

## Type MS450 – MS497



MS450



MS497

### Manual motor starters

FLA adjustment range	Horsepower ratings						Weight (lbs)	Availability code	Catalog number	List price
	Single-phase <sup>①</sup>		Three-phase							
	115V	230V	200V – 208V	230V	460V	575V				
<b>MS450</b>										
11 – 16	1	3	5	5	10	15	2.12	A	MS450-16	\$ 450
14 – 20	1.5	3	5	7.5	15	20	2.12	A	MS450-20	450
18 – 25	2	5	7.5	10	20	25	2.12	A	MS450-25	450
22 – 32	3	5	10	10	25	30	2.12	A	MS450-32	450
28 – 40	3	7.5	15	15	30	40	2.12	A	MS450-40	510
36 – 45	5	7.5	15	15	30	40	2.12	A	MS450-45	510
40 – 50	5	10	15	20	40	50	2.12	A	MS450-50	510
<b>MS495</b>										
28 – 40	3	7.5	15	15	30	40	4.63	A	MS495-40	562.50
36 – 50	5	10	15	20	40	50	4.63	A	MS495-50	562.50
45 – 63	5	15	20	25	50	60	4.63	A	MS495-63	562.50
57 – 75	7.5	15	25	25	60	75	4.63	A	MS495-75	600
70 – 90	10	20	30	30	75	100	4.63	A	MS495-90	615
80 – 100	10	25	40	40	75	100	4.63	A	MS495-100	690
<b>MS497</b>										
11 – 16	1	3	5	5	10	15	2.12	B	MS497-16	450
14 – 20	1.5	3	5	7.5	15	20	2.12	B	MS497-20	450
18 – 25	2	5	7.5	10	20	25	2.12	B	MS497-25	450
22 – 32	3	5	10	10	25	30	2.12	B	MS497-32	450
28 – 40	3	7.5	15	15	30	40	4.63	B	MS497-40	562.50
36 – 50	5	10	15	20	40	50	4.63	B	MS497-50	562.50
45 – 63	5	—	20	25	50	60	4.63	B	MS497-63	562.50
57 – 75	7.5	—	25	25	60	75	4.63	B	MS497-75	600
70 – 90	10	—	30	30	75	100	4.63	B	MS497-90	615
80 – 100	10	—	30	40	75	100	4.63	B	MS497-100	690
<b>MS451</b>										
11 – 16	1	3	5	5	10	15	2.12	B	MS451-16	450
14 – 20	1.5	3	5	7.5	15	20	2.12	B	MS451-20	450
18 – 25	2	5	7.5	10	20	25	2.12	B	MS451-25	450
22 – 32	3	5	10	10	25	30	2.12	B	MS451-32	450
28 – 40	3	7.5	15	15	30	40	2.12	B	MS451-40	510
36 – 45	5	7.5	15	15	30	40	2.12	B	MS451-45	510
40 – 50	5	10	15	20	40	50	2.12	B	MS451-50	510
<b>MS496</b>										
28 – 40	3	7.5	15	15	30	40	4.63	B	MS496-40	562.50
36 – 50	5	10	15	20	40	50	4.63	B	MS496-50	562.50
45 – 63	5	15	20	25	50	60	4.63	B	MS496-63	562.50
57 – 75	7.5	15	25	25	60	75	4.63	B	MS496-75	600
70 – 90	10	20	30	30	75	100	4.63	B	MS496-90	615
80 – 100 <sup>②</sup>	10	25	40	40	75	100	4.63	B	MS496-100	690

#### Availability code

- A – Standard item, stock to two weeks lead time
- B – Stock to four weeks lead time
- C – 4 to 6 weeks lead time

UL File # E167205

① Single phase motor ratings are based upon wiring all three poles in series.  
 ② Maximum motor current 95A.

