



PRODUCT-DETAILS

MS165-20

MS165-20 Manual Motor Starter 14 ... 20 A



General Information	
Extended Product Type	MS165-20
Product ID	1SAM451000R1012
EAN	4013614486067
Catalog Description	MS165-20 Manual Motor Starter 14 ... 20 A
Long Description	MS165 is a compact and powerful range for motor protection up to 45 kW (400 V) / 80 A in width of 55 mm. They offer a reliable protection for motors in the event of overload or phase failure. The devices have trip class 10. 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 build-in disconnect function, temperature compensation, trip-free mechanism and a rotary handle with a clear switch position indication. The manual motor starter (also known as motor protection circuit breaker or manual motor protector) 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.
Ordering	
Minimum Order Quantity	1 piece
Customs Tariff Number	85362010

Popular Downloads	
Data Sheet, Technical Information	2CDC131083D0201
Instructions and Manuals	2CDC131081M6801
Instructions and Manuals (Part 2)	2CDC131060M0202
Ex Operating Instructions	2CDC131087M6801
Time-Current Characteristic Curve	1SAM400505F0002
I ² t Characteristic	1SAM400506F0001
Cut-off Current Characteristic	1SAM400507F0001
CAD Dimensional Drawing	2CDC001079B0201
Dimension Diagram	1SAM400401F0001

Dimensions	
Product Net Width	55 mm
Product Net Height	142.65 mm
Product Net Depth / Length	122.1 mm
Product Net Weight	0.95 kg

Technical	
Rated Service Short-Circuit Breaking Capacity (I _{cs})	(230 V AC) 100 kA (250 V DC) 3 Poles in Series 100 kA (400 V AC) 100 kA (440 V AC) 75 kA (500 V AC) 40 kA (690 V AC) 10 kA
Rated Ultimate Short-Circuit Breaking Capacity (I _{cu})	(230 V AC) 100 kA (250 V DC) 100 kA (400 V AC) 100 kA (440 V AC) 75 kA (500 V AC) 40 kA (690 V AC) 10 kA
Rated Instantaneous Short-Circuit Current Setting (I _i)	300 A
Setting Range	14 ... 20 A
Rated Operational Power AC-3 (P _e)	(400 V) Three Phase 7.5 kW
Rated Operational Power AC-3e (P _e)	(400 V) Three Phase 7.5 kW
Rated Operational Voltage	Main Circuit 690 V AC Main Circuit 250 V DC
Rated Operational Current (I _e)	20 A
Rated Operational Current AC-3 (I _e)	20 A
Rated Operational Current AC-3e (I _e)	20 A
Rated Operational Current DC-5 (I _e)	20 A
Rated Frequency (f)	Main Circuit 50 Hz Main Circuit 60 Hz
Operating Frequency (f _{sw})	0 ... 415 Hz
Rated Impulse Withstand Voltage (U _{imp})	Main Circuit 8 kV
Rated Insulation Voltage (U _i)	1000 V

Power Loss	at Rated Operating Conditions per Pole 1.82 ... 3.72 W
Number of Poles	3
Conventional Free-air Thermal Current (I_{th})	Main Circuit 20 A
Degree of Protection	Housing IP20 Main Circuit Terminals IP10
Pollution Degree	3
Electrical Durability	25000 cycle
Mechanical Durability	50000 cycle
Terminal Type	Screw Terminals
Connecting Capacity Main Circuit	Flexible with Ferrule 1/2x 1 ... 35 mm ² Flexible with Insulated Ferrule 1/2x 1 ... 35 mm ² Flexible 1/2x 1 ... 35 mm ² Rigid 1/2x 1 ... 4 mm ² Solid 1/2x 1 ... 4 mm ² Stranded 1/2x 1 ... 50 mm ²
Tightening Torque	Main Circuit 4 N·m
Wire Stripping Length	Main Circuit 16 mm
Recommended Screw Driver	Pozidriv 2
Mounting Position	1 ... 6
Mounting on DIN Rail	TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715 TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715
Minimum Mounting Distance	Electrical Conductive Board, Horizontal - Up to 1000 V 1.5 mm Electrical Conductive Board, Horizontal - Up to 400 V 0 mm Electrical Conductive Board, Horizontal - Up to 690 V 1.5 mm Electrical Conductive Board, Vertical 75 mm Other Device Same Type, Horizontal 0 mm Other Device Same Type, Vertical 150 mm
Actuator Type	Rotary Handle
Contact Position Indication	ON / OFF / TRIP
Standards	CSA 22.2 No. 14 IEC/EN 60947-1 IEC/EN 60947-2 IEC/EN 60947-4-1 UL 60947-4-1

