



Drives

SINAMICS V20

The cost-effective, reliable and easy-to-use inverter for basic applications

Today, in an increasing number of applications in plant and machinery construction, individual automation and drive solutions are demanded that automate simple motion sequences with low associated requirements. With its compact SINAMICS V20, the basic performance inverter, Siemens offers a simple and cost-effective drive solution for these types of applications. SINAMICS V20 sets itself apart with its quick commissioning times, ease of operation, robustness and cost-efficiency. With five frame sizes, it covers a power range extending from 1/6 hp up to 40 hp (0.12 kW up to 30 kW).

Technical data

Power range	1/6 hp up to 40 hp / 0.12 kW up to 30 kW
Degree of protection	IP20
Voltage range	1AC 200 V ... 240 V (+ / -10 %) 3AC 380 V ... 480 V (+10 % / -15 %)
Control modes	V/f V ² /f FCC V/f multi-point
I/Os	4DI/2DO/2AI/1AO

Highlights

Easy to install

- Push-through and wall mounting – side-by-side possible for both
- Can be run “out-of-the-box” without other options
- Integrated USS and Modbus RTU at terminals and integrated braking chopper for 7.5 kW to 30 kW (10 hp up to 40 hp)
- Simple integration in micro-automation systems, e.g. with SIMATIC S7-1200

Easy to use

- Parameter loading without power supply
- Keep Running Mode for uninterrupted operation
- Wide voltage range, advanced cooling design and coated PCBs increase robustness

Easy to save money

- Integrated ECO mode for V/f, V²/f
- Integrated hibernation mode (energy-saving mode)
- Lower energy usage in operation as a result of the DC link coupling
- High overload and low overload mode for FSE



Ordering data

1AC 230 V device

Rated data						
P _{rated} (HO)		I _H	Article number	Fans	Frame size	
kW	hp	A				
0.12	1/6	0.9	6SL3210-5BB11-2	V0	–	FSA
0.25	1/3	1.7	6SL3210-5BB12-5	V0	–	
0.37	1/2	2.3	6SL3210-5BB13-7	V0	–	
0.55	3/4	3.2	6SL3210-5BB15-5	V0	–	
0.75	3/4	3.9	6SL3210-5BB17-5	V0	–	
0.75	1	4.2	6SL3210-5BB18-0	V0	1	FSB
1.1	1–1/2	6	6SL3210-5BB21-1	V0	1	
1.5	2	7.8	6SL3210-5BB21-5	V0	1	FSC
2.2	3	11	6SL3210-5BB22-2	V0	1	
3	4	13.6	6SL3210-5BB23-0	V0	1	

EMC Standards

With integrated line filter category C2 ¹⁾	A
Without integrated filter	U

¹⁾ EN61800-3 Category C2, 1st environment (residential, domestic)

3AC 400 V device

Rated data						
P _{rated} (LO)		I _L 400 V ²⁾	I _L 480 V	P _{rated} (HO)		I _H 400 V ⁴⁾
kW	hp	A	A	kW	hp	A
0.37	1/2	1.3	1.3	0.37	1/2	1.3
0.55	3/4	1.7	1.7	0.55	3/4	1.7
0.75	1	2.2	2.2	0.75	1	2.2
1.1	1–1/2	3.1	3.1	1.1	1–1/2	3.1
1.5	2	4.1	4.1	1.5	2	4.1
2.2	3	5.6	4.8	2.2	3	5.6
3	4	7.3	7.3	3	4	7.3
4	5	8.8	8.24	4	5	8.8
5.5	7–1/2	12.5	11	5.5	7–1/2	12.5
7.5	10	16.5	16.5	7.5	10	16.5
11	15	25	21	11	15	25
15	20	31	31	15	20	31
22	30	45	40	18.5	25	38
30	40	60	52	22	30	45

EMC Standards

With integrated line filter category C3²⁾

Without integrated filter

²⁾ EN61800-3 Category C3, 2nd environment (industry)

³⁾ The output current I_L is based on the duty cycle for low overload (LO)

⁴⁾ The output current I_H is based on the duty cycle for high overload (HO)