# Type MS450 – MS497 for UL 508 Type E Applications



MS450-16E



MS497-16E

## Manual motor starters

	FLA adjustment range	Horsepower ratings					Weight (lbs)	Availability code	Catalog ③ number	List price
		Single-phase①		Three-phase						
		115V	230V	200V – 208V	230V	460V				
<b>Overload tripping class 10</b>	<b>MS450</b>									
	11 – 16	1	3	5	5	10	15	2.12	A	MS450-16E <b>\$ 525</b>
	14 – 20	1.5	3	5	7.5	15	20	2.12	A	MS450-20E <b>525</b>
	18 – 25	2	5	7.5	10	20	25	2.12	A	MS450-25E <b>525</b>
	22 – 32	3	5	10	10	25	30	2.12	A	MS450-32E <b>525</b>
	28 – 40	3	7.5	15	15	30	40	2.12	A	MS450-40E <b>585</b>
	36 – 45	5	7.5	15	15	30	40	2.12	A	MS450-45E <b>585</b>
	40 – 50	5	10	15	20	40	50	2.12	A	MS450-50E <b>585</b>
	<b>MS495</b>									
	28 – 40	3	7.5	15	15	30	40	4.63	A	MS495-40E <b>622.50</b>
36 – 50	5	10	15	20	40	50	4.63	A	MS495-50E <b>622.50</b>	
45 – 63	5	15	20	25	50	60	4.63	A	MS495-63E <b>622.50</b>	
57 – 75	7.5	15	25	25	60	75	4.63	A	MS495-75E <b>720</b>	
70 – 90	10	20	30	30	75	100	4.63	A	MS495-90E <b>735</b>	
80 – 100	10	25	40	40	75	100	4.63	A	MS495-100E <b>810</b>	
<b>Overload tripping class 10</b>	<b>MS497</b>									
	11 – 16	1	3	5	5	10	15	2.12	B	MS497-16E <b>570</b>
	14 – 20	1.5	3	5	7.5	15	20	2.12	B	MS497-20E <b>570</b>
	18 – 25	2	5	7.5	10	20	25	2.12	B	MS497-25E <b>570</b>
	22 – 32	3	5	10	10	25	30	2.12	B	MS497-32E <b>570</b>
	28 – 40	3	7.5	15	15	30	40	4.63	B	MS497-40E <b>622.50</b>
	36 – 50	5	10	15	20	40	50	4.63	B	MS497-50E <b>622.50</b>
	45 – 63	5	—	20	25	50	60	4.63	B	MS497-63E <b>622.50</b>
	57 – 75	7.5	—	25	25	60	75	4.63	B	MS497-75E <b>720</b>
	70 – 90	10	—	30	30	75	100	4.63	B	MS497-90E <b>735</b>
80 – 100	10	—	30	40	75	100	4.63	B	MS497-100E <b>810</b>	
<b>Overload tripping class 20</b>	<b>MS451</b>									
	11 – 16	1	3	5	5	10	15	2.12	B	MS451-16E <b>525</b>
	14 – 20	1.5	3	5	7.5	15	20	2.12	B	MS451-20E <b>525</b>
	18 – 25	2	5	7.5	10	20	25	2.12	B	MS451-25E <b>525</b>
	22 – 32	3	5	10	10	25	30	2.12	B	MS451-32E <b>525</b>
	28 – 40	3	7.5	15	15	30	40	2.12	B	MS451-40E <b>585</b>
	36 – 45	5	7.5	15	15	30	40	2.12	B	MS451-45E <b>585</b>
	40 – 50	5	10	15	20	40	50	2.12	B	MS451-50E <b>585</b>
	<b>MS496</b>									
	28 – 40	3	7.5	15	15	30	40	4.63	B	MS496-40E <b>622.50</b>
36 – 50	5	10	15	20	40	50	4.63	B	MS496-50E <b>622.50</b>	
45 – 63	5	15	20	25	50	60	4.63	B	MS496-63E <b>622.50</b>	
57 – 75	7.5	15	25	25	60	75	4.63	B	MS496-75E <b>720</b>	
70 – 90	10	20	30	30	75	100	4.63	B	MS496-90E <b>735</b>	
80 – 100②	10	25	40	40	75	100	4.63	B	MS496-100E <b>810</b>	

### Availability code

- A – Standard item, stock to two weeks lead time
- B – Stock to four weeks lead time
- C – 4 to 6 weeks lead time

① Single phase motor ratings are based upon wiring all three poles in series.  
 ② Maximum motor current 95A.  
 ③ Catalog number includes all parts required for UL508/E applications.

