

ABL

**IE3
READY**

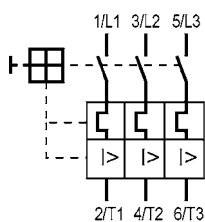


MOTOR PROTECTIVE CIRCUIT BREAKERS

MOTOR PROTECTIVE CIRCUIT BREAKERS MS

Nach IEC 60947-4-1, DIN EN 60947-4-1, VDE 0660-102; UL 508

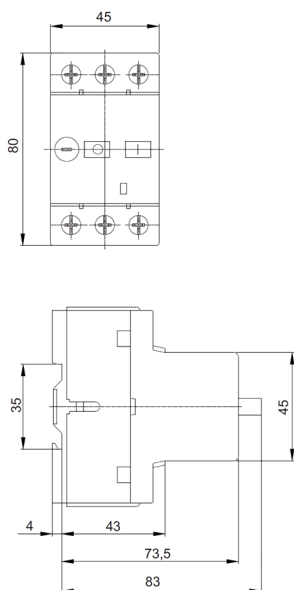
Our MS motor protective circuit breakers (MPCBs) offer optimal protection for motors and other loads up to 32 A, due to its high breaking capacity with strongly limited current. The new products of our MS series are IE3 compliant and therefore perfectly suitable for the safe operation of IE3 motors. They are equipped with main switch and disconnecting functions; 14 ranges are covering nominal rated currents from 0.1 up to 32 A. The MPCBs are self protected up to 6.3 A at 400 V. The ranges > 6.3 A provide a short circuit withstand rating of 6 kA. The MPCBs are temperature compensated; the actuating current of the short circuit trip is 15 x I_n.



ITEM NO.	RATED CURRENT A	MAX. RATED OPERATING POWER (kW/AC 3)					OPERATING CURRENT SHORT CIRCUIT TRIP (A)	WEIGHT G / EACH	PU
		220 V 230 V 240 V	380 V 400 V 415 V	440 V	500 V	660 V 690 V			

MS with overload and short circuit tripping
Phase failure sensitivity

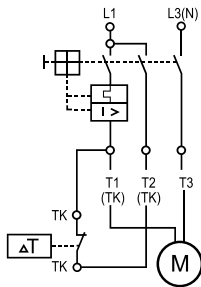
ITEM NO.	Rated Current (A)	0.1 - 0.16	0.16 - 0.25	0.25 - 0.4	0.4 - 0.63	0.63 - 1	1 - 1.6	1.6 - 2.5	2.5 - 4	4 - 6.3	6.3 - 10	10 - 16	16 - 20	20 - 25	25 - 32
MS-016	0,1 – 0,16		0,02							0,06	2,4	252	1		
MS-025	0,16 – 0,25		0,06	0,06	0,06	0,06	0,09	3,75	252	1					
MS-04	0,25 – 0,4	0,06	0,09	0,12	0,12	0,18	6	252	1						
MS-063	0,4 – 0,63	0,09	0,12	0,18	0,25	0,25	9,45	252	1						
MS-1	0,63 – 1	0,09 ... 0,12	0,18 ... 0,25	0,25	0,37	0,37 ... 0,55	15	252	1						
MS-1.6	1 – 1,6	0,18 ... 0,25	0,37 ... 0,55	0,37 ... 0,55	0,55 ... 0,8	0,75 ... 1,1	24	252	1						
MS-2.5	1,6 – 2,5	0,37	0,75 ... 1,1	0,75 ... 1,1	1,1	1,5	37,5	252	1						
MS-4	2,5 – 4	0,55 ... 0,8	1,1 ... 1,5	1,5	1,5 ... 2,2	2,2 ... 3	60	252	1						
MS-6.3	4 – 6,3	1,1 ... 1,5	2,2 ... 2,5	2,2 ... 3	3	4	94,5	252	1						
MS-10	6,3 – 10	1,5 ... 2,5	3 ... 4	4 ... 5	4 ... 5,5	5,5 ... 7,5	150	252	1						
MS-16	10 – 16	3 ... 4	5 ... 7,5	5,5 ... 9	7,5 ... 9	11	240	252	1						
MS-20	16 – 20	5,5	9	11	11 ... 12,5	15	300	252	1						
MS-25	20 – 25	5,5 ... 7,5	11 ... 12,5	12,5	15	18,5	375	252	1						
MS-32	25 – 32	9	15	15	18,5		480	252	1						



