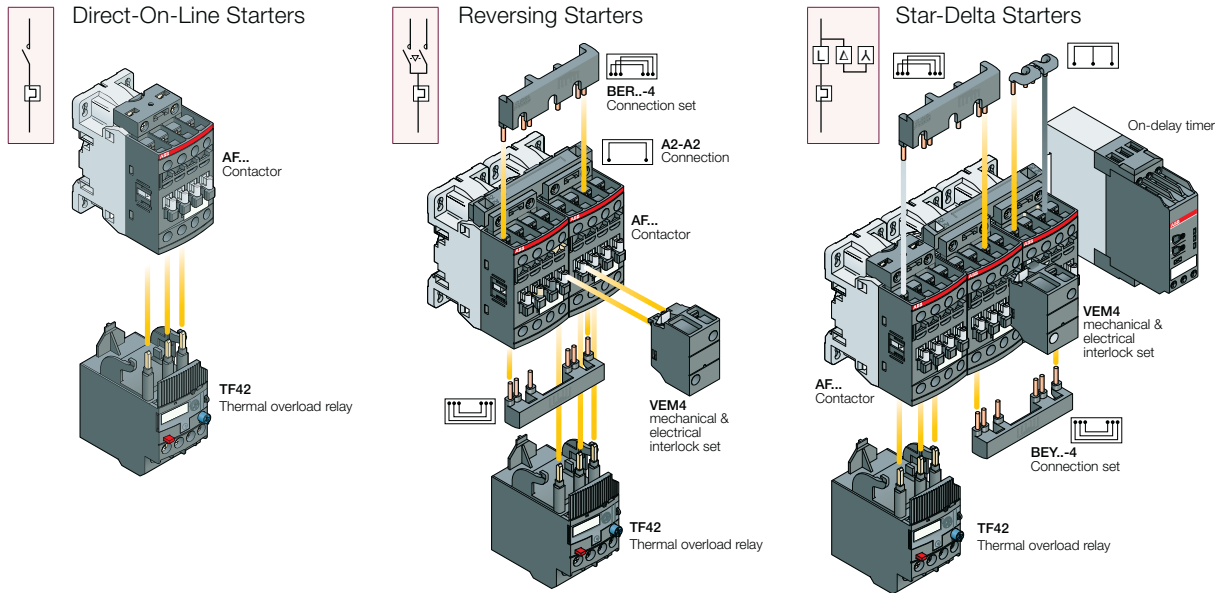




Motor Protection and Control up to 18kW/20hp

Overview

Starters Protected by Thermal Overload Relays



Greater flexibility with fewer components



Meets all relevant electrical standards



Allows the design engineer greater flexibility



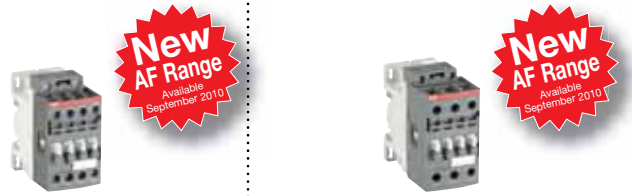
Reliability of operation through years of experience



Full range of product and technical information place this part number in a search engine and download
1SBC100155C0201

3 Pole Block Contactors

for all industrial applications
and motor starting



IEC	AC-3 Rated Power	$\theta \leq 55^\circ\text{C}$, 400 V	kW	4	5.5	7.5	11	15	18.5
UL/CSA	3-phase Motor Power	480 V	hp	5	7.5	10	15	20	20
AC Control Supply			Type	AF09	AF12	AF16	AF26	AF30	AF38
DC Control Supply			Type	AF09	AF12	AF16	AF26	AF30	AF38
AC / DC Control Supply			Type	AF09	AF12	AF16	AF26	AF30	AF38
IEC	AC-3 Rated Current	$\theta \leq 55^\circ\text{C}$, 400 V	A	9	12	18	26	32	38
	AC-1 Rated Current	$\theta \leq 40^\circ\text{C}$, 690 V	A	25	28	30	45	50	50
UL/CSA	NEMA Size			00	0	—	1	—	—
	General Use Rating	600 V	A	25	28	30	45	50	50

