  |
|                                     | AC/DC 48V           | 1.22        | 1.23   | 25   | S-SHT-48  |
|                                     | AC/DC 110~130V      | 1.36        | 1.37   | 10.5 | S-SHT-120 |
|                                     | AC 220~240V/DC250V  | 1.80        | 1.88   | 7.5  | S-SHT-230 |
|                                     | AC 380~500V         | 1.15        | -      | 2.3  | S-SHT-440 |
| Max. opening time (msec)            |                     | 50          |        |      |           |
| Tightening torque of terminal screw |                     | 7.1 lb.in.  |        |      |           |

Installation - see page 71

## Electrical Auxiliaries

### Undervoltage Release, S-UVT

- Can be installed in all frame types
- Reset-Hold Voltage =  $0.85 \times V_n$
- Drop-Out Voltage =  $0.35 - 0.7 \times V_n$
- Frequency (only AC): 45Hz - 65Hz

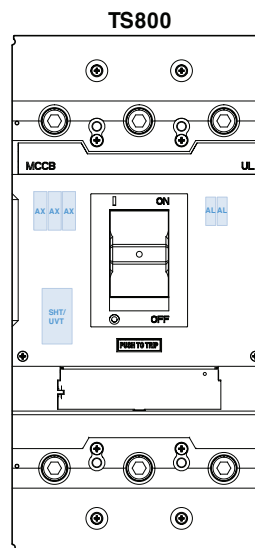
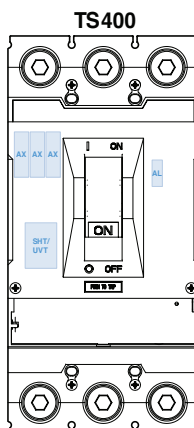
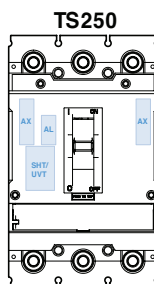
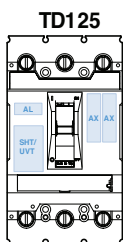


#### Technical Data

| Power<br>consumption                        | Control voltage (V) | Consumption |        |     | Cat. No.  |
|---------------------------------------------|---------------------|-------------|--------|-----|-----------|
|                                             |                     | AC (VA)     | DC (W) | mA  |           |
|                                             | AC/DC 24V           | 0.64        | 0.65   | 27  | S-UVT-24  |
|                                             | AC/DC 48V           | 1.09        | 1.10   | 23  | S-UVT-48  |
|                                             | AC/DC 110~130V      | 0.73        | 0.75   | 5.8 | S-UVT-120 |
|                                             | AC 200~240V/DC 250V | 1.21        | 1.35   | 5.4 | S-UVT-230 |
|                                             | AC 380~440V         | 1.67        | -      | 3.8 | S-UVT-410 |
|                                             | AC 440~480V         | 1.68        | -      | 3.5 | S-UVT-460 |
| Max.opening time (msec)                     |                     | 50          |        |     |           |
| Tightening torque of terminal screw         |                     | 7.1 lb.in.  |        |     |           |
| Transformer operating voltage (V)           |                     |             |        |     |           |
| - Drop (Circuit breaker trips)              |                     | 0.7~1.35Vn  |        |     |           |
| - Rise (Circuit breaker can be switched on) |                     | ~0.85Vn     |        |     |           |

### Installation - Maximum possibilities

| Position | Accessory      | TD125 | TS250 | TS400 | TS800 |
|----------|----------------|-------|-------|-------|-------|
| Left     | S-AX           | —     | 1     | 3     | 3     |
|          | S-AL           | 1     | 1     | —     | —     |
|          | S-SHT or S-UVT | 1     | 1     | 1     | 1     |
| Right    | S-AX           | 2     | 1     | —     | —     |
|          | S-AL           | —     | —     | 1     | 2     |



