We touch your electricity everyday!

C&S electric

Motor Protection Circuit Breakers

Motor Protection Circuit Breaker
up to 100A

32AF

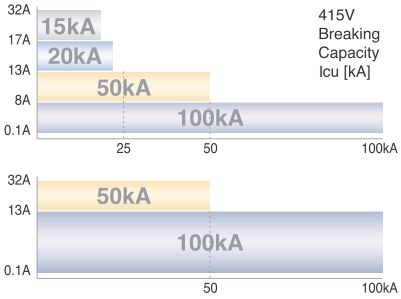
0.1~0.16...22~32A (16 step)

TCMS-32S

- Standard

TCMS-32H
TCMS-32HI

- High break
- Magnetic release



28~63A (3 step)

TCMS-63S

- Standard

TCMS-63H
TCMS-63HI

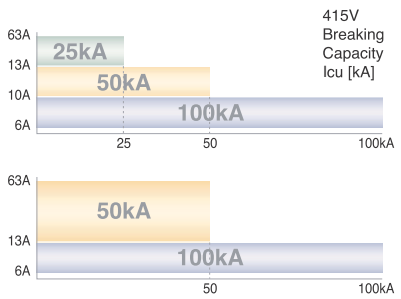
- High break
- Magnetic release

up to 100A

45 mm

70 mm

63AF



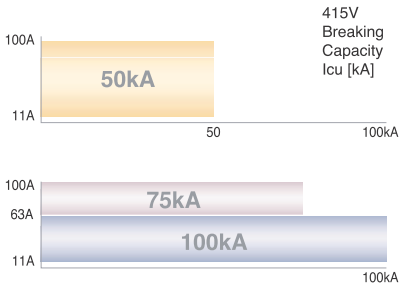
100AF

55~100A (3 step)

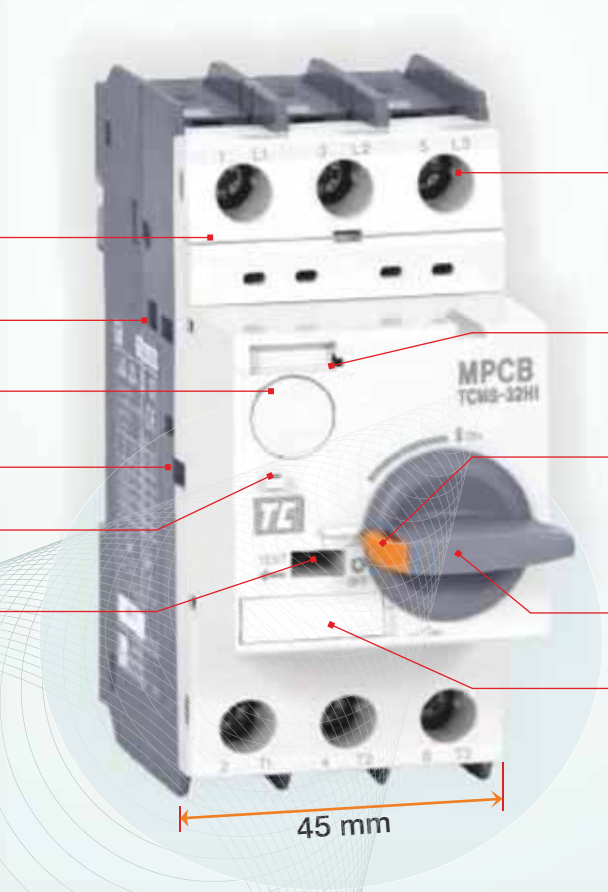
TCMS-100S

TCMS-100H
TCMS-100HI

- Standard
- High break
- Magnetic release



Motor Protection Circuit Breaker, versatile efficient technologically advance compact design



Front mounted auxiliary contact

Easy mounting onto DIN-rails

Large scale for current setting

Auxiliaries are just snapped on: easy, fast, without tools

Dial cover lock device

Test trip device for checks of the trip mechanism

Finger safe terminals

Dial cover

Handle Lock device(Off position)

Three position operator handle: ON-OFF-TRIP (Only 100AF is applied)

Identification labels

Handle Lock

Dial Cover

Terminals

TCMS-32

Screw

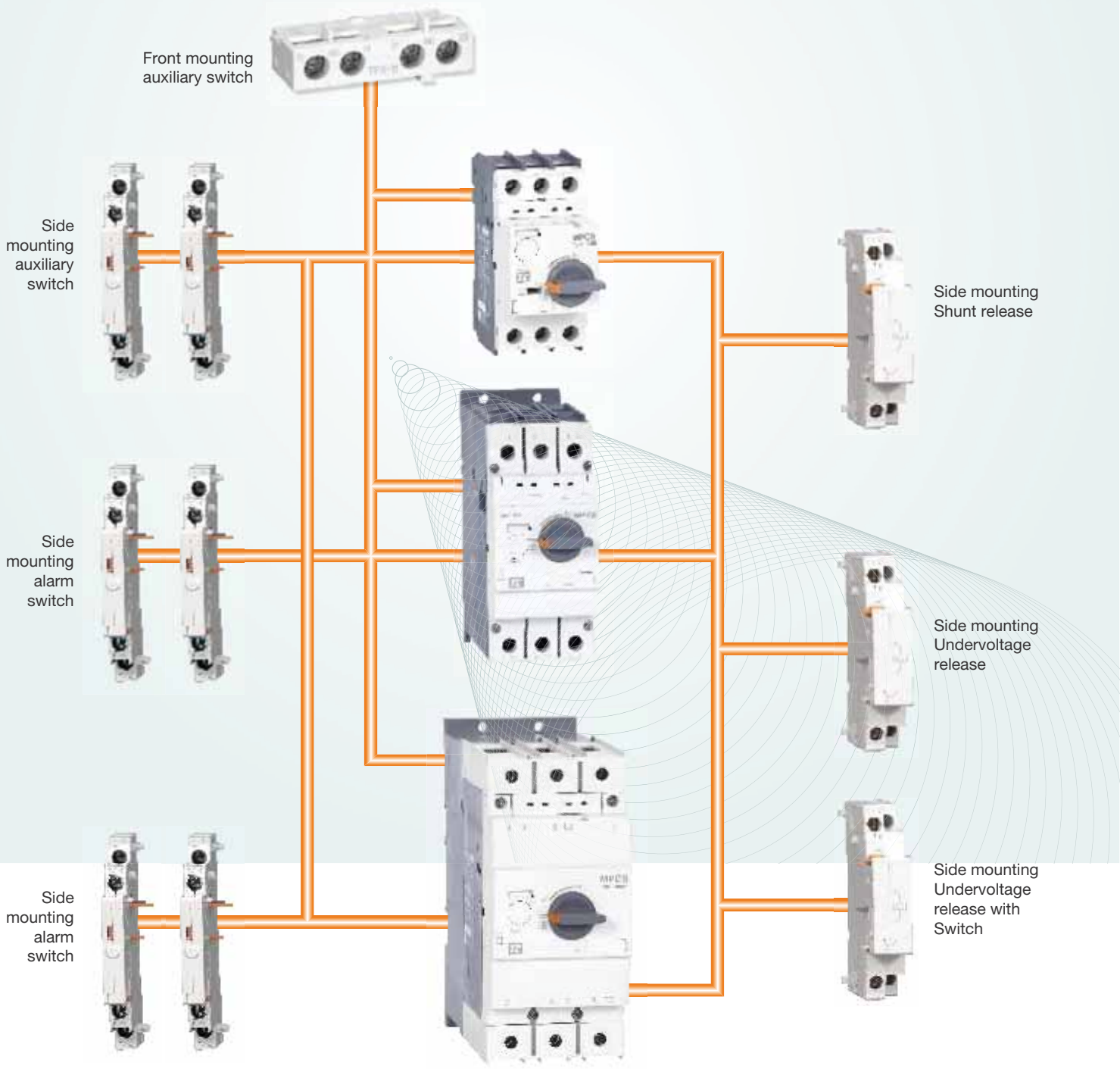
TCMS-63

Lug

TCMS-100

Lug

Common wide variety of accessories from 32~100A frame size enable a flexible response to changes in specifications, saves inventory cost.



Benefits

- Motor Protection
- Isolation
- Phase failure protection
- Current limiting Short Circuit Protection
- Class 10 trip class protection
- Tested for Icu / Ics at 690V
- Ambient temperature compensation
- Common accessories for complete range

Standards

Compliance with International Standards

- IEC 60947-2 & IEC 60947-4-1
- UL508 (Manual Motor Controller in group installation)
- CSA C22-2 no 14

Advantages

- Rated Insulation voltage 690V
- Complete range in #3 frames sizes 45mm upto 32A, 55mm upto 63A & 70mm upto 100A
- Adjustable Thermal release
- Trip test
- Three position operator: ON-OFF trip
- Handle locks in the OFF position
- Finger safe terminal
- 35 Din rail mounting

Global Accreditations

Contents

Product Selection Guide

- Quick Selection table...IEC rating 7
- Motor Protection 9
- Short Circuit Protection for Motor Controller 11
- Accessories: Electrical Auxiliaries 12

Technical Information

- General Data 17
- IEC Performance Data (Motor Protection) 22
- Type ‘2’ Coordination as per IEC 947-4-1 25
- Time / Current Characteristics 27
- Dimensions 28

Product Selection Guide

Quick selection table... IEC rating

TCMS-32S

TCMS-32HI

Frame		32AF	
Type	Current adjustable type	TCMS-32S	TCMS-32H
	Instantaneous type	-	TCMS-32HI
	Breaking capacity	Standard	High breaking
	Handle Type	Toggle	Rotary
Number of poles		3	3
Rated operational voltage (Ue)		Up to 690V	Up to 690V
Rated frequency		50/60 Hz	50/60 Hz
Rated insulation voltage (Ui)		690V	690V
Rated impulse voltage (Uimp)		6kV	6kV
Utilization category	IEC 60 947-2 (Breaker)	Cat. A	Cat. A
	IEC 60 947-4 (Motor starter)	AC 3	AC 3
Mechanical endurance (Operating)		100,000	100,000
Electrical endurance (Cycles)		100,000	100,000
Max operating frequency per hour (Oprn./h)		25	25
Temperature compensation (Operation)		-20 ~ +60 ?	-20 ~ +60 ?
Instantaneous short circuit release		13 x Ie max.	13 x Ie max.
Overload protection		O	O
Phase failure function		O	O
Trip indicating function			
Test function		O	O
Weight (g)		320	360

Rated breaking capacity (kA)	Rated operational current (Ie)	Thermal release Adjustment range (A)	240V* 230V#		415V* 400V#		460V* 440V#		525V* 500V#		690V* 600V#		230V* 240V#		415V* 400V#		460V* 440V#		525V* 500V#		690V* 600V#	
			Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics
	0.16	0.1~0.16	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	0.25	0.16~0.25	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	0.4	0.25~0.4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	0.63	0.4~0.63	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1	0.63~1	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	1.6	1~1.6	100	100	100	100	100	100	100	100	3	3	100	100	100	100	100	100	100	100	100	100
	2.5	1.6~2.5	100	100	100	100	100	100	50	38	3	3	100	100	100	100	100	100	100	100	8	8
	4	2.5~4	100	100	100	100	50	38	15	11	3	3	100	100	100	100	100	100	100	100	8	8
	6	4~6	100	100	100	100	15	11	10	8	3	3	100	100	100	100	100	100	100	100	6	6
	8	5~8	100	100	100	100	15	11	10	8	3	3	100	100	100	100	50	38	50	38	6	6
	10	6~10	100	100	50	38	15	11	6	5	3	3	100	100	100	100	50	38	50	38	6	6
	13	9~13	100	100	50	38	10	8	6	5	3	3	100	100	100	100	50	38	42	32	6	6
	17	11~17	50	38	20	15	10	8	6	5	3	3	100	100	50	38	20	15	10	8	4	4
	22	14~22	40	30	15	11	8	6	6	5	3	3	100	100	50	38	20	15	10	8	4	4
	26	18~26	40	30	15	11	8	6	6	5	3	3	100	100	50	38	20	15	10	8	4	4
	32	22~32	30	22	15	11	6	4	5	4	3	3	100	100	50	38	20	15	10	8	4	4
	40	28~40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	50	34~50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	63	45~63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	75	55~75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	90	70~90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100	80~100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Permissible up to 5% over Voltage
\# Permissible up to 5% over Voltage

TCMS-63H

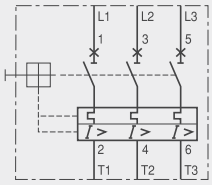
TCMS-100H

63AF	100AF
TCMS-63H	TCMS-100H
TCMS-32HI	TCMS-100HI
High break	High breaking
Rotary	Rotary
3	3
Up to 690V	Up to 690V
50 / 60 Hz	50 / 60 Hz
1000V	1000V
8kA	8kA
Cat. A	Cat. A
AC 3	AC 3
50,000	50,000
25,000	25,000
25	25
- 20 ~ 60 °C	- 20 ~ 60 °C
13 x Ie max.O	13 x Ie max.O
O	O
O	O
	O
O	O
1,000	2,200

240V 230V		415V 400V		460V 440V		525V 500V		690V 600V		240V 230V		415V 400V		460V 440V		525V 500V		690V 600V	
Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	100	100	100	50	38	50	38	6	5	-	-	-	-	-	-	-	-	-	-
100	100	100	100	50	38	42	32	6	5	-	-	-	-	-	-	-	-	-	-
100	100	50	50	50	38	12	9	5	5	100	100	100	50	50	38	35	27	12	9
100	100	50	50	50	38	12	9	5	5	100	100	100	50	50	38	35	27	12	9
100	100	50	50	35	27	12	9	5	5	100	100	100	50	50	38	35	27	12	9
100	100	50	50	35	27	10	8	5	5	100	100	100	50	50	38	25	19	12	9
100	100	50	50	35	27	10	8	5	5	100	100	100	50	50	38	25	15	12	9
100	100	50	50	35	27	10	8	5	5	100	100	100	50	50	38	15	11	10	8
100	100	50	50	35	27	10	8	5	5	100	100	100	50	50	38	15	11	8	6
-	-	-	-	-	-	-	-	-	-	100	100	100	50	50	38	12	9	6	6
-	-	-	-	-	-	-	-	-	-	100	100	100	50	50	38	12	9	6	6
-	-	-	-	-	-	-	-	-	-	100	100	100	50	50	38	12	9	6	6

Motor Protection

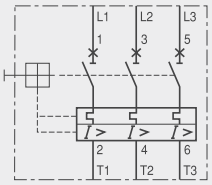
- Adjustable thermal release
- Magnetic release 13 Ie max.
- Trip class 10
- Protective function
  - Phase-failure protection
  - short circuit
  - overload
- Ambient temperature compensation



(Circuit diagram)

Type	Rated operational current Ie [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motor, AC-2, AC-3						400 / 415V	
				3-phase [kW] (50 / 60Hz)			3-phase [HP] (60Hz)				
				230V	400V	690V	230V	460V	575V	I_{cu} [kA]	I_{cs} [kA]
TCMS-32S (Standard)	0.16	0.1...0.16	2.1	-	0.02	-	-	-	-	100	100
	0.25	0.16...0.25	3.3	0.03	0.06	-	-	-	-	100	100
	0.4	0.25...0.4	5.2	0.06	0.09	-	-	-	-	100	100
	0.63	0.4...0.63	8.2	0.09	0.12	0.25	-	-	-	100	100
	1	0.63...1.0	13	0.12	0.25	0.55	-	1/2	1/2	100	100
	1.6	1.0...1.6	20.8	0.25	0.55	1.1	1/3	3/4	1	100	100
	2.5	1.6...2.5	32.5	0.37	0.75	1.5	1/2	1.5	1.5	100	100
	4	2.5...4.0	52	0.75	1.5	3	1	2	3	100	100
	6	4...6	78	1.5	2.2	4	1.5	5	5	100	100
	8	5...8	104	1.5	3	5.5	2	5	5	100	100
	10	6...10	130	3	4	7.5	3	7.5	10	50	38
	13	9...13	169	3	5.5	11	3	7.5	10	50	38
	17	11...17	221	4	7.5	11	5	10	15	20	15
	22	14...22	286	4	7.5	15	7.5	15	20	15	11
	26	18...26	338	5.5	11	18.5	7.5	15	20	15	11
	32	22...32	416	7.5	15	22	10	20	30	15	11
TCMS-32H (High Break)	0.16	0.1...0.16	2.1	-	0.02	-	-	-	-	100	100
	0.25	0.16...0.25	3.3	0.03	0.06	-	-	-	-	100	100
	0.4	0.25...0.4	5.2	0.06	0.09	-	-	-	-	100	100
	0.63	0.4...0.63	8.2	0.09	0.12	0.25	-	-	-	100	100
	1	0.63...1.0	13	0.12	0.25	0.55	-	1/2	1/2	100	100
	1.6	1.0...1.6	20.8	0.25	0.55	1.1	1/3	3/4	1	100	100
	2.5	1.6...2.5	32.5	0.37	0.75	1.5	1/2	1.5	1.5	100	100
	4	2.5...4.0	52	0.75	1.5	3	1	2	3	100	100
	6	4...6	78	1.5	2.2	4	1.5	5	5	100	100
	8	5...8	104	1.5	3	5.5	2	5	5	100	100
	10	6...10	130	3	4	7.5	3	7.5	10	100	100
	13	9...13	169	3	5.5	11	3	7.5	10	100	100
	17	11...17	221	4	7.5	11	5	10	15	50	38
	22	14...22	286	4	7.5	15	7.5	15	20	50	38
	26	18...26	338	5.5	11	18.5	7.5	15	20	50	38
	32	22...32	416	7.5	15	22	10	20	30	50	38

- Adjustable thermal release
- Magnetic release 13 Ie max.
- Trip class 10
- Protective function
  - Phase-failure protection
  - short circuit
  - overload
- Ambient temperature compensation

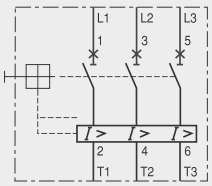


(Circuit diagram)

Type	Rated operational current Ie [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motor, AC-2, AC-3						400 / 415V	
				3-phase [kW] (50 / 60Hz)			3-phase [HP] (60Hz)				
				230V	400V	690V	230V	460V	575V	I_{cu} [kA]	I_{cs} [kA]
TCMS-63H (High Break)	10	6~10	130	3	4	7.5	3	7.5	10	100	100
	13	9~13	169	3	5.5	11	3	7.5	10	100	100
	17	11~17	221	4	7.5	11	5	10	15	50	50
	22	14~22	286	4	7.5	15	7.5	15	20	50	50
	26	18~26	338	5.5	11	18.5	10	20	25	50	50
	32	22~32	416	7.5	15	22	10	25	30	50	50
	40	28~40	520	7.5	18.5	30	15	30	40	50	50
	50	34~50	650	11	22	45	15	40	50	50	50
	63	45~63	819	15	30	55	20	50	60	50	50
TCMS-100H (High Break)	17	11~17	221	4	7.5	11	5	10	15	100	100
	22	14~22	286	4	7.5	15	7.5	15	20	100	50
	26	18~26	338	5.5	11	18.5	10	20	25	100	50
	32	22~32	416	7.5	15	22	10	25	30	100	50
	40	28~40	520	7.5	18.5	30	15	30	40	100	50
	50	34~50	650	11	22	45	15	40	50	100	50
	63	45~63	819	15	30	55	20	50	60	100	50
	75	55~75	975	22	37	63	25	60	75	75	50
	90	70~90	1170	30	45	75	30	75	100	75	50
	100	80~100	1300	30	45	90	40	75	100	75	50

Short Circuit Protection for Motor Controller

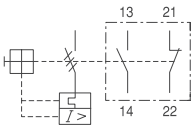
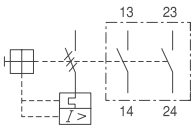
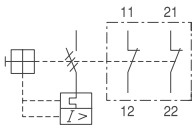
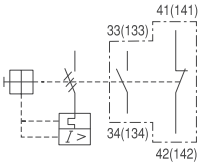
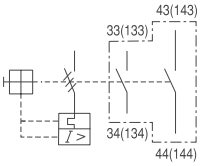
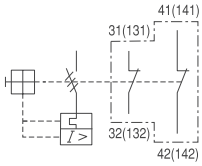
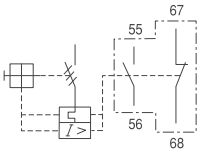
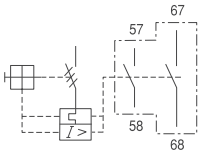
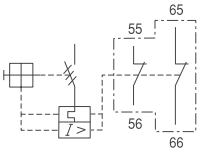
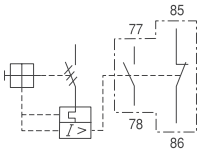
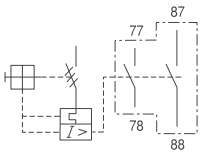
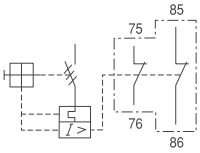
- Without thermal releases
- Magnetic release 13 x Ie max
- Protective function
  -Short Circuit



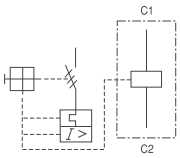
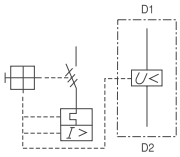
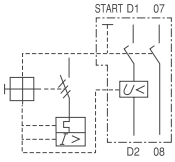
(Circuit diagram)

Type	Rated operational current Ie [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motor, AC-2, AC-3						400 / 415V	
				3-phase [kW] (50 / 60Hz)			3-phase [HP] (60Hz)				
				230V	400V	690V	230V	460V	575V	I_{cu} [kA]	I_{cs} [kA]
TCMS-32HI (Standard)	0.16	-	2.1	-	0.02	-	-	-	-	100	100
	0.25	-	3.3	0.03	0.06	-	-	-	-	100	100
	0.4	-	5.2	0.06	0.09	-	-	-	-	100	100
	0.63	-	8.2	0.09	0.12	0.25	-	-	-	100	100
	1	-	13	0.12	0.25	0.55	-	1/2	1/2	100	100
	1.6	-	20.8	0.25	0.55	1.1	1/3	3/4	1	100	100
	2.5	-	32.5	0.37	0.75	1.5	1/2	1.5	1.5	100	100
	4	-	52	0.75	1.5	3	1	2	3	100	100
	6	-	78	1.5	2.2	4	1.5	5	5	100	100
	8	-	104	1.5	3	5.5	2	5	5	100	100
	10	-	130	3	4	7.5	3	7.5	10	100	100
	13	-	169	3	5.5	11	3	7.5	10	100	100
	17	-	221	4	7.5	11	5	10	15	50	38
	22	-	286	4	7.5	15	7.5	15	20	50	38
	26	-	338	5.5	11	18.5	7.5	15	20	50	38
	32	-	416	7.5	15	22	10	20	30	50	38
TCMS-63HI (High Break)	10	-	130	3	4	7.5	3	7.5	10	100	100
	13	-	169	3	5.5	11	3	7.5	10	100	100
	17	-	221	4	7.5	11	5	10	15	50	50
	22	-	286	4	7.5	15	7.5	15	20	50	50
	26	-	338	5.5	11	18.5	10	20	25	50	50
	32	-	416	7.5	15	22	10	25	30	50	50
	40	-	520	7.5	18.5	30	15	30	40	50	50
	50	-	650	11	22	45	15	40	50	50	50
	63	-	819	15	30	55	20	50	60	50	50
TCMS-100HI (High Break)	17	-	221	4	7.5	11	5	10	15	100	100
	22	-	286	4	7.5	15	7.5	15	20	100	50
	26	-	338	5.5	11	18.5	10	20	25	100	50
	32	-	416	7.5	15	22	10	25	30	100	50
	40	-	520	7.5	18.5	30	15	30	40	100	50
	50	-	650	11	22	45	15	40	50	100	50
	63	-	819	15	30	55	20	50	60	100	50
	75	-	975	22	37	63	25	60	75	75	50
	90	-	1170	30	45	75	30	75	100	75	50
	100	-	1300	30	45	90	40	75	100	75	50

Accessories (Electrical Auxiliaries)

Model	Description	Connection diagram
TFX...	**Auxiliary Switch** · Front mounting · 2-pole · One front mounting module per circuit breaker	1NO1NC  2NO  2NC 
TLX...	**Auxiliary Switch** · Side mounting on the left · 2-pole · One side mounting module per circuit breaker	1NO1NC  2NO  2NC 
TLA...	**Any Trip Alarm Switch** · Operates in case of trip · Side mounting on the left · 2-pole · Set TLA first in case of using TLX together (TCMS-63 can not accept TLX and TLA together)	  
TAM...	**Magnetic Trip Alarm Switch** · Operates in case of instantaneous trip · Side mounting on the left · 2-pole · Set TLAM first in case of using TLX together	  

Accessories (Electrical Auxiliaries)

Model		Description	Connection diagram	
TRS...		**Shunt release** • Side mounting on the right • One side mounting module per circuit breaker. • Can not use with TRU or TRUX		110~127 Hz 220~230V 50Hz 415~440V 50Hz
TRU...		**Undervoltage release** • Side mounting on the right • One side mounting module per circuit breaker. • Can not use with TRU or TRUX		110~127V 50Hz 220~230V 50Hz 415~440V 50Hz
TRX...		**Undervoltage release with Switch** • Side mounting on the right • Include 2NO Auxiliary contact • One side mounting module per circuit breaker. • Can not use with TRU or TRUX • Can not attach to TCMS-32S		110~127V 50Hz 220~230V 50Hz 415~440V 50Hz

E-Handle (Rotary-type)

TCMS E-Handle is a Rotary-type Handle accessory which can be attached to the front to control and verify the ON, TRIP, OFF condition of Manual Motor Starters under the situation of closing panel.

