



www.controlsindia.com

Controls & Switchgear Contactors Ltd.

Corporate Office : 222, Okhla Industrial Estate, New Delhi - 110 020
Tel. : +91-11-3088 7520 - 29, **Fax:** +91-11-2684 7154, 2682 9063

International Business Division: Tel. : +91-11-4161 3503, 3088 7520-29, **Fax:** +91-11-2683 8291, 2684 7342
email : exports@controlsindia.com

Central Marketing Office: Tel. : +91-11-3088 7520-29, **Fax:** +91-11-2684 8241, 2684 7342
email : cmo@controlsindia.com, info@controlsindia.com



Manual Motor Starter (MPCB)

0.16A ~ 100A, 690V



Characteristics

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 °C	-50 ~ +80	-50 ~ +80	-50 ~ +80
Operation °C	-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°C 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 = 32A : 4.5	In = 26~63A : 12	In = 75~100A : 21
Terminal capacity			
Single-core 1.conductor [mm] / [AWG]	1...10 / 18...8	0.75...35 / 18...2	2.5...70 / 12...2/0
2.conductor [mm] / [AWG]	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Stranded 1.conductor [mm] / [AWG]	1...6 / 18...10	0.75...35 / 18...2	2.5...70 / 12...2/0
2.conductor [mm] / [AWG]	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
Flexible 1.conductor [mm] / [AWG]	1...6 / 18...10	0.75...25 / 18...4	2.5...50 / 12...1/0
2.conductor [mm] / [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...	
	[V] / [A]	[V] / [A]	[V] / [A]	[V] / [A]	[V] / [A]	[V] / [A]
Rated thermal current / th at 40°C / 60°C 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...
	[V] / [A]	[V] / [A]	[V] / [A]
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			
1.conductor [mm] / [AWG]	Single-core 0.5...2.5 / 20...14	Flexible 0.5...4 / 20...10	
2.conductor [mm] / [AWG]	0.5...2.5 / 20...14	0.75...2.5 / 18...14	

Rated breaking capacities

Type	Rated operational current (Ie)	Thermal release Adjustment range (A)	240V * 230V #		415V * 400V #		460V * 440V #		525V * 500V #		690V * 600V #	
			Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics	Icu	Ics
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

Back-up Fuses

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

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
230/240V	*	*	*	*	*	*	*	*	*	*	*	*	*	125	125	125
400/415V	*	*	*	*	*	*	*	*	*	*	80	80	100	100	100	100
440/460V	*	*	*	*	*	*	50	50	63	63	80	80	100	100	100	100
500V	*	*	*	*	*	*	50	40	50	63	63	80	80	80	80	80
690V	*	*	*	*	*	20	35	40	50	63	63	63	63	63	63	63

TCMS-32H, 32HI

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
230/240V	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
400/415V	*	*	*	*	*	*	*	*	*	*	*	*	100	125	125	125
440/460V	*	*	*	*	*	*	*	*	*	80	80	80	80	100	100	100
500V	*	*	*	*	*	*	*	*	*	63	80	80	80	80	80	80
690V	*	*	*	*	*	*	35	40	50	63	63	63	63	63	63	63

TCMS-63H, 63HI

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

TCMS-100H, 100HI

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

Note: * : Short circuit of 50 or 100kA, No back up fuse required.

Technical Information - Standard type

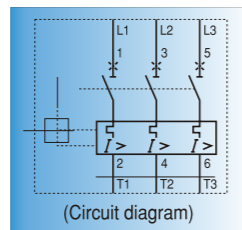
- Adjustable thermal release
- Magnetic release $13 \times I_e$ max.
- Trip class 10
- Ambient temperature compensation
- Phase-failure protection
- Pad lock facility



Type	400/415V		Switching of 3 phase AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release adjustment range [A]	Magnetic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
TCMS-32S (Standard)	100	100	-	0.02	-	-	0.16	0.1...0.16	2.1	TCMS-32-0.16
	100	100	0.03	0.06	-	-	0.25	0.16...0.25	3.3	TCMS-32-0.25
	100	100	0.06	0.09	-	-	0.4	0.25...0.4	5.2	TCMS-32-0.4
	100	100	0.09	0.12	0.25	0.25	0.63	0.4...0.63	8.2	TCMS-32-0.63
	100	100	0.12	0.25	0.37	0.55	1	0.63...1.0	13	TCMS-32-1
	100	100	0.25	0.55	0.55/0.75	1.1	1.6	1.0...1.6	20.8	TCMS-32-1.6
	100	100	0.37	0.75	1.1	1.5	2.5	1.6...2.5	32.5	TCMS-32-2.5
	100	100	0.75	1.5	1.5/2.2	3	4	2.5...4.0	52	TCMS-32-4
	100	100	1.5	2.2	3	4	6	4...6	78	TCMS-32-6
	100	100	1.5	3	3.7	5.5	8	5...8	104	TCMS-32-8
	50	38	3	4	4/5.5	7.5	10	6...10	130	TCMS-32-10
	50	38	3	5.5	7.5	11	13	9...13	169	TCMS-32-13
	25	19	4	7.5	11	11	17	11...17	221	TCMS-32-17
	25	19	4	7.5	11	15	22	14...22	286	TCMS-32-22
	25	19	5.5	11	15	18.5	26	18...26	338	TCMS-32-26
	20	15	7.5	15	18.5	22	32	22...32	416	TCMS-32-32