## Type MS450 – MS497 Accessories

5



HK4-11



HKS4-02



UA4-HK-220



AA4-24

### Auxiliary contacts – top mount

Item description	Weight (lbs)	Packaged in quantity of	Availability code	Catalog number	List price
1 N.O. + 1 N.C.	.044	10	A	HK4-11	<b>\$ 36</b>
1 changeover	.044	10	B	HK-W	

### Auxiliary contacts – mounts on left side, max. 1

Item description	Weight (lbs)	Packaged in quantity of	Availability code	Catalog number	List price
1 N.O. + 1 N.C.	.066	2	A	HKS4-11	<b>\$ 36</b>
2 N.O.	.066	2	B	HKS4-20	
2 N.C.	.066	2	B	HKS4-02	

### Auxiliary release

- Only one auxiliary release per manual motor protector
- Mounts on right side of manual motor protector

Item description	Rating	Weight (lbs)	Pkg. qty.	Avail. code	Catalog number	List price	
Undervoltage release	110–120V, 50–60Hz	.264	1	A	UA4-120	<b>\$ 93</b>	
	208V, 60Hz	.264	1	A	UA4-208		
	230–240V, 50–60Hz	.264	1	A	UA4-240		
	400V, 50Hz	.264	1	B	UA4-400		
	480V, 60Hz	.264	1	A	UA4-480		
Undervoltage release with early make contacts 2 N.O.	230V, 50Hz	.286	1	B	UA4-HK-230	<b>117</b>	
	400V, 50Hz	.286	1	B	UA4-HK-400		
	480V, 60Hz	.286	1	A	UA4-HK-480		
Shunt trip	Voltage continuous 50 – 60Hz	20 – 24	20 – 70V	.242	1	B	<b>93</b>
	Voltage 5 sec. max. 50 – 60Hz, DC						
		30 – 110	70 – 190V	.242	1	A	
		210 – 240	190 – 330V	.242	1	B	
		350 – 415	330 – 500V	.242	1	B	

### Power feed terminal blocks – for MS45X

Item description	Catalog number	List price
For feeding power to multiple MS45Xs when using busbar Accepts 10 - 1/0 AWG, 108A	S4-M1	<b>\$ 81</b>

### Busbars – for MS45X

Item description	Catalog number	List price
Without side mounted auxiliary devices	PS4-2-0	<b>\$ 51</b>
	PS4-3-0	<b>60</b>
	PS4-4-0	<b>76.50</b>
With one side mounted auxiliary device	PS4-2-2	<b>58.50</b>
	PS4-3-2	<b>60</b>
	PS4-4-2	<b>84</b>

### Close coupling adapters

Item description	Catalog number	List price
MS45X + A30, A40	BEA40/450	<b>\$ 54</b>
MS45X + A50	BEA50/450	<b>63</b>
MS49X + A50, A63, A75	BEA75/495	<b>120</b>
MS495 + A95, A110	BEA110/495	<b>180</b>

① Mounting sequence: motor protection switch, pilot switch, auxiliary switch.