Technical UL/CSA

Short-Circuit Current Rating (SCCR)	Manual Self-Protected Combination Controllers (Type E), (480Y / 277 V AC) 65 kA Manual Self-Protected Combination Controllers (Type E), (600Y / 347 V AC) 30 kA Any UL Listed Fuses or Circuit-Breakers, Group Installations (480 V AC) 65 kA Any UL Listed Fuses or Circuit-Breakers, Group Installations (600 V AC) 30 kA Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (480 V AC) 65 kA Any UL Listed Fuses or Circuit-Breakers, Motor Disconnect (600 V AC) 30 kA Any UL Listed Fuses or Circuit-Breakers, Tap Conductor Protection in Group Installations (480Y / 277 V AC) 65 kA Any UL Listed Fuses or Circuit-Breakers, Tap Conductor Protection in Group Installations (600Y / 347 V AC) 30 kA
Maximum Operating Voltage UL/CSA	Main Circuit 600 V AC
Horsepower Rating UL/CSA	(200 V AC) Three Phase 5 Hp (208 V AC) Three Phase 5 Hp (220 ... 240 V AC) Three Phase 5 Hp (440 ... 480 V AC) Three Phase 10 Hp (550 ... 600 V AC) Three Phase 15 Hp
Full Load Amps Motor Use	(200 V AC) Three Phase 17.5 A (208 V AC) Three Phase 16.7 A (220 ... 240 V AC) Three Phase 15.2 A (440 ... 480 V AC) Three Phase 14 A (550 ... 600 V AC) Three Phase 17 A
Locked Rotor Amps	(200 V AC) Three Phase 105.8 A (208 V AC) Three Phase 102 A (220 ... 240 V AC) Three Phase 92 A (440 ... 480 V AC) Three Phase 81 A (550 ... 600 V AC) Three Phase 93 A

General Use Rating UL/CSA	(600 V AC) 20 A
Connecting Capacity Main Circuit UL/CSA	Flexible 1/2x 16-0 AWG Stranded 1/2x 16-0 AWG
Tightening Torque UL/CSA	Main Circuit 35 in-lb

Environmental

Ambient Air Temperature	Operation -25 ... +60 °C Operation Compensated -25 ... +60 °C Storage -50 ... +80 °C
Ambient Air Temperature Compensation	Yes
Maximum Operating Altitude Permissible	2000 m
Resistance to Shock acc. to IEC 60068-2-27	11 ms Pulse 25g
Resistance to Vibrations	Mounted on Mounting Plate: 5g 3 ... 150 Hz Mounted on DIN-Rail: 4g 3 ... 150 Hz

Material Compliance

Conflict Minerals Reporting Template (CMRT)	9AKK108467A5658
REACH Declaration	1SAA963005-4502
RoHS Information	1SAA963006-4502
RoHS Status	Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019
Toxic Substances Control Act - TSCA	2CMT2023-006539
WEEE B2C / B2B	Business To Business
WEEE Category	5. Small Equipment (No External Dimension More Than 50 cm)

Circular Value

End of Life Instructions	1SAC00284H0001
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Certificates and Declarations

ABS Certificate	1SAA963002-0101
ATEX Certificate	1SAA918001-3901
BV Certificate	1SAA963002-0201
CB Certificate	1SAA918002-2002
CQC Certificate	CQC2015010307760141
Cut-off Current Characteristic	1SAM400507F0001
Declaration of Conformity - CCC	2020980307003042
Declaration of Conformity - CE	1SAD101100-3408
Declaration of Conformity - UKCA	1SAD201100-3408
DNV GL Certificate	1SAA963002-0301
EAC Certificate	1SAA963000-2701
I ² t Characteristic	1SAM400506F0001
IECEX Certificate	1SAA918000-4001
KC Certificate	1SAA963001-1501
LR Certificate	1SAA918001-0501
RMRS Certificate	1SAA918000-0704