Type	400/415V		Switching of 3 phase AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
TCMS-32H (High break)	100	100	-	0.02	-	-	0.16	0.1...0.16	2.1	TCMS-32H-0.16
	100	100	0.03	0.06	-	-	0.25	0.16...0.25	3.3	TCMS-32H-0.25
	100	100	0.06	0.09	-	-	0.4	0.25...0.4	5.2	TCMS-32H-0.4
	100	100	0.09	0.12	0.25	0.25	0.63	0.4...0.63	8.2	TCMS-32H-0.63
	100	100	0.12	0.25	0.37	0.55	1	0.63...1.0	13	TCMS-32H-1
	100	100	0.25	0.55	0.55/0.75	1.1	1.6	1.0...1.6	20.8	TCMS-32H-1.6
	100	100	0.37	0.75	1.1	1.5	2.5	1.6...2.5	32.5	TCMS-32H-2.5
	100	100	0.75	1.5	1.5/2.2	3	4	2.5...4.0	52	TCMS-32H-4
	100	100	1.5	2.2	3	4	6	4...6	78	TCMS-32H-6
	100	100	1.5	3	3.7	5.5	8	5...8	104	TCMS-32H-8
	100	100	3	4	4/5.5	7.5	10	6...10	130	TCMS-32H-10
	100	100	3	5.5	7.5	11	13	9...13	169	TCMS-32H-13
	50	38	4	7.5	11	11	17	11...17	221	TCMS-32H-17
	50	38	4	7.5	11	15	22	14...22	286	TCMS-32H-22
	50	38	5.5	11	15	18.5	26	18...26	338	TCMS-32H-26
	50	38	7.5	15	18.5	22	32	22...32	416	TCMS-32H-32



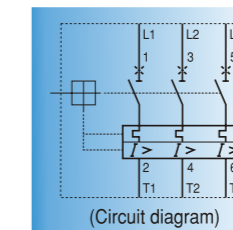
- Adjustable thermal release
- Magnetic release $13 \times I_e$ max.
- Trip class 10
- Ambient temperature compensation
- Phase-failure protection
- Pad lock facility



Type	400/415V		Switching of 3 phase AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
TCMS-63H (High break)	100	100	3	4	4/5.5	7.5	10	6~10	130	TCMS-63H-10
	100	100	3	5.5	7.5	11	13	9~13	169	TCMS-63H-13
	50	50	4	7.5	11	11	17	11~17	221	TCMS-63H-17
	50	50	4	7.5	11	15	22	14~22	286	TCMS-63H-22
	50	50	5.5	11	15	18.5	26	18~26	338	TCMS-63H-26
	50	50	7.5	15	18.5	22	32	22~32	416	TCMS-63H-32
	50	50	7.5	18.5	22	30	40	28~40	520	TCMS-63H-40
	50	50	11	22	30	45	50	34~50	650	TCMS-63H-50
	50	50	15	30	37	55	63	45~63	819	TCMS-63H-63



Type	400/415V		Switching of 3 phase AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
MMS-100H (High break)	100	100	4	7.5	11	11	17	11~17	221	TCMS-100H-17
	100	50	4	7.5	11	15	22	14~22	286	TCMS-100H-22
	100	50	5.5	11	15	18.5	26	18~26	338	TCMS-100H-26
	100	50	7.5	15	18.5	22	32	22~32	416	TCMS-100H-32
	100	50	7.5	18.5	22	30	40	28~40	520	TCMS-100H-40
	100	50	11	22	30	45	50	34~50	650	TCMS-100H-50
	100	50	15	30	37	55	63	45~63	819	TCMS-100H-63
	100	50	22	37	45	63	75	55~75	975	TCMS-100H-75
	100	50	30	45	55	75	90	70~90	1170	TCMS-100H-90
	100	50	30	45	63	90	100	80~100	1300	TCMS-100H-100



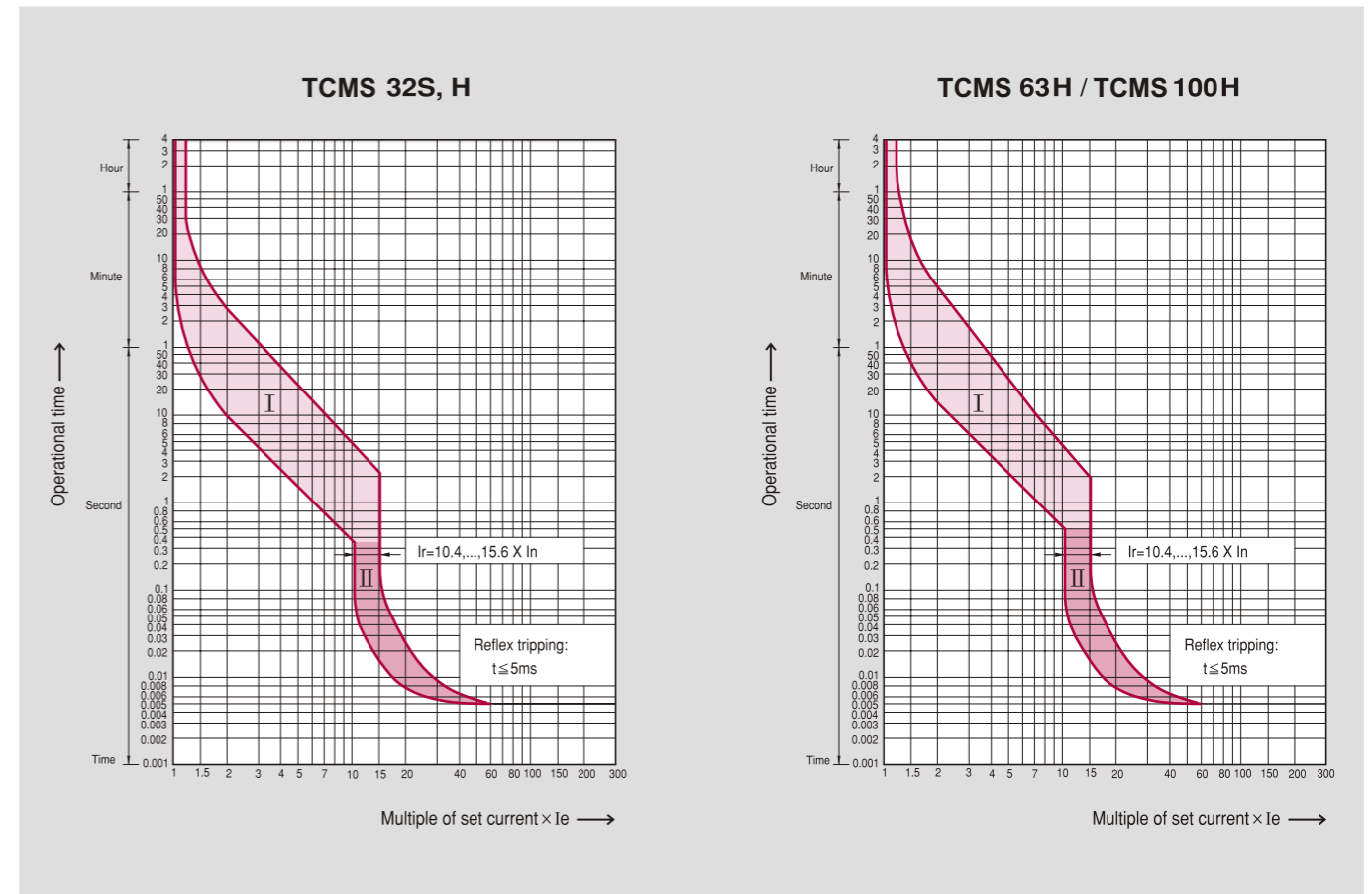
- Without thermal releases
- Magnetic release $13 \times I_e$ max.
- Pad lock facility



Type	400/415V		Switching of 3 phase AC motors, AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magne t ic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
TCMS-32HI (High break)	100	100	-	0.02	-	-	0.16	-	2.1	TCMS-32HI-0.16
	100	100	0.03	0.06	-	-	0.25	-	3.3	TCMS-32HI-0.25
	100	100	0.06	0.09	-	-	0.4	-	5.2	TCMS-32HI-0.4
	100	100	0.09	0.12	0.25	0.25	0.63	-	8.2	TCMS-32HI-0.63
	100	100	0.12	0.25	0.37	0.55	1	-	13	TCMS-32HI-1
	100	100	0.25	0.55	0.55 / 0.75	1.1	1.6	-	20.8	TCMS-32HI-1.6
	100	100	0.37	0.75	1.1	1.5	2.5	-	32.5	TCMS-32HI-2.5
	100	100	0.75	1.5	1.5 / 2.2	3	4	-	52	TCMS-32HI-4
	100	100	1.5	2.2	3	4	6	-	78	TCMS-32HI-6
	100	100	1.5	3	3.7	5.5	8	-	104	TCMS-32HI-8
	100	100	3	4	4 / 5.5	7.5	10	-	130	TCMS-32HI-10
	100	100	3	5.5	7.5	11	13	-	169	TCMS-32HI-13
	50	38	4	7.5	11	11	17	-	221	TCMS-32HI-17
	50	38	4	7.5	11	15	22	-	286	TCMS-32HI-22
	50	38	5.5	11	15	18.5	26	-	338	TCMS-32HI-26
	50	38	7.5	15	18.5	22	32	-	416	TCMS-32HI-32