- Application Model: TCMS-32H/HI,TCMS-63S/H/HI, TCMS-100S/H/HI
- Operation temp.: -20~ +60°C
- CE and UL certified
- Degree of protection: Ip65
- Locking device: Lockable in on/off position
- Material of insulation: Plastic (PA66)

Type	Application MMS	Remarks
MEH-32	TCMS-32H, 32HI	Length of shaft: 115 or 315mm
MEH-63	TCMS-63S, 63H, 63HI	
MEH-100	TCMS-100S, 100H, 100HI	

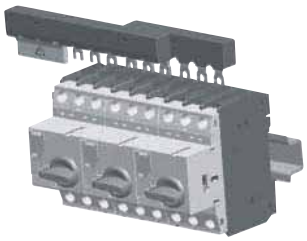
Phase Bus

It is a device for a parallel connection with power terminals in the circuit lined up by TCMS, and it can provides the solution "Simple wiring"and "Compact wiring space".

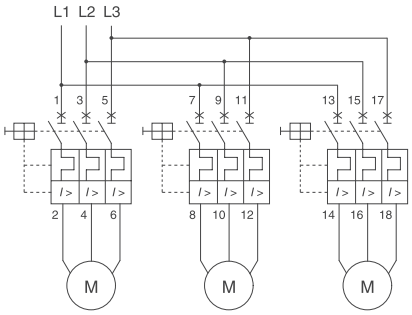
- Application Model : TCMS-32, 63
- CE and UL certified
- Safety Cover built-in
- RoHS compliance

Type	Application MMS	Number of Terminals	Rated current	Safety cover attached
PB-322	TCMS-32S, 32H, 32HI	2	63A	PBPC-32 (32for S, H)
PB-323		3		
PB-632	TCMS-63S, 63H, 63HI	2	108A	PBPC-63
PB-633		3		

Phase Bus



Diagram



Enclosure

Case cover of TCMS enclosure is specifically designed with dust-proof and corrosive-proof structure. Therefore, it is the optimum product to use in dusty areas such as cement plants, cotton mills as well as in the presence of corrosive gas or liquid (excl. explosive, flammable gas) such as fertilizer, refinery, and plating plant.

- Application Model: TCMS - 32H / HI
- CE and UL certified
- Material of insulation: Plastic (ABS)
- Operation temperature : -20~ +60°C
- Degree of protection: Ip65

Type	Application TCMS	Remarks
EPH-32	TCMS-32H, 32HI	Surface mount

Dial Cover

Dial cover is used to protect the set value from the operation that is not intended.

It is supplied as standard for all TCMS

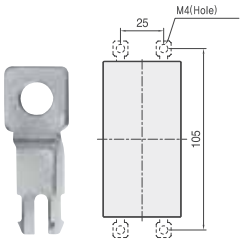
- Application Model: TCMS-32, 63,100 (All types)

Insulation Barrier

Insulation barrier is used to enlarge the creepage distance and clearance to meet therequirement of UL.

- Application Model : TCMS-100

Type	Application TCMS
TIB100	TCMS-100S, 100H, 100HI



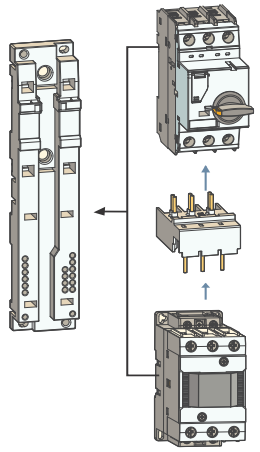
Screw mounting holder

32AF TCMS is only for DIN rail mountable by itself. Screw mounting holder is used to mount TCS on a panel by screws.

- Application Model : TCMS-32

Type	Application TCMS	Remarks
TMP 32	TCMS-32S, 32H, 32HI	For M4 screw

Accessories (Electrical Auxiliaries)



Direct adaptor and Mounting unit

Direct adaptor, DA

Direct adaptor is used to connect TCMS directly with a contactor

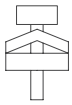
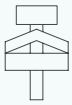
Mounting unit, MU

This device is attached module to connect joined TCMS with a contactor

- Application Model: TCMS+contactor TCIM06~16 / TPIM06~16 Mini contactor

Type		Combine Devices	
Direct adaptor	Mounting Unit	TCMS	MC
TDA-32SA	MU-45	TCMS-32S	Mini MC TCIM06~16
TDA-32HA		TCMS-32H, 32HI	
TDA-32SD		TCMS-32S	Mini MC TDIM06~16
TDA-32HD		TCMS-32H, 32HI	

Terminals

			TCMS32S	TCMS32H	TCMS63S, 63H	TCMS100S, 100H
Conformity to standards			IEC60947 UL508, UL508 Type E			
Approvals			CE, UL			
Terminal parts						
Screwdriver						
Single-core	1.conductor	[㎟] / [AWG]	1...10 / 18...8	1...10 / 18...8	0.75...35 / 18...2	2.5...70 / 12...2/0
	2.conductor	[㎟] / [AWG]	1...6 / 18...10	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Standard	1.conductor	[㎟] / [AWG]	1...6 / 18...10	1...6 / 18...10	0.75...35 / 18...2	2.5...70 / 12...2/0
	2.conductor	[㎟] / [AWG]	1...6 / 18...10	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Flexible	1.conductor	[㎟] / [AWG]	1...6 / 18...10	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
	2.conductor	[㎟] / [AWG]	0.75...4 / 18...10	0.75...4 / 18...10	0.75...16 / 18...6	2.5...35 / 10...2
Tightening torque		[Nm] / [lb-in]	0.8...2.5 / 7...22	0.8...2.5 / 7...22	3...4.5 / 26...39	4...6 / 35...53

Power consumption

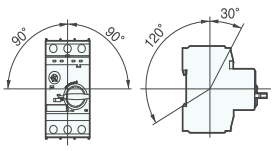
		TCMS32S	TCMS32H	TCMS63S, 63H	TCMS100S, 100H
Total power loss Pv Circuit breaker at rated load operating temperature	[W]	In = 0.16~1.6A : 4.4 In = 2.5~26A : 7.4 In = 32A : 4.0	In = 0.16~1.6A : 4.4 In = 2.5~26A : 7.4 In = 32A : 4.0	In = 10~22A : 10.2 In = 26~63A : 9.7	In = 17~32A : 15 In = 40~63A : 21.8 In = 75~100A : 17.8

Mounting

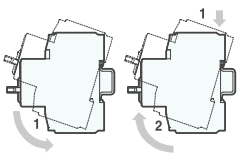
35mm DIN rail for TCMS32~63

35mm or 75mm DIN rail for TCMS100

- use 15mm depth for 35mm DIN rail



Operating positions



DIN rail mounting

Environment

Ambient air temperature

storage: - 50…+ 80 °C

operation: - 20…+ 60 °C

Ambient temperature compensation : - 20…+ 60 °C

Maximum operating altitude: 2000m

Protection degree: IP20

Shock resistance: 25g

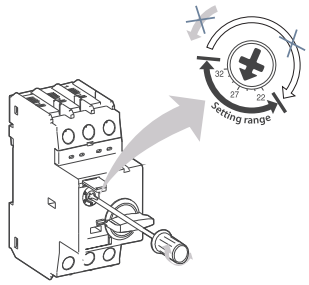
Vibration resistance: 5~150Hz

Caution for thermal adjustments

1. Keep the setting range as shown below.
2. Moving counterclockwise out of the setting range may cause the damage of the device.
3. Calibration by ambient air temperature

A: set to one point lower	Calibrated automatically	B: set to one point higher

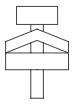
-20℃ -5℃ +40℃ +60℃



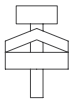
Dial setting method

In case of using out of the standard air temperature range (-5°C~+40°C) it needs to be calibrated by one point

Auxiliaries

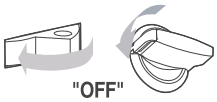
			Auxiliary contacts for front mounting T FX...		Auxiliary contacts for left side mounting T LX...		Alarm switch for left side mounting T LA...	
Rated thermal current / th								
at 40℃ ambient temperature		[A]	5		10		10	
at 60℃ ambient temperature		[A]	3		6		6	
Contact class coordination according to NEMA (UL/CSA-Standards)		AC	A600		A600		A600	
		DC	Q300		Q300		Q300	
Back-up fuses gG, gL		[A]	16		16		16	
Rated supply current		[V]	-	240	24	240	24	240
	AC-15:	[A]	-	3	6	4	6	4
	DC-13:	[V]	24	220	24	220	24	220
		[A]	1	0.1	2	0.25	2	0.25
Weight (g)			18		30		40	
Terminal parts								
Screwdriver					Pozidriv size 2			
Single-core	1.conductor	[mm²] / [AWG]	0.5...2.5 / 20...14		0.5...2.5 / 20...14			
	2.conductor	[mm²] / [AWG]	-		0.5...2.5 / 20...14			
Standard	1.conductor	[mm²] / [AWG]	0.5...4 / 20...10		0.5...4 / 20...10			
	2.conductor	[mm²] / [AWG]	0.75...2.5 / 18...14		0.75...2.5 / 18...14			
Tightening torque		[Nm] / [lb-in]	0.8...1.2 / 7...10		0.8...1.2 / 7...10			

General Data

	Undervoltage release for right side mounting TRU...	Undervoltage release with 2 auxiliary contacts for right side mounting TRUX...	Shunt release for right side mounting TRS...
Actuating voltage			
Pull-in	0.7...1.1×Us	0.85...1.1×Us	0.85...1.1×Us
Drop-out		0.7...0.35×Us	0.7...0.35×Us
Rated control voltage			
min.:	24V 50Hz / 28V 60Hz	24V 50Hz / 28V 60Hz	24V 50Hz / 28V 60Hz
max.:	415~440V 50Hz / 460~480V 60Hz	415~440V 50Hz / 460~480V 60Hz	415~440V 50Hz / 460~480V 60Hz
Coil rating			
Pull-in	8.5VA, 6W	8.5VA, 6W	8.5VA, 6W
Hold	3VA, 1.2W	3VA, 1.2W	3VA, 1.2W
Opening time (ms)	-	20	20
Weight (g)	18	30	40
Terminal parts			
Screwdriver		Pozidriv size 2	
Single-core 1.conductor [㎟] / [AWG]		0.5...2.5 / 20...14	
2.conductor [㎟] / [AWG]		0.5...2.5 / 20...14	
Standard 1.conductor [㎟] / [AWG]		0.5...4 / 20...10	
2.conductor [㎟] / [AWG]		0.75...2.5 / 18...14	
Tightening torque [Nm] / [lb-in]		0.8...1.2 / 7...10	

Installation of auxiliaries

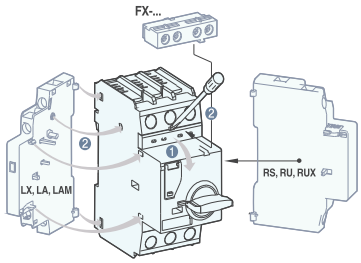
Be sure to turn off the main switch of TCMS before any other action.



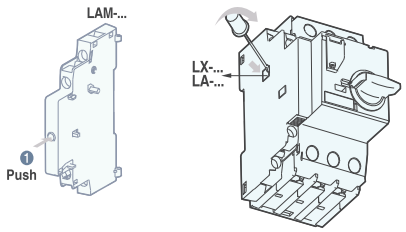
TCMS-32S/H/HI

To install TFX remove the cover first.

