

Technical features & highlights

ASAC0 is the right solution to save space and keep costs under control. Besides the features of ASAC0, the ASAC1 grants a reliable motor protection and current control.

- Compact dimensions
- Internal By-pass contactor
- 400% max allowed overload of the nominal current
- IP20 Enclosure (<=ASAC 55kW)
- 3 Adjustments: Initial start voltage, Start ramp time, Soft stop ramp time
- 6 Indications: No control power, Starter Ready, Starter tripped, Motor not running, Motor running at full speed, Motor starting/ stopping
- 3 Alarms: Power circuit, Supply frequency, Communication
- 2 digital inputs: Start, Stop
- 1 Output relay: Main contactor relay
- Local reset
- Control power supply: 110-240Vac and 380-440Vac
- Power supply: 200-440Vac ±10% / 200-575Vac ±10%
- Input frequency: 50-60Hz ±10%

ASAC 1 additional technical features

- 8 adjustments: Motor FLC, Current Ramp, Current Limit, Motor Trip Class, Soft Stop Time, Excess Start Time, Phase Sequence Protection, Auxiliary Relay Function
- 5 additional Alarms: Excess start time, Motor overload, Motor thermistor, Phase imbalance, Phase sequence
- 1 additional Digital input: Motor thermistor probe
- 1 additional Output relay: Programmable relay

Options (ASAC 0/ASAC 1)

- 24Vac/Vdc Control Power Supply
- Extra-fast fuses
- RS485 Serial communication port with MODBUS RTU DeviceNet, Profibus, ASI protocol
- Remote control panel (RS485 doubler, one 4-20mA output)
- RS232/485 converter



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

- Range 7.5kW - 110kW
- Power supply voltage range 200 - 575Vac
- Internal By-pass Contactor
- Input frequency 50 - 60Hz
- Full compatibility with the "REMOTE DRIVE" software for remote control

Models

Control Supply
1 = 110-240Vac & 380-440Vac
2 = 24Vac/Vdc

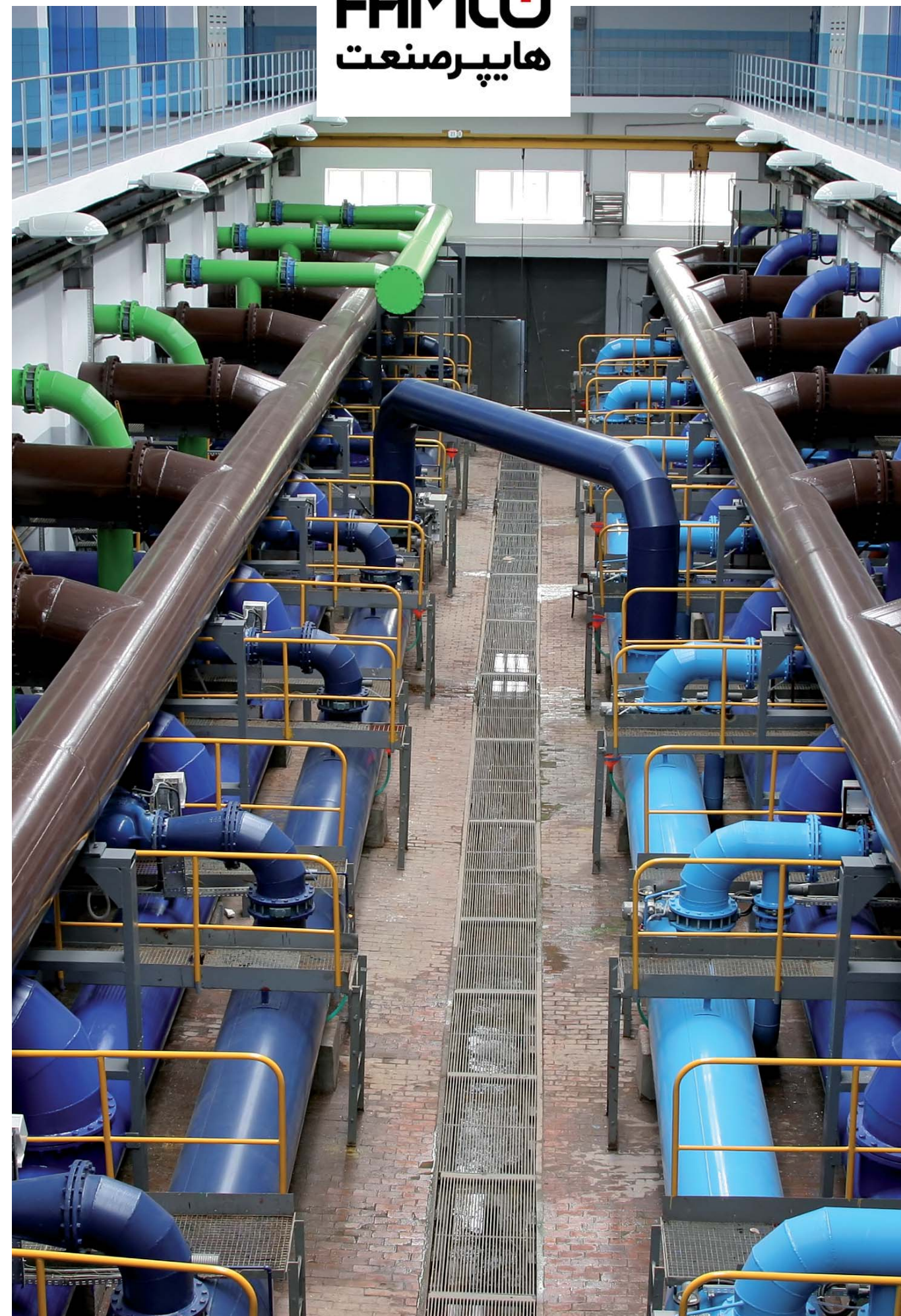
ASAC 1 / 007 / 4 / 1

Version
0 = Basic
1 = Advanced

Main Supply
4 = 3Ø, 200-440Vac, 45-66Hz
5 = 3Ø, 200-575Vac, 45-66Hz

Model	Applicable motor power					FLC*	Dimensions (WxHxD) mm	Weight kg
	200-240Vac kW	380-415Vac kW	440Vac kW	460-500Vac kW	575Vac kW			
ASAC0/ASAC1 007	4.5	9.2	9.2	11	11	18	98x203x163	2.1
ASAC0/ASAC1 015	9.2	15	18.5	18.5	22	34	98x203x163	2.1
ASAC0/ASAC1 018	11	18.5	22	22	30	42	98x203x163	2.1
ASAC0/ASAC1 022	11	22	30	30	37	48	98x203x163	2.1
ASAC0/ASAC1 030	15	30	37	37	45	60	98x203x163	2.1
ASAC0/ASAC1 037	22	37	45	45	55	75	145x215x191	4.3
ASAC0/ASAC1 045	22	45	55	55	55	85	145x215x191	4.3
ASAC0/ASAC1 055	30	55	55	55	75	100	145x215x191	4.3
ASAC0/ASAC1 075	45	75	75	90	110	140	202x240x212	6.8
ASAC0/ASAC1 090	55	90	90	110	132	170	202x240x212	6.8
ASAC0/ASAC1 110	55	110	110	132	160	200	202x240x212	6.8
Soft-Starter power supply	200-440Vac		200-575Vac					

* Full load current.



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



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

Product selection chart

ASAB XXXX B 7 12 2

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

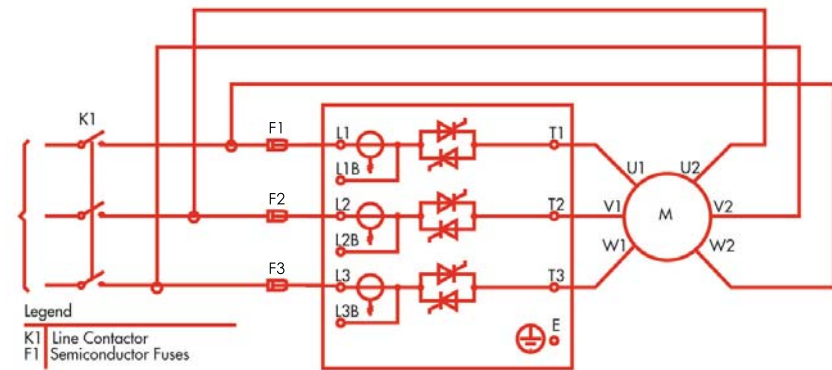
Control Voltage
12 = 110~120Vac or 220~240Vac
14 = 24Vac/Vdc

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.



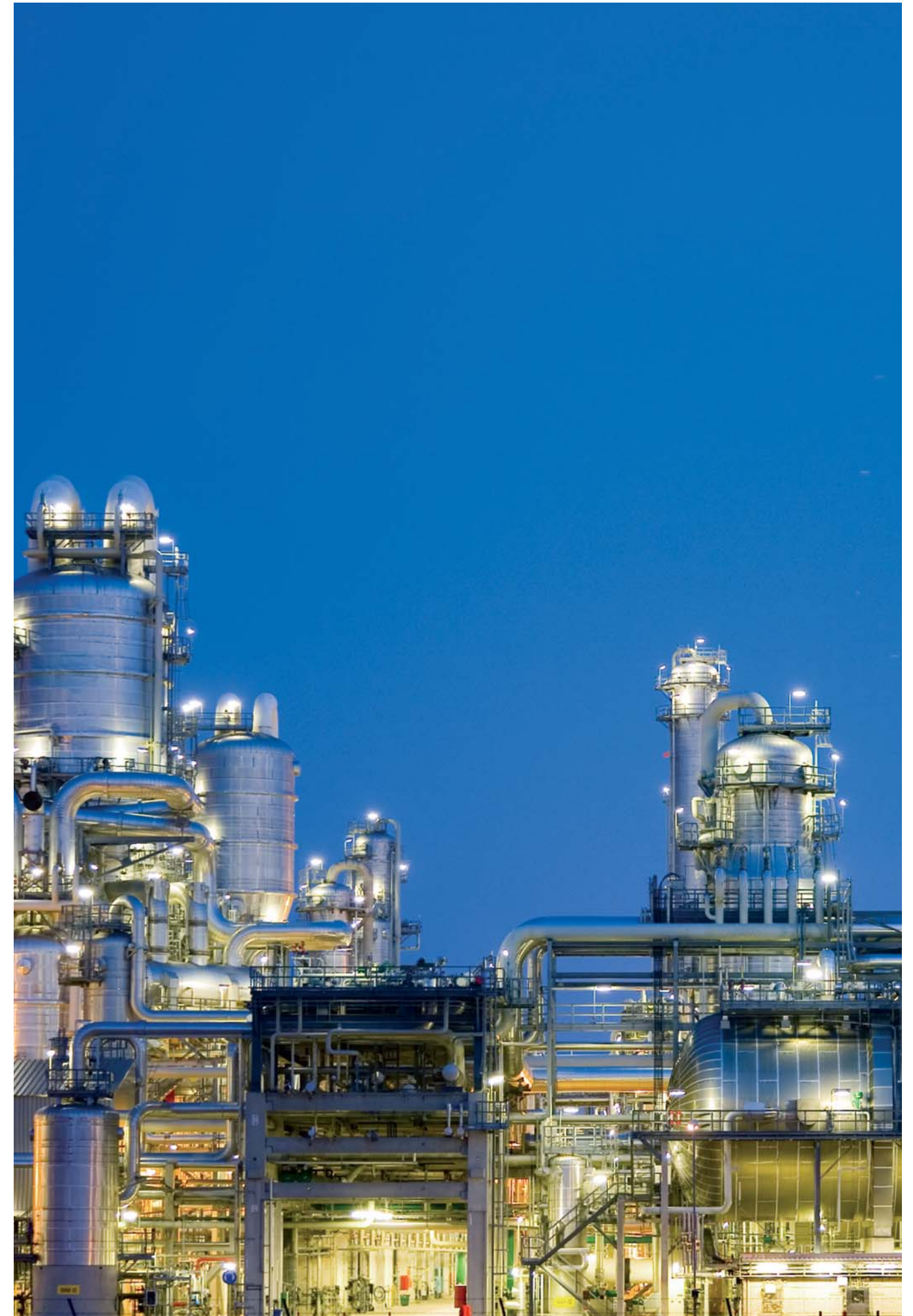
Model 200-525V	Size	Start per Hour	Bypassed ratings In-line connection				Bypassed ratings Inside delta connection				
			300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	300%, 10s Light Dty	350%, 15s	400%, 20s	450%, 30s Hvy Dty	
			N°	Amps	Amps	Amps	N°	Amps	Amps	Amps	
ASAB-0023B/5/12/2	G1 no 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
		Non Bypassed ratings In-line connection				Non Bypassed ratings Inside delta connection					
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	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	
			N°	Amps	Amps	Amps	N°	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
		Non Bypassed ratings In-line connection				Non Bypassed ratings Inside delta connection					
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)