# Type MS450 – MS497 Accessories



KA450



SA450



DX495



SK4-11

## Terminal shrouds

Item description	Weight (lbs)	Packaged in quantity of	Availability code	Catalog number	List price
for MS45x	.022	1	A	KA450 ①	\$ 15
for MX49x	.022	1	A	KA495 ①	18
for MS49x	.066	1	A	KA495C ②	21

## FLA adjustment cover

Item description	Weight (lbs)	Packaged in quantity of	Availability code	Catalog number	List price
for MS45x	.015	10	A	SA450 ③	\$ 30

## Type E Terminal — Required for UL 508 Type E Applications

Item description	Weight (lbs)	Packaged in quantity of	Availability code	Catalog number	List price
for MS49x	.550	1	B	DX495	\$ 45

## Signalling contact — indication of short-circuit trip (required for UL508 Type E applications)

Item description	Weight (lbs)	Packaged in quantity of	Availability code	Catalog number	List price
Short circuit trip 1 N.O. + 1 N.C.	.154	1	A	SK4-11	\$ 60

## Selector handles — for thru the door operation for Types MS450 & MS451<sup>④</sup>

Item description	Catalog number	List price
Shaft coupler	MSMN	\$ 15
NEMA 1, 3R, 12 black selector handle	OHB2AJ	30
NEMA 1, 3R, 12 red/yellow selector handle	OHY2AJ	30
4.1" length shaft	OXS5X105	4
7.1" length shaft	OXS5X180	6

① Plug onto box terminals in each case.  
 ② Plug onto housing after removing box terminals, if using cable lugs or buses.  
 ③ Supplied only as a set of 10 scale covers.  
 ④ Must have shaft coupler, handle and shaft for through-the-door operation.

# Manual Motor Starters MS4xx

## Ordering details



MS45x

SST02198



MS49x

SST01988



MS495 with A95  
connected via BEA 110/495

ST14-02



MS495 with auxiliary switch  
HKS4-02 and open-circuit shunt  
release AA4 in addition to termi-  
nal shroud KA495C

SST 09498

Type	Setting range	Order code	Weight / piece kg	Packing unit piece	Price
	A . . . A				

### MS450 with thermal and electromagnetic trips, tripping class 10, short-circuit-proof up to 50 kA ①

MS450 – 16	11 ... 16	1SAM 450 000 R1001	0.96	1	
MS450 – 20	14 ... 20	1SAM 450 000 R1002	0.96	1	
MS450 – 25	18 ... 25	1SAM 450 000 R1003	0.96	1	
MS450 – 32	22 ... 32	1SAM 450 000 R1004	0.96	1	
MS450 – 40	28 ... 40	1SAM 450 000 R1005	0.96	1	
MS450 – 45	36 ... 45	1SAM 450 000 R1006	0.96	1	
MS450 – 50	40 ... 50	1SAM 450 000 R1007	0.96	1	

### MS495 with thermal and electromagnetic trips, tripping class 10, short-circuit-proof up to 50 kA ①

MS495 – 40	28 ... 40	1SAM 550 000 R1005	2.1	1	
MS495 – 50	36 ... 50	1SAM 550 000 R1006	2.1	1	
MS495 – 63	45 ... 63	1SAM 550 000 R1007	2.1	1	
MS495 – 75	57 ... 75	1SAM 550 000 R1008	2.1	1	
MS495 – 90	70 ... 90	1SAM 550 000 R1009	2.1	1	
MS495 – 100	80 ... 100 ②	1SAM 550 000 R1010	2.1	1	

### MS497 with thermal and electromagnetic trips, tripping class 10, short-circuit-proof up to 100 kA ①

MS497 – 16	11 ... 16	1SAM 580 000 R1001	2.1	1	
MS497 – 20	14 ... 20	1SAM 580 000 R1002	2.1	1	
MS497 – 25	18 ... 25	1SAM 580 000 R1003	2.1	1	
MS497 – 32	22 ... 32	1SAM 580 000 R1004	2.1	1	
MS497 – 40	28 ... 40	1SAM 580 000 R1005	2.1	1	
MS497 – 50	36 ... 50	1SAM 580 000 R1006	2.1	1	
MS497 – 63	45 ... 63	1SAM 580 000 R1007	2.1	1	
MS497 – 75	57 ... 75	1SAM 580 000 R1008	2.1	1	
MS497 – 90	70 ... 90	1SAM 580 000 R1009	2.1	1	
MS497 – 100	80 ... 100 ②	1SAM 580 000 R1010	2.1	1	

