

Circuit breakers for transformer protection

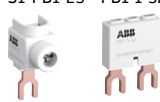
Low voltage transformers are used to supply power to control and auxiliary circuits in distribution and automation boards and to provide galvanic isolation. These transformers may be damaged by an electrical failure (short-circuit or overload on the primary side), therefore a proper protection should be provided.

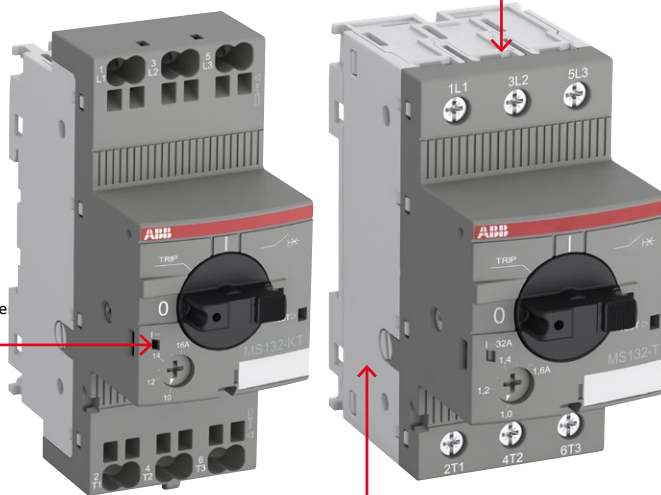
Troubleshooting made easy

MS132-T feature a magnetic trip indicator. This way, every tripping event will be distinguished, making troubleshooting a lot easier and faster.

Complete portfolio

Manual motor starter accessories are suitable throughout the complete range. Moreover ABB offers special accessories for fast single-phase setup.





Transformer protection

MS132-T is an inrush compensated circuit breaker for control transformer protection. With the right selection, it provides overcurrent protection on the primary side of the transformer. This avoids expensive protection on the secondary side.



Circuit breakers for transformers protection are specially designed for fuseless protection of control transformers on the primary side against overloads and short-circuits.

Application example
 Protection of transformers for power supply of control and auxiliary circuits, both in distribution and automation boards (checking, signaling, interlock, etc).

MS132-T circuit breakers for transformer protection

0.10 to 25 A – with thermal and electromagnetic protection



MS132-10T

2CDC24009V0017



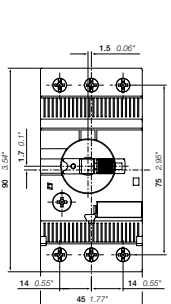
MS132-25T

2CDC241008P0014

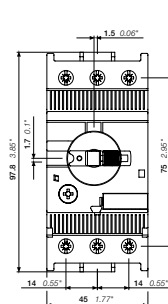
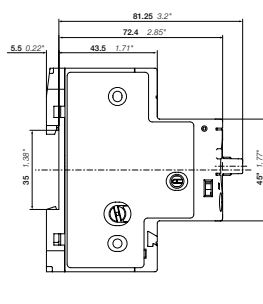
Circuit breakers for transformer protection are electro-mechanical protection devices specially designed to protect control transformers on the primary side. They allow fuseless protection against overload and short-circuit, saving space and cost and ensuring a quick reaction under short-circuit condition by switching off the transformer within milliseconds. The short-circuit current setting is fixed to 20 times the operating current to handle the high inrush current generated by transformers. The device allows manual connection and disconnection of the transformer from the mains.

MS132-T is a 45 mm (width) compact and powerful range for transformer protection up to 12.5 kW (400 V) / 25 A. This type has also a clear and reliable indication of fault in a separate window in the event of short-circuit tripping. Further features are the built-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signaling contacts, undervoltage releases, shunt trips, power in-feed blocks are available as accessory. These are suitable throughout the MS116/MS132/MS165-range. Moreover ABB offers special accessories for fast single phase setup.