Main Accessories

Auxiliary Contact Blocks	Front mounting	CA4-10 (1 x N.O.)	CA4-01 (1 x N.C.)
	Side mounting	CAL4-11 (1 x N.O. + 1 x N.C.)	
Timers	Pneumatic (Front mounting)		
	Electronic*		
Interlocking Units	Mechanical	VM4	
	Mechanical / Electrical	VEM4	
Connection Sets	For reversing contactors	BER16-4	BER38-4
Surge Suppressors	Varistor (AC/DC)		
	RC Type (AC)		
	Transil diode (DC)		

* AF contactors do not need TE5S electronic timer

Overload Relays

Thermal Relays		Class 10 (10A or 20 for TA42DU to TA80DU)	TF42	TF42
Electronic Relays		Class 10E, 20E, 30E	EF19 (0.10...18.9 A)	EF19 (0.10...18.9 A) EF45 (9...45 A)
Accessories for Thermal Overload Relays		Remote tripping coil		
		Remote reset coil		
		Wall/separate mounting kit		

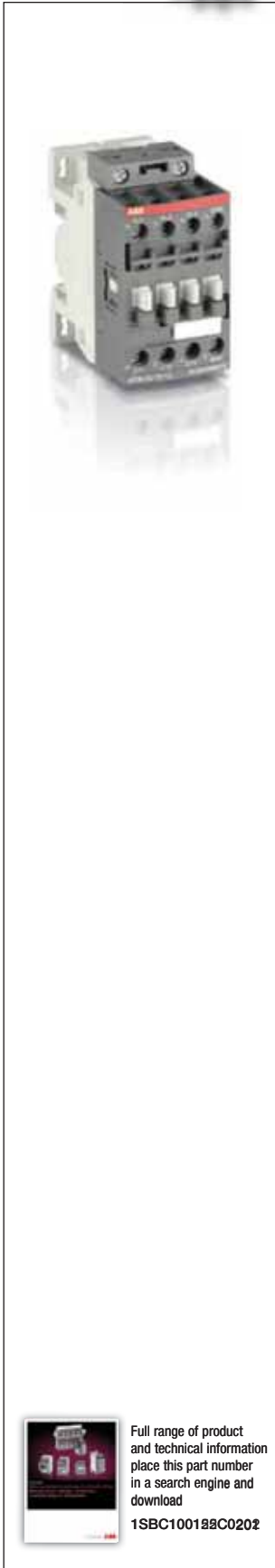
Manual Motor Starters

Manual Motor Starters		Thermal / magnetic protection	Class 10	MS116 for class 10A (0.10...16 A) I _{cs} up to 50 kA	MS450 (11...50 A)
				MS132 (0.10...32 A) I _{cs} up to 100 kA	MS497 (11...100 A)
					MS451 (11...50 A)
		Magnetic only types			
Accessories		For contactor mounting	BEA16-4	BEA38-4	HK4, HKS4, UA4, AA4, PS4, S4, SK4
		Aux. trip units, aux. contacts, busbars	HKF1, HK1, UA1, AA1, PS1, S1, SK1, CK1 (MS132 only)		



