



Soft start/stop static starters for three-phase asynchronous motors

The ASAB is an advanced digital soft start solution for motors from 7 kW to 800 kW. ASAB soft starters provide a complete range of motor and system protection features and have been designed for reliable performance in the most demanding installation situations

Technical features & highlights

Extensive starting and stopping options

- AAC Adaptive Acceleration Control
- Constant current
- Current ramp
- Timed voltage ramp soft stop
- Brake

Models for all connection requirements

- 23 A to 1600 A (nominal)
- 200 VAC to 525 VAC
- 380 VAC to 690 VAC
- Internally bypassed up to 220 A
- In-line or inside delta connection (auto-detect)

Inputs and outputs

- Remote control inputs (3 x fixed, 1 x programmable)
- Relay outputs (3 x programmable)
- Analog output
- Communication modules using Profibus, DeviceNet, Modbus RTU and USB protocols (optional)

Easy-to-read display with comprehensive feedback

- Multi-language feedback
- Multiple status screens and performance graphs
- Date and time stamped event logging
- Operational counters (number of starts, hours run, kWh)
- Performance monitoring (current, voltage, power factor, kWh)
- User-programmable monitoring screen

Customisable protection

- Motor overload
- Excess start time
- Undercurrent
- Instantaneous overcurrent
- Current imbalance
- Mains frequency
- Input trip
- Motor thermistor
- Power circuit
- Phase sequence

What's new

- New integrated bypass now ranging up to 1000A
- IP20 finger guard kit
- New remote operator kit w/o additional serial boards
- Ethernet/IP module, Modbus TCP module and Profinet module available

Product selection chart

ASAB XXXX B 7 12 2

Bypass/Non Bypass
B = With Internal Bypass Contactor
C = Without Internal Bypass Contactor (Continuous)

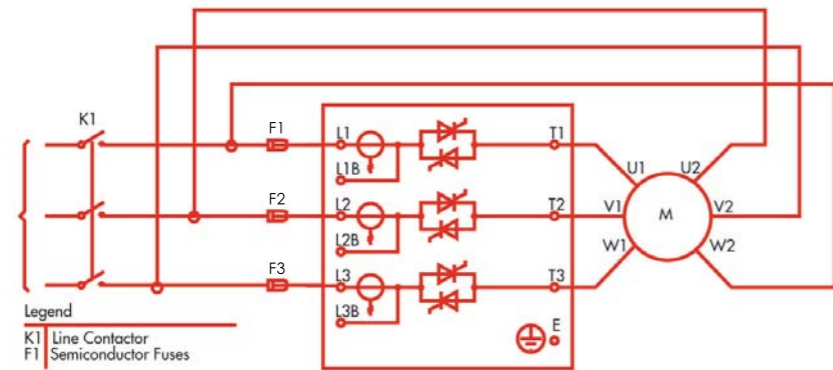
Control Voltage
12 = 110~120Vac or 220~240Vac
14 = 24Vac/Vdc

Ratings - Amps
 Current in Amps e.g. 0023

Mains Voltage
5 = 200~525Vac
7 = 380~690Vac

IP Rating
0 = IP00
2 = IP20

Inside Delta (6 wire connection possibility)



Overload value calculation: IST

Example: 45 kW, 400/690 Vac 4-poles motor for bore pump, T_L = Max starting torque requested by load = 98 Nm

Motor type	Pn		Nn	Tn	In a 400V	cosfi	η	I _s	T _s	T _{max}	T _L	Weight (kg)
	kW	HP	RPM	Nm	(A)	P.F.	%	I _n	T _n	T _n	Nm	
MA 225 M 4	45	60	1475	291.5	80	0.88	92.3	7.2	2.2	2.3	98	309

$$IST = \sqrt{\frac{T_L}{T_s} \times \frac{I_s}{I_n}} = \sqrt{\frac{98}{2.2 \times 291.5}} \times 7.2 = 2.8$$

Overload Choice

Applications	Overload (IST)				Applications	Overload (IST)			
	3	3.5	4	4.5		3	3.5	4	4.5
Agitator			•		Grinder		•		
Atomizer			•		Hammer mill				•
Ball mill				•	Hydraulic power pack		•		
Bandsaw				•	Loaded piston compressor				•
Bore pumps	•				Mill				•
Bottle washer	•				Mixer				•
Centrifugal compressor		•			Palletiser				•
Centrifugal damped fan		•			Planers		•		
Centrifugal pumps		•			Positive displacement pumps			•	
Centrifuge				•	Press		•		
Chipper				•	Pulper				•
Circular saw		•			Roller Mill				•
Conveyor belt				•	Rotary table			•	
Conveyor roller		•			Sander			•	
Conveyor screw			•		Screw compressor, loaded			•	
Crusher cone		•			Screw compressors, unloaded		•		
Crusher jaw				•	Separator				•
Crusher rotary		•			Shredder				•
Crusher vertical impact		•			Slicer	•			
Damped axial fan		•			Slurry pumps				•
Debarker		•			Tumbler			•	
Dryer				•	Undamped axial fan				•
Dust collector		•			Undamped centrifugal fan				•
Edger		•			Unloaded piston compressor			•	
Fan high pressure				•					

The above tables are intended as a guide only. Individual machine and motor characteristics will determine the actual start current requirements. For accurate designing see the example.