Type	400/415V		Switching of 3 phase AC motors, AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magne t ic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
TCMS-63HI (High break)	100	100	3	4	4 / 5.5	7.5	10	-	130	TCMS-63HI-10
	100	100	3	5.5	7.5	11	13	-	169	TCMS-63HI-13
	50	50	4	7.5	11	11	17	-	221	TCMS-63HI-17
	50	50	4	7.5	11	15	22	-	286	TCMS-63HI-22
	50	50	5.5	11	15	18.5	26	-	338	TCMS-63HI-26
	50	50	7.5	15	18.5	22	32	-	416	TCMS-63HI-32
	50	50	7.5	18.5	22	30	40	-	520	TCMS-63HI-40
	50	50	11	22	30	45	50	-	650	TCMS-63HI-50
	50	50	15	30	37	55	63	-	819	TCMS-63HI-63

Type	400/415V		Switching of 3 phase AC motors, AC-2, AC-3 3-phase [kW] (50/60Hz)				Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magne t ic release Operating current [A]	Reference
	I_{cu} [kA]	I_{cs} [kA]	230V	400V	500V	690V				
TCMS-100HI (High break)	100	100	4	7.5	11	11	17	-	221	TCMS-100HI-17
	100	50	4	7.5	11	15	22	-	286	TCMS-100HI-22
	100	50	5.5	11	15	18.5	26	-	338	TCMS-100HI-26
	100	50	7.5	15	18.5	22	32	-	416	TCMS-100HI-32
	100	50	7.5	18.5	22	30	40	-	520	TCMS-100HI-40
	100	50	11	22	30	45	50	-	650	TCMS-100HI-50
	100	50	15	30	37	55	63	-	819	TCMS-100HI-63
	100	50	22	37	45	63	75	-	975	TCMS-100HI-75
	100	50	30	45	55	75	90	-	1170	TCMS-100HI-90
	100	50	30	45	63	90	100	-	1300	TCMS-100HI-100



I) 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.

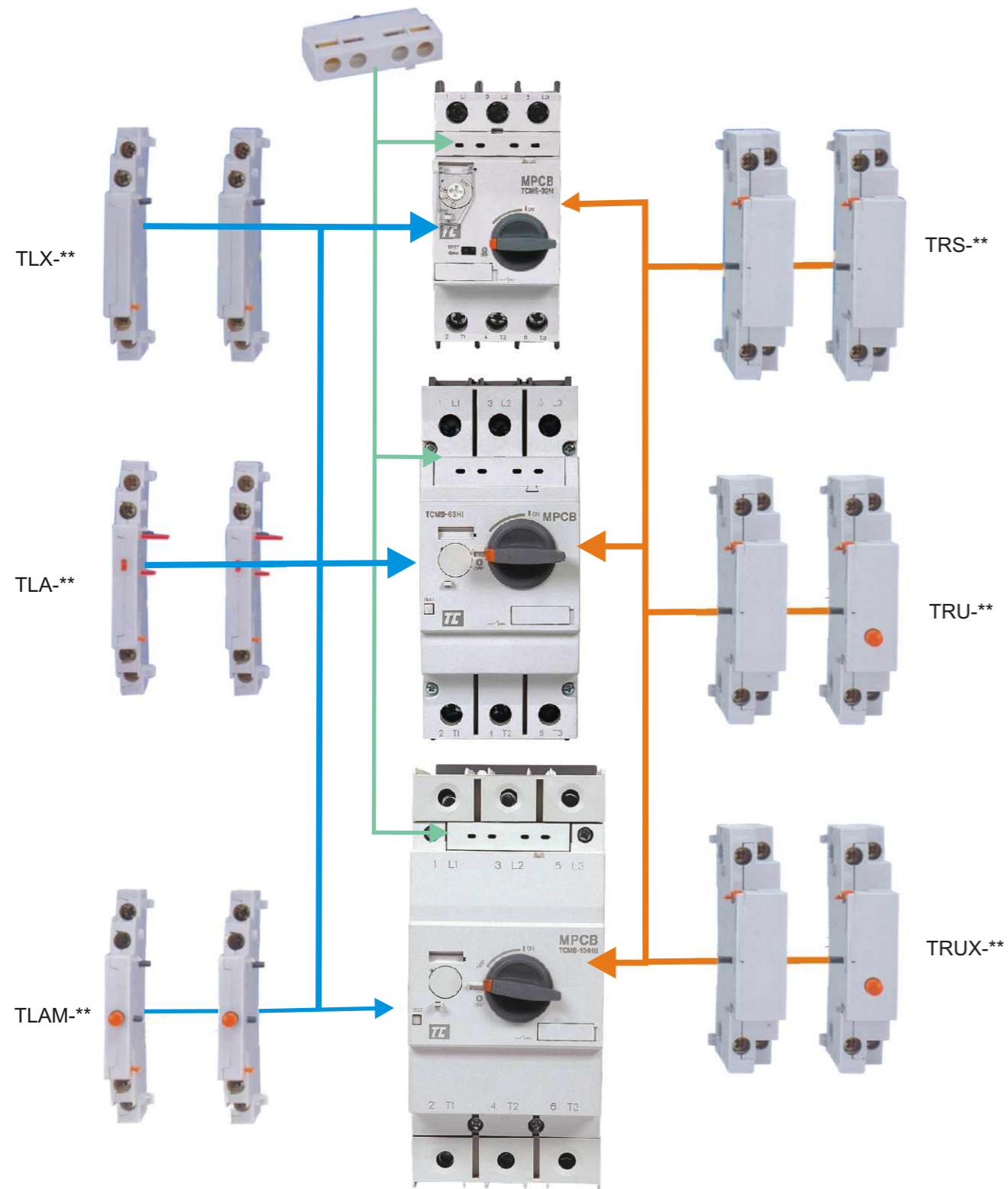
II) Magnetic release trip current :