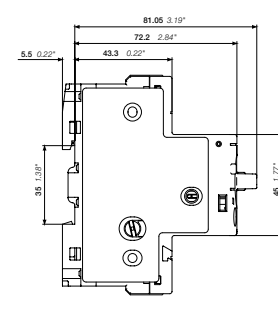
Setting range	Short-circuit breaking capacity Ics at 400 V AC kA	Rated instantaneous short-circuit current setting Ii A	Type	Order code	Weight (1 pce)
A					kg
0.10 ... 0.16	100	3.2	MS132-0.16T	1SAM340000R1001	0.215
0.16 ... 0.25	100	5	MS132-0.25T	1SAM340000R1002	0.215
0.25 ... 0.40	100	8	MS132-0.4T	1SAM340000R1003	0.215
0.40 ... 0.63	100	12.6	MS132-0.63T	1SAM340000R1004	0.215
0.63 ... 1.00	100	20	MS132-1.0T	1SAM340000R1005	0.215
1.00 ... 1.60	100	32	MS132-1.6T	1SAM340000R1006	0.265
1.60 ... 2.50	100	50	MS132-2.5T	1SAM340000R1007	0.265
2.50 ... 4.00	100	80	MS132-4.0T	1SAM340000R1008	0.265
4.00 ... 6.30	100	126	MS132-6.3T	1SAM340000R1009	0.265
6.30 ... 10.0	100	200	MS132-10T	1SAM340000R1010	0.265
8.00 ... 12.0	100	240	MS132-12T	1SAM340000R1012	0.310
10.0 ... 16.0	100	320	MS132-16T	1SAM340000R1011	0.310
16.0 ... 20.0	100	400	MS132-20T	1SAM340000R1013	0.310
20.0 ... 25.0	50	500	MS132-25T	1SAM340000R1014	0.310



MS132T ≤ 10 A



MS132T ≥ 12 A



Main dimensions mm, inches

MS132-KT circuit breakers for transformer protection with Push-in Spring terminals

0.10 to 25 A – with thermal and electromagnetic protection

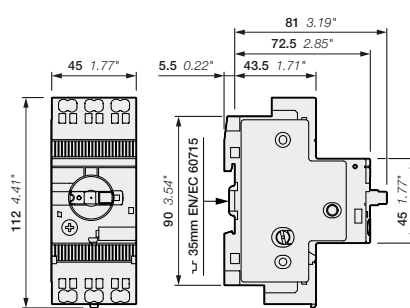


MS132-KT

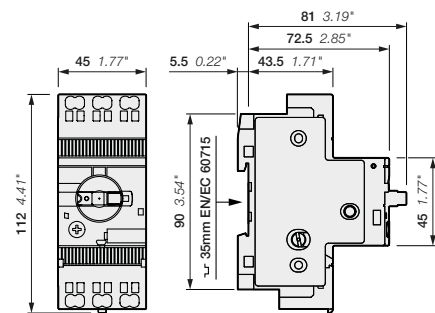
Circuit breakers for transformer protection with Push-in Spring terminals are electro-mechanical protection devices specially designed to protect control transformers on the primary side. They allow fuseless protection against overload and short-circuit, saving space and cost and ensuring a quick reaction under short-circuit condition by switching off the transformer within milliseconds. The short-circuit current setting is fixed to 20 times the operating current to handle the high inrush current generated by transformers. The device allows manual connection and disconnection of the transformer from the mains.

MS132-KT is a 45 mm (width) compact and powerful range for transformer protection up to 12.5 kW (400 V) / 25 A. This type has also a clear and reliable indication of fault in a separate window in the event of short-circuit tripping. Further features are the built-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signaling contacts, undervoltage releases and shunt trips are available as accessory. These are suitable throughout the MS116/MS132/MS165-range.

Setting range	Short-circuit breaking capacity Ics at 400 V AC kA	Rated instantaneous short-circuit current setting Ii A	Type	Order code	Weight (1 pce) kg
0.10 ... 0.16	100	3.2	MS132-0.16KT	1SAM340010R1001	0.256
0.16 ... 0.25	100	5	MS132-0.25KT	1SAM340010R1002	0.256
0.25 ... 0.40	100	8	MS132-0.4KT	1SAM340010R1003	0.256
0.40 ... 0.63	100	12.6	MS132-0.63KT	1SAM340010R1004	0.256
0.63 ... 1.00	100	20	MS132-1.0KT	1SAM340010R1005	0.256
1.00 ... 1.60	100	32	MS132-1.6KT	1SAM340010R1006	0.298
1.60 ... 2.50	100	50	MS132-2.5KT	1SAM340010R1007	0.280
2.50 ... 4.00	100	80	MS132-4.0KT	1SAM340010R1008	0.286
4.00 ... 6.30	100	126	MS132-6.3KT	1SAM340010R1009	0.289
6.30 ... 10.0	100	200	MS132-10KT	1SAM340010R1010	0.296
10.0 ... 16.0	100	320	MS132-16KT	1SAM340010R1011	0.316
16.0 ... 20.0	100	400	MS132-20KT	1SAM340010R1013	0.317
20.0 ... 25.0	50	500	MS132-25KT	1SAM340010R1014	0.316