### MS451 with thermal and electromagnetic trips, tripping class 20, for heavy start short-circuit-proof up to 50 kA ①

MS451 – 16	11 ... 16	1SAM 470 000 R1001	0.96	1	
MS451 – 20	14 ... 20	1SAM 470 000 R1002	0.96	1	
MS451 – 25	18 ... 25	1SAM 470 000 R1003	0.96	1	
MS451 – 32	22 ... 32	1SAM 470 000 R1004	0.96	1	
MS451 – 40	28 ... 40	1SAM 470 000 R1005	0.96	1	
MS451 – 45	36 ... 45	1SAM 470 000 R1006	0.96	1	
MS451 – 50	40 ... 50	1SAM 470 000 R1007	0.96	1	

### MS496 with thermal and electromagnetic trips, tripping class 20, for heavy start short-circuit-proof up to 100 kA ①

MS496 – 40	28 ... 40	1SAM 570 000 R1005	2.1	1	
MS496 – 50	36 ... 50	1SAM 570 000 R1006	2.1	1	
MS496 – 63	45 ... 63	1SAM 570 000 R1007	2.1	1	
MS496 – 75	57 ... 75	1SAM 570 000 R1008	2.1	1	
MS496 – 90	70 ... 90	1SAM 570 000 R1009	2.1	1	
MS496 – 100	80 ... 100 ②	1SAM 570 000 R1010	2.1	1	

### Direct adapter for wiring MS450 - MS497 to contactors

Type	Order code	Weight / piece kg	Packing unit piece	Price
BEA40/450, direct adapter MS450 to A30/A40	1SBN 083 206 R1000	0.061	1	
BEA50/450, direct adapter MS450 to A50 plate	1SBN 083 506 R1000	0.062	1	
BEA75/495, direct adapter MS495-497 to A50/63/75	1SBN 084 106 R1000	0.120	1	
BEA110/495, direct adapter MS495-497 to A95/A110	1SBN 084 506 R1000	0.124	1	

① See table on Page 24, ② Max. motor current 95 A

# Manual Motor Starters MS4xx

## Accessories

### Ordering details



Auxiliary switch HK4-11



Auxiliary switch HKS4-02



Pilot switch SK4-11



Open-circuit shunt release AA4



Undervoltage release UA4-HK

### Retrofittable accessories

These parts may be procured in addition to the MS4xx. They must be mounted by the user.