Model 200-525V	Size	Start per Hour N°	Bypassed ratings In-line connection				Bypassed ratings Inside delta connection				
			300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	
			Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	
ASAB-0023B/5/12/2	G1 no fan	10	23	20	17	15	10	35	30	26	22
ASAB-0043B/5/12/2	G1 no fan	10	43	37	31	26	10	65	59	51	44
ASAB-0053B/5/12/2	G1 no fan	10	53	53	46	37	10	80	80	69	55
ASAB-0076B/5/12/2	G1 no fan	6	76	64	55	47	6	114	96	83	70
ASAB-0097B/5/12/2	G1	6	97	82	69	58	6	146	123	104	87
ASAB-0100B/5/12/2	G1	6	100	88	74	61	6	150	132	112	92
ASAB-0105B/5/12/2	G1	6	105	105	95	78	6	158	158	143	117
ASAB-0145B/5/12/0	G2	6	145	123	106	90	6	218	184	159	136
ASAB-0170B/5/12/0	G2	6	170	145	121	97	6	255	217	181	146
ASAB-0200B/5/12/0	G2	6	200	189	160	134	6	300	283	241	200
ASAB-0220B/5/12/0	G2	6	220	210	178	148	6	330	315	268	223
ASAB-0255B/5/12/0	G3	6	255	231	231	176	6	382	346	302	264
ASAB-0350B/5/12/0	G3	6	350	329	284	244	6	525	494	427	366
ASAB-0425B/5/12/0	G3	6	425	411	355	305	6	638	617	533	458
ASAB-0500B/5/12/0	G4	6	500	445	383	326	6	750	668	575	490
ASAB-0580B/5/12/0	G4	6	580	492	425	364	6	870	738	637	546
ASAB-0700B/5/12/0	G4	6	700	592	512	438	6	1050	889	768	658
ASAB-0820B/5/12/0	G4	6	820	705	606	516	6	1230	1058	910	774
ASAB-0920B/5/12/0	G4	6	920	804	684	571	6	1380	1206	1026	857
ASAB-1000B/5/12/0	G4	6	1000	936	796	664	6	1500	1404	1194	997
		Start per Hour N°	Non Bypassed ratings In-line connection				Non Bypassed ratings Inside delta connection				
			300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	
			Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	
ASAB-0255C/5/12/0	G3	6	255	231	201	176	6	383	346	302	264
ASAB-0380C/5/12/0	G4	6	380	380	359	299	6	570	570	539	449
ASAB-0430C/5/12/0	G4	6	430	430	368	309	6	645	645	552	464
ASAB-0620C/5/12/0	G4	6	620	620	540	434	6	930	930	810	651
ASAB-0650C/5/12/0	G4	6	650	650	561	455	6	975	975	842	683
ASAB-0790C/5/12/0	G4	6	790	790	714	579	6	1185	1185	1071	868
ASAB-0930C/5/12/0	G4	6	930	930	829	661	6	1395	1395	1244	992
ASAB-1200C/5/12/0	G5	6	1200	1200	1200	1071	6	1800	1800	1800	1606
ASAB-1410C/5/12/0	G5	6	1410	1410	1319	1114	6	2115	2115	1979	1671
ASAB-1600C/5/12/0	G5	6	1600	1600	1600	1353	6	2400	2400	2400	2030



