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BALDOR

Multipurpose Solid State Soft Starter



8 thru 420 Amps **208/230/460V 60 Hz.**
8 thru 30 Amps **208/230/460/575V 60 Hz.**

Applications: Controlled ramp start and stop, minimize spillage in material handling applications and water hammer in pumping equipment. Current limit provides a current ceiling to limit peak demand on start and constant current starting of high inertial loads such as chippers, centrifuges and compressors. Typical applications include: small and large pumps, conveyors, low and high inertia fans, reciprocating compressors, screw and rotary compressors.

Features: Six SCR power devices and several enclosure options. Tachometer feedback may be used to provide consistent starting independent of load conditions on textile, material handling and pumping equipment.

Design Specifications

- Current feedback
- Microprocessor Control
- Power factor sensing
- Energy optimization
- One programmable input
- Two programmable form C outputs
- Programmable current limit

Environmental and Operating Conditions

- Input voltage 3 phase 208-575V
- Control voltage 120VAC
- Input frequency 50/60 Hz
- Humidity 90% RH condensing
- 3000 feet altitude
- 40°C ambient temperature

Protective Features

- Current limit
- Shorted SCR detection
- SCR overload
- Shear pin-over-current detection
- Low current/under-load detection
- Input phase loss on start up
- Heat sink over-temperature

Model Number	208/230/460 VAC 60 Hz.		MA7-008-CA	MA7-016-CA	MA7-030-CA	MB7-055-CP	MB7-080-CP	MB7-160-CP	MB7-250-CP	MB7-420-CP
Control only	208/230/460/575 VAC 60 Hz.		MA8-008-CA	MA8-016-CA	MA8-030-CA	—	—	—	—	—
Output Ratings	Hp Rating	230 VAC	2	5	10	20	30	60	100	150
		460 VAC	5	10	20	40	60	125	200	350
		575 VAC	5	10	20	—	—	—	—	—
	Current Rating		8 Amp	16 Amp	30 Amp	55 Amp	80 Amp	160 Amp	240 Amp	420 Amp
	Overload Rating		Continuous 115% of FLA; 400% for 30 seconds							
	Derate		Above 1000m (3300 Ft.) decrease amp rating 1% for each additional 100m (330 ft.)							
			Above 45° (115°F) decrease amp rating 1.% for each additional °C (0.84%/°F)							
Input Rating	Frequency		60 Hz. ±5%							
	Voltage		+10% to -15% (except for 575 VAC units max. VAC is 620)							
	Phase		Three Phase							
Control Spec.	Control Method		6 SCRs connected in inverse parallel for full-wave control							
	Start Time		Adjustable 3-50 seconds (current limit starting is not timed)							
	Stop Time		Adjustable 5-50 seconds to extend stopping time							
	Initial Torque		Adjustable starting 0-75%: Stopping 0-100%							
	Current Limit		Adjustable 75-400% of full load amps							
	Pulse Time		Adjustable 0-1.5 seconds							
	Current Monitor		Adjustable 50-400% of full load amps (causes a contact closure or control shut down when current level is reached after starting)							
	Power Factor		Adjustable for max. reduced motor voltage dependent on motor load							
	Control Power		Self-powered			External Transformer				
	Status Contacts		125 VAC at 0.5 Amp normally open							
SCR Spec.	Peak Inverse Voltage		460 VAC Starters 1200 VAC							
			575 VAC Starters 1600 VAC							
	Heat Loss		3.3 watts per running amp							
Protective Functions	Over Current		Over current shut down at 450% of motor full load amps							
	Shorted SCR Detection		Shunt trip contact							
	SCR Thermostat		Trips on over temperature of heat sink on 55 amp sizes and above							
	Voltage Transient		Metal oxide varistor (MOV)							
Ambient Conditions	Temperature		Enclosed 0-45°C (32 to 113°F) open/panel 0 to 50°C (32 to 122°F)							
	Cooling		Convection			Forced Air				

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Multipurpose Solid State Soft Starter

Amp Size	Max Hp at VAC 208	230	460	575	Catalog Number	List Price	Mult. Sym.
Combination Starter [a]							
NEMA 12 (can also be used for NEMA 1)							
55	15	20	40	—	**MB7-055-GC**	5,834	E7
80	25	30	60	—	**MB7-080-GC**	6,398	E7
160	50	60	125	—	**MB7-160-GC**	13,634	E7
250	75	100	200	—	**MB7-250-GC**	15,685	E7
420	150	150	350	—	**MB7-420-GC**	20,111	E7
NEMA 1 - 208/230/460 Volts							
80	25	30	60	—	**MB7-080-AB**	7,748	E7
160	50	60	125	—	**MB7-160-AB**	10,217	E7
250	60	75	150	—	**MB7-250-AB-1**	12,200	E7
250	75	100	200	—	**MB7-250-AB**	12,754	E7
420	150	150	350	—	**MB7-420-AB**	14,645	E7
Non-Combination Starter [a]							
NEMA 1							
160	50	60	125	—	**MB7-160-BB**	8,641	E7
250	75	100	200	—	**MB7-250-BB**	9,615	E7
420	150	150	350	—	**MB7-420-BB**	11,557	E7
Control Only							
Open/Panel							
8	2	2	5	—	**MA7-008-CA**	1,269	E7
16	3	5	10	—	**MA7-016-CA**	1,335	E7
30	7.5	10	20	—	**MA7-030-CA**	1,566	E7
55	15	20	40	—	**MB7-055-CP**	2,968	E7
80	25	30	60	—	**MB7-080-CP**	4,253	E7
160	50	60	125	—	**MB7-160-CP**	5,535	E7
250	75	100	200	—	**MB7-250-CP**	7,584	E7
420	150	150	350	—	**MB7-420-CP**	9,526	E7
8	2	2	5	5	**MA8-008-CA**	1,324	E7
16	3	5	10	10	**MA8-016-CA**	1,402	E7
30	7.5	10	20	25	**MA8-030-CA**	1,621	E7
NEMA 1							
160	50	60	125	—	**MB7-160-CB**	6,724	E7
250	75	100	200	—	**MB7-250-CB**	8,813	E7
420	150	150	350	—	**MB7-420-CB**	10,614	E7

[a] Combination Starter includes control, overload relay and circuit breaker. Non-combination Starter includes control and overload relay.
[b] Uses a shunt bypass contactor to short SCR after ramp up (not a full voltage bypass starter). Custom controls available.

Single Phase Starter



7 thru 110 Amps — 115/230V 50/60 Hz.

Applications: Use with existing or new magnetic starter. This industrial solid state control will reduce initial starting torque and current of single phase motors allowing them to be started with minimum voltage drop. High starting torque problems such as belt slippage may be eliminated. Ideal for crop driers, augers, bucket elevators and fan or pump applications.

Features: Two adjustable starting torque settings. Adjustable starting ramp time to 30 seconds.

Amp Size	Max Hp at VAC 115	230	Catalog Number	List Price	Mult. Sym.	Notes [a]
Open/Panel - 115/230 Volts						
7	1/4	3/4	**S20CA**	538	E7	19
12	1/2	2	**S21CA**	559	E7	19
24	2	3	**S22CA**	597	E7	19
40	3	7.5	**S23CA**	637	E7	19
110	10	—	**S25CA**	1,065	E7	19

NOTE: To size single phase starters use the motor FLA. There is a great variation in FLA between motor manufacturers in these sizes.
[a] See notes on inside back flap and pages 5-6.

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Catalog Number	Page Number	List Price	Mult Sym	Ship Wgt (1)	Type	Alternate Cat Number (2)
RL324A	114	221	C1	23		RL1208A
RL325A	114	223	C1	23		RL1303A
RL344A	114	278	C1	25		
RL345A	114	280	C1	25		RL1304A
RL425A	114	262	C1	23		RL1306A
RL445A	114	297	C1	33		RL1307A
RL525A	114	313	C1	30		RL1309A
RL545A	114	375	C1	32		RL1310A
RM3003	120	267	K	19		RM3007
RM3006	120	256	K	20		RM3009
RM3007	120	270	K	21		RM3010
RM3009	120	270	K	19		
RM3010	120	340	K	23		
RM3104	120	307	K	22		RM3108
RM3108	120	349	K	23		RM3112
RM3108A	123	409	K	24		RM3112A
RM3111	120	355	K	22		RM3115
RM3111A	123	412	K	23		RM3115A
RM3112	120	388	K	27		RM3116
RM3112A	123	441	K	27		RM3116A
RM3115	120	375	K	24		RM3120
RM3115A	123	433	K	25		RM3120A
RM3116	120	411	K	33		RM3154
RM3116A	123	459	K	27		RM3154A
RM3120	120	456	K	31		RM3155
RM3120A	123	491	K	30		RM3155A
RM3154	120	473	K	34		RM3157
RM3154A	123	488	K	33		RM3157A
RM3155	120	530	K	33		RM3158
RM3155A	123	568	K	33		RM3158TA
RM3157	120	512	K	37		
RM3157A	123	559	K	40		RM3161TA
RM3158	120	548	K	39		
RM3158TA	123	562	K	45		
RM3161TA	123	611	K	55	3535M	
RSP1441A	117	197	C1	26		
RSP1442A	117	201	C1	27		
RSP2441A	117	210	C1	23		
RSP2442A	117	214	C1	22		
RSP2451A	117	213	C1	27		
RSP2452A	117	221	C1	25		
RSP3441A	117	245	C1	27		
RSP3442A	117	250	C1	23		
RSP3451A	117	248	C1	25		
RSP3452A	117	255	C1	23		
RTA2-2	252	2,690	E8	13		
RTA2-4	252	1,900	E8	13		RTA2-2
RTA2-6	252	1,615	E8	10		RTA2-4
RTA4-10	252	2,043	E8	14		RTA4-4
RTA4-2	252	3,795	E8	14		
RTA4-20	252	1,441	E8	14		RTA4-10
RTA4-4	252	2,690	E8	14		RTA4-2

