

02

Main accessories with screw terminals

MS132-(K)B, MS165-B, MO132-B, MO165-B



AA1-24



UA1-24

Suitable for	Rated control supply voltage		Type	Order code	Pkg qty	Weight (1 pce)
	50 Hz V AC	60 Hz V AC				
					pce	kg

Shunt trips – mountable on the left

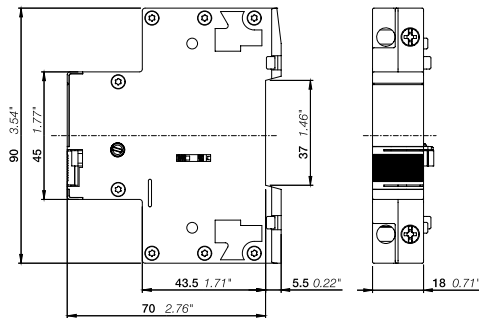
MS132-(K)B,	20 ... 24	20 ... 24	AA1-24	1SAM201910R1001	1	0.100
MS165-B, MO132-B,	110	110	AA1-110	1SAM201910R1002	1	0.100
MO165-B	200 ... 240	200 ... 240	AA1-230	1SAM201910R1003	1	0.100
	350 ... 415	350 ... 415	AA1-400	1SAM201910R1004	1	0.100

Undervoltage releases – mountable on the left

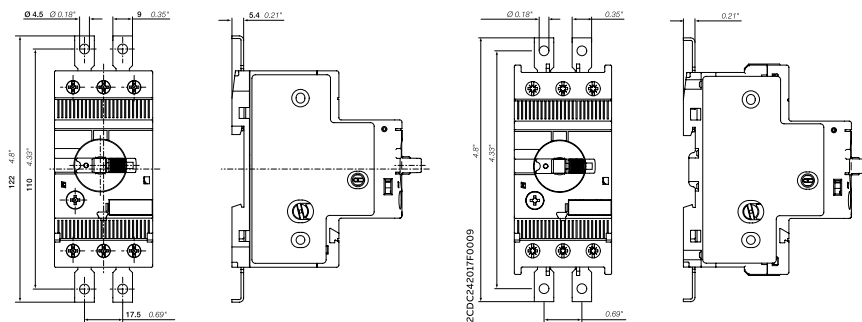
MS132-(K)B,	20	24	UA1-20	1SAM201904R1010	1	0.100
MS165-B, MO132-B,	24	-	UA1-24	1SAM201904R1001	1	0.100
MO165-B	48	-	UA1-48	1SAM201904R1002	1	0.100
	60	-	UA1-60	1SAM201904R1003	1	0.100
	110	120	UA1-110	1SAM201904R1004	1	0.100
	-	208	UA1-208	1SAM201904R1008	1	0.100
	230	240	UA1-230	1SAM201904R1005	1	0.100
	400	-	UA1-400	1SAM201904R1006	1	0.100
	415	480	UA1-415	1SAM201904R1007	1	0.100
	-	575	UA1-575	1SAM201904R1009	1	0.100

Screw fixing kit

MS132-(K)B,	-	-	FS116	1SAM201909R1001	10	0.020
MO132-B						



AA1, UA1



MS132 + FS116 ≤ 10 A

MS132 + FS116 > 10 A

Main dimensions mm, inches

ZDC242018F0009

Main accessories with Push-in Spring terminals

MS132-(K)B, MS165-B, MO132-B, MO165-B



HKF1-11K

2CDC241027V0017



HK1-11K

2CDC241028V0017



SK1-11K

2CDC241029V0017

Manual motor starters can be equipped with auxiliary contacts for lateral and front mounting as well as signaling contacts for lateral mounting. The accessories are equipped with Push-in Spring terminals that enable tool-free wiring. A variety of combinations is possible as required for the application. The auxiliary contacts change position with the main contacts. The signaling contact SK1 signals tripping regardless if it was caused by short-circuit or overload. These main accessories are suitable throughout the MS132-(K)B/MS165-B range.