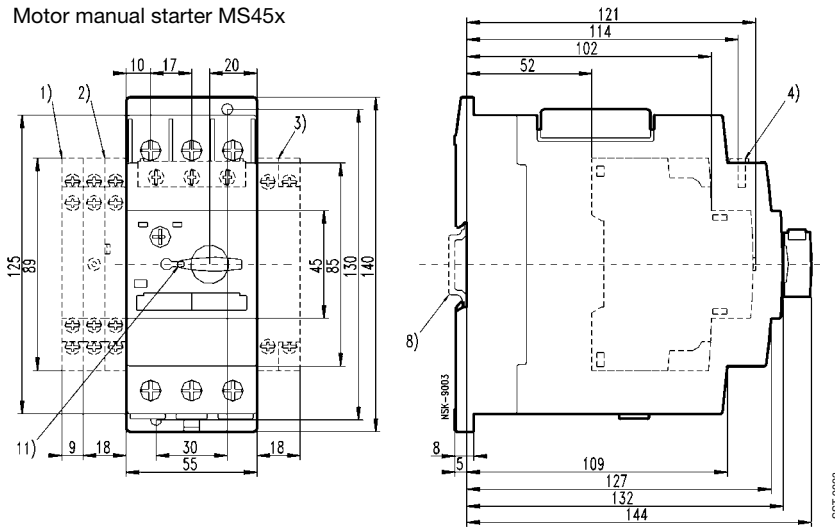
Type		Order code	Weight/ piece kg	Packing unit piece	Price
<b>Auxiliary switches, for front mounting</b>					
HK4-11,	1 NO + 1 NC	1SAM 401 901 R1001	0.02	10	
HK4-W,	1 Changeover	1SAM 401 901 R1002	0.02	10	
<b>Auxiliary switches, for lateral attachment at left, max. 1 mountable</b>					
HKS4-11,	1 NO + 1 NC	1SAM 401 902 R1001	0.03	2	
HKS4-20,	2 NO	1SAM 401 902 R1002	0.03	2	
HKS4-02,	2 NC	1SAM 401 902 R1003	0.03	2	
<b>Signal switch for separate signalling acc. UL508 type E, lateral attachment at left 1NO + 1NC for short circuit signalling, 1NO + 1NC for general tripping</b>					
SK4-11	2x: 1NO + 1NC	1SAM 401 904 R 1001	0.07	1	
<b>Undervoltage release, for lateral attachment at right</b>					
UA4,	24 V 50 Hz	1SAM 401 905 R1004	0.12	1	
UA4,	110 V 50 Hz	1SAM 401 905 R1001	0.12	1	
UA4,	230 V 50 Hz / 240 V 60 H	1SAM 401 905 R1002	0.12	1	
UA4,	400 V 50 Hz	1SAM 401 905 R1003	0.12	1	
<b>Undervoltage release with pre-mating auxiliary switch 2 NO, for lateral attachment at right</b>					
UA4-HK,	U <sub>e</sub> 230 V 50 Hz / 240 V 60 Hz	1SAM 401 906 R1001	0.13	1	
UA4-HK,	400 V 50 Hz	1SAM 401 906 R1002	0.13	1	
<b>Shunt release, lateral mounting at the left side ⑤</b>					
AA4,	20-70 V, 50/60 Hz	1SAM 401 907 R1001	0.11	1	
AA4,	70-190 V, 50/60 Hz	1SAM 401 907 R1002	0.11	1	
AA4,	190-330 V, 50/60 Hz	1SAM 401 907 R1003	0.11	1	
AA4,	330-500 V, 50/60 Hz	1SAM 401 907 R1004	0.11	1	
<b>Terminal shroud, for additional shock-hazard protection</b>					
KA450,	for MS45x ①	1SAM 401 908 R1001	0.01	1	
KA495,	for MS49x ①	1SAM 501 901 R1001	0.01	1	
KA495C,	for MS49x ②	1SAM 501 902 R1001	0.03	1	
<b>Terminal insulation barrier,</b>					
DX495	necessary for UL 508E, MS49x-Starter	1SAM 401 912 R1001			
<b>Scale cover, lead-sealable</b>					
SA450,	for MS45x ③	1SAM 401 909 R1001	0.007	1 set	
<b>Disconnecter module, for producing a visible gap, lockable</b>					
TB450,	for MS45x	1SAM 401 910 R1001	0.30	1	
<b>Phase busses MS45x, 108 A, 690 V</b>					
PS4-2	without HK, for 2 devices	1SAM 401 911 R1001			
PS4-3	without HK, for 3 devices	1SAM 401 911 R1002			
PS4-4	without HK, for 4 devices	1SAM 401 911 R1003			
PS4-2	with HK, for 2 devices	1SAM 401 911 R1004			
PS4-3	with HK, for 3 devices	1SAM 401 911 R1005			
PS4-4	with HK, for 4 devices	1SAM 401 911 R1006			
<b>Infeed block, 108 A, 690 V, Stranded 50 mm<sup>2</sup>, finely stranded 35 mm<sup>2</sup></b>					
S4-M1,	flat	1SAM 401 911 R1007	10		
<b>Cover for phase bus poles</b>					
BS4-3		1SAM 401 911 R1008			
<b>Switch cubicle mounting kit IP65, with axial extension, lockable in Off position, locked in On position ④</b>					
OHB2AJM,	Twist knob black	1SCA 022 384 R6940			
OHY2AJM,	Twist knob red/yellow	1SCA 022 384 R7080			
OXS5X 85,	axis 85 mm	1SCA 022 347 R3570			
OXS5X105,	axis 105 mm	1SCA 022 347 R3650			
OXS5X130,	axis 130 mm	1SCA 022 353 R4540			
OXS5X180,	axis 180 mm	1SCA 022 353 R4620			
MSMN,	driver ⑦	1SAM 101 923 R0001			