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

Current setting I_e :

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 I_e 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 I_e of the motor.

Accessories - Overview



Handle Lock



Dial cover



TCMS32



Terminals

TCMS63



TCMS100



Accessories

Type	Description	Connection diagram		
TFX...	Auxiliary Switch · Front mounting · 2-pole · One front mounting module per circuit breaker	TFX-11 NO1NC	TFX-20 2NO	TLX-02 2NC
TLX...	Auxiliary Switch · Side mounting on the left · 2-pole · One side mounting module per circuit breaker	TLX-11 1NO1NC	TLX-20 2NO	TLX-02 2NC
TLA...	Any Trip Alarm Switch · Side mounting on the left · 2-pole · One side mounting module per circuit breaker. (Always directly fitted to the circuit breaker).	TLA-11	TLA-02	TLA-20
TLAM...	Magnetic Trip Alarm Switch · Side mounting on the left · 2-pole · One side mounting module per circuit breaker. (Always directly fitted to the circuit breaker except using with Any Trip Alarm Switch).	TLAM-11	TLAM-02	TLAM-20

Type	Description	Connection diagram	Reference
Shunt release	· Side mounting on the right · One side mounting module per circuit breaker. (Always directly fitted to the circuit breaker).		24V 50Hz / 28V 60Hz 110~127V 50Hz / 120V 60Hz 220~230V 50Hz / 240~260V 60Hz 240V 50Hz / 277V 60Hz 380~400V 50Hz / 440~460V 60Hz 415~440V 50Hz / 460~480V 60Hz
Undervoltage release	· Side mounting on the right · One side mounting module per circuit breaker. (Always directly fitted to the circuit breaker).		24V 50Hz / 28V 60Hz 110~127V 50Hz / 120V 60Hz 220~230V 50Hz / 240~260V 60Hz 240V 50Hz / 277V 60Hz 380~400V 50Hz / 440~460V 60Hz 415~440V 50Hz / 460~480V 60Hz
Undervoltage release with Switch (Rotary Handle Only)	· Side mounting on the right · Include 2NO Auxiliary contact · One side mounting module per circuit breaker. (Always directly fitted to the circuit breaker).		24V 50Hz / 28V 60Hz 110~127V 50Hz / 120V 60Hz 220~230V 50Hz / 240~260V 60Hz 240V 50Hz / 277V 60Hz 380~400V 50Hz / 440~460V 60Hz 415~440V 50Hz / 460~480V 60Hz

Others

Type	Description	Applied Type
TPIL32	Push-in lug · For screwing the TCMS on to mounting plates.	TCMS 32
TIB100	Insulation barriers · Insulation barriers with increased creepage distances and clearances for UL	TCMS 100