## Accessories

### Handle Kits

#### Extended Rotary Handle Kits\*

Shaft length: 12", (16", 24", upon request)

| Frame Type | Cat. No.<br>NEMA 1, 3R, 12 | Cat. No.<br>NEMA 4X |
|------------|----------------------------|---------------------|
| TD125      | S-EHU1-12                  | S-EHU1-12/NEMA 4X   |
| TS250      | S-EHU2-12                  | S-EHU2-12/NEMA 4X   |
| TS400      | S-EHU3-12                  | S-EHU3-12/NEMA 4X   |
| TS800      | S-EHU4-12                  | S-EHU4-12/NEMA 4X   |

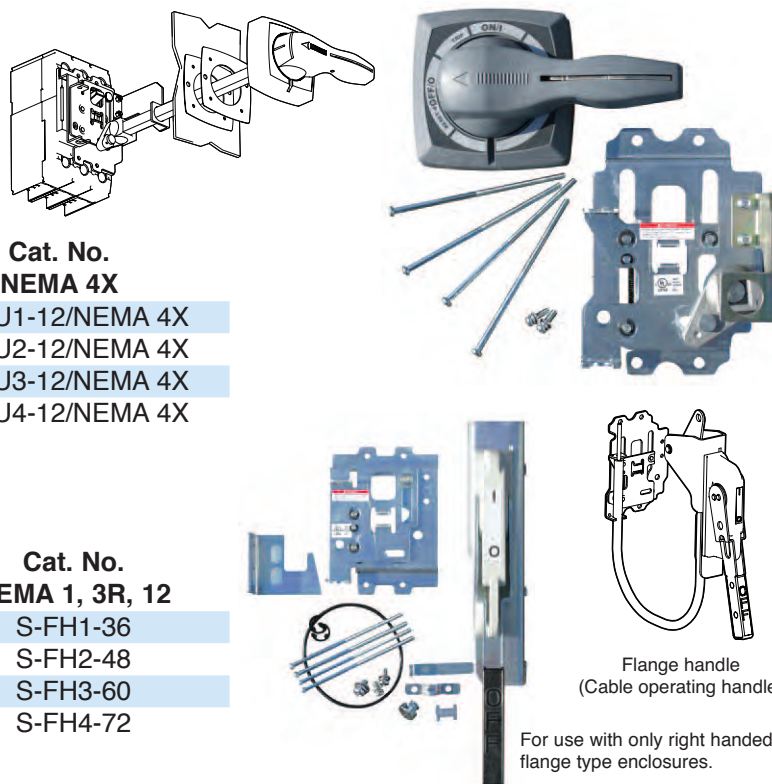
**Dimensions** (see page 75)

#### Flange Handle Kits\*

| Frame Type | Cable**<br>Length | Cat. No.<br>NEMA 1, 3R, 12 |
|------------|-------------------|----------------------------|
| TD125      | 36"               | S-FH1-36                   |
| TS250      | 48"               | S-FH2-48                   |
| TS400      | 60"               | S-FH3-60                   |
| TS800      | 72"               | S-FH4-72                   |

\* Kits include all necessary hardware to mount to MCCB

\*\* Longer cable available upon request.

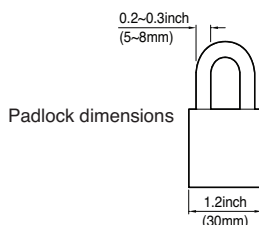


## Locking Devices

### Fixed Locking Device

| MCCB  | Function           | Cat. No.<br>Padlockable Device |
|-------|--------------------|--------------------------------|
| TD125 | OFF or ON position | S-PHL1                         |
| TS250 | OFF or ON position | S-PHL2                         |
| TS400 | OFF or ON position | S-PHL3                         |
| TS800 | OFF or ON position | S-PHL4                         |

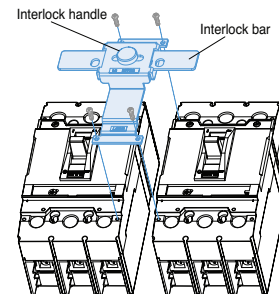
Padlocks are not supplied.