AF9 ... AF12 contactors

AC/DC Operated with screw terminals



AF9 ... AF12 Contactors

Product Hierarchy 1700009

AC-3 400V kW	AC-3 400V A	AC-1 40°C A	Aux NO	Aux NC	Description	Order Code	Price £
4	9	25	1	-	AF09-30-10-12 48-130V50/60HZ-DC	1SBL137001R1210	19.38
					AF09-30-10-13 100-250V50/60HZ-DC	1SBL137001R1310	19.38
					AF09-30-10-14 250-500V50/60HZ-DC	1SBL137001R1410	19.38
					AF09Z-30-10-20 12-20VDC	1SBL136001R2010	38.55
					AF09Z-30-10-21 24-60V50/60HZ 20-60VDC	1SBL136001R2110	38.55
			-	1	AF09-30-01-12 48-130V50/60HZ-DC	1SBL137001R1201	19.38
					AF09-30-01-13 100-250V50/60HZ-DC	1SBL137001R1301	19.38
					AF09-30-01-14 250-500V50/60HZ-DC	1SBL137001R1401	19.38
					AF09Z-30-01-20 12-20VDC	1SBL136001R2001	38.55
					AF09Z-30-01-21 24-60V50/60HZ 20-60VDC	1SBL136001R2101	38.55
		-	-	AF09-22-00-12 48-130V50/60HZ-DC	1SBL137501R1200	20.25	
				AF09-22-00-13 100-250V50/60HZ-DC	1SBL137501R1300	20.25	
				AF09-22-00-14 250-500V50/60HZ-DC	1SBL137501R1400	20.25	
				AF09Z-22-00-21 24-60V50/60HZ 20-60VDC	1SBL136501R2100	45.88	
				AF09-40-00-12 48-130V50/60HZ-DC	1SBL137201R1200	20.25	
				AF09-40-00-13 100-250V50/60HZ-DC	1SBL137201R1300	20.25	
				AF09-40-00-14 250-500V50/60HZ-DC	1SBL137201R1400	20.25	
				AF09Z-40-00-20 12-20VDC	1SBL136201R2000	40.72	
		AF09Z-40-00-21 24-60V50/60HZ 20-60VDC	1SBL136201R2100	40.72			
		5.5	12	27	1	-	AF12Z-30-10-20 12-20VDC
AF12-30-10-12 48-130V50/60HZ-DC	1SBL157001R1210						23.37
AF12-30-10-13 100-250V50/60HZ-DC	1SBL157001R1310						23.37
AF12-30-10-14 250-500V50/60HZ-DC	1SBL157001R1410						23.37
AF12Z-30-10-21 24-60V50/60HZ 20-60VDC	1SBL156001R2110						40.72
-	1				AF12Z-30-01-20 12-20VDC	1SBL156001R2001	40.72
					AF12-30-01-12 48-130V50/60HZ-DC	1SBL157001R1201	23.37
					AF12-30-01-13 100-250V50/60HZ-DC	1SBL157001R1301	23.37
					AF12-30-01-14 250-500V50/60HZ-DC	1SBL157001R1401	23.37
					AF12Z-30-01-21 24-60V50/60HZ 20-60VDC	1SBL156001R2101	40.72



Full range of product and technical information place this part number in a search engine and download
1SBC100122C0202



AF16 ... AF38 contactors

AC/DC Operated with screw terminals



AF16 ... AF38 Contactors

Product Hierarchy 1700009

AC-3 400V kW	AC-3 400V A	AC-1 40°C A	Aux NO	Aux NC	Description	Order Code	Price £			
7.5	17	30	1	-	AF16-30-10-12 48-130V50/60HZ-DC	1SBL177001R1210	30.86			
					AF16-30-10-13 100-250V50/60HZ-DC	1SBL177001R1310	30.86			
					AF16-30-10-14 250-500V50/60HZ-DC	1SBL177001R1410	30.86			
					AF16Z-30-10-20 12-20VDC	1SBL176001R2010	53.08			
					AF16Z-30-10-21 24-60V50/60HZ 20-60VDC	1SBL176001R2110	53.08			
			-	1	AF16-30-01-12 48-130V50/60HZ-DC	1SBL177001R1201	30.86			
					AF16-30-01-13 100-250V50/60HZ-DC	1SBL177001R1301	30.86			
					AF16-30-01-14 250-500V50/60HZ-DC	1SBL177001R1401	30.86			
					AF16Z-30-01-20 12-20VDC	1SBL176001R2001	53.08			
					AF16Z-30-01-21 24-60V50/60HZ 20-60VDC	1SBL176001R2101	53.08			
			-	-	AF16-22-00-12 48-130V50/60HZ-DC	1SBL177501R1200	36.35			
					AF16-22-00-13 100-250V50/60HZ-DC	1SBL177501R1300	36.35			
					AF16-22-00-14 250-500V50/60HZ-DC	1SBL177501R1400	36.35			
					AF16Z-22-00-21 24-60V50/60HZ 20-60VDC	1SBL176501R2100	56.33			
			-	-	AF16-40-00-12 48-130V50/60HZ-DC	1SBL177201R1200	32.60			
					AF16-40-00-13 100-250V50/60HZ-DC	1SBL177201R1300	32.60			
					AF16-40-00-14 250-500V50/60HZ-DC	1SBL177201R1400	32.60			
					AF16Z-40-00-20 12-20VDC	1SBL176201R2000	54.57			
								AF16Z-40-00-21 24-60V50/60HZ 20-60VDC	1SBL176201R2100	54.57
			11	26	45	-	-	AF26-30-00-12 48-130V50/60HZ-DC	1SBL237001R1200	40.07
AF26-30-00-13 100-250V50/60HZ-DC	1SBL237001R1300	40.07								
AF26-30-00-14 250-500V50/60HZ-DC	1SBL237001R1400	40.07								
AF26Z-30-00-20 12-20VDC	1SBL236001R2000	61.40								
AF26Z-30-00-21 24-60V50/60HZ 20-60VDC	1SBL236001R2100	61.40								
15	32	55	-	-	AF30-30-00-12 48-130V50/60HZ-DC	1SBL277001R1200	61.77			
					AF30-30-00-13 100-250V50/60HZ-DC	1SBL277001R1300	61.77			
					AF30-30-00-14 250-500V50/60HZ-DC	1SBL277001R1400	61.77			
					AF30Z-30-00-20 12-20VDC	1SBL276001R2000	80.63			
					AF30Z-30-00-21 24-60V50/60HZ 20-60VDC	1SBL276001R2100	80.63			
18.5	35	60	-	-	AF38-30-00-12 48-130V50/60HZ-DC	1SBL297001R1200	76.79			
					AF38-30-00-13 100-250V50/60HZ-DC	1SBL297001R1300	76.79			
					AF38-30-00-14 250-500V50/60HZ-DC	1SBL297001R1400	76.79			
					AF38Z-30-00-20 12-20VDC	1SBL296001R2000	91.19			
					AF38Z-30-00-21 24-60V50/60HZ 20-60VDC	1SBL296001R2100	91.19			



