

MS165 manual motor starters

10 to 80 A – with thermal and electromagnetic protection



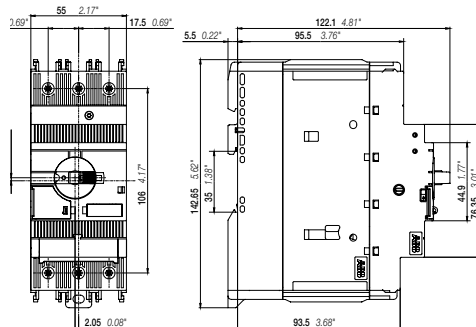
MS165-65

2CDC241007V0017

MS165 is a compact and powerful range for motor protection up to 45 kW (400 V) / 80 A in width of 55 mm. This type has also a clear and reliable indication of fault in a separate window in the event of short-circuit tripping. Further features are the built-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The manual motor starter is suitable for three- and single-phase applications. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signaling contacts, undervoltage releases, shunt trips, power in-feed blocks are available as accessory. These are suitable throughout the MS116/MS132/MS165-range.

Rated operational power 400 V	Setting range	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
AC-3 kW	A	kA	A			kg
7.5	10 ... 16	100	240	MS165-16	1SAM451000R1011	0.950
7.5	14 ... 20	100	300	MS165-20	1SAM451000R1012	0.950
11	18 ... 25	100	375	MS165-25	1SAM451000R1013	0.960
15	23 ... 32	100	480	MS165-32	1SAM451000R1014	0.970
22	30 ... 42	50	630	MS165-42	1SAM451000R1015	0.970
22	40 ... 54	30	810	MS165-54	1SAM451000R1016	0.970
30	52 ... 65	30	975	MS165-65	1SAM451000R1017	0.980
37	62 ... 73	30	1022	MS165-73	1SAM451000R1018	1.000
45	70 ... 80	30	1120	MS165-80	1SAM451000R1019	1.000

Note: Manual motor starters should always be selected so that the actual motor current is within the setting range.



MS165

Main dimensions mm, inches

2CDC131062C0201

MO165 manual motor starters magnetic only

16 to 80 A – with electromagnetic protection



MO165-65

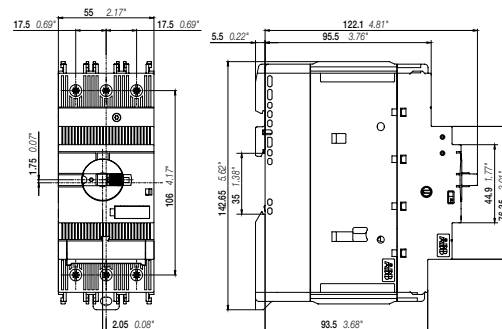
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The MO165 manual motor starter magnetic only is a compact and powerful range for motor protection up to 45 kW (400 V AC) in width of 55 mm. The devices are used to manually switch on and off loads/motors and to protect them reliably and without the need for a fuse from short-circuits. The manual motor starter offers a rated service short-circuit breaking capacity up to 100 kA at 400 V AC. A combination together with overload relays or motor controllers allows the protection of motors. Further features are the built-in disconnect function, trip-free mechanism and a rotary handle with a clear switch position indication.

The manual motor starters magnetic only are suitable for three- and single-phase applications. The handle is lockable to protect against unauthorized changes. Auxiliary contacts, signaling contacts, undervoltage releases, shunt trips, 3-phase bus bars and power in-feed blocks are available as accessory.

Rated operational power 400 V	Rated operational current	Short-circuit breaking capacity Ics at 400 V AC	Rated instantaneous short-circuit current setting Ii	Type	Order code	Weight (1 pce)
AC-3 kW	A	kA	A			kg
7.5	16	100	240	MO165-16	1SAM461000R1011	0.950
7.5	20	100	300	MO165-20	1SAM461000R1012	0.950
11	25	100	375	MO165-25	1SAM461000R1013	0.960
15	32	100	480	MO165-32	1SAM461000R1014	0.970
22	42	50	630	MO165-42	1SAM461000R1015	0.970
22	54	30	810	MO165-54	1SAM461000R1016	0.970
30	65	30	975	MO165-65	1SAM461000R1017	0.980
37	73	30	1022	MO165-73	1SAM461000R1018	1.000
45	80	30	1120	MO165-80	1SAM461000R1019	1.000

Note: For overload protection of motors, an appropriate thermal or electronic overload relay must be used.