MS132-KT > 10 A



MS132-KT < 10 A

Main dimensions mm, inches

MS132-T, MS132-KT

Technical data

Main circuit – Utilization characteristics according to IEC/EN

Type	MS132-T / -KT
Standards	IEC/EN 60947-2, IEC/EN 60947-4-1, IEC/EN 60947-1
Rated operational voltage Ue	690 V AC
Rated frequency	50/60 Hz
Operational frequency	0 ... 400 Hz
Trip class	10
Number of poles	3
Duty time	100%
Mechanical durability	100000 cycles
Electrical durability	50000 cycles
Rated impulse withstand voltage Uimp	6 kV
Rated insulation voltage Ui	690 V
Rated operational current Ie	See ordering details
Rated instantaneous short-circuit current setting Ii	See ordering details
Rated service short-circuit breaking capacity Ics	See table "Short-circuit breaking capacity and back-up fuses"
Rated ultimate short-circuit breaking capacity Icu	See table "Short-circuit breaking capacity and back-up fuses"

Short-circuit breaking capacity and back-up fuses

Ics Rated service short-circuit breaking capacity

Icu Rated ultimate short-circuit breaking capacity

Icc Prospective short-circuit current at installation location

Note: Maximum rated current of the back-up fuses if Icc > Ics

Type	230 V AC			400 V AC			440 V AC			500 V AC			690 V AC		
	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A
MS132-0.16T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-0.25T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-0.4T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-0.63T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-1.0T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-1.6T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-2.5T / -KT	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)	100	100	-(1)
MS132-4.0T / -KT	100	100	-(1)	100	100	-(1)	30	30	35 (2)	20	20	35 (2)	3	3	35 (2)
MS132-6.3T / -KT	100	100	-(1)	100	100	-(1)	30	30	63 (2)	20	20	63 (2)	3	3	50 (2)
MS132-10T / -KT	100	100	-(1)	100	100	-(1)	30	30	100 (2)	20	20	100 (2)	3	3	50 (2)
MS132-12T	100	100	-(1)	100	100	-(1)	30	30	100 (2)	20	20	100 (2)	3	3	63 (2)
MS132-16T / -KT	100	100	-(1)	100	100	-(1)	30	30	125 (2)	20	20	125 (2)	3	3	63 (2)
MS132-20T / -KT	100	100	-(1)	100	100	-(1)	30	30	125 (2)	20	20	125 (2)	3	3	80 (2)
MS132-25T / -KT	50	50	125 (2)	50	50	125 (2)	30	30	125 (2)	10	10	125 (2)	3	3	100 (2)

(1) No back-up fuse required, because short-circuit proof up to 100 kA

(2) Rated back-up fuse for short-circuits up to 100 kA

MS132-T, MS132-KT

Technical data

Main circuit – Utilization characteristics according to UL

Type	MS132-T / -KT	
Standards	UL 60947-1, UL 60947-4-1	
Rated operational voltage U _e acc. to UL/CSA	600 V AC	
Trip class	10	
Motor ratings (1)	Full Load Amps (FLA)	see table UL current ratings

(1) See product data sheets for UL/CSA single phase motor and general use (AC-1) ratings.

UL/CSA ratings overview

Type	MS132-T / -KT	
Manual Motor Controller	not applicable	
Manual Motor Controller, Suitable as Motor Disconnect	not applicable	
Manual Motor Controller, Suitable for use in Group Installations	not applicable	
Manual Motor Controller, Suitable for Tap Conductor Protection in Group Installations	x	
Manual self-protected Combination Motor Controller (Type E)	not applicable	
Combination Motor Controller (Type F)	not applicable	