Type "2" coordination

According to IEC947-4-1 / IS13947-4-1

● Short-circuit current $I_q = 50kA$, Voltage : 400/415V, 50/60Hz

Standard motors		Manual motor starter			Contactor	
AC-3 at 400/415V 1500rpm		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	TC1-MS06	6
0.06	0.2	TCMS-32S 0.25A	0.16~0.25	3.25	TC1-MS06	6
0.09	0.3	TCMS-32S 0.4A	0.25~0.4	5.2	TC1-MS06	6
0.12	0.4	TCMS-32S 0.63A	0.4~0.63	8.19	TC1-MS06	6
0.18	0.6	TCMS-32S 0.63A	0.4~0.63	8.19	TC1-MS06	6
0.25	0.8	TCMS-32S 1A	0.63~1	13	TC1-MS06	6
0.37	1.1	TCMS-32S 1.6A	1~1.6	20.8	TC1-MS06	6
0.55	1.5	TCMS-32S 1.6A	1~1.6	20.8	TC1-MS09	9
0.75	1.9	TCMS-32S 2.5A	1.6~2.5	32.5	TC1-D18	18
1.1	2.7	TCMS-32S 4A	2.5~4	52	TC1-D18	18
1.5	3.6	TCMS-32S 4A	2.5~4	52	TC1-D18	18
2.2	5.2	TCMS-32S 6A	4~6	78	TC1-D18	18
3	6.8	TCMS-32S 8A	5~8	104	TC1-D18	18
4	9	TCMS-32S 10A	6~10	130	TC1-D18	18
5.5	11.5	TCMS-32H 13A	9~13	169	TC1-D18	18
7.5	15.5	TCMS-32H 17A	11~17	221	TC1-D25	25
10	20	TCMS-32H 22A	14~22	286	TC1-D25	25
11	22	TCMS-32H 26A	18~26	338	TC1-D32	32
15	29	TCMS-32H 32A	22~32	416	TC1-D40	40
18.5	35	TCMS-63H 40A	28~40	520	TC1-D40	40
22	41	TCMS-63H 50A	34~50	650	TC1-D50	50
30	55	TCMS-63H 63A	45~63	819	TC1-D65	65
37	67	TCMS-100S 75A	55~75	975	TC1-D80	80
-	-	TCMS-100S 90A	70~90	1170	TC1-D95	95
45	80	TCMS-100S 100A	80~100	1300	TC1-D95	95

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

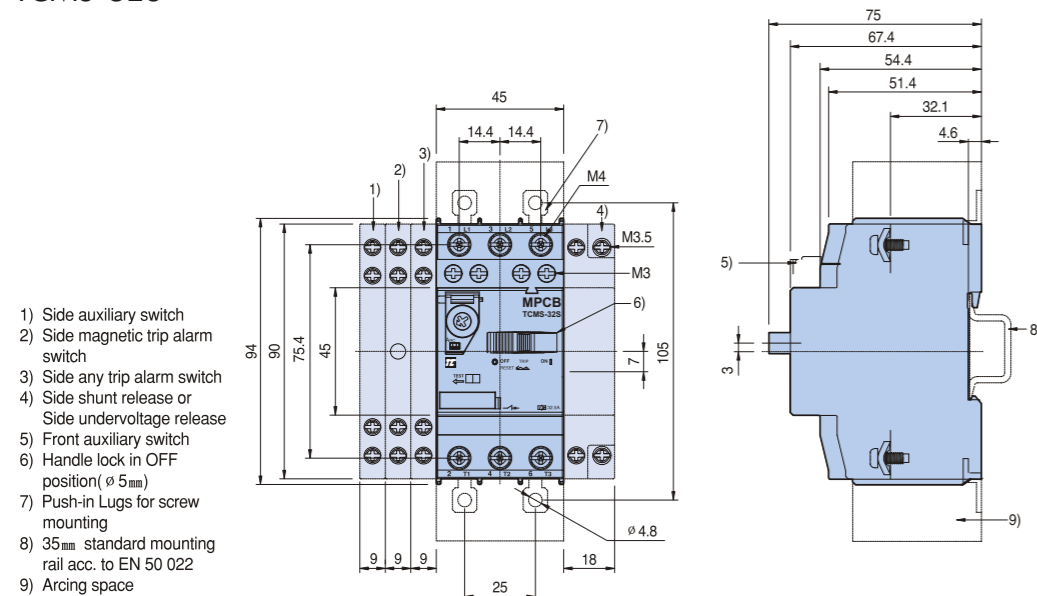
● The contactor or the starter must not endanger persons or system in the event of a short-circuit.

● 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 with out significant deformation (such as with a screwdriver).

Dimensions

TCMS-32S

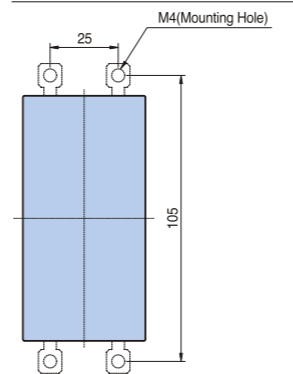


Height of arcing spaces (Clearance from earthed parts)

