

SINAMICS G110 Variable Speed Drives 0.12 kW to 3 kW



sinamics

G110



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SIEMENS

SINAMICS G110

The SINAMICS G110 is a Variable Speed Drive with basic functions for a variety of industrial applications. This particularly compact drive operates with voltage frequency control on single phase supplies (200V to 240V). It is the ideal solution for low cost, low power drive applications.



- Input 1Ph, 200V up to 3kW
- Low cost
- Easy to install and commission
- Rugged EMC design
- Compact design including version without heatsink
- Time saving parameter cloning with optional Operator Panel

Benefits

- Easy to install, parameterise and commission
- Rugged EMC design
- Comprehensive range of parameterisable functions for a wide variety of applications
- Simple cable connection
- High pulse frequencies for low-noise motor operation
- Status information with optional operator panel
- Time saving parameter cloning with the optional operator panel
- Simple PC communication for set up with graphical starter software
- Skip frequency band in case of resonance, adjustable ramp up/down times, ramp smoothing and flying start function for starting the drive on to a turning motor
- Automatic restart facility following power failure or fault
- Fast Current Limit (FCL) for trip free operation in case of sudden load changes
- Fast, repeatable digital input response time for fast reaction applications

Low cost doesn't always mean compromise The SINAMICS G110 delivers

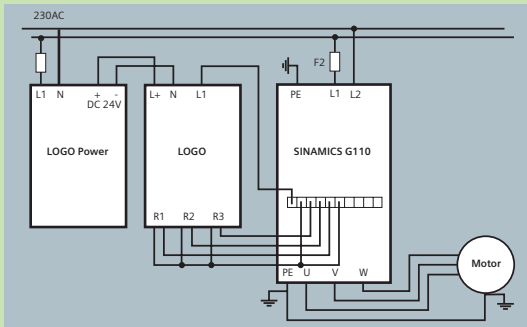
- A maximum overload rating of 150% of rated output current for 60 Seconds
- A standard pulse frequency of 8kHz without de-rating (extendable to 16kHz for low noise requirements)
- Great security from extensive protection features, Under-Voltage, Over Voltage, earth faults, short circuits, stall prevention, I²t motor thermal protection, inverter and motor over temperature
- All the standards conformance you need UL, cUL, CE, c-tick



The 2 Versions

The SINAMICS G110 Variable Speed Drive is available in 2 versions. The first is the more typical, in that its control is derived from a series of analogue and digital inputs for the control and setpoint levels. The second version however is specifically designed for use with the Siemens S7-200 MICROSYSTEMS range of PLCs. In this case the analogue input is replaced with a communication port for direct connection to the PLC

Version 1 – Standard



This version is simply controlled using the freely configurable I/O from a variety of sources such as a local operator station or from the MICROSYSTEMS LOGO module and the drives fixed frequency selection function. These units are all equipped with the following.

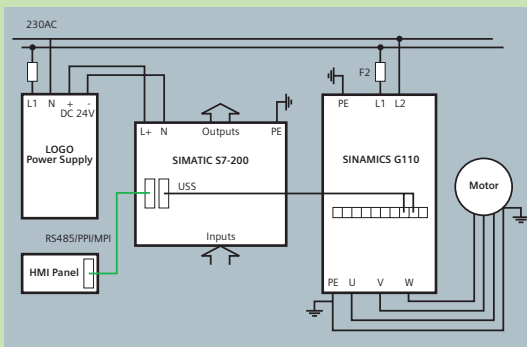
3 freely programmable digital inputs

1 analogue 0V-10V scalable input

(This can if required be reconfigured as an extra digital I/P)

1 isolated digital optocoupler output (24V, 50mA)

Version 2 – USS Protocol



This version connects up to 31 drive nodes directly to the S7-200 via the integrated RS-485 port. Control instructions such as start/stop signals and the speed reference are simply transferred without the need for hardwiring of control cables. In addition other information such as status and parameter information can be simply passed between the nodes (eg to be displayed on an HMI panel)

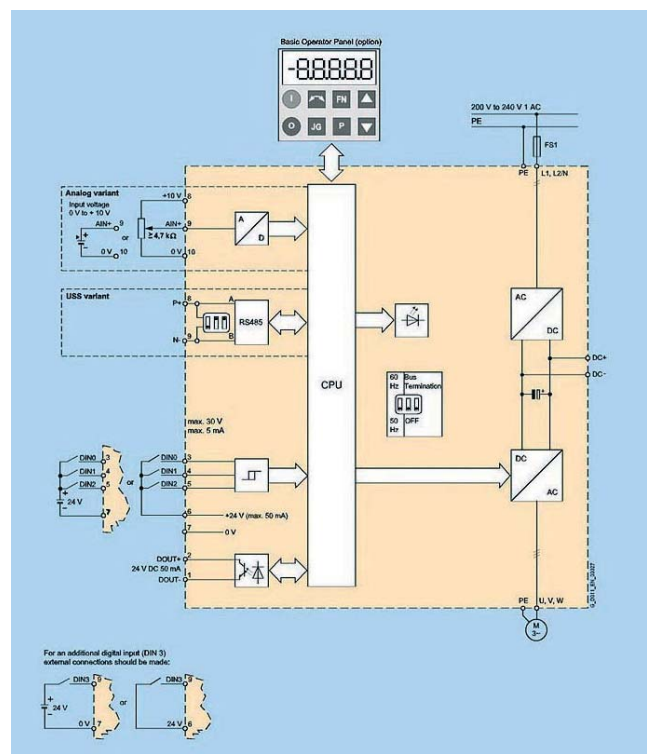
Should some other local hard wired control be required the drive is also fitted with 3 digital inputs and 1 isolated optocoupler output (24V, 50mA)



For easy local commissioning simply clip the optional keypad to the front of the drive. The module allows simple access to all functions and useful information. Parameter cloning is even provided as standard



If you prefer the drive can be configured using simple graphical software (STARTER). To enable set up by this method there is a PC connection kit available that includes an opto-isolation module giving protection for your PC and a connecting cable.