3 YEARS WARRANTY

Soft start/stop static starters Medium Voltage

- Range 200A to 630A
- Power supply voltage range, 2300Vac - 13800Vac (15000Vac on demand)
- Input frequency 50 - 60Hz
- Full compatibility with the "REMOTE DRIVE" software for remote control

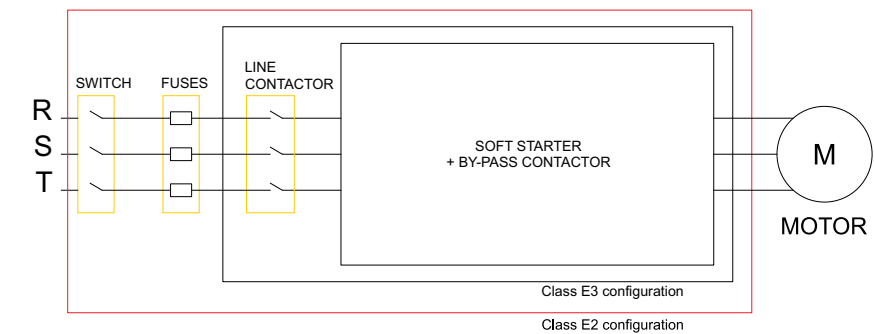
Technical features & highlights

- Power supply from 2300Vac to 13800Vac (15000Vac on demand), rated current from 200 to 630A
- 3 types of motor starting (Constant Current, Current Ramp, Torque Control)
- Stopping (Soft Stop, Pump control profiles, Auto Stop)
- Allowed overload to 600% of the nominal current
- CABINET MODEL IP54 protection degree Class A EMC
- Operating temperature from 0 to +50°C (option from -20 to +50°C)
- Protection: Under/ Overvoltage, Supply Frequency, Phase Sequence, Shorted SCR, Motor Overload (Thermal Model), Instantaneous Overcurrent, Undercurrent, Current Imbalance, Excess Start Time, Power Circuit, Auxiliary Trip
- Interface: 5 Remote Control Inputs (3 x fixed, 2 x programmable), 6 Relay Outputs (3 fixed, 3 x programmable), Analog Output (1 x programmable), Serial Output (1 x RS485 Modbus-RTU)
- Human Interface: 20-character, 2-line LCD display, Start-Stop-Reset-Local/Remote keys, Starter Status LEDs, Event Log (99 positions, date and time stamped), Trip Log (60 positions, date and time stamped), Counters (starts, hours-run, kWh), Metering (current, voltage, power factor, kWh), User Programmable Metering Screen, Multi-Level Password Protection

Optionals

- RTD Interface
- PT100 interface
- Profibus Interface
- DeviceNet Interface
- Synchronous Motor Control
- Remote Drive PC software
- Remote Operator
- Control supply transformer
- Ground fault protection

Basic class E3 and Complete class E2 soft starter configurations



Product selection chart

ASAMV CABINET 0200 06 E2

Current Rating
0200 = 200 A, 500% 60 sec, 600% 30 sec
0300 = 300 A, 500% 60 sec, 600% 30 sec
0400 = 400 A, 500% 60 sec, 600% 30 sec
0600 = 630 A, 500% 60 sec, 600% 30 sec

Supply Voltage
02 = 2300 VAC 50/60 Hz
03 = 3300 VAC 50/60 Hz
04 = 4160 VAC 50/60 Hz
06 = 6600 VAC 50/60 Hz
07 = 7200 VAC 50/60 Hz
11 = 11000 VAC 50/60 Hz
13 = 13800 VAC 50/60 Hz
15 = 15000 VAC 50/60 Hz