ITEM NO.	RATED ULTIMATE SHORT-CIRCUIT BREAKING CAPACITY I _{cu}				MAX. BACK-UP FUSE, IF I _{cc} > I _{cu}			
	230 V	400 V	500 V	690 V	230 V	400 V	500 V	690 V
MS-016	50	50	50	50	No back-up fuse required			
MS-025	50	50	50	50				
MS-04	50	50	50	50				
MS-063	50	50	50	50				
MS-1	50	50	50	50				
MS-1.6	50	50	50	50				
MS-2.5	50	50	3	2,5			25	20
MS-4	50	50	3	2,5			35	25
MS-6.3	50	50	3	2,5			50	35
MS-10	50	6	3	2,5		80	50	35
MS-16	10	6	2,5	2	80	80	63	35
MS-20	10	6	2,5	2	80	80	63	50
MS-25	10	6	2,5	2	80	80	63	50
MS-32	10	6	2,5	2	80	80	63	50

MOTOR PROTECTIVE DEVICES FOR VARIABLE SPEED FAN MOTORS

The MWC-10 is a multi-polar circuit breaker which allows a thermal contact, which is built into the motor (directly into the coil), to be analysed. For example, if the motor is hindered due to dirt, the coil will heat up more than normal and the thermal contact (NC contact) in the coil will break the circuit. The bimetal built into the circuit breaker recognizes the opening of the thermal contact in the motor coil and, with the smallest motor rated current, switches off all poles completely within max. 40 s. However, this type of full motor protection neglects wiring protection. The connection from the full motor protection to the fan is not protected. In order to protect this connection, a back-up fuse is needed which fits the conductor cross section. This back-up fuse is usually installed in front of the full motor protection.



ITEM NO.	RATED CURRENT (A)	WEIGHT G / EACH	PU
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Motor protective device for variable-speed fan motors

MWC-10	0,4-10	252	1
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ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS



ITEM NO.	MODULES	WIRING DIAGRAM	CONTACTS	WEIGHT G / EACH	PU
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Auxiliary contact for side mounting

HM-20	½ M		2 NO	35	1
HM-11	½ M		1 NO + 1 NC	35	1



ITEM NO.	RATED OPERATING VOLTAGE	WEIGHT G / EACH	PU
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Shunt trip
for inside mounting with connecting cable (140 mm long)

AM-110	110 V 50 Hz	62	1
AM-230	220-240V 50 Hz	62	1
AM-400	380-415 V 50 Hz	62	1

Undervoltage trip
for inside mounting with connecting cable (140 mm long)

UM-110	110 V 50 Hz	62	1
UM-230	220-240 V 50 Hz	62	1
UM-400	380-415 V 50 Hz	62	1

Shunt trip with
rated impulse withstand voltage U_{imp} 6.000 V

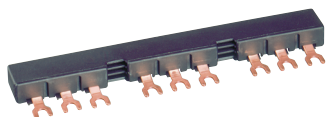
ITEM NO.	CONTACTS	RATED OPERATING VOLTAGE U_e	RATED OPERATING CURRENT I_e	WEIGHT G / EACH	PU
EHM-11	1 NO + 1 NC	230 / 400 / 500 V	3,5 / 2 / 1,5 A	15	1

ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS

DESCRIPTION	MAX. BUSBAR CURRENT (A)	LENGTH	ITEM NO.	WEIGHT G / EACH	PU
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Busbars

for 2 MPCBs without auxiliary contacts	63	90 mm	SB.D02	37	10
for 3 MPCBs without auxiliary contacts	63	136 mm	SB.D03	55	10
for 4 MPCBs without auxiliary contacts	63	180 mm	SB.D04	75	10
for 2 MPCBs each with 1 auxiliary contact fitted on the right side	63	99 mm	SB.D12	40	10
for 3 MPCBs each with 1 auxiliary contact fitted on the right side	63	153 mm	SB.D13	65	10
for 4 MPCBs each with 1 auxiliary contact fitted on the right side	63	207 mm	SB.D14	90	10
for 5 MPCBs each with 1 auxiliary contact fitted on the right side	63	261 mm	SB.D15	115	10
for 2 MPCBs each with 2 auxiliary contacts	63	108 mm	SB.D22	45	10
for 4 MPCBs each with 2 auxiliary contacts	63	234 mm	SB.D24	105	10

