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

© 2024 ABB. All rights reserved.

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^2t 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

© 2024 ABB. All rights reserved.

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	3P
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 mm² Flexible with Insulated Ferrule 1/2x 1 ... 35 mm² Flexible 1/2x 1 ... 35 mm² Rigid 1/2x 1 ... 4 mm² Solid 1/2x 1 ... 4 mm² Stranded 1/2x 1 ... 50 mm²
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

© 2024 ABB. All rights reserved.

	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)

ABB EcoSolutions

Environmental Product	1SAC200253H0001

© 2024 ABB. All rights reserved.

Declaration - EPD	
End of Life Instructions	1SAC00284H0001

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^2t Characteristic	1SAM400506F0001
IECEx Certificate	1SAA918000-4001
KC Certificate	1SAA963001-1501
LR Certificate	1SAA918001-0501
RMRS Certificate	1SAA918000-0704
UL Certificate	E137861-20150206 E345003-20150206

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

© 2024 ABB. All rights reserved.

eClass	V11.0 : 27370401
UNSPSC	39121521
IDEA Granular Category Code (IGCC)	4731 >> Manual Starters
E-Number (Finland)	3707285
E-Number (Norway)	4364121
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

© 2024 ABB. All rights reserved.

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 mm²	S2-M3-50	1	piece
1SAM401920R1002	PS2-2-0-125 3-phase busbar for 2 MS165, Ie=125A	PS2-2-0-125	1	piece
1SAM401920R1003	PS2-3-0-125 3-phase busbar for 3 MS165, Ie=125A	PS2-3-0-125	1	piece
1SAM401920R1004	PS2-4-0-125 3-phase busbar for 4 MS165, Ie=125A	PS2-4-0-125	1	piece
1SAM401920R1022	PS2-2-2-125 3-phase busbar for 2 MS165 with 2 HK/SK, Ie=125A	PS2-2-2-125	1	piece
1SAM401920R1023	PS2-3-2-125 3-phase busbar for 3 MS165 with 2 HK/SK, Ie=125A	PS2-3-2-125	1	piece
1SAM401920R1024	PS2-4-2-125 3-phase busbar for 4 MS165 with 2 HK/SK, Ie=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	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

© 2024 ABB. All rights reserved.

Categories

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

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



© 2024 ABB. All rights reserved.