Full range of product and technical information place this part number in a search engine and download
1SBC100122C0202



NF contactor relays

AC/DC Operated with screw terminals



NF Contactor Relays

NF Contactor Relays			Product Hierarchy 1700009	
NO	NC	Part No	Order Code	Price £
2	2	NF22E-12 48-130V50/60HZ-DC	1SBH137001R1222	19.59
		NF22E-13 100-250V50/60HZ-DC	1SBH137001R1322	19.59
		NFZ22E-21 24-60V50/60HZ 20-60VDC	1SBH136001R2122	40.20
3	1	NF31E-12 48-130V50/60HZ-DC	1SBH137001R1231	19.59
		NF31E-13 100-250V50/60HZ-DC	1SBH137001R1331	19.59
		NFZ31E-21 24-60V50/60HZ 20-60VDC	1SBH136001R2131	40.20
4	-	NF40E-12 48-130V50/60HZ-DC	1SBH137001R1240	19.59
		NF40E-13 100-250V50/60HZ-DC	1SBH137001R1340	19.59
		NFZ40E-21 24-60V50/60HZ 20-60VDC	1SBH136001R2140	40.20



Full range of product and technical information place this part number in a search engine and download
1SBC100155C0201



AF09 ... AF38 Main Accessories

for contactors and relays

1



Front mounted instantaneous auxiliary contacts

For Contactor	NO	NC	Part No.	Product Hierarchy 1700009	
				Order Code	Price
AF09 ... AF38	1	0	CA4-10	1SBN010110R1010	2.82
	1	0	CA4-10-T	1SBN010110T1010	2.82
	0	1	CA4-01	1SBN010110R1001	2.82
	0	1	CA4-01-T	1SBN010110T1001	2.82
AF09 ... AF16-30-10	2	2	CA4-22M	1SBN010140R1122	10.08
	3	1	CA4-31M	1SBN010140R1131	10.08
	1	3	CA4-13M	1SBN010140R1113	10.08
	0	4	CA4-04M	1SBN010140R1104	10.08
AF26 ... AF38-30-00	2	2	CA4-22E	1SBN010140R1022	10.08
	3	1	CA4-31E	1SBN010140R1031	10.08
	4	0	CA4-40E	1SBN010140R1040	10.08
	0	4	CA4-04E	1SBN010140R1004	10.08
AF09 ... AF16-30-10	2	2	CA4-22U	1SBN010140R1322	10.08
	3	1	CA4-31U	1SBN010140R1331	10.08
	4	0	CA4-40U	1SBN010140R1340	10.08

Front mounted auxiliary contacts with NO leading and NC lagging

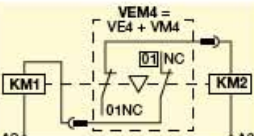
AF09 ... AF38	1	0	CC4-10	1SBN010111R1010	8.56
	0	1	CC4-01	1SBN010111R1001	8.56