UL current ratings, single-phase – MS132-T / -KT

Type	120 V AC	220 ... 240 V AC
	FLA	FLA
MS132-0.16T / -KT	0.16	0.16
MS132-0.25T / -KT	0.25	0.25
MS132-0.4T / -KT	0.4	0.4
MS132-0.63T / -KT	0.63	0.63
MS132-1.0T / -KT	1	1
MS132-1.6T / -KT	1.6	1.6
MS132-2.5T / -KT	2.5	2.5
MS132-4.0T / -KT	4	4
MS132-6.3T / -KT	6.3	6.3
MS132-10T / -KT	9.8	10
MS132-12T	9.8	12
MS132-16T / -KT	16	12
MS132-20T / -KT	20	17
MS132-25T / -KT	24	17

UL 508 — Manual controller for tap conductor protection and for control transformers

Type	Max. short-circuit current rating when used with upstream protection device	
	480 V kA	600 V kA
MS132-0.16T / -KT	65	47
MS132-0.25T / -KT	65	47
MS132-0.4T / -KT	65	47
MS132-0.63T / -KT	65	47
MS132-1.0T / -KT	65	47
MS132-1.6T / -KT	65	47
MS132-2.5T / -KT	65	47
MS132-4.0T / -KT	65	47
MS132-6.3T / -KT	65	18
MS132-10T / -KT	65	18
MS132-12T	30	18
MS132-16T / -KT	30	18
MS132-20T / -KT	30	18
MS132-25T / -KT	30	18





MS132-T, MS132-KT

Technical data






General technical data

Type		MS132-T / - KT
Pollution degree		3
Phase loss sensitivity		Yes
Disconnect function acc. to IEC/EN 60947-2		Yes
Ambient air temperature		
Operation	Open - compensated	-25 ... +60 °C
	Open	-25 ... +70 °C
	Enclosed (IB132)	0 ... +40 °C
Storage		-50 ... +80 °C
Ambient air temperature compensation		Acc. to IEC/EN60947-4-1
Maximum operating altitude permissible		2000 m
Resistance to shock acc. to IEC 60068-2-27		25g / 11 ms
Resistance to vibrations acc. to IEC 60068-2-6		5g / 3 ... 150 Hz
Mounting position		Position 1-6 (optional for single mounting)
Mounting		DIN-rail (EN 60715)
Group mounting		-
Recommended screw for mounting plate		-
Screw torque for mounting plate		-
Minimum distance to other units same type	Horizontal	0 mm
	Vertical	150 mm
Minimum distance to electrical conductive board	Horizontal, up to 400 V	0 mm
	Horizontal, up to 690 V	> 1.5 mm
	Vertical	75 mm
Degree of protection	Housing	IP20
	Main circuit terminals	IP10 (Push-in Spring terminals: IP20)

Connecting characteristics - main circuit

Type		MS132-T ≤ 10 A	MS132-T ≥ 12 A
Connecting capacity			
 Rigid	1 or 2 x	1 ... 4 mm ²	1 ... 2.5 mm ² 2.5 ... 6 mm ²
 Flexible with ferrule	1 or 2 x	0.75 ... 2.5 mm ²	0.75 ... 6 mm ²
 Flexible with insulated ferrule	1 or 2 x	0.75 ... 2.5 mm ²	0.75 ... 6 mm ²
 Flexible	1 or 2 x	0.75 ... 2.5 mm ²	1 ... 2.5 mm ² 2.5 ... 6 mm ²
Stranded acc. to UL/CSA		1 or 2 x	AWG 16-12 AWG 16-8
Stripping length		9 mm	10 mm
Tightening torque		0.8 ... 1.2 Nm / 10 ... 12 lb.in	2.0 Nm / 18 lb.in
Recommended screwdriver		Pozidriv 2	Pozidriv 2

Connecting characteristics - main circuit

Type		MS132-KT with Push-in Spring terminals
Connecting capacity		
 Rigid solid	1 or 2 x	1 ... 2.5 mm ²
 Rigid stranded	1 or 2 x	1 ... 6 mm ²
 Flexible with ferrule	1 or 2 x	0.5 ... 4 mm ²
 Flexible with insulated ferrule	1 x	0.5 ... 4 mm ²
	1/2 x	0.75 ... 4 mm ²
 Flexible	1 or 2 x	0.75 ... 4 mm ²
Stranded acc. to UL/CSA		1/2 x
		AWG 18 ... AWG 10
Wire stripping length		12 mm
Tightening torque		0.8 ... 1.2 Nm / 10 ... 12 lb.in
Screwdriver		Flat Ø 3 mm x 0.5 mm