### Mechanical Interlocking Device

| MCCB  | Cat. No.<br>Interlocking Device |
|-------|---------------------------------|
| TD125 | S-MIT13                         |
| TS250 | S-MIT23                         |
| TS400 | S-MIT33                         |
| TS800 | S-MIT43                         |

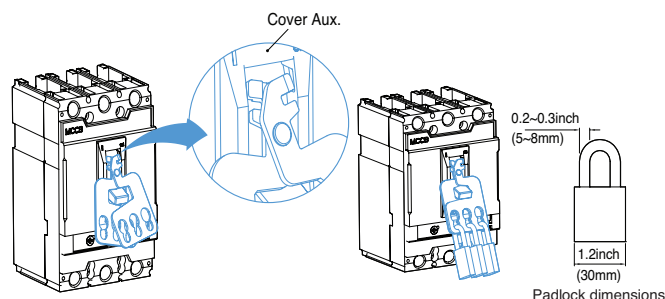
Padlocks are not supplied.



### Removable Locking Device

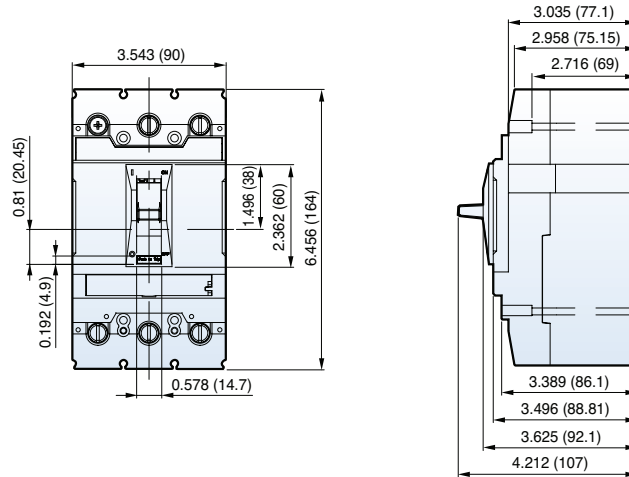
| MCCB  | Function     | Cat. No.<br>Padlockable device |
|-------|--------------|--------------------------------|
| TD125 | OFF position | S-PL1                          |
| TS250 | OFF position | S-PL2                          |
| TS400 | OFF position | S-PL3                          |
| TS800 | OFF position | S-PL4                          |

Padlocks are not supplied.