Suitable for	Auxiliary contacts N.O.	Auxiliary contacts N.C.	Description	Type	Order code	Pkg qty	Weight (1 pce) kg
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Auxiliary contacts - mountable on the front

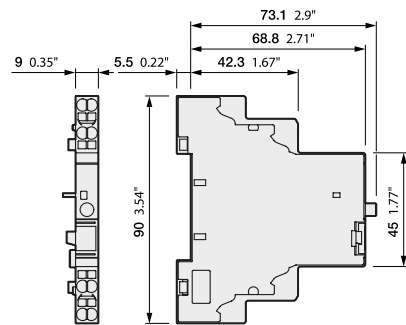
MS132-(K)B,	1	1		HKF1-11K	1SAM201901R1201	10	0.016
MS165-B,	2	0		HKF1-20K	1SAM201901R1202	10	0.016
MO132-B,							
MO165-B.							

Auxiliary contacts - mountable on the right

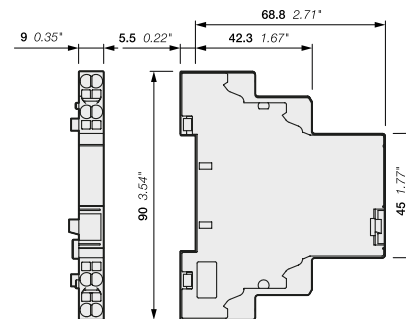
MS132-(K)B,	1	1	max. 2 pieces	HK1-11K	1SAM201902R1201	2	0.035
MS165-B,	2	0	max. 2 pieces	HK1-20K	1SAM201902R1202	2	0.035
MO132-B,	0	2	max. 2 pieces	HK1-02K	1SAM201902R1203	2	0.035
MO165-B.	2	0	with leading contacts	HK1-20LK	1SAM201902R1204	2	0.035

Signaling contacts - mountable on the right

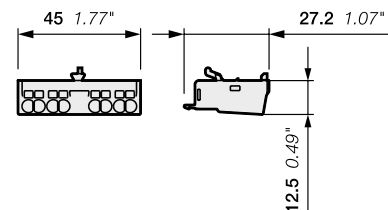
MS132-(K)B,	1	1	for tripped alarm	SK1-11K	1SAM201903R1201	2	0.035
MS165,	2	0	for tripped alarm	SK1-20K	1SAM201903R1202	2	0.035
MO132, MO165	0	2	for tripped alarm	SK1-02K	1SAM201903R1203	2	0.035



SK1-K



HK1-K



HKF1-K

Main dimensions mm, inches

Main accessories

MS132-(K)B, MS165-B, MO132-B, MO165-B

02





General technical data

Type	HK1, SK1, CK1	HKF1	
Standards	IEC/EN 60947-1, IEC/EN 60947-2, IEC/EN 60947-4-1, IEC 60077-2 (applicable parts), IEC 60077-1 (applicable parts), IEC 61373, EN 45545-2.		
Rated operational voltage U_e	690 V AC / 600 DC	250 V AC / 250 V DC	
Conventional free-air thermal current I_{th}	6 A	5 A	
Rated frequency	50/60 Hz		
Rated impulse withstand voltage U_{imp}	6 kV		
Rated insulation voltage U_i	690 V AC	250 V AC	
Pollution degree	3		
Ambient air temperature	Operation Storage	-25 ... +70 °C -50 ... +80 °C	
Resistance to shock acc. to IEC 60068-2-27	25g / 11 ms		
Resistance to vibrations acc. to IEC 60068-2-6	5g / 3 ... 150 Hz		
I_e / Rated operational current AC-15 acc. to IEC/EN 60947-5-1 for utilization category	24 V, 120 V	6 A	3 A
	240 V	4 A	1.5 A
	400 V	3 A	-
	440 V, 690 V	1 A	-
	I_e / Rated operational current DC-13 acc. to IEC/EN 60947-5-1 for utilization category	24 V	2 A
	125 V	0.55 A	0.27 A
	250 V	0.27 A	0.11 A
	440 V, 600 V	0.15 A	-
Minimum switching capacity	17 V / 5 mA		
Short-circuit protective device	N.C., 95-96 N.O., 97-98	10 A Type gG 10 A Type gG	
Duty time	100 %		
Mounting	Right side of manual motor starter	Front of manual motor starter	
Mounting positions	1-6		
Mechanical durability	100000 cycles (CK1: 10000 cycles)		
Electrical durability	100000 cycles (CK1: 10000 cycles)		

Contact utilization characteristics according to UL/CSA

Type	HK1, SK1, CK1	HKF1
Standards	UL 60947-1, UL 60947-4-1 (UL 508), CSA C22.2 No.60947-4-1	(CSA C22.2 No.14)
Rated operational voltage U_e acc. to UL/CSA	600 V AC / 600 V DC	
Pilot duty	B600, Q600	B300, R300
AC thermal rated current	5 A	5 A
AC maximum volt-ampere making	3600 VA	3600 VA
AC maximum volt-ampere breaking	360 VA	360 VA
DC thermal rated current	2.5 A	1 A
DC maximum volt-ampere making-breaking	69 VA	28 VA

Connecting characteristics - Auxiliary circuit

Type	HK1, SK1, CK1	HKF1
Connecting capacity		
 Rigid	1 or 2 x 1 ... 1.5 mm ² / 0.5 ... 2.5 mm ² (with Push-in Spring terminals)	1 ... 2.5 mm ²
 Flexible with ferrule	1 or 2 x 0.75 ... 1.5 mm ² / 0.5 ... 2.5 mm ² (with Push-in Spring terminals)	
 Flexible with insulated ferrule	1 or 2 x 0.75 ... 1.5 mm ² / 0.5 ... 1.5 mm ² (with Push-in Spring terminals)	
 Flexible	1 or 2 x 0.75 ... 1.5 mm ² / 0.5 ... 2.5 mm ² (with Push-in Spring terminals)	
	Stranded acc. to UL/CSA	1 or 2 x AWG 16-14 / AWG 20 - 14 (with Push-in Spring terminals)
Stripping length	8 mm / 10 mm (with Push-in Spring terminals)	
Tightening torque	0.8 ... 1.2 Nm / 7 lb.in	
Recommended screw driver	Pozidriv 2	
	Flat Ø 3 mm x 0.5 mm (with Push-in Spring terminals)	

Main accessories

MS132-(K)B, MS165-B, MO132-B, MO165-B

General technical data

Type	UA1	AA1
Standards	IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60947-1, UL 60947-4-1	(UL 508), CSA C22.2 No.60947-4-1 (CSA C22.2 No.14)
Rated control supply voltage	see ordering details	AA1-24: 20-24 V 50/60 Hz; 20-70 V 50/60 Hz KB = 5 s, 20-70 V DC ON-Period = 5 s AA1-100: 110 V 50/60 Hz; 110-200 V 50/60 Hz KB = 5 s, 110-200 V DC ON-Period = 5 s AA1-230: 200-240 V 50/60 Hz, 200-350 V 50/60 Hz KB = 5 s, 200-350 V DC ON-Period = 5 s AA1-400: 350-415 V 50/60 Hz, 350-500 V 50/60 Hz KB = 5 s, 350-500 V DC ON-Period = 5 s
Rated frequency	see ordering details	50/60 Hz, DC
Operating voltage	Tripping 0.35 ... 0.7 x Us Coil operating voltage 0.85 ... 1.1 x Us	0.7 ... 1.1 x Us -
Power consumption	Pull-in AC on request DC on request Holding AC on request DC on request	on request on request - -
Rated impulse withstand voltage U_{imp}	6 kV	6 kV
Rated insulation voltage U_i	690 V	690 V
Pollution degree	3	3
Ambient air temperature	Operation -25 ... +60 °C Storage -50 ... +80 °C	-25 ... +60 °C -50 ... +80 °C
Resistance to shock acc. to IEC 60068-2-27	25g / 11 ms	25g / 11 ms
Resistance to vibrations acc. to IEC 60068-2-6	5g / 3 ... 150 Hz	5g / 3 ... 150 Hz
Mounting	left side of manual motor starters	left side of manual motor starters
Mounting positions	-	-

Note : For AA1 please consider 15 min OFF-period after max. 5 s ON-period, for voltages above the rated values.

Connecting characteristics

Auxiliary circuit

Type	UA1	AA1
Connecting capacity		
 Rigid 1 or 2 x	1 ... 4 mm ²	
 Flexible with ferrule 1 or 2 x	0.75 ... 2.5 mm ²	
 Flexible with insulated ferrule 1 x	0.75 ... 2.5 mm ²	
 Flexible with insulated ferrule 2 x	0.75 ... 1.5 mm ²	
 Flexible 1 or 2 x	0.75 ... 2.5 mm ²	
Stranded acc. to UL/CSA 1 or 2 x	AWG 16-12	
Stripping length	10 mm	
Tightening torque	0.8 ... 1.2 Nm / 7 lb.in	
Recommended screw driver	Pozidriv 2	