- ① Is plugged onto the box terminals in each case  
 ② Is plugged onto the housing after removing the box terminals, if using cable lugs or buses  
 ③ Supplied only as a set as 10 scale covers  
 ④ Mounting sequence: Motor protection switch, pilot switch, auxiliary switch  
 ⑤ Max. ON time: 5 seconds, see also Page 22  
 ⑥ See also MS325 Page 10  
 ⑦ Is screwed directly onto the manual motor starter

# Manual Motor Starters MS45x / MS49x

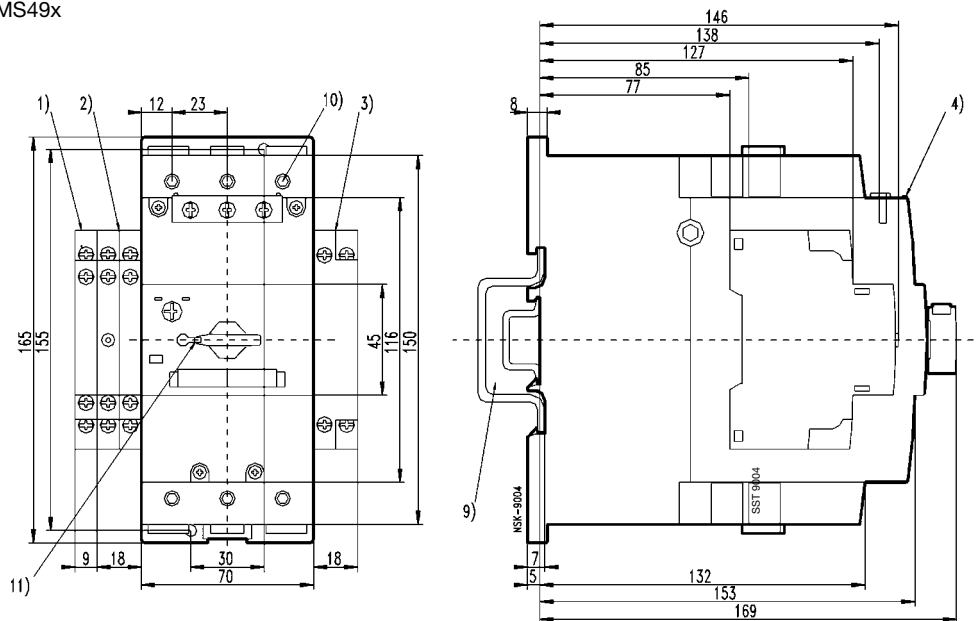
## Dimension diagrams

Motor manual starter MS45x



- Auxiliary switch block HKS4
- ▼ Pilot switch SK4
- Open-circuit shunt release/undervoltage release AA4, UA4, UA4-HK
- Auxiliary switch HK4
- Top-hat rail 35 mm to DIN EN 50022
- ◻ Top-hat rail 35 mm, 15 mm high to DIN EN 50022
- or Top-hat rail 75 mm to DIN EN 50023
- Switch knob lockable in zero position with bracket diameter 5 mm

Motor manual starter MS49x



MS45x with disconnecter module TB450