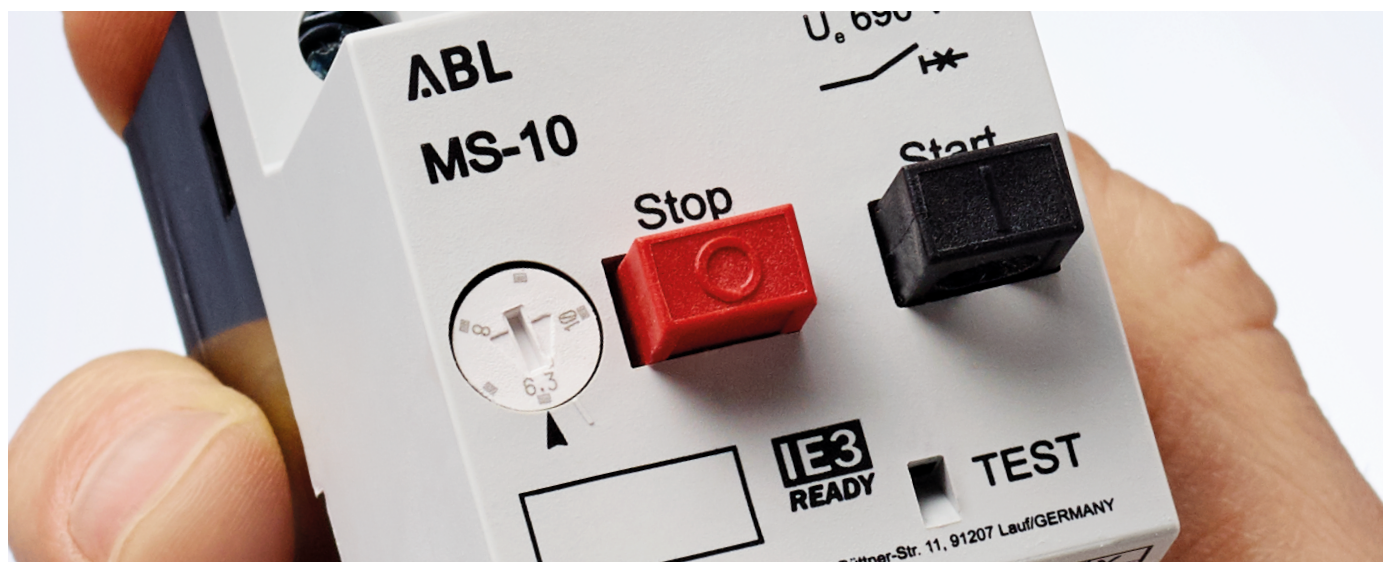


Incoming terminal block

	63		SB.DE1	30	10
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Shroud

			SB.DA1	5	10
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INSULATED ENCLOSURES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS



INSULATED ENCLOSURE IP55

with integrated PE(N)
terminal top and bottom
each 2xM25 metric knock-outs

ITEM NO.	WEIGHT G / EACH	PU
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M-G55	222	1
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INSULATED FLUSH MOUNTING ENCLOSURE IP55

with integrated PE(N) terminal

ITEM NO.	WEIGHT G / EACH	PU
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M-F55	150	1
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ACCESSORIES FOR INSULATED ENCLOSURES M-G55 / M-F55



EMERGENCY-STOP BUTTON

latching, turn to release
red, on yellow surface

ITEM NO.	WEIGHT G / EACH	PU
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M-PV	40	1
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PADLOCKING FACILITY

for up to three padlocks

ITEM NO.	WEIGHT G / EACH	PU
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M-VS	95	1
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INDICATOR LIGHT

with glow bulb,
nominal rated voltage 250 V

COLOUR	ITEM NO.	WEIGHT G / EACH	PU
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green	M-SLG2	175	25
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INDICATOR LIGHT

with glow bulb,
nominal rated voltage 400 V

COLOUR	ITEM NO.	WEIGHT G / EACH	PU
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green	M-SLG3	175	25
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Max. assembly of insulated enclosures

ITEM NO.	MS	HMS	AM/UM/EHM	M-PV/M-VS	M-SLG
M-G55	1	2	1	1	1
M-F55	1	2	1	1	1



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