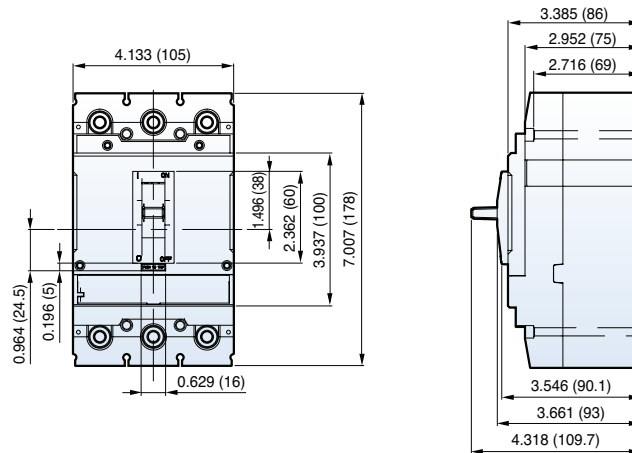


# TD / TS Series Circuit Breakers Dimensions

## TD125



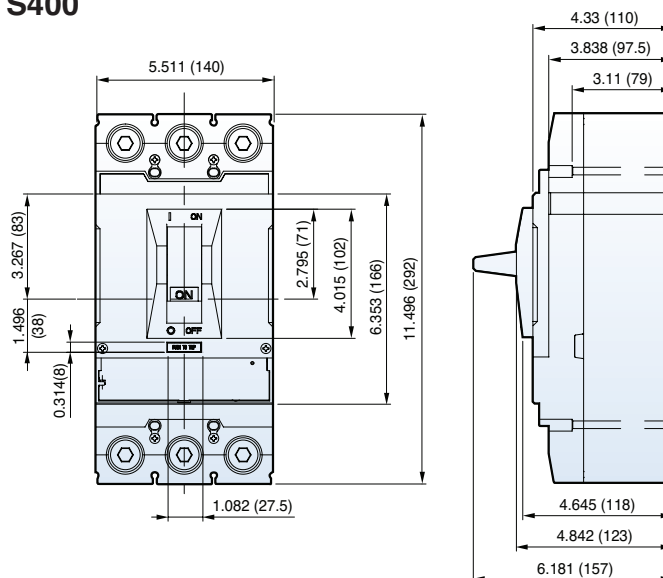
## TS250



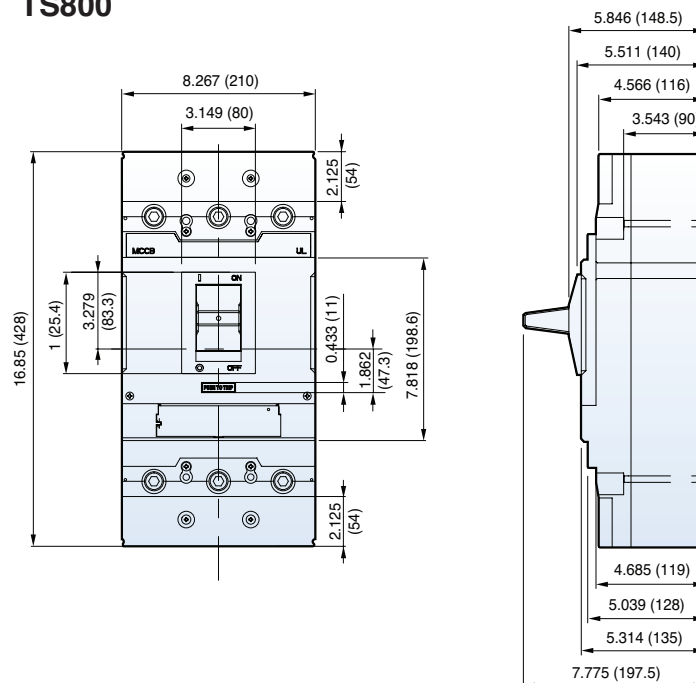
Dimensions shown in inches (mm)

## TD / TS Series Circuit Breakers Dimensions

### TS400



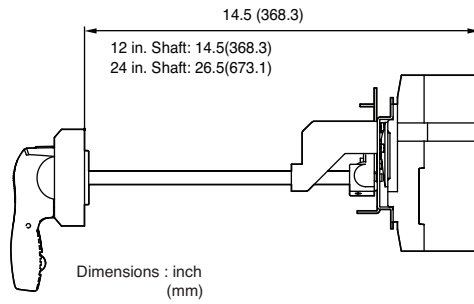
### TS800



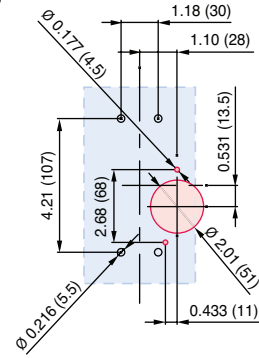
Dimensions shown in inches (mm)

## Overall Dimensions - Extended Rotary Handles

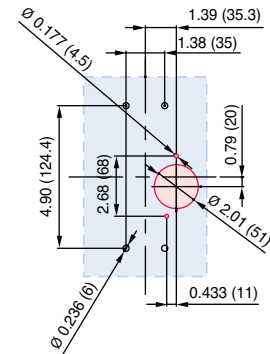
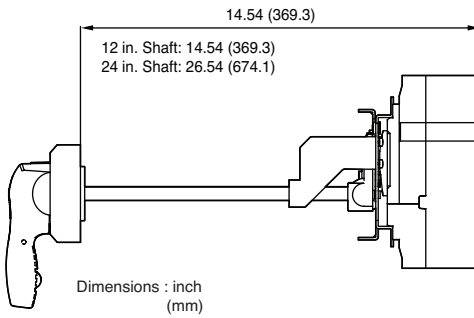
### TD125