Model 380-690V	Size	Start per Hour N°	Bypassed ratings In-line connection				Bypassed ratings Inside delta connection				
			300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	
			Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	
ASAB-0023B/7/12/2	G1nofan	10	23	20	17	15	10	35	30	26	22
ASAB-0043B/7/12/2	G1nofan	10	43	37	31	26	10	65	59	51	44
ASAB-0053B/7/12/2	G1nofan	10	53	53	46	37	10	80	80	69	55
ASAB-0076B/7/12/2	G1nofan	6	76	64	55	47	6	114	96	83	70
ASAB-0097B/7/12/2	G1	6	97	82	69	58	6	146	123	104	87
ASAB-0100B/7/12/2	G1	6	100	88	74	61	6	150	132	112	92
ASAB-0105B/7/12/2	G1	6	105	105	95	78	6	158	158	143	117
ASAB-0145B/7/12/0	G2	6	145	123	106	90	6	218	184	159	136
ASAB-0170B/7/12/0	G2	6	170	145	121	97	6	255	217	181	146
ASAB-0200B/7/12/0	G2	6	200	189	160	134	6	300	283	241	200
ASAB-0220B/7/12/0	G2	6	220	210	178	148	6	330	315	268	223
ASAB-0255B/7/12/0	G3	6	255	231	231	176	6	382	346	302	264
ASAB-0350B/7/12/0	G3	6	350	329	284	244	6	525	494	427	366
ASAB-0425B/7/12/0	G3	6	425	411	355	305	6	638	617	533	458
ASAB-0500B/7/12/0	G4	6	500	445	383	326	6	750	668	575	490
ASAB-0580B/7/12/0	G4	6	580	492	425	364	6	870	738	637	546
ASAB-0700B/7/12/0	G4	6	700	592	512	438	6	1050	889	768	658
ASAB-0820B/7/12/0	G4	6	820	705	606	516	6	1230	1058	910	774
ASAB-0920B/7/12/0	G4	6	920	804	684	571	6	1380	1206	1026	857
ASAB-1000B/7/12/0	G4	6	1000	936	796	664	6	1500	1404	1194	997
		Start per Hour N°	Non Bypassed ratings In-line connection				Non Bypassed ratings Inside delta connection				
			300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	
			Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	
ASAB-0255C/7/12/0	G3	6	255	231	201	176	6	383	346	302	264
ASAB-0380C/7/12/0	G4	6	380	380	359	299	6	570	570	539	449
ASAB-0430C/7/12/0	G4	6	430	430	368	309	6	645	645	552	464
ASAB-0620C/7/12/0	G4	6	620	620	540	434	6	930	930	810	651
ASAB-0650C/7/12/0	G4	6	650	650	561	455	6	975	975	842	683
ASAB-0790C/7/12/0	G4	6	790	790	714	579	6	1185	1185	1071	868
ASAB-0930C/7/12/0	G4	6	930	930	829	661	6	1395	1395	1244	992
ASAB-1200C/7/12/0	G5	6	1200	1200	1200	1071	6	1800	1800	1800	1606
ASAB-1410C/7/12/0	G5	6	1410	1410	1319	1114	6	2115	2115	1979	1671
ASAB-1600C/7/12/0	G5	6	1600	1600	1600	1353	6	2400	2400	2400	2030

Dimensions and weight

Models	Dimensions WxHxD mm (inches)	Weight kg (lbs)
ASAB-0023B	150x295x183 (5.9"x11.6"x7.2")	4.3 (9.5)
ASAB-0043B	150x295x183 (5.9"x11.6"x7.2")	4.3 (9.5)
ASAB-0053B	150x295x183 (5.9"x11.6"x7.2")	4.3 (9.5)
ASAB-0076B	150x295x183 (5.9"x11.6"x7.2")	4.5 (9.9)
ASAB-0097B	150x295x213 (5.9"x11.6"x8.4")	5.0 (11.0)
ASAB-0100B	150x295x213 (5.9"x11.6"x8.4")	5.0 (11.0)
ASAB-0105B	150x295x213 (5.9"x11.6"x8.4")	5.0 (11.0)
ASAB-0145B	275x438x250 (10.8"x17.2"x9.9")	15 (33.0)
ASAB-0170B	275x438x250 (10.8"x17.2"x9.9")	15 (33.0)
ASAB-0200B	275x438x250 (10.8"x17.2"x9.9")	15 (33.0)
ASAB-0220B	275x438x250 (10.8"x17.2"x9.9")	15 (33.0)
ASAB-0255B	424x440x392 (16.7"x17.3"x15.4")	26 (57.2)
ASAB-0350B	424x440x392 (16.7"x17.3"x15.4")	30.2 (66.6)
ASAB-0425B	424x440x392 (16.7"x17.3"x15.4")	30.2 (66.6)
ASAB-0500B	433x640x600 (17.0"x25.2"x23.6")	49.5 (109.1)
ASAB-0580B	433x640x600 (17.0"x25.2"x23.6")	49.5 (109.1)
ASAB-0700B	433x640x600 (17.0"x25.2"x23.6")	60 (132.3)
ASAB-0820B	433x640x600 (17.0"x25.2"x23.6")	60 (132.3)
ASAB-0920B	433x640x600 (17.0"x25.2"x23.6")	60 (132.3)
ASAB-1000B	433x640x600 (17.0"x25.2"x23.6")	60 (132.3)
ASAB-0255C	390x460x280 (15.4"x18.1"x11.0")	24 (52.9)
ASAB-0380C	430x689x300 (16.9"x27.1"x11.8")	45 (98.1)
ASAB-0430C	430x689x300 (16.9"x27.1"x11.8")	45 (98.1)
ASAB-0620C	430x689x300 (16.9"x27.1"x11.8")	45 (98.1)
ASAB-0650C	430x689x300 (16.9"x27.1"x11.8")	45 (98.1)
ASAB-0790C	430x689x300 (16.9"x27.1"x11.8")	45 (98.1)
ASAB-0930C	430x689x300 (16.9"x27.1"x11.8")	53 (116.8)
ASAB-1200C	585x856x364 (23.0"x33.7"x14.3")	117 (257.9)
ASAB-1410C	585x856x364 (23.0"x33.7"x14.3")	117 (257.9)
ASAB-1600C	585x856x364 (23.0"x33.7"x14.3")	130 (286.6)