E3 = IP54 Enclosure, by-pass contactor, Line contactor.
E2 = IP54 Enclosure, by-pass contactor, Line contactor, Fuses, Switch-gear



Current ratings - Basic Class E3 Soft Starter

Model ASAMV-CABINET	Rated Amps	Motor	
		HP	kW
Volts 2300			
200-02-E3	200	800	500
400-02-E3	400	1500	1000
600-02-E3	630	2500	1900
Volts 3300			
200-03-E3	200	1000	600
400-03-E3	400	1800	1200
600-03-E3	630	3000	2200
Volts 4160			
200-04-E3	200	1250	1000
400-04-E3	400	2500	2000
600-04-E3	630	5000	3750
Volts 6000			
200-06-E3	200	2000	1500
400-06-E3	400	4000	3000
600-06-E3	630	6350	4750
Volts 7000			
200-07-E3	200	2500	2000
400-07-E3	400	5000	3750
600-07-E3	630	7500	5600



Current ratings - Complete Class E2 Soft S

Model ASAMV-CABINET	Rated Amps	Motor	
		HP	kW
Volts 2300			
200-02-E2	200	800	500
400-02-E2	400	1500	1000
600-02-E2	630	2500	1900
Volts 3300			
200-03-E2	200	1000	600
400-03-E2	400	1800	1200
600-03-E2	630	3000	2200
Volts 4160			
200-04-E2	200	1250	1000
400-04-E2	400	2500	2000
600-04-E2	630	5000	3750
Volts 6000			
200-06-E2	200	2000	1500
400-06-E2	400	4000	3000
600-06-E2	630	6350	4750
Volts 7000			
200-07-E2	200	2500	2000
400-07-E2	400	5000	3750
600-07-E2	630	7500	5600
Volts 11 kV			
100-11-E2	100	1700	1250
200-11-E2	200	3400	2500
400-11-E2	400	6700	5000
600-11-E2	630	10600	8000
Volts 13.8 kV			
100-13-E2	100	2100	1550
200-13-E2	200	4200	3100
400-13-E2	400	6750	5000
600-13-E2	630	12500	9300

Dimensions and weight - Basic Class E3 Soft Starter

Model ASAMV-CABINET	IP54			Kg
	H (mm)	W (mm)	D (mm)	
200-02-E3	2350	914	762	591
400-02-E3	2350	914	762	591
600-02-E3	2350	1829	762	1182
200-03-E3	2350	914	762	591
400-03-E3	2350	914	762	591
600-03-E3	2350	1829	762	1182
200-04-E3	2350	914	762	591
400-04-E3	2350	914	762	591
600-04-E3	2350	1829	762	1182
200-06-E3	2350	1067	762	1182
400-06-E3	2350	1067	762	1182
600-06-E3	2350	2972	762	1818
200-07-E3	2350	1829	762	1364
400-07-E3	2350	1829	762	1364
600-07-E3	2350	2972	762	1818

Dimensions and weight - Complete Class E2 Soft Starter

Model ASAMV-CABINET	IP54			Kg
	H (mm)	W (mm)	D (mm)	
200-02-E2	2350	914	762	591
400-02-E2	2350	914	762	591
600-02-E2	2350	1829	762	1182
200-03-E2	2350	914	762	591
400-03-E2	2350	914	762	591
600-03-E2	2350	1829	762	1182
200-04-E2	2350	914	762	591
400-04-E2	2350	914	762	591
600-04-E2	2350	1829	762	1182
200-06-E2	2350	1067	762	1182
400-06-E2	2350	1067	762	1182
600-06-E2	2350	2972	762	1818
200-07-E2	2350	1829	762	1364
400-07-E2	2350	1829	762	1364
600-07-E2	2350	2972	762	1818
100-11-E2	2413	3200	1118	2136
200-11-E2	2413	3200	1118	2136
400-11-E2	2413	3200	1118	2136
600-11-E2	2413	3200	1118	2136
100-13-E2	2413	3200	1118	2136
200-13-E2	2413	3200	1118	2136
400-13-E2	2413	3200	1118	2136
600-13-E2	2413	3048	2032	2727