Ue[V]	240	415	460	525	690
[mm]	20	20	20	20	20

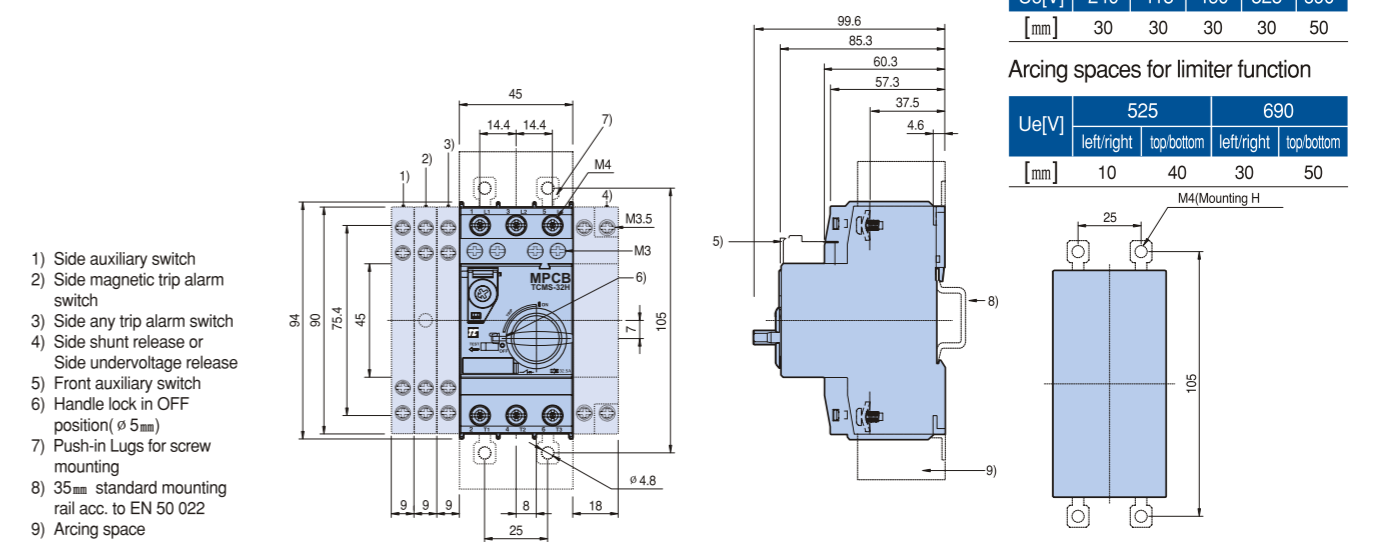
Arcing spaces for limiter function

Ue[V]	525		690	
	left/right	top/bottom	left/right	top/bottom
[mm]	10	40	30	50



Dimensions

TCMS 32H, 32HI

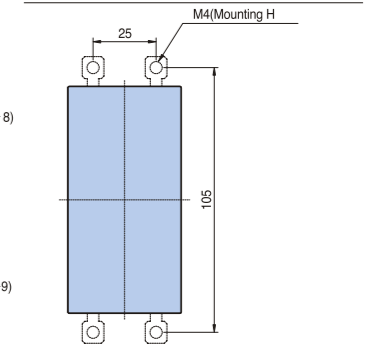


Height of arcing spaces (Clearance from earthed parts)

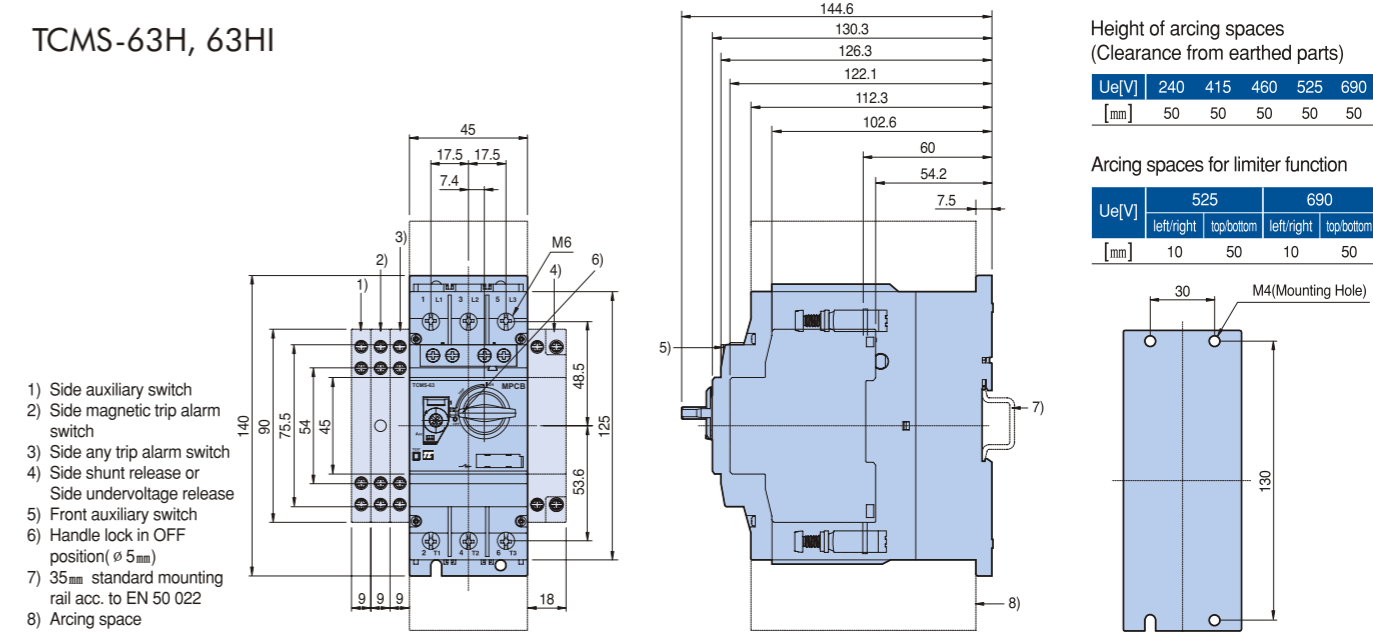
Ue[V]	240	415	460	525	690
[mm]	30	30	30	30	50