1AC 230 V options

FS	P _{rated} (HO) kW	Braking resistor 6SE6400-...	Line reactor 6SE6400-...	Output reactor 6SE6400-...	Shield connection kit 6SL3266-...	Line filter class B 6SE6400-...	Corresponding to the IEC standard		
							Standard fuse ³⁾		Circuit breaker ³⁾
							Current in A	Article No.	Article No.
A	0.12	4BC05-0AA0	3CC00-4AB3	3TC00-4AD3	1AA00-0VA0	2FL01-0AB0	10	3NA3803	3RV2011-1DA10
	0.25						10	3NA3803	3RV2011-1FA10
	0.37						10	3NA3803	3RV2011-1HA10
	0.55						10	3NA3803	3RV2011-1JA10
	0.75						16	3NA3805	3RV2011-1KA10
B	1.1	4BC11-2BA0	3CC02-6BB3	3TC01-0BD3	1AB00-0VA0	–	20	3NA3807	3RV2021-4BA10
	1.5						32	3NA3812	3RV2021-4CA10
C	2.2	4BC12-5CA0	3CC03-5CB3	3TC03-2CD3	1AC00-0VA0	–	35	3NA3814	3RV1031-4EA10
	3						50	3NA3820	3RV1031-4FA10

3AC 400 V options

FS	P _{rated} (LO) kW	P _{rated} (HO) kW	Braking resistor 6SL3201-...	Line reactor 6SL3203-...	Output reactor 6SL3202-...	Shield connection kit 6SL3266-...	Line filter class B 6SL3203-...	Corresponding to the IEC standard		
								Standard fuse ⁴⁾		Circuit breaker ⁴⁾
								Current in A	Article No.	Article No.
FSA	0.37	0.37	OBE14-3AA0	OCE13-2AA0	OAE16-1CA0	1AA00-0VA0	OBE17-7BA0	6	3NA3801	3RV2011-1CA10
	0.55	0.55						6	3NA3801	3RV2011-1DA10
	0.75	0.75						6	3NA3801	3RV2011-1EA10
	1.1	1.1						6	3NA3801	3RV2011-1FA10
	1.5	1.5						10	3NA3803	3RV2011-1HA10
	2.2	2.2						16	3NA3805	3RV2011-1JA10
FSB	3	3	OBE21-0AA0	OCE21-0AA0	OAE18-8CA0	1AB00-0VA0	OBE21-8BA0	16	3NA3805	3RV2011-4AA10
	4	4						20	3NA3807	3RV2021-4AA10
FSC	5.5	5.5	OBE21-8AA0	OCE21-8AA0	OAE21-8CA0	1AC00-0VA0	OBE23-8BA0	25	3NA3810	3RV2021-4BA10
FSD	7.5	7.5	OBE23-8AA0	OCE23-8AA0	OAE23-8CA0	1AD00-0VA0		–	–	–
	11	11					–	–	–	
	15	15					–	–	–	
			6SE6400-...	6SE6400-...	6SE6400-...	6SL3266-...	6SL3203-...			
FSE	22	18.5	4BD21-2DA0	3CC05-2DD0	3TC05-4DD0	1AE00-0VA0	OBE23-8BA0	–	–	–
	30	22		3CC08-3ED0	OBE27-5BA0		–	–	–	

⁵⁾ Additional information about the listed fuses and circuit breakers can be found in Catalogs LV 10, IC 10 and IC 10 AO
siemens.com/drives/infocenter

I _H 480 V A	Article number		Fans	Frame size
1.3	6SL3210-5BE13-7	V0	–	FSA
1.7	6SL3210-5BE15-5	V0	–	
2.2	6SL3210-5BE17-5	V0	–	
3.1	6SL3210-5BE21-1	V0	1	
4.1	6SL3210-5BE21-5	V0	1	
4.8	6SL3210-5BE22-2	V0	1	
7.3	6SL3210-5BE23-0	V0	1	FSB
8.24	6SL3210-5BE24-0	V0	1	
11	6SL3210-5BE25-5	V0	1	FSC
16.5	6SL3210-5BE27-5	V0	2	FSD
21	6SL3210-5BE31-1	V0	2	
31	6SL3210-5BE31-5	V0	2	
34	6SL3210-5BE31-8	V0 New	2	FSE
40	6SL3210-5BE32-2	V0 New	2	