Catalog Number	Page Number	List Price	Mult Sym	Ship Wgt (1)	Type	Alternate Cat Number (2)
RTA5-14	252	2,248	E8	17		RTA5-4
RTA5-24	252	1,600	E8	13		RTA5-14
RTA5-4	252	2,959	E8	14		
S20CA	329	538	E7	4		S21CA
S21CA	329	559	E7	4		S22CA
S22CA	329	597	E7	4		S23CA
S23CA	329	637	E7	4		
S25CA	329	1,065	E7	19		
S46	401	112	A8	3		
S61	401	112	A8	3		
SFL913B5	384	151	A8	8		
SFL918B5	384	151	A8	9		
SFL918B7	384	151	A8	8		
SFL921B5	384	169	A8	11		
SFL921B7	384	169	A8	11		
SFL924B5	384	169	A8	11		
SFL924B7	384	169	A8	11		
SFL926B5	384	217	A8	14		
SFL926B7	384	217	A8	15		
SH10HS	341, 391	21	A8	2		
SSB18H71	383	329	A8	8		
SSB21H71	383	342	A8	10		
SSB26H71	383	378	A8	13		
SSGF0518AG	366	1,553	GB	30		
SSGF0518BG	366	1,553	GB	30		SSGF0521BG
SSGF0521BG	366	1,817	GB	35		SSGF0526BG
SSGF0526BG	366	2,556	GB	65		
SSGF1018AG	366	1,553	GB	30		
SSGF1018BG	366	1,553	GB	30		SSGF1021BG
SSGF1021BG	366	1,817	GB	35		SSGF1026BG
SSGF1026BG	366	2,556	GB	65		
SSGF1518AG	366	1,553	GB	30		SSGF1521AG
SSGF1521AG	366	1,817	GB	35		
SSGF1526BG	366	2,556	GB	65		
SSGF2018AG	366	1,553	GB	30		SSGF2021AG
SSGF2021AG	366	1,817	GB	35		
SSGF2026BG	366	2,556	GB	65		
SSGF2518AG	366	1,553	GB	30		SSGF2521AG
SSGF2521AG	366	1,817	GB	35		
SSGF2526BG	366	2,556	GB	65		
SSGF3018AG	366	1,553	GB	30		SSGF3021AG
SSGF3021AG	366	1,817	GB	35		
SSGF3026BG	366	2,556	GB	65		
SSGF4018AG	366	1,553	GB	30		SSGF4021AG
SSGF4021AG	366	1,817	GB	35		
SSGF4026BG	366	2,556	GB	65		
SSGF5018AG	366	1,553	GB	30		SSGF5021AG
SSGF5021AG	366	1,817	GB	35		SSGF5026AG
SSGF5026AG	366	2,556	GB	65		
SSGF6018AG	366	1,553	GB	30		SSGF6021AG
SSGF6021AG	366	1,817	GB	35		SSGF6026AG
SSGF6026AG	366	2,556	GB	65		

(1) Shipping weight is approximate.
(2) Baldor has suggested alternate products, however there may be slight differences in performance, efficiency, voltage range, dimensions and mounting. Customers should verify suitability of selected products for their specific application.

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