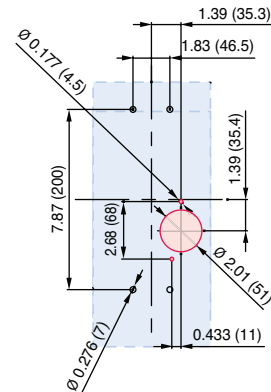
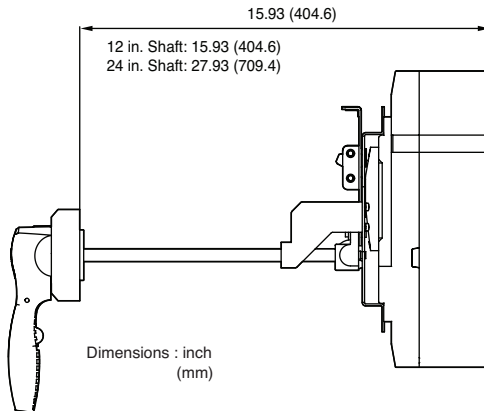
#### Panel drilling



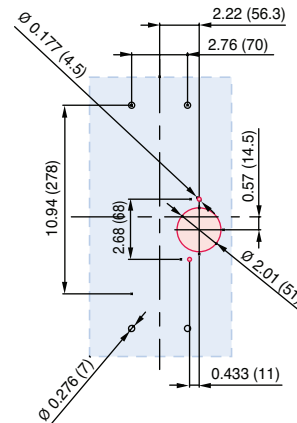
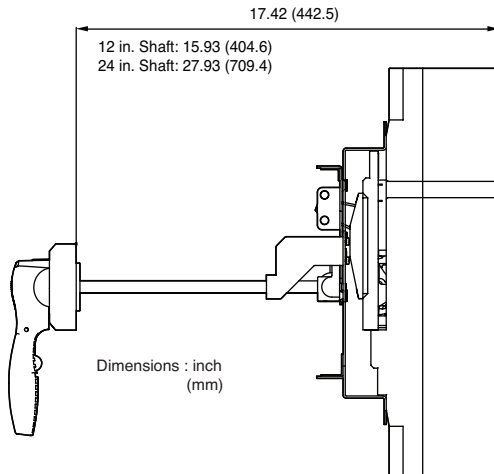
### TS250



### TS400



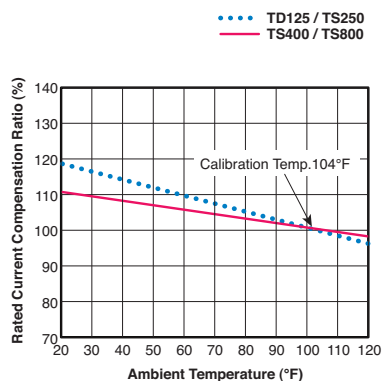
### TS800



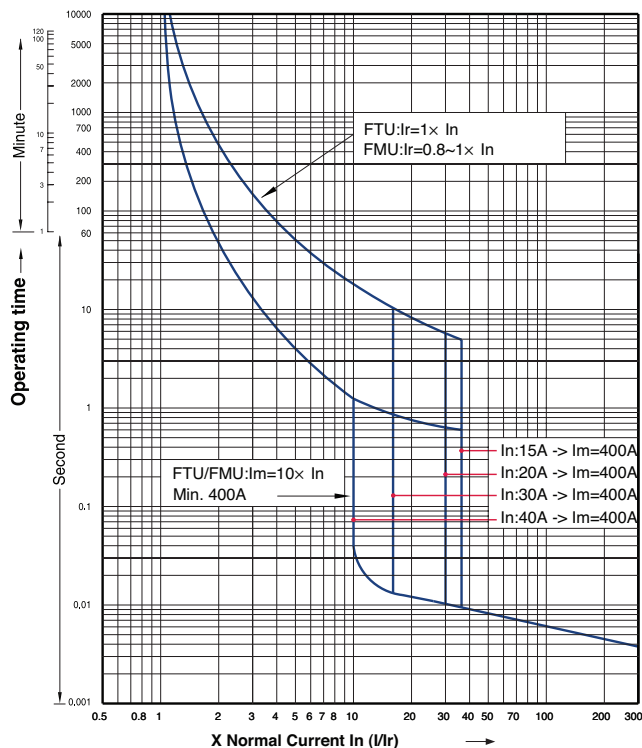
Panel drilling for MCCB

Panel drilling rotary handle

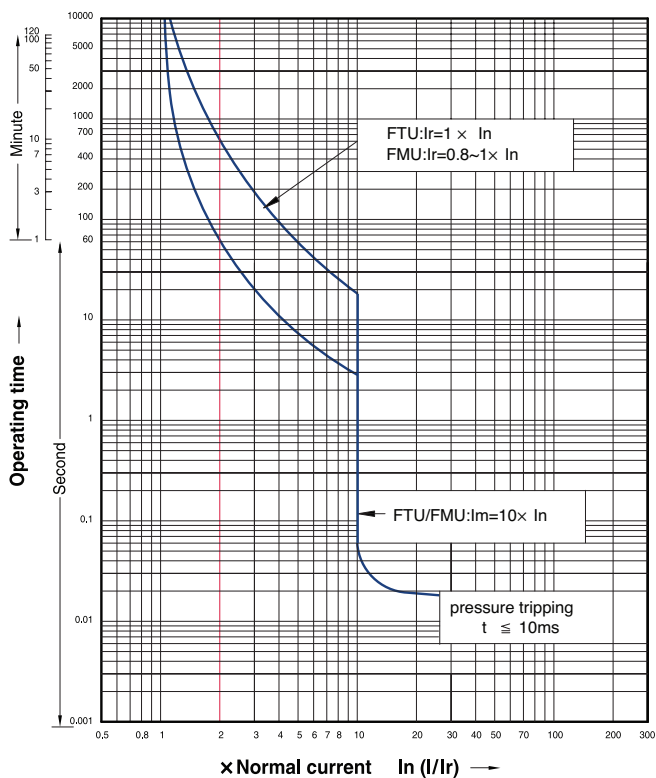
## TD / TS Series Circuit Breakers Trip Curves