Container Information

Package Level 1 Units	box 1 piece
Package Level 1 Width	64 mm
Package Level 1 Depth / Length	177 mm
Package Level 1 Height	140 mm
Package Level 1 Gross Weight	1.1 kg
Package Level 1 EAN	4013614486067
Package Level 2 Units	carton 12 piece
Package Level 2 Width	330 mm
Package Level 2 Depth / Length	400 mm
Package Level 2 Height	320 mm
Package Level 2 Gross Weight	13 kg
Package Level 2 EAN	4013614503924

Classifications

Object Classification Code	F
ETIM 5	EC000074 - Motor protective circuit-breaker
ETIM 6	EC000074 - Motor protection circuit-breaker
ETIM 7	EC000074 - Motor protection circuit-breaker
ETIM 8	EC000074 - Motor protection circuit-breaker
eClass	V11.0 : 27370401
UNSPSC	39121521
IDEA Granular Category Code (IGCC)	4731 >> Manual Starters
E-Number (Finland)	3707285
E-Number (Sweden)	3110052

Accessories

Identifier	Description	Type	Quantity	Unit Of Measure
1SAM201901R1001	HKF1-11 Aux.-contact for front mounting	HKF1-11	1	piece
1SAM201901R1201	HKF1-11K Aux.-contact for frontmounting with Push-In terminals	HKF1-11K	1	piece
1SAM201901R1002	HKF1-20 Aux.-contact 2NO, front mounting	HKF1-20	1	piece
1SAM201901R1202	HKF1-20K Aux.-contact for frontmounting with Push-In terminals	HKF1-20K	1	piece
1SAM201901R1004	HKF1-01 Aux.-contact for front mounting	HKF1-01	1	piece
1SAM201901R1003	HKF1-10 Aux.-contact for front mounting	HKF1-10	1	piece
1SAM201902R1002	HK1-20 Aux.-contact 2 NO	HK1-20	1	piece
1SAM201902R1202	HK1-20K Aux.-contact 2 NO with Push-In terminals	HK1-20K	1	piece
1SAM201902R1001	HK1-11 Aux.-contact 1 NO + 1 NC	HK1-11	1	piece
1SAM201902R1201	HK1-11K Aux.-contact 1 NO + 1 NC with Push-In terminals	HK1-11K	1	piece
1SAM201902R1003	HK1-02 Aux.-contact 2 NC	HK1-02	1	piece
1SAM201902R1203	HK1-02K Aux.-contact 2 NC with Push-In terminals	HK1-02K	1	piece
1SAM201902R1004	HK1-20L Aux.-cont. w. 2 lead contacts 2 NO	HK1-20L	1	piece
1SAM201902R1204	HK1-20LK Aux.-cont. w. 2 leading contacts 2 NO, with Push-In terminals	HK1-20LK	1	piece

