

Product Selection Guide

Quick selection table ... IEC rating



Frame			32AF																			
Type	Current adjustable type		MMS-32S							MMS-32H												
	Instantaneous type		-							-												
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 (Ope./h)			25							25												
Temperature compensation (Operation)			-20 ~ +60°C							-20 ~ +60°C												
Instantaneous short circuit release			13 × Ie max.							13 × Ie max.												
Overload protection			○							○												
Phase failure function			○							○												
Trip indicating function			×							×												
Test function			○							○												
Weight (g)			320							360												
Rated breaking capacity (kA)	Rated operational current (Ie)	Thermal release Adjustment range (A)	220V 240V 230V		415V 400V		460V 440V		525V 500V		690V 600V		220V 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
	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	15	11	3	3	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

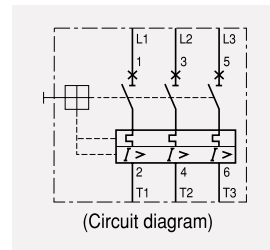


63AF															100AF																								
MMS-63S					MMS-63H					MMS-100S					MMS-100H																								
-					MMS-63HI					-					MMS-100HI																								
Standard					High breaking					Standard					High breaking																								
Rotary					Rotary					Rotary					Rotary																								
3					3					3					3																								
Up to 690V					Up to 690V					Up to 690V					Up to 690V																								
50/60 Hz					50/60 Hz					50/60 Hz					50/60 Hz																								
1,000V					1,000V					1,000V					1,000V																								
8kV					8kV					8kV					8kV																								
Cat. A					Cat. A					Cat. A					Cat. A																								
AC 3					AC 3					AC 3					AC 3																								
50,000					50,000					50,000					50,000																								
25,000					25,000					25,000					25,000																								
25					25					25					25																								
-20 ~ +60°C					-20 ~ +60°C					-20 ~ +60°C					-20 ~ +60°C																								
13 × I _e max.					13 × I _e max.					13 × I _e max.					13 × I _e max.																								
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1,000					1,000					2,200					2,200																								
220V	240V	230V	415V	400V	460V	440V	525V	500V	690V	600V	220V	240V	230V	415V	400V	460V	440V	525V	500V	690V	600V	220V	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}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}								
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100	100	100	100	15	12	10	8	4	3	100	100	100	100	50	38	50	38	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-							
100	100	50	38	10	8	6	5	4	3	100	100	100	100	50	38	42	32	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-							
100	100	25	19	10	8	6	5	4	3	100	100	50	50	50	38	12	9	5	5	100	100	50	38	40	30	25	19	10	8	100	100	100	100	50	38	35	27	12	9
50	38	25	19	10	8	6	5	4	3	100	100	50	50	50	38	12	9	5	5	100	100	50	38	40	30	25	19	10	8	100	100	100	50	50	38	35	27	12	9
50	38	25	19	10	8	6	5	4	3	100	100	50	50	35	27	12	9	5	5	100	100	50	38	40	30	25	19	10	8	100	100	100	50	50	38	35	27	12	9
50	38	25	19	10	8	6	5	4	3	100	100	50	50	35	27	10	8	5	5	100	100	50	38	40	30	15	11	10	8	100	100	100	50	50	38	25	19	12	9
50	38	25	19	10	8	6	5	4	3	100	100	50	50	35	27	10	8	5	5	100	100	50	38	40	30	15	11	6	5	100	100	100	50	50	38	20	15	12	9
50	38	25	19	10	8	6	5	4	3	100	100	50	50	35	27	10	8	5	5	100	100	50	38	40	30	12	9	6	5	100	100	100	50	50	38	15	11	10	8
50	38	25	19	10	8	6	5	4	3	100	100	50	50	35	27	10	8	5	5	100	100	50	38	40	30	12	9	6	5	100	100	100	50	50	38	15	11	8	6
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	50	38	40	30	8	6	5	4	100	100	75	50	50	38	12	9	6	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	50	38	40	30	8	6	5	4	100	100	75	50	50	38	12	9	6	6

Product Selection Guide

Standard type

- Adjustable thermal release
- Magnetic release 13 I_e max.
- Trip class 10
- Protective function
 - phase-failure
 - short circuit
 - overload



