

Manual Motor Starters

IEC performance data (Motor protection)

Standard type

● MMS 32S

Rated operational current I <sub>e</sub> [A]		0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Switching of standard three-phase motors																	
AC-2, AC-3																	
230/240V [kW]		-	0.03	0.06	0.09	0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5	2.2/3	3	3.7/4	4	5.5	7.5
400/415V [kW]		0.02	0.06	0.09	0.12	0.18/0.25	0.37/0.55	0.75	1.1/1.5	2.2	3	3.7/4	5.5	7.5	7.5	11	15
500V [kW]		-	-	-	0.25	0.37	0.55/0.75	1.1	1.5/2.2	3	3.7	4/5.5	7.5	11	11	15	18.5
690V [kW]		-	-	-	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3	3.7/4	5.5	7.5	11	11	15	18.5	22
Back-up fuses gG, gL <sub>r</sub> , only if I <sub>cc</sub> >I <sub>cu</sub> (* = No back up fuse required)																	
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
Ultimate short-circuit breaking capacity I <sub>cu</sub>																	
230/240V [kA]		100	100	100	100	100	100	100	100	100	100	100	100	50	40	40	30
400/415V [kA]		100	100	100	100	100	100	100	100	100	100	50	50	20	15	15	15
440/460V [kA]		100	100	100	100	100	100	100	50	15	15	15	10	10	8	8	6
500V [kA]		100	100	100	100	100	100	50	15	10	10	6	6	6	6	6	5
690V [kA]		100	100	100	100	100	3	3	3	3	3	3	3	3	3	3	3
Rated service short-circuit breaking capacity I <sub>cs</sub>																	
230/240V [kA]		100	100	100	100	100	100	100	100	100	100	100	100	38	30	30	22
400/415V [kA]		100	100	100	100	100	100	100	100	100	100	38	38	15	11	11	11
440/460V [kA]		100	100	100	100	100	100	100	38	11	11	11	8	8	6	6	4
500V [kA]		100	100	100	100	100	100	38	11	8	8	5	5	5	5	5	4
690V [kA]		100	100	100	100	100	3	3	3	3	3	3	3	3	3	3	3

● MMS 63S

Rated operational current I <sub>e</sub> [A]		10	13	17	22	26	32	40	50	63
Switching of standard three-phase motors										
AC-2, AC-3										
230/240V [kW]		2.2/3	3	3.7/4	4	5.5	7.5	7.5	11	15
400/415V [kW]		3.7/4	5.5	7.5	7.5	11	15	18.5	22	30
500V [kW]		4/5.5	7.5	11	11	15	18.5	22	30	37
690V [kW]		7.5	11	11	15	18.5	22	30	45	55
Back-up fuses gG, gL <sub>r</sub> , only if I <sub>cc</sub> >I <sub>cu</sub> (* = No back up fuse required)										
230/240V [A]		*	*	*	125	125	160	160	160	200
400/415V [A]		*	80	100	125	125	125	125	160	160
440/460V [A]		80	80	100	100	100	100	100	100	125
500V [A]		80	80	80	80	80	80	80	80	80
690V [A]		63	63	63	63	63	63	63	63	80
Ultimate short-circuit breaking capacity I <sub>cu</sub>										
230/240V [kA]		100	100	100	50	50	50	50	50	50
400/415V [kA]		100	50	25	25	25	25	25	25	25
440/460V [kA]		15	10	10	10	10	10	10	10	10
500V [kA]		10	6	6	6	6	6	6	6	6
690V [kA]		4	4	4	4	4	4	4	4	4
Rated service short-circuit breaking capacity I <sub>cs</sub>										
230/240V [kA]		100	100	100	38	38	38	38	38	38
400/415V [kA]		100	38	19	19	19	19	19	19	19
440/460V [kA]		12	8	8	8	8	8	8	8	8
500V [kA]		8	5	5	5	5	5	5	5	5
690V [kA]		3	3	3	3	3	3	3	3	3

## IEC performance data (Motor protection)

### Standard type

#### ● MMS 100S

Rated operational current $I_n$ [A]		17	22	26	32	40	50	63	75	90	100
Switching of standard three-phase motors AC-2, AC-3											
230/240V [kW]		3.7/4	4	5.5	7.5	7.5	11	15	22	30	30
400/415V [kW]		7.5	7.5	11	15	18.5	22	30	37	45	45
500V [kW]		11	11	15	18.5	22	30	37	45	55	63
690V [kW]		11	15	18.5	22	30	45	55	63	75	90
Back-up fuses gG, gL, only if $I_{cc} > I_{cu}$ (* = No back up fuse required)											
230/240V [A]		*	*	*	*	*	*	*	*	*	*
400/415V [A]		100	125	125	125	160	160	160	160	160	160
440/460V [A]		100	125	125	125	125	125	160	160	160	160
500V [A]		100	100	100	100	100	100	100	125	125	125
690V [A]		63	80	80	80	80	80	80	100	125	125
Ultimate short-circuit breaking capacity $I_{cu}$											
230/240V [kA]		100	100	100	100	100	100	100	100	100	100
400/415V [kA]		50	50	50	50	50	50	50	50	50	50
440/460V [kA]		40	40	40	40	40	40	40	40	40	40
500V [kA]		25	25	25	15	15	12	12	8	8	8
690V [kA]		10	10	10	10	6	6	6	5	5	5
Rated service short-circuit breaking capacity $I_{cs}$											
230/240V [kA]		100	100	100	100	100	100	100	100	100	100
400/415V [kA]		38	38	38	38	38	38	38	38	38	38
440/460V [kA]		30	30	30	30	30	30	30	30	30	30
500V [kA]		19	19	19	11	11	9	9	6	6	6
690V [kA]		8	8	8	8	5	5	5	4	4	4

### High breaking type

#### ● MMS 32H

Rated operational current $I_n$ [A]		0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
Switching of standard three-phase motors AC-2, AC-3																	
230/240V [kW]		-	0.03	0.06	0.09	0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5	2.2/3	3	3.7/4	4	5.5	7.5
400/415V [kW]		0.02	0.06	0.09	0.12	0.18/0.25	0.37/0.55	0.75	1.1/1.5	2.2	3	3.7/4	5.5	7.5	7.5	11	15
500V [kW]		-	-	-	0.25	0.37	0.55/0.75	1.1	1.5/2.2	3	3.7	4/5.5	7.5	11	11	15	18.5
690V [kW]		-	-	-	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3	3.7/4	5.5	7.5	11	11	15	18.5	22
Back-up fuses gG, gL, only if $I_{cc} > I_{cu}$ (* = No back up fuse required)																	
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	80
690V [A]		*	*	*	*	*	35	40	50	63	63	63	63	63	63	63	63
Ultimate short-circuit breaking capacity $I_{cu}$																	
230/240V [kA]		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
400/415V [kA]		100	100	100	100	100	100	100	100	100	100	100	100	50	50	50	50
440/460V [kA]		100	100	100	100	100	100	100	100	100	50	50	50	20	20	20	20
500V [kA]		100	100	100	100	100	100	100	100	100	50	50	42	10	10	10	10
690V [kA]		100	100	100	100	100	100	8	8	6	6	6	6	4	4	4	4
Rated service short-circuit breaking capacity $I_{cs}$																	
230/240V [kA]		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
400/415V [kA]		100	100	100	100	100	100	100	100	100	100	100	100	38	38	38	38
440/460V [kA]		100	100	100	100	100	100	100	100	100	38	38	38	15	15	15	15
500V [kA]		100	100	100	100	100	100	100	100	100	38	38	32	8	8	8	8
690V [kA]		100	100	100	100	100	100	8	8	6	6	6	6	4	4	4	4

Note) \* = Short circuit proof up to 50 or 100kA. No back up fuse required.

## High breaking type

### ● MMS 63H



Rated operational current I <sub>e</sub> [A]		10	13	17	22	26	32	40	50	63
Switching of standard three-phase motors AC-2, AC-3										
230/240V	[kW]	2.2/3	3	3.7/4	4	5.5	7.5	7.5	11	15
400/415V	[kW]	3.7/4	5.5	7.5	7.5	11	15	18.5	22	30
500V	[kW]	4/5.5	7.5	11	11	15	18.5	22	30	37
690V	[kW]	7.5	11	11	15	18.5	22	30	45	55
Back-up fuses gG, gL, only if I <sub>cc</sub> >I <sub>cu</sub> (* = No back up fuse required)										
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
Ultimate short-circuit breaking capacity I <sub>cu</sub>										
230/240V	[kA]	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	50	50	50	50	50	50	50
440/460V	[kA]	50	50	50	50	35	35	35	35	35
500V	[kA]	50	42	12	12	12	10	10	10	10
690V	[kA]	6	6	5	5	5	5	5	5	5
Rated service short-circuit breaking capacity I <sub>cs</sub>										
230/240V	[kA]	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	50	50	50	50	50	50	50
440/460V	[kA]	38	38	38	38	27	27	27	27	27
500V	[kA]	38	32	9	9	9	8	8	8	8
690V	[kA]	5	5	5	5	5	5	5	5	5

Note) \* = Short circuit proof up to 50 or 100kA. No back up fuse required.

### ● MMS 100H



Rated operational current I <sub>e</sub> [A]		17	22	26	32	40	50	63	75	90	100
Switching of standard three-phase motors AC-2, AC-3											
230/240V	[kW]	3.7/4	4	5.5	7.5	7.5	11	15	22	30	30
400/415V	[kW]	7.5	7.5	11	15	18.5	22	30	37	45	45
500V	[kW]	11	11	15	18.5	22	30	37	45	55	63
690V	[kW]	11	15	18.5	22	30	45	55	63	75	90
Back-up fuses gG, gL, only if I <sub>cc</sub> >I <sub>cu</sub> (* = No back up fuse required)											
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
Ultimate short-circuit breaking capacity I <sub>cu</sub>											
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100	75	75	75
440/460V	[kA]	50	50	50	50	50	50	50	50	50	50
500V	[kA]	35	35	35	25	20	15	15	12	12	12
690V	[kA]	12	12	12	12	12	10	8	6	6	6
Rated service short-circuit breaking capacity I <sub>cs</sub>											
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	50	50	50	50	50	50	50	50	50
440/460V	[kA]	38	38	38	38	38	38	38	38	38	38
500V	[kA]	27	27	27	19	15	11	11	9	9	9
690V	[kA]	9	9	9	9	9	8	6	6	6	6

Note) \* = Short circuit proof up to 50 or 100kA. No back up fuse required.

## IEC performance data (Motor protection)

### High breaking type

#### ● MMS 32HI

Rated operational current $I_e$ [A]	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6	8	10	13	17	22	26	32
AC-2, AC-3																	
230/240V	[kW]	-	0.03	0.06	0.09	0.12	0.18/0.25	0.37	0.55/0.75	1.1/1.5	1.5	2.2/3	3	3.7/4	4	5.5	7.5
400/415V	[kW]	0.02	0.06	0.09	0.12	0.18/0.25	0.37/0.55	0.75	1.1/1.5	2.2	3	3.7/4	5.5	7.5	11	15	18.5
500V	[kW]	-	-	-	0.25	0.37	0.55/0.75	1.1	1.5/2.2	3	3.7	4.5/5	7.5	11	11	15	18.5
690V	[kW]	-	-	-	0.25	0.37/0.55	0.75/1.1	1.5	2.2/3	3.7/4	5.5	7.5	11	11	15	18.5	22
Back-up fuses gG, gL, only if $I_{cc} > I_{cu}$ (* = No back up fuse required)																	
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
Ultimate short-circuit breaking capacity $I_{cu}$																	
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	50	50	50	50
440/460V	[kA]	100	100	100	100	100	100	100	100	100	50	50	50	20	20	20	20
500V	[kA]	100	100	100	100	100	100	100	100	100	50	50	42	10	10	10	10
690V	[kA]	100	100	100	100	100	100	8	8	6	6	6	6	4	4	4	4
Rated service short-circuit breaking capacity $I_{cs}$																	
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	100	100	38	38	38	38
440/460V	[kA]	100	100	100	100	100	100	100	100	100	38	38	38	15	15	15	15
500V	[kA]	100	100	100	100	100	100	100	100	100	38	38	32	8	8	8	8
690V	[kA]	100	100	100	100	100	100	8	8	6	6	6	6	4	4	4	4

#### ● MMS 63HI

Rated operational current $I_e$ [A]	[A]	10	13	17	22	26	32	40	50	63
AC-2, AC-3										
230/240V	[kW]	2.2/3	3	3.7/4	4	5.5	7.5	7.5	11	15
400/415V	[kW]	3.7/4	5.5	7.5	7.5	11	15	18.5	22	30
500V	[kW]	4/5.5	7.5	11	11	15	18.5	22	30	37
690V	[kW]	7.5	11	11	15	18.5	22	30	45	55
Back-up fuses gG, gL, only if $I_{cc} > I_{cu}$ (* = No back up fuse required)										
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
Ultimate short-circuit breaking capacity $I_{cu}$										
230/240V	[kA]	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	50	50	50	50	50	50	50
440/460V	[kA]	50	50	50	50	35	35	35	35	35
500V	[kA]	50	42	12	12	12	10	10	10	10
690V	[kA]	6	6	5	5	5	5	5	5	5
Rated service short-circuit breaking capacity $I_{cs}$										
230/240V	[kA]	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	50	50	50	50	50	50	50
440/460V	[kA]	38	38	38	38	27	27	27	27	27
500V	[kA]	38	32	9	9	9	8	8	8	8
690V	[kA]	5	5	5	5	5	5	5	5	5

#### ● MMS 100HI

Rated operational current $I_e$ [A]	[A]	17	22	26	32	40	50	63	75	90	100
AC-2, AC-3											
230/240V	[kW]	3.7/4	4	5.5	7.5	7.5	11	15	22	30	30
400/415V	[kW]	7.5	7.5	11	15	18.5	22	30	37	45	45
500V	[kW]	11	11	15	18.5	22	30	37	45	55	63
690V	[kW]	11	15	18.5	22	30	45	55	63	75	90
Back-up fuses gG, gL, only if $I_{cc} > I_{cu}$ (* = No back up fuse required)											
230/240V	[A]	*	*	*	*	*	*	*	*	*	*
400/415V	[A]	*	*	*	*	*	*	*	*	*	*
440/460V	[A]	125	125	125	160	160	160	200	200	200	200
500V	[A]	100	125	125	160	160	160	160	160	160	160
690V	[A]	80	80	80	80	80	100	100	125	160	160
Ultimate short-circuit breaking capacity $I_{cu}$											
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	100	100	100	100	100	100	75	75	75
440/460V	[kA]	50	50	50	50	50	50	50	50	50	50
500V	[kA]	35	35	35	25	20	15	12	12	12	12
690V	[kA]	12	12	12	12	12	10	8	6	6	6
Rated service short-circuit breaking capacity $I_{cs}$											
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100
400/415V	[kA]	100	50	50	50	50	50	50	50	50	50
440/460V	[kA]	38	38	38	38	38	38	38	38	38	38
500V	[kA]	27	27	27	19	15	11	11	9	9	9
690V	[kA]	9	9	9	9	9	8	6	6	6	6