1SAM201903R1002	SK1-20 Signaling Contact 2 NO	SK1-20	1	piece
1SAM201903R1202	SK1-20K Signaling Contact 2 NO with Push-In terminals	SK1-20K	1	piece
1SAM201903R1005	SK1-20AR Signaling Contact, 2NO with screw terminals	SK1-20AR	1	piece
1SAM201903R1205	SK1-20ARK Signaling Contact, 2NO with Push-in Spring terminals	SK1-20ARK	1	piece
1SAM201903R1001	SK1-11 Signaling Contact 1 NO + 1 NC	SK1-11	1	piece
1SAM201903R1201	SK1-11K Signaling Contact 1 NO + 1 NC with Push-In terminals	SK1-11K	1	piece
1SAM201903R1004	SK1-11AR Signaling Contact, 1NO+1NC with screw terminals	SK1-11AR	1	piece
1SAM201903R1204	SK1-11ARK Signaling Contact, 1NO+1NC with Push-in Spring terminals	SK1-11ARK	1	piece
1SAM201903R1003	SK1-02 Signaling Contact 2 NC	SK1-02	1	piece
1SAM201903R1203	SK1-02K Signaling Contact 2 NC with Push-In terminals	SK1-02K	1	piece
1SAM201903R1006	SK1-02AR Signaling Contact, 2NC with screw terminals	SK1-02AR	1	piece
1SAM201903R1206	SK1-02ARK Signaling Contact, 2NC with Push-in Spring terminals	SK1-02ARK	1	piece
1SAM301901R1002	CK1-20 Short-Circuit Signaling Contact 2 NO	CK1-20	1	piece
1SAM301901R1001	CK1-11 Short-Circuit Signaling Contact 1 NO + 1 NC	CK1-11	1	piece
1SAM301901R1003	CK1-02 Short-Circuit Signaling Contact 2 NC	CK1-02	1	piece
1SAM201910R1001	AA1-24 Shunt Trip 20-24V	AA1-24	1	piece
1SAM201910R1002	AA1-110 Shunt Trip 110V	AA1-110	1	piece
1SAM201910R1003	AA1-230 Shunt Trip 200-240V	AA1-230	1	piece
1SAM201910R1004	AA1-400 Shunt Trip 350-415V	AA1-400	1	piece
1SAM201904R1010	UA1-20 Undervoltage release 20V 50Hz / 24V 60 Hz	UA1-20	1	piece
1SAM201904R1001	UA1-24 Undervoltage release 24 V	UA1-24	1	piece
1SAM201904R1002	UA1-48 Undervoltage release 48V	UA1-48	1	piece
1SAM201904R1003	UA1-60 Undervoltage release 60V	UA1-60	1	piece
1SAM201904R1004	UA1-110 Undervoltage release 110V 110V 50Hz/120V 60Hz	UA1-110	1	piece
1SAM201904R1008	UA1-208 Undervoltage release 208V 60Hz	UA1-208	1	piece
1SAM201904R1005	UA1-230 Undervoltage release 230 V 50 Hz / 240 V 60 Hz	UA1-230	1	piece
1SAM201904R1006	UA1-400 Undervoltage release 400V	UA1-400	1	piece
1SAM201904R1007	UA1-415 Undervoltage release 415V 415V 50Hz/480V 60Hz	UA1-415	1	piece
1SAM201904R1009	UA1-575 Undervoltage release 575V 60Hz	UA1-575	1	piece
1SAM401923R1003	S2-M3-50 3-phase Power infeed Block for MS165, 50 mm ²	S2-M3-50	1	piece
1SAM401920R1002	PS2-2-0-125 3-phase busbar for 2 MS165, I _e =125A	PS2-2-0-125	1	piece
1SAM401920R1003	PS2-3-0-125 3-phase busbar for 3 MS165, I _e =125A	PS2-3-0-125	1	piece
1SAM401920R1004	PS2-4-0-125 3-phase busbar for 4 MS165, I _e =125A	PS2-4-0-125	1	piece
1SAM401920R1022	PS2-2-2-125 3-phase busbar for 2 MS165 with 2 HK/SK, I _e =125A	PS2-2-2-125	1	piece
1SAM401920R1023	PS2-3-2-125 3-phase busbar for 3 MS165 with 2 HK/SK, I _e =125A	PS2-3-2-125	1	piece
1SAM401920R1024	PS2-4-2-125 3-phase busbar for 4 MS165 with 2 HK/SK, I _e =125A	PS2-4-2-125	1	piece
1SAM401921R1001	BS2-3 Protection Cover for busbars	BS2-3	1	piece
1SAM401922R1001	KA165 Terminal Shroud for MS165/MO165	KA165	1	piece
GJF1101903R0002	SA2 Terminals and Installation Material	SA2	1	piece
1SAM201920R1011	MSHD-LTB Handle, IP64, black, 3 times lockable, defeatable, 0-TRIP-I	MSHD-LTB	1	piece
1SAM201920R1012	MSHD-LTY Handle, IP64, red/yellow, 3 times lockable, defeatable, 0-TRIP-I	MSHD-LTY	1	piece

1SAM201920R1000	MSH-AR Shaft alignment ring suitable for MSHD and MSH handles	MSH-AR	1	piece
1SAM101923R0002	MSMN Driver w. screw for manual motor staters, 6x6	MSMN	1	piece
1SAM101923R0012	MSMNO Driver w/o coding w. screw for manual motor staters, 6x6	MSMNO	1	piece
1SCA101647R1001	OXS6X85 SHAFT	OXS6X85	1	piece
1SCA108043R1001	OXS6X105 SHAFT	OXS6X105	1	piece
1SCA101655R1001	OXS6X130 SHAFT	OXS6X130	1	piece
1SCA101659R1001	OXS6X180 SHAFT	OXS6X180	1	piece

Categories

Low Voltage Products and Systems → Circuit Breakers → Manual Motor Starters
Low Voltage Products and Systems → Control Products → Manual Motor Starters → Manual Motor Starters