Arcing spaces for limiter function

Ue[V]	525		690	
	left/right	top/bottom	left/right	top/bottom
[mm]	10	40	30	50



TCMS-63H, 63HI

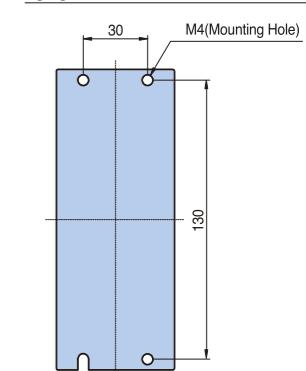


Height of arcing spaces (Clearance from earthed parts)

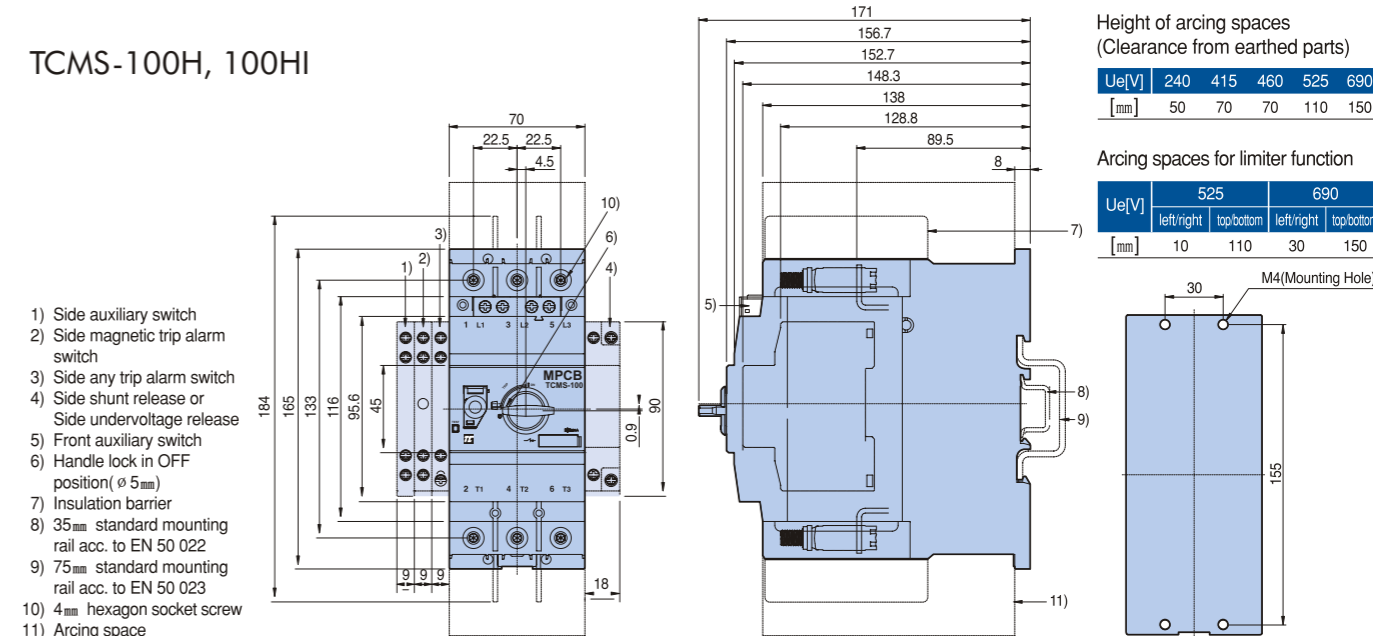
Ue[V]	240	415	460	525	690
[mm]	50	50	50	50	50

Arcing spaces for limiter function

Ue[V]	525		690	
	left/right	top/bottom	left/right	top/bottom
[mm]	10	50	10	50



TCMS-100H, 100HI



Height of arcing spaces (Clearance from earthed parts)

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

Arcing spaces for limiter function

Ue[V]	525		690	
	left/right	top/bottom	left/right	top/bottom
[mm]	10	110	30	150