C
U

Overload capability

SINAMICS V20 FSE (22 kW and 30 kW) has two different overload cycles.
<ul style="list-style-type: none"> Low overload (LO): for applications with low demands on the dynamic performance (continuous duty) 110% I_L³⁾ for 60 s (cycle time: 300 s)
<ul style="list-style-type: none"> High overload (HO): for applications demanding a high dynamic performance (cyclic duty) 150% I_H⁴⁾ for 60 s (cycle time: 300 s)



Accessories

Name	Article number
Parameter Loader	6SL3255-0VE00-0UA0
BOP-Interface (Basic Operator Panel)	6SL3255-0VA00-2AA0
Braking module 1AC 230 V: 8 A 3AC 400 V: 7 A	6SL3201-2AD20-8VA0
V20 BOP (Basic Operator Panel)	6SL3255-0VA00-4BA0
BOP cable 3 m incl. 4 mounting screws	6SL3256-0VP00-0VA0
SINAMICS Memory Card (SD)	6SL3054-4AG00-2AA0
RS485 Terminators (Content 50 Pieces)	6SL3255-0VC00-0HA0
SINAMICS V20 Democase	6AG1067-2AA00-0AB6
DIN Rail Mounting Kit	FSA: 6SL3261-1BA00-0AA0 ⁶⁾ FSB: 6SL3261-1BB00-0AA0

⁶⁾ Installation of FSA with fan pls. refer to SINAMICS V20 manual

Dimensions⁷⁾ and weight

Frame size	Width (mm)	Height (mm)	Depth (mm)	Weight (kg)
FSA without fan	90	140	145.5	1
FSA	90	140	145.5	1.05
FSB	140	135	164.5	1.8
FSC	184	140	169	2.6
FSD	240	166	172.5	4.3
FSE	243.5	206	209	6.6

⁷⁾ all dimensions refer to the maximum outer dimension


SINAMICS SELECTOR App – find article numbers quickly and easily

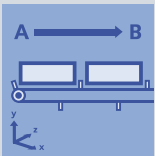


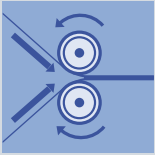
Scan the QR code and download the SINAMICS SELECTOR App free of charge



Typical applications

Pumping, ventilating and compressing		
	<ul style="list-style-type: none"> • Centrifugal pumps • Radial/axial fans • Compressors 	<p>Additional advantages:</p> <ul style="list-style-type: none"> • High availability through automatic restart and flying restart after power failures • Broken belt detection by monitoring the load torque • Pump protection against cavitation • Hammer start and blockage clearing modes for clogged pumps • PID controller for process values (e.g. temperature, pressure, level, flow) • PID auto tuning to optimize controller parameters • Hibernation mode stops the motor when demand is low • Motor staging extends the flow range by adding two more fixed-speed drives (cascade) • Frost and condensation protection prevents moisture in motors under extreme environmental conditions

Moving		
	<ul style="list-style-type: none"> • Belt conveyors • Roller conveyors • Chain conveyors 	<p>Additional advantages:</p> <ul style="list-style-type: none"> • Soft, jerk-free acceleration reduces the stress on the gear units, bearings, drums and rollers • Super torque start for conveyor belts with high breakaway torque • Dynamic behavior by using braking resistor or DC braking • Direct control of mechanical holding brake • Broken belt detection by monitoring the load torque • Precise stopping with Quick Stop (switch-off positioning) independently from the control cycle

Processing		
	<ul style="list-style-type: none"> • Single drives in the process industry such as mills, mixers, kneaders, crushers, agitators, centrifuges • Main drives in machines with mechanically coupled axes such as ring spinning machines, braiding machines for textile, ropes and wire 	<p>Additional advantages:</p> <ul style="list-style-type: none"> • Frost and condensation protection prevents moisture in motors under extreme environmental conditions • Higher productivity with uninterrupted production due to Keep Running Mode • Exchange of regenerative energy via the DC link • Super torque start for machines with a high breakaway torque

Siemens AG
Digital Factory
P.O. Box 3180
91050 Erlangen
GERMANY

Subject to change without prior notice
Article No.: E20001-A190-P670-V3-7600
Dispo 21500
SCHÖ/1000022620 V6.MKDICH.WES
SB 02154.0
Printed in Germany
© Siemens AG 2015

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.

Strong partners for the industry and the trades –
Siemens and electrical distributors

You can obtain more information from your electrical distributor: