

# 1.7 Selection Table of Direct-On-Line Motor Starters

## 1.7.1 Non-Reversing Motor Starters without Enclosure (IP 00)

Type MSO-N□

### Ordering Designation

Model name ..... MSO-N50KP  
 Heater designation of overload relay ..... 42A  
 Main circuit voltage ..... 440VAC  
 Coil designation (See page 13) ..... AC200V

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Complete type designation ..... MSO-N50KP\*42A\*440V\*AC200V

Note: Mark\*indicates a blank space.

Table 1.7.1

Rated operational current AC-3		Rated motor capacity 3-phase AC-2 & AC-3				Model name		Aux. contacts	Heater designation of overload relay
220 -240V (A)	380 -440V (A)	220 -240V (kW)	380 -440V (kW)	500V (kW)	690V (kW)	Phase failure protection type	Two heater type	(ordering designation)	
11	9	2.5	4	4	4	MSO-N10KP MSO-N10CXKP <sup>1</sup>	MSO-N10	1 —	0.12A, 0.17A, 0.24A, 0.35A, 0.5A, 0.7A 0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A 6.6A, 9A
13	12	3.5	5.5	5.5	5.5	MSO-N11KP MSO-N11CXKP <sup>1</sup>	MSO-N11	1 —	
13	12	3.5	5.5	5.5	5.5	MSO-N12KP MSO-N12CXKP <sup>1</sup>	MSO-N12	1 1	0.24A, 0.35, 0.5A, 0.7A, 0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A, 6.6A, 9A, 11A, 15A
18	16	4.5	7.5	7.5	7.5	MSO-N18KP MSO-N18CXKP <sup>1</sup>	MSO-N18	— —	
22	22	5.5	11	11	7.5	MSO-N20KP MSO-N20CXKP <sup>1</sup>	MSO-N20	1 1	19A
22	22	5.5	11	11	7.5	MSO-N21KP MSO-N21CXKP <sup>1</sup>	MSO-N21	2 2	
30	30	7.5	15	15	11	MSO-N25KP MSO-N25CXKP <sup>1</sup>	MSO-N25	2 2	22A 29A 35A
40	40	11	18.5	18.5	15	MSO-N35KP MSO-N35CXKP <sup>1</sup>	MSO-N35	2 2	
55	50	15	22	22	22	MSO-N50KP MSO-N50CXKP <sup>1</sup>	MSO-N50	2 2	15A, 22A, 29A, 35A, 42A, 54A
65	62	18.5	30	37	30	MSO-N65KP MSO-N65CXKP <sup>1</sup>	MSO-N65	2 2	
85	85	22	45	45	45	MSO-N80KP	MSO-N80	2 2	67A 82A 95A
105	105	30	55	55	55	MSO-N95KP	MSO-N95	2 2	
125	120	37	60	60	60	MSO-N125KP	MSO-N125	2 2	42A, 54A, 67A, 82A, 105A
150	150	45	75	90	90	MSO-N150KP	MSO-N150	2 2	
180	180	55	90	110	110	MSO-N180KP	MSO-N180	2 2	82A, 105A, 125A, 150A
250	250	75	132	132	132	MSO-N220KP	MSO-N220	2 2	
300	300	90	160	160	200	MSO-N300KP	MSO-N300	2 2	105A, 125A, 150A, 180A, 250A
400	400	125	220	225	250	MSO-N400KP	MSO-N400	2 2	

Note: 1. "CX" denotes with finger protection terminal covers.



MSO-N11CXKP



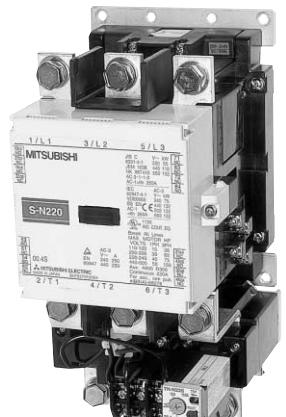
MSO-N18KP



MSO-N50



MSO-N125KP



MSO-N220

## 1.7.2 Reversing Motor Starters without Enclosure (IP 00)

Type MSO-2xN□

### Ordering Designation

Model name ..... MSO-2xN35KP  
 Heater designation of overload relay ..... 29A  
 Main circuit voltage ..... 440VAC  
 Coil designation (See page 13) ..... AC200V

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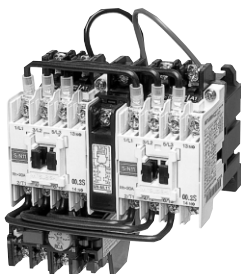
Complete type designation ..... MSO-2xN35KP\*29A\*440V\*AC200V

Note: Mark\*indicates a blank space.

Table 1.7.2

Rated operational current AC-3		Rated motor capacity 3-phase AC-2 & AC-3				Model name		Free aux. contacts	Heater designation of overload relay
220 -240V (A)	380 -440V (A)	220 -240V (kW)	380 -440V (kW)	500V (kW)	690V (kW)	Phase failure protection type	Two heater type		(ordering designation)
11	9	2.5	4	4	4	MSO-2xN10KP MSO-2xN10CXKP <sup>1</sup>	<b>MSO-2xN10</b>	2 —	0.12A, 0.17A, 0.24A, 0.35A, 0.5A, 0.7A
13	12	3.5	5.5	5.5	5.5	MSO-2xN11KP MSO-2xN11CXKP <sup>1</sup>	<b>MSO-2xN11</b>	2 —	0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A
18	16	4.5	7.5	7.5	7.5	MSO-2xN18KP MSO-2xN18CXKP <sup>1</sup>	<b>MSO-2xN18</b>	4 2	6.6A, 9A, 11A
22	22	5.5	11	11	7.5	MSO-2xN20KP MSO-2xN20CXKP <sup>1</sup>	<b>MSO-2xN20</b>	2 —	0.24A, 0.35A, 0.5A, 0.7A, 0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A, 6.6A, 9A, 11A, 15A
22	22	5.5	11	11	7.5	MSO-2xN21KP MSO-2xN21CXKP <sup>1</sup>	<b>MSO-2xN21</b>	4 2	
30	30	7.5	15	15	11	MSO-2xN25KP MSO-2xN25CXKP <sup>1</sup>	<b>MSO-2xN25</b>	4 2	22A 29A 35A
40	40	11	18.5	18.5	15	MSO-2xN35KP MSO-2xN35CXKP <sup>1</sup>	<b>MSO-2xN35</b>	4 2	
55	50	15	22	22	22	MSO-2xN50KP MSO-2xN50CXKP <sup>1</sup>	<b>MSO-2xN50</b>	4 2	15A, 22A, 29A, 35A, 42A, 54A
65	62	18.5	30	37	30	MSO-2xN65KP MSO-2xN65CXKP <sup>1</sup>	<b>MSO-2xN65</b>	4 2	
85	85	22	45	45	45	<b>MSO-2xN80KP</b>	<b>MSO-2xN80</b>	4 2	67A
105	105	30	55	55	55	<b>MSO-2xN95KP</b>	<b>MSO-2xN95</b>	4 2	82A 95A
125	120	37	60	60	60	<b>MSO-2xN125KP</b>	<b>MSO-2xN125</b>	4 2	42A, 54A, 67A, 82A, 105A
150	150	45	75	90	90	<b>MSO-2xN150KP</b>	<b>MSO-2xN150</b>	6 4	
180	180	55	90	110	110	<b>MSO-2xN180KP</b>	<b>MSO-2xN180</b>	6 4	82A, 105A, 125A, 150A
250	250	75	132	132	132	<b>MSO-2xN220KP</b>	<b>MSO-2xN220</b>	6 4	
300	300	90	160	160	200	<b>MSO-2xN300KP</b>	<b>MSO-2xN300</b>	6 4	180A, 210A
400	400	125	220	225	250	<b>MSO-2xN400KP</b>	<b>MSO-2xN400</b>	6 4	

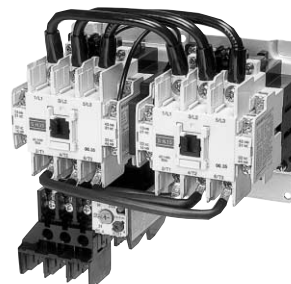
Note:1. "CX" denotes with finger protection terminal covers.



MSO-2xN11KP



MSO-2xN18



MSO-2xN35



MSO-2xN150KP

### 1.7.3 Enclosed Non-Reversing Motor Starters (IP 20)

Type **MS-N**□

#### Ordering Designation

Model name ..... MS-N21KP  
 Heater designation of overload relay ..... 15A  
 Main circuit voltage ..... 220VAC  
 Coil designation (See page 13) ..... AC230V

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Complete type designation MS-N21KP\*15A\*220V\*AC230V