- 2 each of TLX can be installed together.
- Only one of auxiliaries among TRU, TRS and TRUX can be mounted on the right side of TCMS.
- Do not give trip signal to TRS longer than 10 sec.
- Refer to the possible combination chart for the mounting of TLX, TLA and TLAM on left side of TCMS.

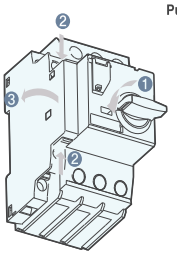


- Push the trip button before installation of TLAM
- Remove the indicated part in the fig. before the additional installation of TLX



Separation of auxiliaries from TCMS

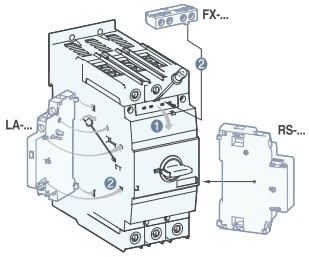
- Be sure to turn off the main switch of TCMS before the separation.
- Push softly the separation button on the side of the auxiliary and pull it.

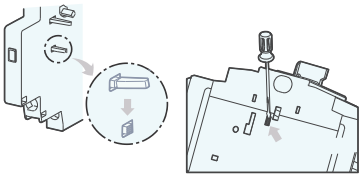


TCMS-63, 100S/H/HI

To install TFX remove the cover ①first.

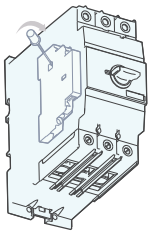
- 2 each of TLX can be installed together. (only 1 each for TCMS-63)
- Only one of auxiliaries among TRU, TRS and TRUX can be mounted on the right side of TCMS.
- Do not give trip signal to TRS longer than 10 sec.
- Refer to the possible combination chart for the mounting of TLX, TLA and TLAM on left side of TCMS.





- Remove the indicated part of TCMS-63 and TCMS 100 as shown in the fig. before the installation of TLA

- Do not install TLA in the status of TRIP of TCMS-100



- Remove the indicated part as shown in the above fig. before the additional installation of TLX

Separation of auxiliaries from TCMS

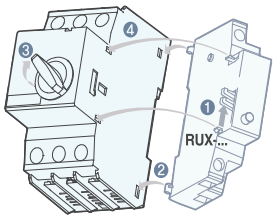
- Be sure to turn off the main switch of TCMS before the separation.
- Push softly the separation button on the side of the auxiliary and pull it.

Installation of auxiliaries

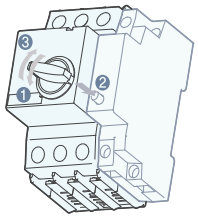
How to Install and reset TRUX

Installing

1. Check if the trip button of TRUX is "UP". If not, push the side lever ① to come it up.
2. Fit the both lower hooks ② into the TCMS.
3. Rotate the handle of TCMS to the 20 to 30 degree ③ to ON direction and keep it.
4. Fit the both upper hooks ④ into the TCMS
5. Input power to the TRUX
6. Turn ON the handle of TCMS



Insulation



Reset

Resetting

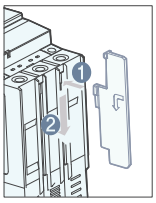
The trip button of TRUX does not come "UP" in the event of tripping due to undervoltage. To turn ON the TCMS after the tripping

① Turn OFF the TCMS and check if the trip button of TRUX comes "UP"

② Push the trip button

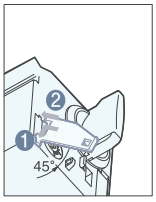
③ Turn ON the TCMS

Insulation barrier



*Only for TCMS-100

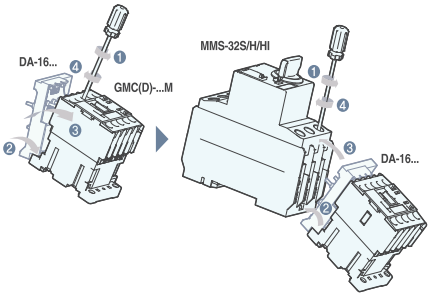
Dial cover



*For all TCMS

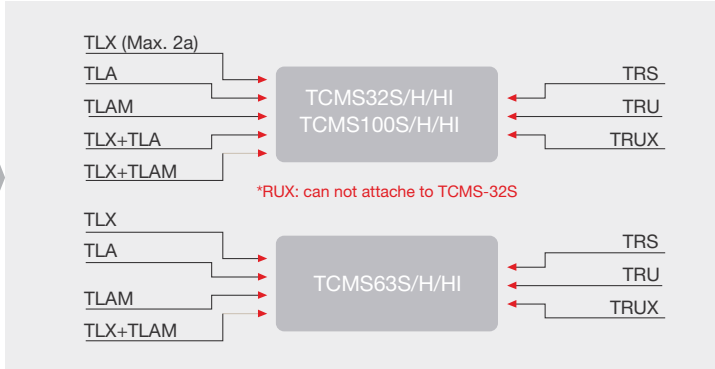
Combination with mini contactors

Adaptor	TCMS	+ Contactor Model
TDA-16SA	TCMS-32S	+ TCI 06~16
TDA-16SD	TCMS-32S	+ TCI 06~16
TDA-16HA	TCMS-32H	+ TCI 06~16
TDA-16HD	TCMS-32H	+ TCI 06~16



Installation of auxiliaries

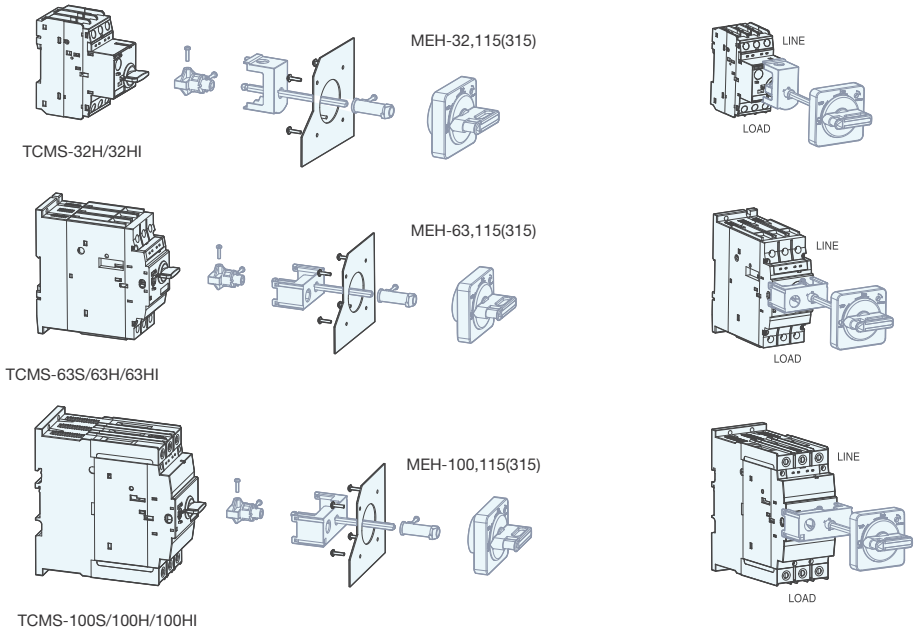
Please read this chart completely before installing the auxiliaries. Improper combination can cause electric failure or accident.



General Data

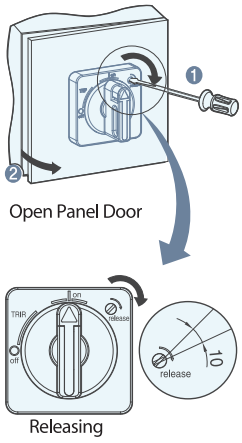
● E-Handle

Structure



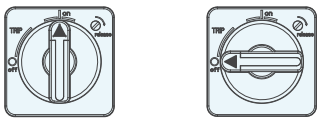
Locking Device

When opening the panel door at ON position



Locking
Installation at OF, OFF position

❶ Setting to regular position through turning the handle

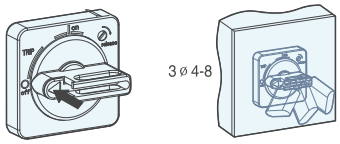


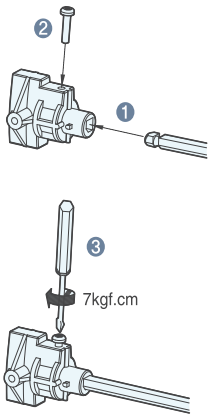
On Position
(Vertical State)

Off Position
(Horizontal State)

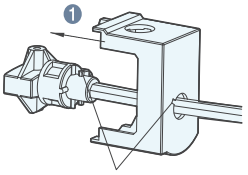
❷ Pushing

❸ Locking

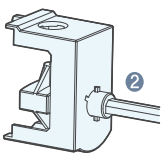




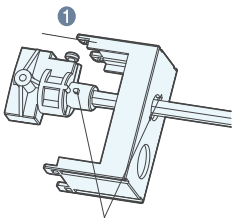
MEH-32/63/100



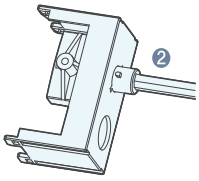
Projection should be passed through the hole when assembling



MEH-32



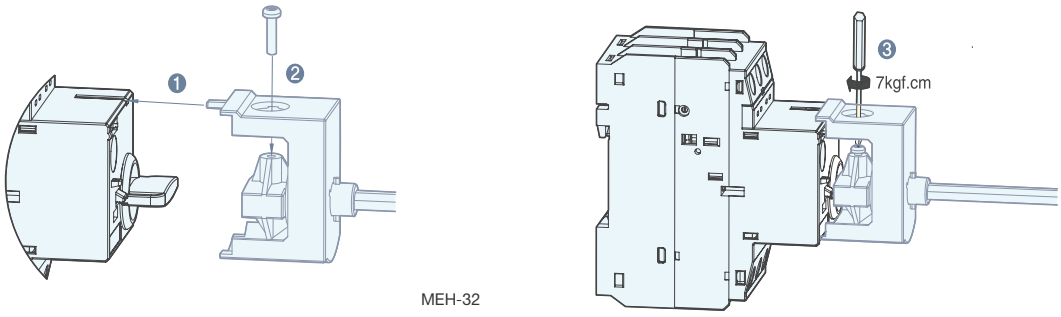
Projection should be passed through the hole when assembling



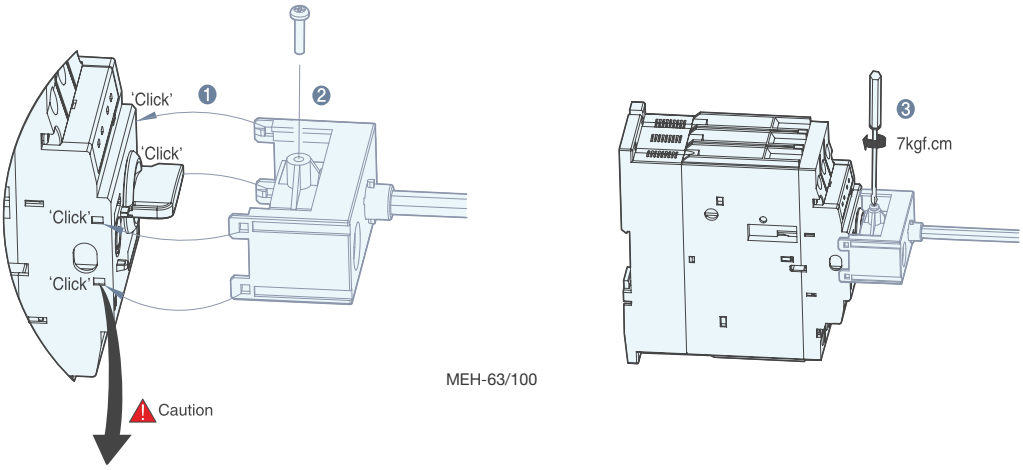
MEH-63/100

● E-Handle

Installation



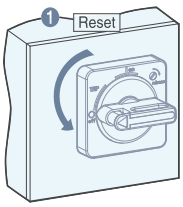
MEH-32



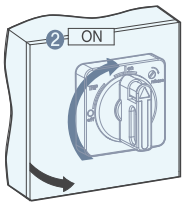
MEH-63/100

Restricted fact of Assembling
Assembling is available for TCMS-63/100 with 4 holes on the main cover which is produced after June, 2007 base on manufacturing date.