Type	Rated operational current I _e [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						400/415V	
				3-phase [kW] (50/60Hz)			3-phase [HP] (60Hz)			I _{cu} [kA]	I _{cs} [kA]
				230V	400V	690V	230V	460V	575V		
MMS-32S	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 1/2	1 1/2	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 1/2	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 1/2	10	50	38
	13	9...13	169	3	5.5	11	3	7 1/2	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 1/2	15	20	15	11
26	18...26	338	5.5	11	18.5	7 1/2	15	20	15	11	
32	22...32	416	7.5	15	22	10	20	30	15	11	
MMS-63S	10	6~10	130	3	4	7.5	3	7 1/2	10	100	100
	13	9~13	169	3	5.5	11	3	7 1/2	10	50	38
	17	11~17	221	4	7.5	11	5	10	15	25	19
	22	14~22	286	4	7.5	15	7 1/2	15	20	25	19
	26	18~26	338	5.5	11	18.5	10	20	25	25	19
	32	22~32	416	7.5	15	22	10	25	30	25	19
	40	28~40	520	7.5	18.5	30	15	30	40	25	19
50	34~50	650	11	22	45	15	40	50	25	19	
MMS-100S	63	45~63	819	15	30	55	20	50	60	25	19
	17	11~17	221	4	7.5	11	5	10	15	50	38
	22	14~22	286	4	7.5	15	7 1/2	15	20	50	38
	26	18~26	338	5.5	11	18.5	10	20	25	50	38
	32	22~32	416	7.5	15	22	10	25	30	50	38
	40	28~40	520	7.5	18.5	30	15	30	40	50	38
	50	34~50	650	11	22	45	15	40	50	50	38
	63	45~63	819	15	30	55	20	50	60	50	38
	75	55~75	975	22	37	63	25	60	75	50	38
	90	70~90	1170	30	45	75	30	75	100	50	38
100	80~100	1300	30	45	90	40	75	100	50	38	

High breaking type

- Adjustable thermal release
- Magnetic release 13 Ie max.
- Trip class 10
- Protective function
 - phase-failure
 - short circuit
 - overload



MMS-32H

MMS-63H

MMS-100H

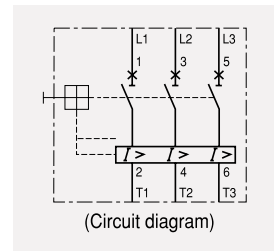
(Circuit diagram)

Type	Rated operational current I _e [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						400/415V	
				3-phase [kW] (50/60Hz)			3-phase [HP] (60Hz)			I _{cu} [kA]	I _{cs} [kA]
				230V	400V	690V	230V	460V	575V		
MMS-32H	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	1½	1½	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	1½	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	7½	10	100	100
	13	9...13	169	3	5.5	11	3	7½	10	100	100
	17	11...17	221	4	7.5	11	5	10	15	50	38
	22	14...22	286	4	7.5	15	7½	15	20	50	38
26	18...26	338	5.5	11	18.5	7½	15	20	50	38	
32	22...32	416	7.5	15	22	10	20	30	50	38	
MMS-63H	10	6~10	130	3	4	7.5	3	7½	10	100	100
	13	9~13	169	3	5.5	11	3	7½	10	100	100
	17	11~17	221	4	7.5	11	5	10	15	50	50
	22	14~22	286	4	7.5	15	7½	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	
MMS-100H	63	45~63	819	15	30	55	20	50	60	50	50
	17	11~17	221	4	7.5	11	5	10	15	100	100
	22	14~22	286	4	7.5	15	7½	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	

Product Selection Guide

Instantaneous type

- Without thermal releases
- Magnetic release 13 le max.
- Protective function
 - short circuit



Type	Rated operational current I_e [A]	Thermal release Adjustment range [A]	Magnetic release Operating current [A]	Switching of 3 phase AC motors, AC-2, AC-3						400/415V	
				3-phase [kW] (50/60Hz)			3-phase [HP] (60Hz)			I_{cu} [kA]	I_{cs} [kA]
				230V	400V	690V	230V	460V	575V		
MMS-32HI	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	1½	1½	100	100
	4	-	52	0.75	1.5	3	1	2	3	100	100
	6	-	78	1.5	2.2	4	1½	5	5	100	100
	8	-	104	1.5	3	5.5	2	5	5	100	100
	10	-	130	3	4	7.5	3	7½	10	100	100
	13	-	169	3	5.5	11	3	7½	10	100	100
	17	-	221	4	7.5	11	5	10	15	50	38
	22	-	286	4	7.5	15	7½	15	20	50	38
26	-	338	5.5	11	18.5	7½	15	20	50	38	
32	-	416	7.5	15	22	10	20	30	50	38	
MMS-63HI	10	-	130	3	4	7.5	3	7½	10	100	100
	13	-	169	3	5.5	11	3	7½	10	100	100
	17	-	221	4	7.5	11	5	10	15	50	50
	22	-	286	4	7.5	15	7½	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	
MMS-100HI	17	-	221	4	7.5	11	5	10	15	100	100
	22	-	286	4	7.5	15	7½	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