*Note: Mark\*indicates a blank space.*

Table 1.7.3

Rated operational current AC-3		Rated motor capacity 3-phase AC-2 & AC-3				Model name		Free aux. contacts	Heater designation of overload relay
220 -240V (A)	380 -440V (A)	220 -240V (kW)	380 -440V (kW)	500V (kW)	690V (kW)	Phase failure protection type	Two heater type	(ordering designation)	
11	9	2.5	4	4	4	MS-N10KP	MS-N10	0.24A, 0.35A, 0.5A, 0.7A, 0.9A, 1.3A	
13	12	3.5	5.5	5.5	5.5	MS-N11KP	MS-N11	1.7A, 2.1A, 2.5A, 3.6A, 5A, 6.6A, 9A	
13	12	3.5	5.5	5.5	5.5	MS-N12KP	MS-N12	11A	
22	22	5.5	11	11	7.5	MS-N20KP	MS-N20	19A	
22	22	5.5	11	11	7.5	MS-N21KP	MS-N21	0.24A, 0.35A, 0.5A, 0.7A, 0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A, 6.6A, 9A, 11A, 15A	
30	30	7.5	15	15	11	MS-N25KP	MS-N25	22A	
40	40	11	18.5	18.5	15	MS-N35KP	MS-N35	29A	
55	50	15	22	22	22	MS-N50KP	MS-N50	35A	
65	62	18.5	30	37	30	MS-N65KP	MS-N65	15A, 22A, 29A, 35A, 42A, 54A	
85	85	22	45	45	45	MS-N80KP	MS-N80	67A	
105	105	30	55	55	55	MS-N95KP	MS-N95	82A	
125	120	37	60	60	60	MS-N125KP	MS-N125	95A	
150	150	45	75	90	90	MS-N150KP	MS-N150	42A, 54A, 67A, 82A, 105A	
180	180	55	90	110	110	MS-N180KP	MS-N180	125A	
250	250	75	132	132	132	MS-N220KP	MS-N220	82A, 105A, 125A, 150A	
300	300	90	160	160	200	MS-N300KP	MS-N300	180A, 210A	
400	400	125	220	225	250	MS-N400KP	MS-N400	105A, 125A, 150A, 180A, 250A	
								330A	

Note: 1. Models with finger protection terminal covers are not available.



**MS-N10**



**MS-N21**



**MS-N65**



**MS-N220KP**

## 1.7.4 Enclosed Non-Reversing Motor Starters with Pushbutton Switch (IP 20)

Type **MS-N□PM**

When the thermal overload relay is tripped, type MS-N/K□PM enclosed direct-on-line motor starters can be easily reset by pushing the OFF button on the enclosure (MS-N10 KPPM and -N11 KPPM can be reset by pushing the RESET button).

### Ordering Designation

Model name ..... MS-N21KPPM  
 Heater designation of overload relay ..... 15A  
 Main circuit voltage ..... 220VAC  
 Coil designation (See page 13) ..... AC200V

*Note: Mark\*indicates a blank space.*

Complete type designation **MS-N21KPPM\*15A\*220V\*AC200V**

Table 1.7.4

Rated operational current AC-3		Rated motor capacity 3-phase AC-2 & AC-3				Model name		Free aux. contacts		Heater designation of overload relay			
220 -240V (A)	380 -440V (A)	220 -240V (kW)	380 -440V (kW)	500V (kW)	690V (kW)	Phase failure protection type	Two heater type	1	2	(ordering designation)			
11	9	2.5	4	4	4	MS-N10KPPM	MS-N10PM	1	—	0.24A, 0.35A, 0.5A, 0.7A, 0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A, 6.6A, 9A			
13	12	3.5	5.5	5.5	5.5	MS-N11KPPM	MS-N11PM	1	—	11A			
22	22	5.5	11	11	7.5	MS-N20KPPM	MS-N20PM	—	1	0.24A, 0.35A, 0.5A, 0.7A, 0.9A, 1.3A, 1.7A, 2.1A, 2.5A, 3.6A, 5A, 6.6A, 9A, 11A, 15A			
22	22	5.5	11	11	7.5	MS-N21KPPM	MS-N21PM	1	2	19A			
30	30	7.5	15	15	11	MS-N25KPPM	MS-N25PM	1	2	22A			
40	40	11	18.5	18.5	15	MS-N35KPPM	MS-N35PM	1	2	29A 35A			
55	50	15	22	22	22	MS-N50KPPM	MS-N50PM	1	2	15A, 22A, 29A, 35A, 42A, 54A			
65	62	18.5	30	37	30	MS-N65KPPM	MS-N65PM	1	2				
85	85	22	45	45	45	MS-N80KPPM	MS-N80PM	1	2			67A	
105	105	30	55	55	55	MS-N95KPPM	MS-N95PM	1	2			82A 95A	



**MS-N11PM**



**MS-N80PMKP**