MO165

Main dimensions mm, inches

2CDC131062C0201

MS116, MS132, MS165, MO132, MO165

Technical data

Main circuit – Utilization characteristics according to IEC/EN

Type	MS116	MS132	MS165	MO132	MO165
Standards	IEC/EN 60947-2, IEC/EN 60947-4-1, IEC/EN 60947-1				
Rated operational voltage Ue	690 V AC	690 V AC / 250 V DC	690 V AC / 250 V DC	690 V AC	690 V AC / 250 V DC
Rated frequency	50/60 Hz	DC, 50/60 Hz	DC, 50/60 Hz	50/60 Hz	DC, 50/60 Hz
Operational frequency	50/60 Hz	0 ... 400 Hz	0 ... 400 Hz	0 ... 400 Hz	0 ... 400 Hz
Trip class	10A	10	10	-	-
Number of poles	3				
Duty time	100%				
Mechanical durability	100000 cycles	100000 cycles	50000 cycles	100000 cycles	50000 cycles
Electrical durability	up to 10 A	up to 100000 cycles	up to 25000 cycles	up to 100000 cycles	up to 50000 cycles
	up to 16 A	100000 cycles	50000 cycles	50000 cycles	25000 cycles
	20 ... 65 A	50000 cycles	50000 cycles	25000 cycles	25000 cycles
	65 ... 80 A	-	-	20000 cycles	-
Rated impulse withstand voltage Uimp	6 kV	6 kV	8 kV	6 kV	8 kV
Rated insulation voltage Ui	690 V	690 V	1000 V	690 V	1000 V
Rated operational current Ie	See ordering details				
Rated operational current DC-5 Ie 3 conducting paths in series up to 250 V	-	See "Rated operational current Ie"	See "Rated operational current Ie"	-	See "Rated operational current Ie"
Rated instantaneous short-circuit current setting Ii	See ordering details				
Rated service short-circuit breaking capacity Ics	See table "Short-circuit breaking capacity and back-up fuses"				
Rated ultimate short-circuit breaking capacity Icu	See table "Short-circuit breaking capacity and back-up fuses"				
Rated service short-circuit breaking capacity DC Ics 3 conducting paths in series up to 250 V	-	10 kA	100 kA	-	100 kA

Short-circuit breaking capacity and back-up fuses

Ics Rated service short-circuit breaking capacity

Icu Rated ultimate short-circuit breaking capacity

Icc Prospective short-circuit current at installation location

Note: Maximum rated current of the back-up fuses if $I_{cc} > I_{cs}$

Type	230 V AC			400 V AC			440 V AC			500 V AC			690 V AC		
	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A	Ics kA	Icu kA	gG, aM A
MS116-0.16	50	100	-(1)	50	100	-(1)	30	100	-(1)	30	100	-(1)	30	100	-(1)
MS116-0.25	50	100	-(1)	50	100	-(1)	30	100	-(1)	30	100	-(1)	30	100	-(1)
MS116-0.4	50	100	-(1)	50	100	-(1)	30	100	-(1)	30	100	-(1)	30	100	-(1)
MS116-0.63	50	100	-(1)	50	100	-(1)	30	100	-(1)	30	100	-(1)	30	100	-(1)
MS116-1.0	50	100	-(1)	50	100	-(1)	30	100	-(1)	30	100	-(1)	30	100	-(1)
MS116-1.6	50	100	-(1)	50	100	-(1)	30	100	-(1)	30	100	-(1)	30	100	-(1)
MS116-2.5	50	75	-(1)	50	75	-(1)	10	30	25 (2)	10	20	25 (2)	5	10	25 (2)
MS116-4.0	50	75	-(1)	50	75	-(1)	6	18	25 (2)	6	15	25 (2)	2	3	25 (2)
MS116-6.3	50	50	-(1)	50	50	-(1)	6	18	63 (2)	6	10	63 (2)	2	3	40 (2)
MS116-10	50	50	-(1)	50	50	-(1)	6	18	63 (2)	6	10	63 (2)	2	3	50 (2)
MS116-12	25	50	80 (2)	25	50	80 (2)	6	15	63 (2)	6	10	63 (2)	2	3	50 (2)
MS116-16	16	16	80 (2)	16	16	80 (2)	6	15	63 (2)	4	10	63 (2)	2	3	63 (2)
MS116-20	10	16	125 (2)	10	16	125 (2)	3	15	125 (2)	3	10	125 (2)	2	3	80 (2)
MS116-25	10	16	125 (2)	10	16	125 (2)	3	15	125 (2)	3	10	125 (2)	2	3	100 (2)
MS116-32	10	16	125 (2)	10	16	125 (2)	3	15	125 (2)	3	10	125 (2)	2	3	100 (2)

(1) No back-up fuse required, because short-circuit proof up to 50 kA

(2) Rated back-up fuse for short-circuit up to 50 kA