Side mounted instantaneous auxiliary contacts

AF09 ... AF38	1	1	CAL4-11	1SBN010120R1011	6.40
	1	1	CAL4-11-T	1SBN010120T1011	6.40

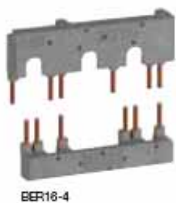
Front mounted instantaneous auxiliary contacts with A1/A2 terminal blocks

AF09 ... AF16-30-10	1	1	CAT4-11E	1SBN010151R1011	6.07
AF26 ... AF38-30-00	1	1	CAT4-11M	1SBN010151R1111	6.07
AF09 ... AF16-30-10	1	1	CAT4-11U	1SBN010151R1311	6.07



Add on Mechanical Interlocks

		Product Hierarchy 1700009	
Mechanical and Electrical Interlock Unit	VEM4	1SBN030111R1000	11.30
Mechanical Interlock Unit	VM4	1SBN030105T1000	6.04



Connecting Links

		Product Hierarchy 1700009	
Connecting Link	BEA16-4	1SBN081306T1000	3.61
Connecting Link	BEA38-4	1SBN082306T2000	4.39
Connection kit for PSR24-30 and MS132	PSR30-MS132	1SFA896212R1001	12.09
Connection Set for Reversing Starter	BER16-4	1SBN081311R1000	7.43
Connection Set for Reversing Starter	BER38-4	1SBN082311R1000	10.24
Connection Set for Star-Delta Starter	BEY16-4	1SBN081313R2000	11.64
Connection Set for Star-Delta Starter	BEY38-4	1SBN082713R2000	15.97



Full range of product and technical information place this part number in a search engine and download
1SBC100155C0201



Overload Protection



EF19



EF45

Electronic Overload Relays

Setting [A]	Part No	Product Hierarchy 1700006	
		Order Code	Price
0.10...0.32 A	EF19-0.32	1SAX121001R1101	51.91
0.30...1.00 A	EF19-1.0	1SAX121001R1102	51.91
0.80...2.70 A	EF19-2.7	1SAX121001R1103	51.91
1.90...6.30 A	EF19-6.3	1SAX121001R1104	54.87
5.70...18.9 A	EF19-18.9	1SAX121001R1105	54.87
9.00...30.0 A	EF45-30	1SAX221001R1101	81.52
15.0...45.0 A	EF45-45	1SAX221001R1102	98.48

Thermal Overload Relays

0.10...0.13 A	TF42-0.13	1SAZ721201R1005	25.50
0.13...0.17 A	TF42-0.17	1SAZ721201R1008	25.50
0.17...0.23 A	TF42-0.23	1SAZ721201R1009	25.50
0.23...0.31 A	TF42-0.31	1SAZ721201R1013	25.50
0.31...0.41 A	TF42-0.41	1SAZ721201R1014	25.50
0.41...0.55 A	TF42-0.55	1SAZ721201R1017	25.50
0.55...0.74 A	TF42-0.74	1SAZ721201R1021	25.50
0.74...1.00 A	TF42-1.0	1SAZ721201R1023	25.50
1.00...1.30 A	TF42-1.3	1SAZ721201R1025	25.50
1.30...1.70 A	TF42-1.7	1SAZ721201R1028	25.50
1.70...2.30 A	TF42-2.3	1SAZ721201R1031	25.50
2.30...3.10 A	TF42-3.1	1SAZ721201R1033	25.50
3.10...4.20 A	TF42-4.2	1SAZ721201R1035	25.50
4.20...5.70 A	TF42-5.7	1SAZ721201R1038	25.50
5.70...7.60 A	TF42-7.6	1SAZ721201R1040	25.50
7.60...10.0 A	TF42-10	1SAZ721201R1043	25.50
10.0...13.0 A	TF42-13	1SAZ721201R1045	26.58
13.0...16.0 A	TF42-16	1SAZ721201R1047	31.84
16.0...20.0 A	TF42-20	1SAZ721201R1049	32.95
20.0...24.0 A	TF42-24	1SAZ721201R1051	41.82
24.0...29.0 A	TF42-29	1SAZ721201R1052	44.24
29.0...35.0 A	TF42-35	1SAZ721201R1053	46.66
35.0...38.0 A	TF42-38	1SAZ721201R1055	46.66



Full range of product and technical information place this part number in a search engine and download
1SBC100155C0201