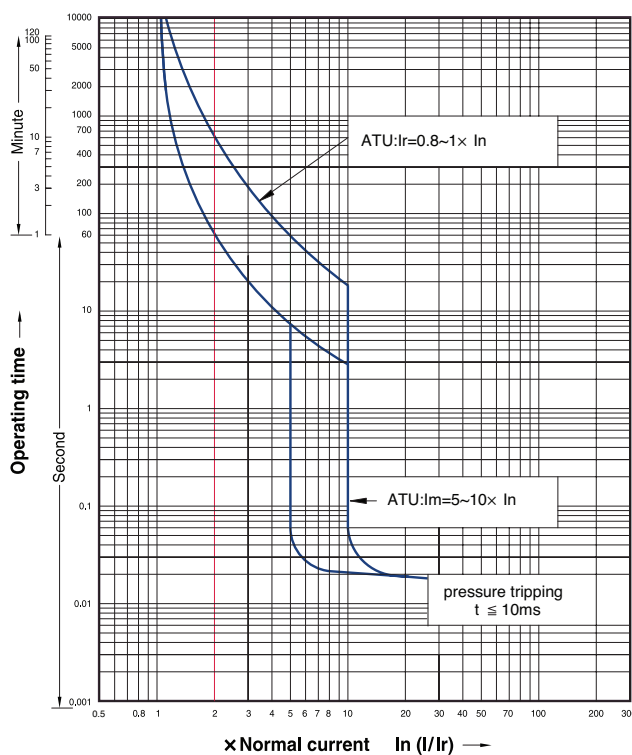
### TD125 - FTU/FMU; 15~125A



### TS250 - FTU/FMU; 150~250A

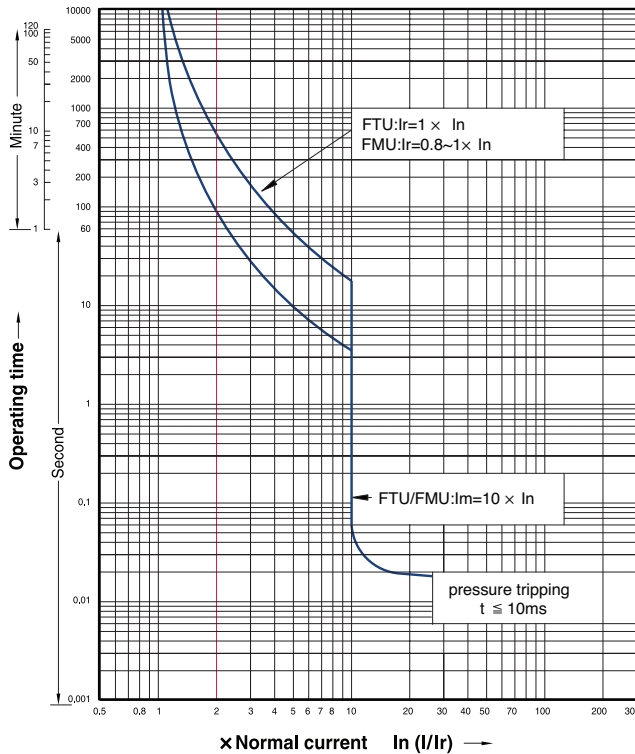


### TS250 - ATU; 160~250A

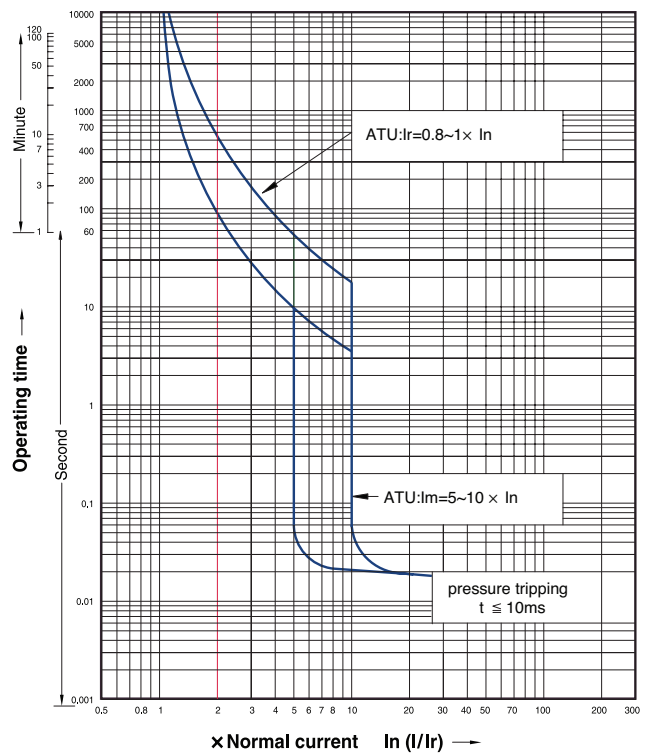


# TD / TS Series Circuit Breakers Trip Curves

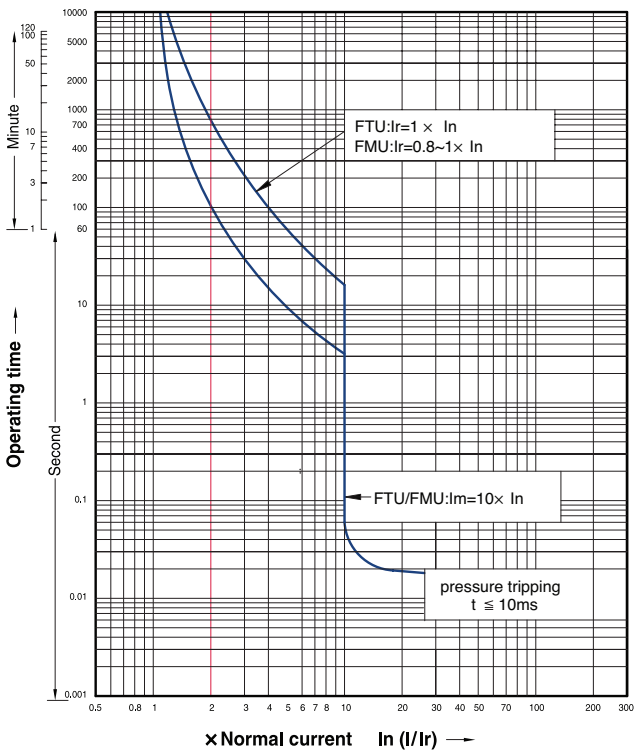
**TS400 - FTU/FMU; 300~400A**



**TS400 - ATU; 300~400A**



**TS800 - FTU/FMU; 500~800A**



**TS800 - ATU; 500~800A**