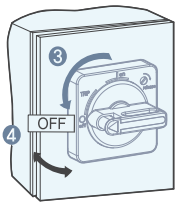
Operating Test



***Caution**
If trying to open the door at ON or Trip position, locking knob can be damaged.



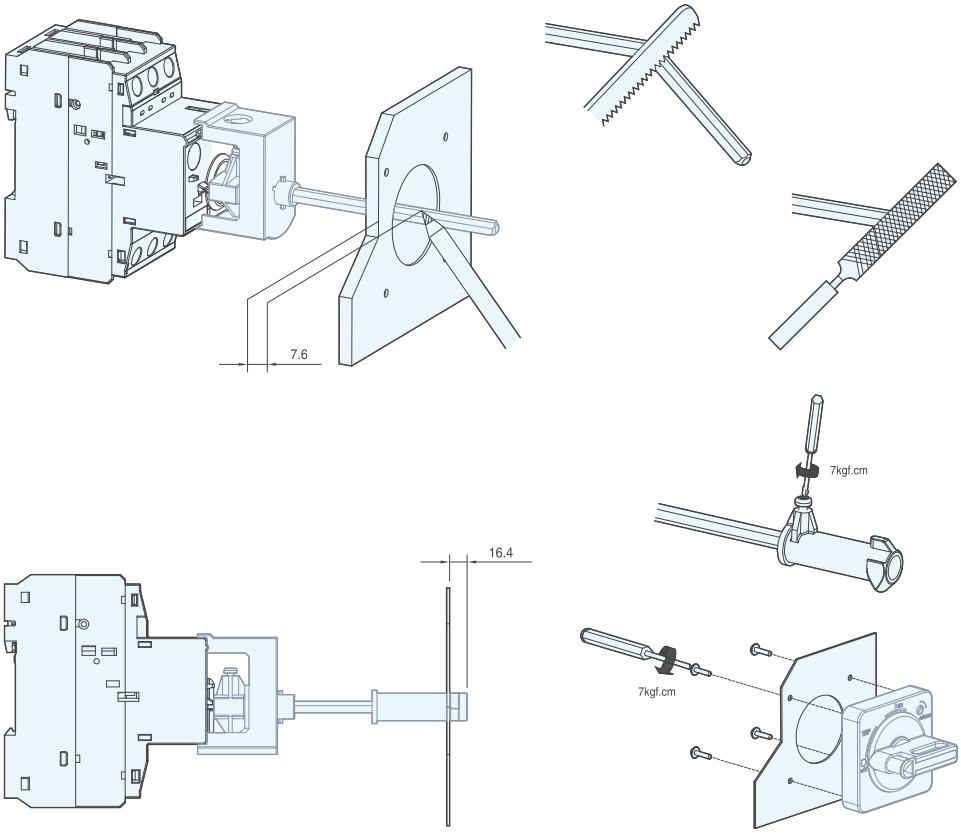
At On position Panel door can not be opened



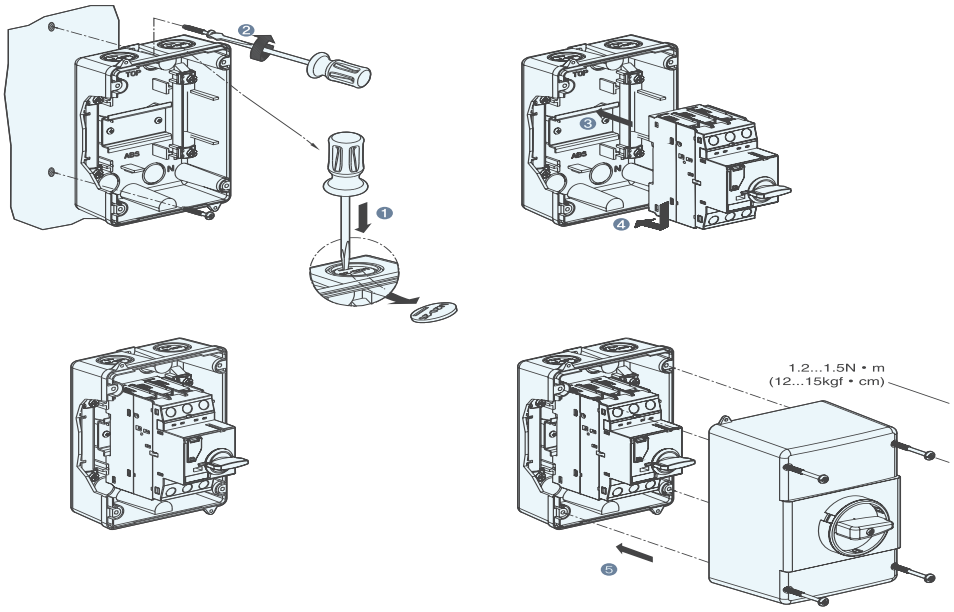
At Trip position Panel door can not be opened.
At Off position Panel door can be opened

General Data

Cutting off the shaft & applying the handle



● **Enclosure**



Manual Motor Controller (UL508, CSA, C22.2)

- Combination Motor Controller
- Group Installation
- Type E Starter

• TCMS 32S

Rated operational current Ie		[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Max. short-circuit current																		
	240V	[kA]	100	100	100	100	100	100	100	100	100	100	50	50	40	30	30	20
	480V	[kA]	50	50	50	50	50	50	50	50	25	25	10	10	10	10	7.5	7.5
	600V	[kA]	10	10	10	10	10	10	10	5	5	5	5	5	5	5	5	5
Motor load																		
1 Phase	115V	[HP]	-	-	-	-	-	-	-	1/8	1/4	1/3	1/2	1/2	1	1.5	2	2
	230V	[HP]	-	-	-	-	-	1/10	1/6	1/3	1/2	1	1.5	2	3	3	3	5
3 Phase	200V	[HP]	-	-	-	-	-	-	1/2	3/4	1	2	2	3	3	5	7.5	7.5
	230V	[HP]	-	-	-	-	-	-	1/2	3/4	1.5	2	3	3	5	7.5	7.5	10
	460V	[HP]	-	-	-	-	-	3/4	1	2	3	5	5	7.5	10	15	15	20
	575V	[HP]	-	-	-	-	1/2	3/4	1.5	3	5	5	7.5	10	15	20	20	30
Maximum rated current		[A]	1	1	1	1	3	6	10	15	20	30	40	50	60	80	100	125
of fuse or breaker		[A]	15	15	15	15	15	15	15	15	20	30	40	50	60	80	100	125

• TCMS 32H

Rated operational current Ie		[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Max. short-circuit current																		
	240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	480V	[kA]	50	50	50	50	50	50	50	50	50	50	50	50	30	30	30	30
	600V	[kA]	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Motor load																		
1 Phase	115V	[HP]	-	-	-	-	-	-	-	1/8	1/4	1/3	1/2	1/2	1	1.5	2	2
	230V	[HP]	-	-	-	-	-	1/10	1/6	1/3	1/2	1	1.5	2	3	3	3	5
3 Phase	200V	[HP]	-	-	-	-	-	-	1/2	3/4	1	2	2	3	3	5	7.5	7.5
	230V	[HP]	-	-	-	-	-	-	1/2	3/4	1.5	2	3	3	5	7.5	7.5	10
	460V	[HP]	-	-	-	-	-	3/4	1	2	3	5	5	7.5	10	15	15	20
	575V	[HP]	-	-	-	-	1/2	3/4	1.5	3	5	5	7.5	10	15	20	20	30
Max. fuse size		[A]	1	1	1	1	3	6	10	15	20	30	40	50	60	80	100	125
Max. breaker size		[A]	15	15	15	15	15	15	15	15	20	30	40	50	60	80	100	125

• TCMS 63H

Rated operational current Ie [Ie]			10	13	17	22	26	32	40	50	63
Max. short-circuit current											
	240V	[kA]	100	100	100	100	100	100	100	100	100
	480V	[kA]	50	50	50	50	50	50	50	50	50
	600V	[kA]	10	10	10	10	10	10	10	10	10
Motor load											
1 Phase	115V	[HP]	1/2	1/2	1	1.5	2	2	3	3	5
	230V	[HP]	1.5	2	3	3	3	5	7.5	10	10
3 Phase	200V	[HP]	2	3	3	5	7.5	7.5	10	15	20
	230V	[HP]	3	3	5	7.5	7.5	10	10	15	20
	460V	[HP]	5	7.5	10	15	15	20	30	30	40
	575V	[HP]	7.5	10	15	20	20	30	30	40	60
Max. fuse size		[A]	40	50	60	80	100	125	150	200	250
Max. breaker size		[A]	40	50	60	80	100	125	150	200	250

• TCMS 100H

Rated operational current Ie		[Ie]	17	22	26	32	40	50	63	75	90	100
Max. short-circuit current												
	240V	[kA]	100	100	100	100	100	100	100	100	100	100
	480V	[kA]	50	50	50	50	50	50	50	50	50	50
	600V	[kA]	10	10	10	10	10	10	10	10	10	10
Motor load												
1 Phase	115V	[HP]	1	1.5	2	2	3	3	5	5	7.5	10
	230V	[HP]	3	3	3	5	7.5	10	10	15	20	20
3 Phase	200V	[HP]	3	5	7.5	7.5	10	15	20	20	25	30
	230V	[HP]	5	7.5	7.5	10	10	15	20	25	30	30
	460V	[HP]	10	15	15	20	30	30	40	50	60	75
	575V	[HP]	15	20	20	30	30	40	60	60	75	100
Max. fuse size		[A]	60	80	100	125	150	200	250	300	350	400
Max. breaker size		[A]	60	80	100	125	150	200	250	300	350	400

IEC Performance Data

Type		TCMS 32S,32H	TCMS 63H	TCMS 100H
Rated insulation voltage IEC,IS/UL	V	690 / 600	690/ 600	690/ 600
Rated impulse withstand voltage				
Uimp/Pollution degree		6kV / 3	8kV / 3	8kV / 3
Rated frequency		50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Utilization category:				
IEC 947-2,IS 13947-2 (Circuit breaker)		Cat. A	Cat. A	Cat. A
IEC 947-4-1,IS 13947-4-1(Motor starter)		AC 3	AC 3	AC 3
Life span				
Mechanical / Electrical(Ie max.)	Operations	100,000 / 100,000	50,000 / 25,000	50,000 / 25,000
Switching frequency	Ope./h	25	25	25
Ambient temperature				
Storage	℃	-50 ~ +80	-50 ~ +80	-50 ~ +80
Operation	℃	-20 ~ +60	-20 ~ +60	-20 ~ +60
Operation altitude	m	Up to 2000 (6500 Feet)	Up to 2000 (6500 Feet)	Up to 2000 (6500 Feet)
Protection class		IP 20	IP 20	IP 20
Resistance to shock	g	25	25	25
Resistance to vibration	Hz	5 ~ 150	5 ~ 150	5 ~ 150
Rated thermal current Ith				
IEC up to 60℃ ambient temperature	[A]	0.1 ... 32	6 ...63	11 ...100
Overload protection		Available	Available	Available
Ambient temperature compensation		-20 ~ +60	-20 ~ +60	-20 ~ +60
Phase-failure protection		Available	Available	Available
Trip class	IEC 60947-4-1	10	10	10
Magnetic release		13 × In #	13 × In #	13 × In #
Total power loss Pv				
Circuit breaker at rated load	[W]	In = 0.16~4A : 9.8	In = 10~22A : 16	In = 17~63A : 17
Operating temperature		In = 6~26A : 7.5	In = 26~63A : 12	In = 75~100A : 21
		In = 32A : 4.5		
Terminal capacity				
Single-core 1.conductor	[mm²] / [AWG]	1...10 / 18...8	0.75...35 / 18...2	2.5...70 / 12...2/0
2.conductor	[mm²] / [AWG]	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Stranded 1.conductor	[mm²] / [AWG]	1...6 / 18...10	0.75...35 / 18...2	2.5...70 / 12...2/0
2.conductor	[mm²] / [AWG]	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Flexible 1.conductor	[mm²] / [AWG]	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
2.conductor	[mm²] / [AWG]	0.75...4 / 18...10	0.75...16 / 18...6	2.5...35 / 10...2
Tightening torque	[Nm] / [lb-in]	0.8...2.5 / 7...22	3...4.5 / 26...39	4...6 / 35...53

Note: # In = Max. rated operational current Ie

Accessories		Auxiliary contacts for front mounting TFX...		Auxiliary contacts for left side mounting TLX...		Alarm switch for left side mounting TLA...	
Rated thermal current / th at 40℃ / 60℃ ambient temperature	[A]	5 / 3		10 / 6		10 / 6	
Back-up fuses gG, gL	[A]	16		16		16	
Rated supply current AC-15:	[V] / [A]	24 / 3	240 / 2	24 / 6	240 / 4	24 / 6	240 / 4
DC-13:	[V] / [A]	24 / 1	220 / 0.1	24 / 2	220 / 0.25	24 / 2	220 / 0.25

Accessories	Undervoltage release for right side mounting TRU...	Undervoltage release with 2 auxiliary contacts for right side mounting TRUX...	Shunt release for right side mounting TRS...
Actuating voltage			
Pull-in	0.85...1.1 × Us	0.85...1.1 × Us	0.7...1.1 × Us
Drop-out	0.7...0.35 × Us	0.7...0.35 × Us	
Coil rating			
Pull-in	8.5VA, 6W	8.5VA, 6W	8.5VA, 6W
Hold	3VA, 1.2W	3VA, 1.2W	3VA, 1.2W
On-Time	100%	100%	100%
Terminal capacity for Accessories		Single-core	Flexible
1.conductor	[mm²] / [AWG]	0.5...2.5 / 20...14	0.5...4 / 20...10
2.conductor	[mm²] / [AWG]	0.5...2.5 / 20...14	0.75...2.5 / 18...14

Type	Rated operational current (I_e)	Thermal release Adjustment range (A)	240V * 230V #		415V * 400V #		460V * 440V #		525V * 500V #		690V * 600V #	
			I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
TCMS-32S	0.16	0.1~0.16	100	100	100	100	100	100	100	100	100	100
	0.25	0.16~0.25	100	100	100	100	100	100	100	100	100	100
	0.4	0.25~0.4	100	100	100	100	100	100	100	100	100	100
	0.63	0.4~0.63	100	100	100	100	100	100	100	100	100	100
	1	0.63~1	100	100	100	100	100	100	100	100	100	100
	1.6	1~1.6	100	100	100	100	100	100	100	100	3	3
	2.5	1.6~2.5	100	100	100	100	100	100	50	38	3	3
	4	2.5~4	100	100	100	100	50	38	15	11	3	3
	6	4~6	100	100	100	100	15	11	10	8	3	3
	8	5~8	100	100	100	100	15	11	10	8	3	3
	10	6~10	100	100	50	38	15	11	6	5	3	3
	13	9~13	100	100	50	38	10	8	6	5	3	3
	17	11~17	100	100	25	19	10	8	6	5	3	3
	22	14~22	50	38	20	15	10	8	6	5	3	3
	26	18~26	40	30	15	11	8	6	6	5	3	3
	32	22~32	40	30	15	11	8	6	6	5	3	3
TCMS-63H	40	28~40	100	100	50	50	35	27	10	8	5	4
	50	34~50	100	100	50	50	35	27	10	8	5	4
	63	45~63	100	100	50	50	35	27	10	8	5	4
TCMS-100H	75	55~75	100	100	100	50	50	38	12	9	6	6
	90	70~90	100	100	100	50	50	38	12	9	6	6
	100	80~100	100	100	100	50	50	38	12	9	6	6

Note : * : Permissible up to 5% over voltage, # : Permissible up to 10% over voltage

gG, gL,, only f Icc>Icu
(* = No back up fuse required)

TCMS-32S

Rated operational current I_e	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
230/240V	[A]	*	*	*	*	*	*	*	*	*	*	*	*	*	125	125	125
400/415V	[A]	*	*	*	*	*	*	*	*	*	*	80	80	100	100	100	100
440/460V	[A]	*	*	*	*	*	*	*	50	50	63	63	80	80	100	100	100
500V	[A]	*	*	*	*	*	*	50	40	50	63	63	80	80	80	80	80
690V	[A]	*	*	*	*	*	20	35	40	50	63	63	63	63	63	63	63

TCMS-32H, 32HI

Rated operational current I_e	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
230/240V	[A]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
400/415V	[A]	*	*	*	*	*	*	*	*	*	*	*	*	100	125	125	125
440/460V	[A]	*	*	*	*	*	*	*	*	*	80	80	80	80	100	100	100
500V	[A]	*	*	*	*	*	*	*	*	*	63	80	80	80	80	80	80
690V	[A]	*	*	*	*	*	*	35	40	50	63	63	63	63	63	63	63

TCMS-63H, 63HI

Rated operational current I_e	[A]	10	13	17	22	26	32	40	50	63
230/240V	[A]	*	*	*	*	*	*	*	*	*
400/415V	[A]	*	*	100	125	125	125	160	160	160
440/460V	[A]	100	100	100	125	125	125	125	125	160
500V	[A]	100	100	100	100	100	100	100	100	100
690V	[A]	63	63	63	80	80	80	80	80	80

TCMS-100H, 100HI

Rated operational current I_e	[A]	17	22	26	32	40	50	63	75	90	100
230/240V	[A]	*	*	*	*	*	*	*	*	*	*
400/415V	[A]	*	*	*	*	*	*	*	*	*	*
440/460V	[A]	125	125	125	160	160	160	200	200	200	200
500V	[A]	100	125	125	125	160	160	160	160	160	160
690V	[A]	80	80	80	80	80	100	100	125	160	160

Type '2' coordination according to IEC 947-4-1/ IS13947-4-1

- DOL Feeders
- Short-circuit current Iq = 50kA
  Voltage : 400 / 415V, 50/60Hz

Standard motors AC-3 at 400/415V 1500rpm		Manual motor starter			Contactor	
		Circuit breaker	Thermal overload release setting range	Magnetic release response current		
[kW]	[A]	Type	[A]	[A]	Type	[A]
-	-	TCMS-32S 0.16A	0.1~0.16	2.08	TC1M06 / TC1M09	6 / 9
0.06	0.2	TCMS-32S 0.25A	0.16~0.25	3.25	TC1M06 / TC1M09	6 / 9
0.09	0.3	TCMS-32S 0.4A	0.25~0.4	5.2	TC1M06 / TC1M09	6 / 9
0.12	0.4	TCMS-32S 0.63A	0.4~0.63	8.19	TC1M06 / TC1M09	6 / 9
0.18	0.6	TCMS-32S 0.63A	0.4~0.63	8.19	TC1M06 / TC1M09	6 / 9
0.25	0.8	TCMS-32S 1A	0.63~1	13	TC1M06 / TC1M09	6 / 9
0.37	1.1	TCMS-32S 1.6A	1~1.6	20.8	TC1M06 / TC1M09	6 / 9
0.55	1.5	TCMS-32S 1.6A	1~1.6	20.8	TC1M06/TC1M09	6 / 9
0.75	1.9	TCMS-32S 2.5A	1.6~2.5	32.5	TC1M12	12
1.1	2.7	TCMS-32S 4A	2.5~4	52	TC1M16	16
1.5	3.6	TCMS-32S 4A	2.5~4	52	TC1M16	16
2.2	5.2	TCMS-32S 6A	4~6	78	TC1M16	16
3	6.8	TCMS-32S 8A	5~8	104	TC1M16	16
4	9	TCMS-32S 10A	6~10	130	TC1M16	16
5.5	11.5	TCMS-32H 13A	9~13	169	TC1M16	16
7.5	15.5	TCMS-32H 17A	11~17	221	TC1M16	16
10	20	TCMS-32H 22A	14~22	286	TC1D25	25
11	22	TCMS-32H 26A	18~26	338	TC1D25	25
15	29	TCMS-32H 32A	22~32	416	TC1D32	32
18.5	35	TCMS-63H 40A	28~40	520	TC1D50	50
22	41	TCMS-63H 50A	34~50	650	TC1D50	50
30	55	TCMS-63H 63A	45~63	819	TC1D65	65
37	67	TCMS-100S 75A	55~75	975	TC1D80	75
-	-	TCMS-100S 90A	70~90	1170	TC1D95	85
45	80	TCMS-100S 100A	80~100	1300	TC1D95	85

Definition type '2' coordination according to IEC 947-4-1

- The contactor or the starter must not endanger persons or systems in the event of a short-circuit.
- The contactor or the starter must be suitable for further use.
- No damage to the overload relay or other parts may occur with the exception of welding of the contactor or starter contacts provided that these can be easily separated without significant deformation (such as with a screwdriver).

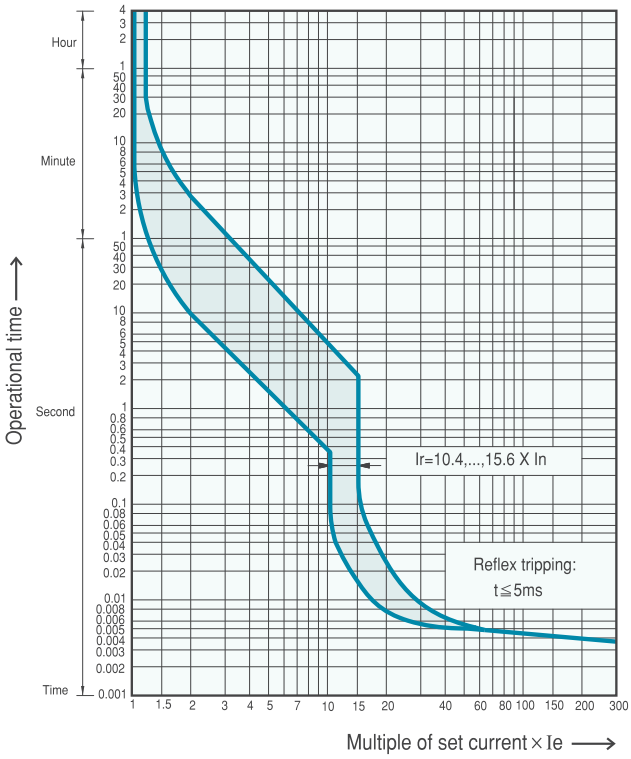
Type "2" coordination according to IEC947-4-1/ IS13947-4-1

- Star Delta Feeders
- Short-circuit current Iq = 50kA
  Voltage : 400 / 415V, 50/60Hz

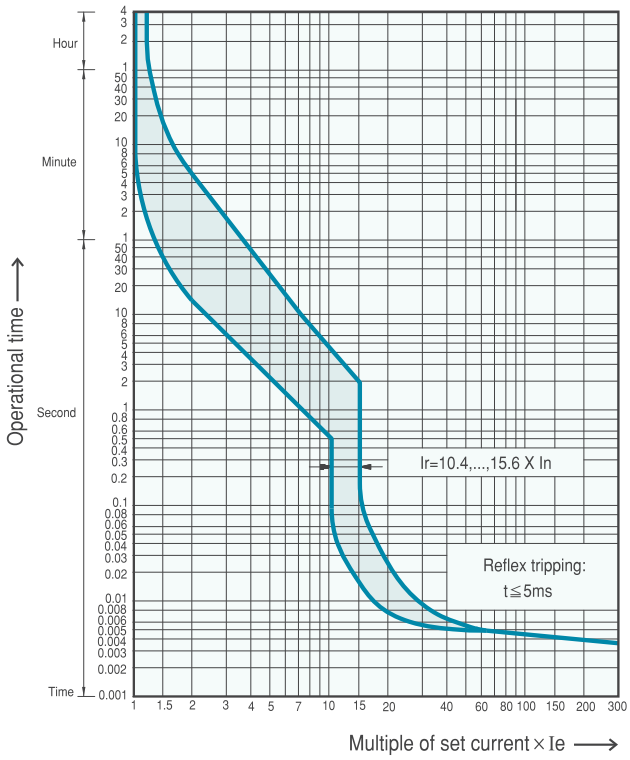
Standard motors AC-3 at 400/415V 1500rpm		Manual motor starter			Contactor	
		Circuit breaker	Thermal overload release setting range	Magnetic release response current		
KW	A	Type	A	A	Type	A
3	6.8	TCMS-32S 4A	2.5 ~ 4	52	TC1M16/TC1-D18	16/18
4	9	TCMS-32S 6A	4 ~ 6	78	TC1M16/TC1-D18	16/18
5.5	11.5	TCMS-32S 8A	5 ~ 8	104	TC1M16/TC1-D18	16/18
7.5	15.5	TCMS-32S 10A	6 ~ 10	130	TC1-D18	18
10	20	TCMS-32H 13A	9 ~ 13	169	TC1-D18	18
11	22	TCMS-32H 17A	11 ~ 17	221	TC1-D25	25
15	29	TCMS-32H 22A	14 ~ 22	286	TC1-D25	25
18.5	35	TCMS-32H 26A	18 ~ 26	338	TC1-D32	32
22	41	TCMS-32H 22A	22~ 32	416	TC1-D40	40
30	55	TCMS-63H 40A	28~ 40	520	TC1-D40	40
37	67	TCMS-63H 50A	34~ 50	650	TC1-D50	50
45	80	TCMS-63H 50A	34 ~ 50	650	TC1-D50	50
55	97	TCMS-63H 63A	45 ~ 63	819	TC1-D65	65
75	132	TCMS-100S 90A	70 ~ 90	1170	TC1-D95	95
90	160	TCMS-100S 100A	80 ~ 100	1130	TC1-D95	95

Time/Current characteristic

TCMS-32AF
Tripping Curve



TCMS-63, 100AF
Tripping Curve



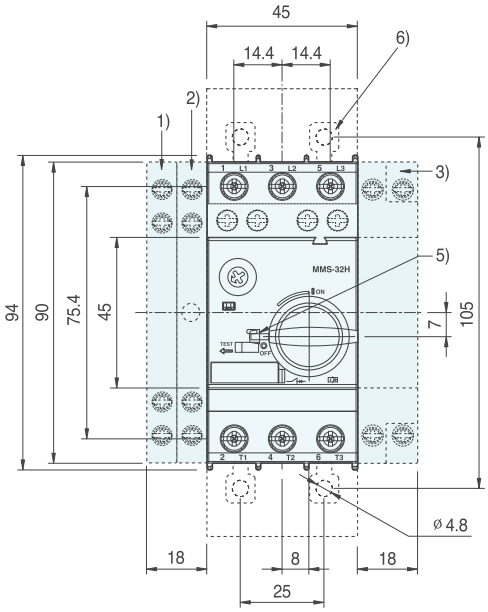
1. **Thermal release trip current**:
   The adjustable inverse bimetal trip reliability protects motors against overloads.
   The curve shows the mean operating current at an ambient temperature of 20°C starting from cold.
   Careful testing and setting ensures effective motor protection even in the case of single-phasing.

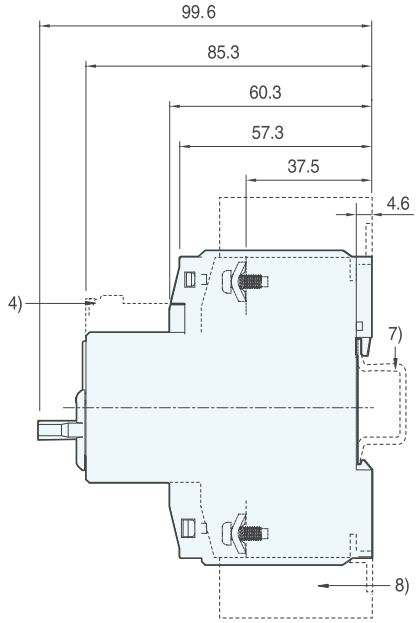
2. **Magnetic release trip current**:
   The instantaneous magnetic trip has a fixed operating current setting.
   This corresponds to 13times the maximum value of setting range, at a lower setting it is correspondingly higher.

3. **Current setting Ie**:
   The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 947-4-1. If a different value is prescribed (e.g. reduced Ie for cooling medium having a temperature higher than 40°C or a place of installation higher than 2000m above sea level), the setting current is equal to the reduced rated current Ie of the motor.

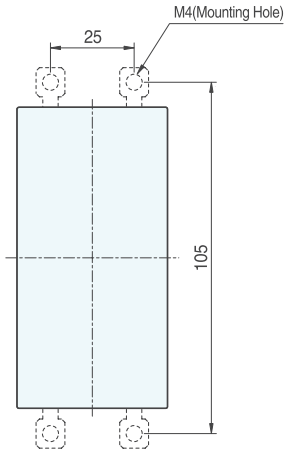
• TCMS 32H, 32HI

[mm]



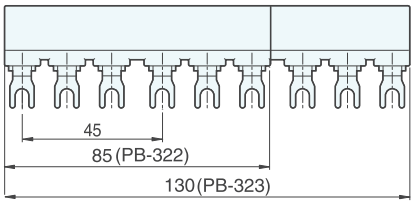


0.36kg

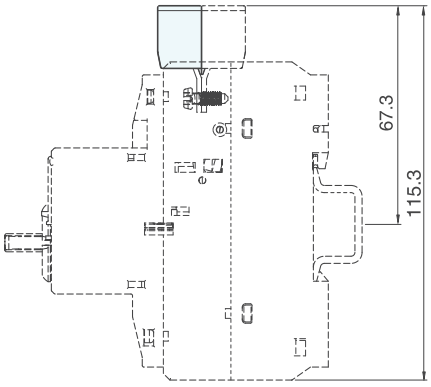


Height of arcing spaces
(Clearance from earthed parts)

Ue[V]	240	415	460	525	690
[mm]	30	30	30	30	50



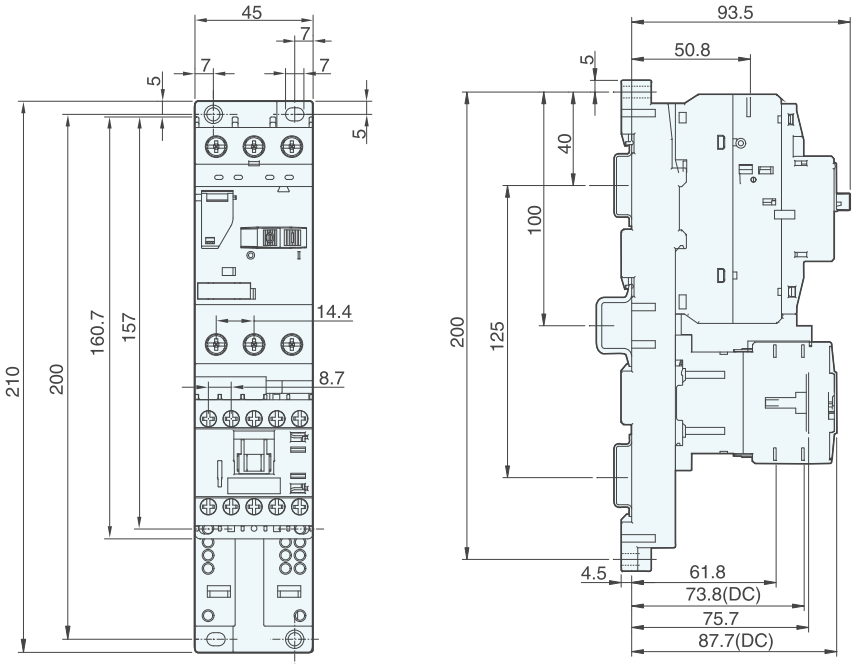
TCMS-32H/HI+PB-32(2,3 Terminal)
PB-322(2 Terminal), PB-323(3 Terminal)



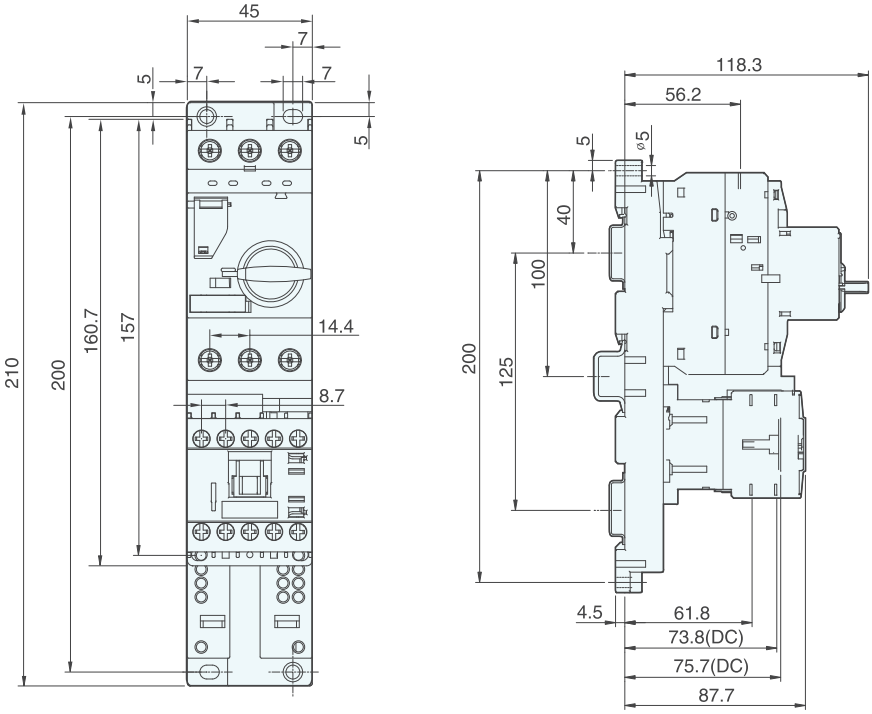
Dimensions

● TCMS

[mm]



TCMS-32S+TCM06-16

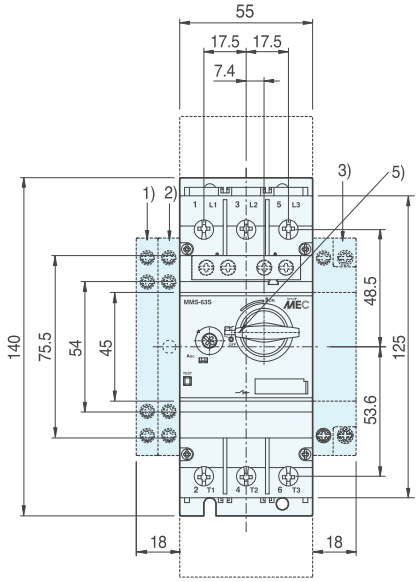


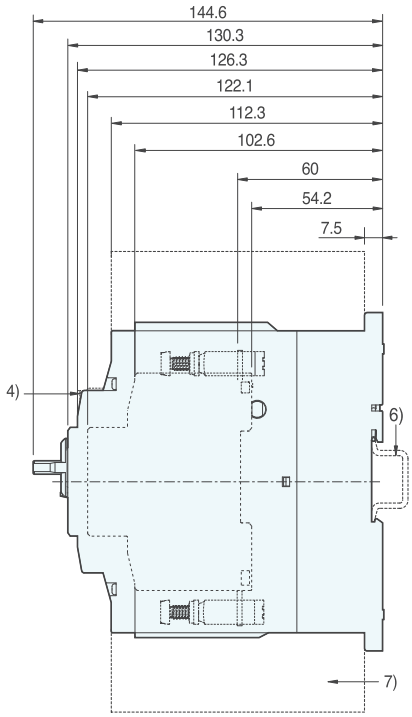
TCMS-32H+TCM06-16

Dimensions

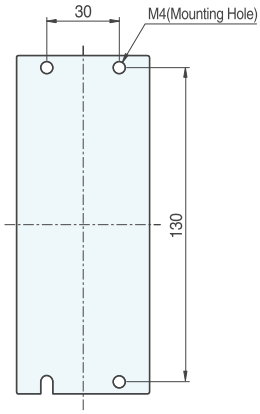
● TCMS 63S, 63H, 63HI

[mm]



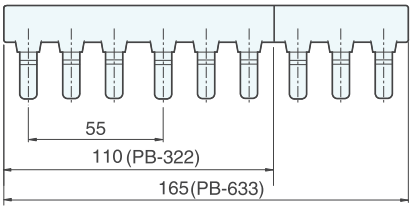


1kg

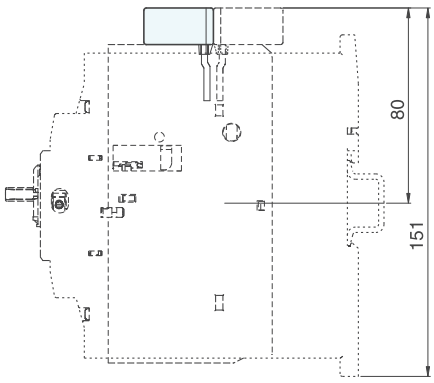


Height of arcing spaces
(Clearance from earthed parts)

Ue[V]	240	415	460	525	690
[mm]	50	50	50	50	50



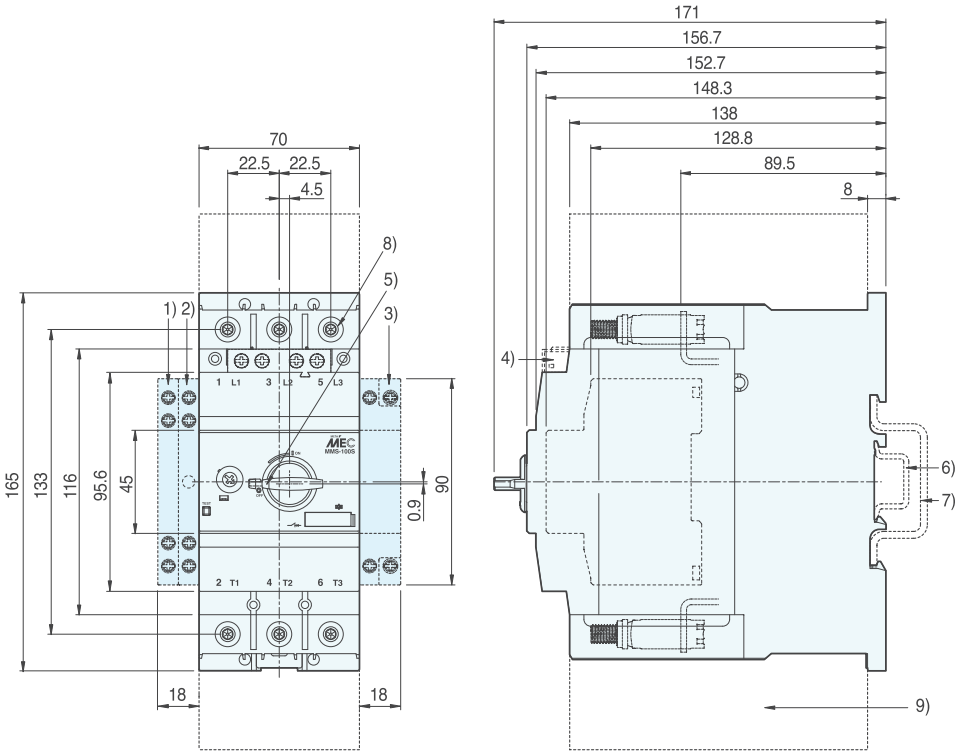
TCMS-63S/H/HI+ PB-63(2,3 Terminal)
PB-632(2 Terminal), PB-633(3 Terminal)



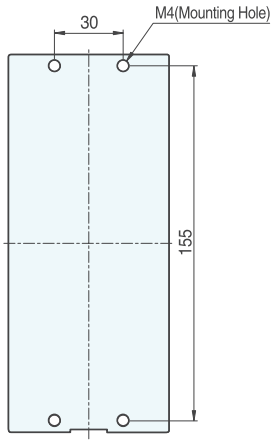
1) Side auxiliary switch
2) Side magnetic trip alarm switch
3) Side shunt release or Side undervoltage release
4) Front auxiliary switch
5) Handle lock in OFF position(ø 5mm)
6) 35mm standard mounting rail acc. to EN 50 022
7) Arcing space

Dimensions

● **TCMS 100S, 100H, 100HI** [mm]



2.2kg



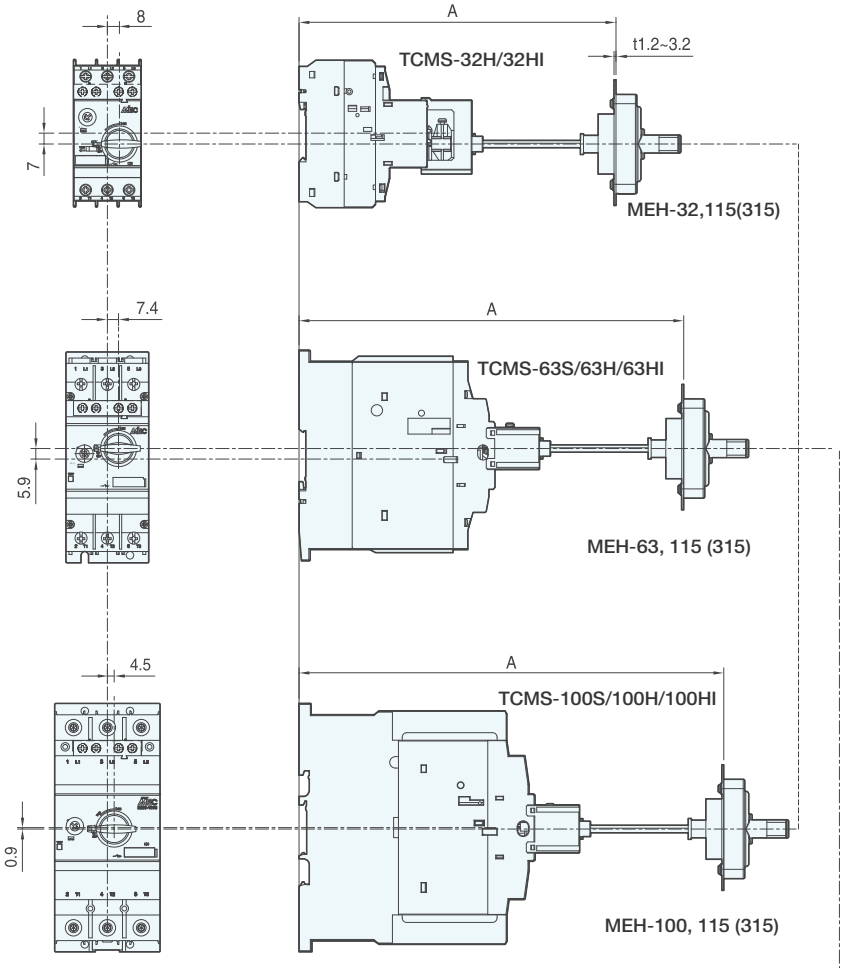
Height of arcing spaces
(Clearance from earthed parts)

Ue[V]	240	415	460	525	690
[mm]	50	70	70	110	150

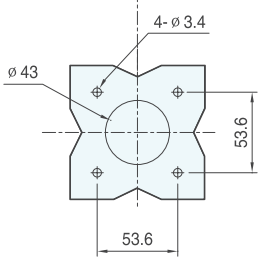
Dimensions

● E-Handle

[mm]



E-Handle Type	A(mm)	TCMS Type
MEH-32, 115	min : 148.6	TCMS-32H/32HI
	max:210.6(Shaft 115mm)	
MEH-32, 315	min : 148.6	
	max:410.6(Shaft 315mm)	
MEH-63, 115	min : 193.6	TCMS-63S/63H/63HI
	max:255.6(Shaft 115mm)	
MEH-63, 315	min : 193.6	
	max:455.6(Shaft 315mm)	
MEH-100, 115	min : 220	TCMS-100S/100H/100HI
	max:282(Shaft 115mm)	
MEH-100, 315	min : 220	
	max:482(Shaft 315mm)	



www.cselectric.co.in

C&S electric

Marketing Offices spread all over India

CENTRAL MARKETING OFFICE

222, Okhla Industrial Estate, Phase - III, New Delhi - 110 020
Ph. : (+91 11) 3384 9000 - 09 • Fax : (+91 11) 26847342 • E-Mail : cmo@cselectric.co.in

CUSTOMER CARE

Toll Free Number: 1800 3010 2012

NORTHERN REGION

DELHI
Ph. : (+91 11) 3384 9000 - 09
Fax : (+91 11) 26847342
E-Mail : cmo@cselectric.co.in

CHANDIGARH
Ph. : (+91 172) 3021144
Fax : (+91 172) 2631059-3201144
E-Mail : chandigarh@cselectric.co.in

LUDHIANA
Ph. : (+91 161) 2541900, 2541800
Fax : (+91 161) 2541900, 2541800
E-Mail : ludhiana@cselectric.co.in

LUCKNOW
Ph. : (+91 522) 3917843, 4102044
E-Mail : lucknow@cselectric.co.in

KANPUR
Ph. : (+91 522) 3917843, 4102044
E-Mail : kanpur@cselectric.co.in

INDORE
Ph. : (+91 731) 4035761, 3918020
E-Mail : indore@cselectric.co.in

RAIPUR
Ph. : (+91 771) 4061404
E-Mail : raipur@cselectric.co.in

NAGPUR
Ph. : (+91 712) 2565215 , 2547295
Fax : (+91 712) 2528923
E-Mail : nagpur@cselectric.co.in

EASTERN REGION

KOLKATA
Ph. : (+91 33) 39212100-01
Fax : (+91 33) 22275849
E-Mail : kolkata@cselectric.co.in

GUWAHATI
Ph. : (+91 361) 2469950
E-Mail : guwahati@cselectric.co.in

RANCHI
Ph. : (+91 651) 2242202, 2242224
E-Mail : ranchi@cselectric.co.in

BHUBANESWAR
Ph. : (+91 674) 2580788, 9778070465
E-Mail : bhubaneshwar@cselectric.co.in

WESTERN REGION

MUMBAI
Ph. : (+91 22) 24114727-28, 30484071-73
Fax : (+91 22) 24126631
E-Mail : mumbai@cselectric.co.in

AHMEDABAD
Ph. : (+91 79) 30653015
Fax : (+91 79) 30074519
E-Mail : ahmedabad@cselectric.co.in

BARODA
Ph. : (+91 265) 2339479, 2356293
Fax : (+91 265) 2338754
E-Mail : baroda@cselectric.co.in

PUNE
Ph. : (+91 20) 30283239 - 40
Fax : (+91 20) 30283239
E-Mail : pune@cselectric.co.in

SURAT
Ph. : (+91 261) 6544024-28
E-Mail : surat@cselectric.co.in

JAIPUR
Ph. : (+91 141) 4037651
Fax : (+91 141) 4033954
E-Mail : jaipur@cselectric.co.in

SOUTHERN REGION

CHENNAI
Ph. : (+91 44) 33534500-01
Fax : (+91 44) 39180514
E-Mail : chennai@cselectric.co.in

COIMBATORE
Ph. : (+91 422) 3048406 - 20
Fax : (+91 422) 3048412
E-Mail : coimbatore@cselectric.co.in

KOCHI
Ph. : (+91 484) 3071715 (10 LINES)
Fax : (+91 484) 3071716
E-Mail : cochin@cselectric.co.in

MADURAI
E-Mail : commercial.madurai@cselectric.co.in

BENGALURU
Ph. : (+91 80) 3065 9400
Fax : (+91 80) 25594939
E-Mail : bangalore@cselectric.co.in

SECUNDERABAD
Ph. : (+91 40) 48534080
Fax : (+91 40) 27812987
E-Mail : hyderabad@cselectric.co.in

VIJAYAWADA
Ph. : (+91 866) 2496265 / 67
E-Mail : vijayawada@cselectric.co.in

RESIDENT ENGINEERS

Agra | Allahabad | Aurangabad | Bareilly | Bhopal | Dehradun | Goa | Gorakhpur | Haridwar | Hubli | Jabalpur | Jammu | Kolhapur | Kollam
Mangalore | Mehsana | Nashik | Patna | Rajkot | Rourkela | Siliguri | Srinagar | Tirupathi | Trichey | Udaipur | Una | Vapi | Visakhapatnam

WAREHOUSES

NATIONAL WAREHOUSE

NOIDA - A-7 & 8, Sector-VIII , Noida -201 301, Distt. Gautam Budh Nagar, (UP) Ph.: (+91 120) 3914301-02 Fax: (+ 91 120) 3914303

REGIONAL WAREHOUSES

DELHI	Khasra No. 915 & 916, 2nd Floor, Near Rice Mill, Village Rithala, Delhi-85 Ph.: (+91 11) 27049211
LUCKNOW	3rd Floor, E-143, Phase-I, Transport Nagar, Kanpur Road, Lucknow - 17 Ph.: (+91 522) 4103460
INDORE	Liberty Agencies 53, Udyog Nagar, Near Musakhedi Square, Ring Road, Indore-452001 Ph.: (+91) 88780-62000 / 64000
KOLKATA	113, Chetla Road, New Alipur, Kolkata - 700 053, Ph.: (+91 33) 22275849 - 51
RANCHI	Plot No. 145/C, Mandir Marg-D, Road No. 4, Ashok Nagar, Distt. Ranchi, Jharkhand - 834002 Ph:. (91 651) 2242202, 2242224
BHUBANESWAR	Rasharaj Geetikunj, Plot No. 224/A, Sec-A, Zone-B, Mancheswar Industrial Estate, Bhubaneswar-751 010 Ph.: (+91 674) 2580788
MUMBAI	E-5, Parasnath Complex. Gala No.8, Village 'VAL' Dapode Road, Taluka Bhiwandi, District, Thane - 421302 Ph.: (+91 2522) 314830
AHMEDABAD	B-25-B/C Meldi Industrial Estate, Opp. West Coast Pharmaceutical, Nr. Gota Over Bridge, Gota, Ahmedabad - 382481 Ph.: (+91 79) 65453044
BENGALURU	No. 17, 1st Main Road, Sampangiram Nagar, Bengaluru - 560 027 Ph.: (+91 80) 41125467

Motor Protection Circuit Breaker 00/02/2018

We touch your electricity everyday!