Technical Data and Dimensions

Input voltage and power range	200 V to 240 V 1 AC $\pm 10\%$, 0.12 kW to 3.0 kW
Input frequency	47 Hz to 63 Hz
Output frequency	0 Hz to 650 Hz
Overload capability	Overload current 1.5 x rated output current (ie 150 % overload capability) for 60 s, then 0.85 x rated output current for 240 s, cycle time 300 s
Control method	Linear V/f (with programmable voltage boost); quadratic V/f; multipoint characteristic (programmable V/f)
Pulse frequency	8 kHz (standard) 2 kHz to 16 kHz (in 2 kHz steps)
Fixed frequencies	3, programmable
Skip frequency band	1, programmable
Setpoint resolution	0.01 Hz digital, 0.01 Hz serial 10 bit analog (motor potentiometer 0.1 Hz)
Digital inputs	3 programmable digital inputs, non isolated; PNP type, SIMATIC compatible
Analog input (analog variant)	1, for setpoint (0 V to 10 V, scalable or for use as 4th digital input)
Digital output	1 isolated optocoupler output (24 V DC, 50 mA, resistive, NPN type)
Serial interface	(USS variant) RS485, for operation with USS protocol
Motor cable length	Max. 25 m (shielded) 50 m (unshielded). Longer cable lengths on request.
Braking	Ramp optimised braking and DC braking
Protection level	IP 20
Temperature range	-10 °C to +40 °C (up to +50 °C with derating)
Storage temperature	-40 °C to +70 °C
Humidity	95 % (non-condensing)
Operational altitudes	Up to 1000 m above sea level
Protection features for	Under-voltage, over-voltage, earth faults, short circuits, stall prevention, I ² t motor thermal protection, inverter over-temperature, motor over-temperature

Dimensions and weights (Without Options)

Frame size (FS)	H x W x D MM	Weight, approx. (kg)	
		Industrial	filtered
A ≤ 0.37 kW	150 x 90 x 116	0.7	0.8
A 0.55 kW and 0.75 kW	150 x 90 x 131	0.8	0.9
A ≤ 0.37 kW without heatsink	150 x 90 x 101	0.6	0.7
A 0.55 kW and 0.75 kW without heatsink	150 x 90 x 101	0.7	0.8
B 1.1 kW and 1.5 kW	160 x 140 x 142	1.4	1.5
C 2.2 kW	181 x 184 x 152	1.9	2.1
C 3.0 kW	181 x 184 x 152	2.0	2.2

Frame size	A: (0.12 kW to 0.37 kW)	A: (0.55 kW to 0.75 kW)	B: (1.1 kW to 1.5 kW)	C: (2.2 kW to 3.0 kW)	A: without heatsink: (0.12 kW to 0.75 kW)
Front view					
Side view					

SINAMICS G110

Standard – For use with Analogue and Digital I/O

Rating	Frame size	Industrial	List price	Filtered	List price
0.12 kW / 0.9 A	A	6SL3211-0AB11-2UA0	£71	6SL3211-0AB11-2BA0	£79
0.25 kW / 1.7 A	A	6SL3211-0AB12-5UA0	£76	6SL3211-0AB12-5BA0	£86
0.37 kW / 2.3 A	A	6SL3211-0AB13-7UA0	£81	6SL3211-0AB13-7BA0	£93
0.55 kW / 3.2 A	A	6SL3211-0AB15-5UA0	£89	6SL3211-0AB15-5BA0	£100
0.75 kW / 3.9 A	A	6SL3211-0AB17-5UA0	£97	6SL3211-0AB17-5BA0	£110
1.1 kW / 6.0 A	B	6SL3211-0AB21-1UA0	£112	6SL3211-0AB21-1AA0	£128
1.5 kW / 7.8 A	B	6SL3211-0AB21-5UA0	£127	6SL3211-0AB21-5AA0	£147
2.2 kW / 11.0 A	C	6SL3211-0AB22-2UA0	£152	6SL3211-0AB22-2AA0	£174
3.0 kW / 13.6 A	C	6SL3211-0AB23-0UA0	£175	6SL3211-0AB23-0AA0	£202

Standard without heatsink – For use with Analogue and Digital I/O

Rating	Frame size	Industrial	List price	Filtered	List price
0.12 kW / 0.9 A	A	6SL3211-0KB11-2UA0	£71	6SL3211-0KB11-2BA0	£79
0.25 kW / 1.7 A	A	6SL3211-0KB12-5UA0	£76	6SL3211-0KB12-5BA0	£86
0.37 kW / 2.3 A	A	6SL3211-0KB13-7UA0	£81	6SL3211-0KB13-7BA0	£93
0.55 kW / 3.2 A	A	6SL3211-0KB15-5UA0	£89	6SL3211-0KB15-5BA0	£100
0.75 kW / 3.9 A	A	6SL3211-0KB17-5UA0	£97	6SL3211-0KB17-5BA0	£110

MICROSYSTEMS – For direct connection to Siemens S7200 PLC via communication link

Rating	Frame size	Industrial	List price	Filtered	List price
0.12 kW / 0.9 A	A	6SL3211-0AB11-2UB0	£71	6SL3211-0AB11-2BB0	£79
0.25 kW / 1.7 A	A	6SL3211-0AB12-5UB0	£76	6SL3211-0AB12-5BB0	£86
0.37 kW / 2.3 A	A	6SL3211-0AB13-7UB0	£81	6SL3211-0AB13-7BB0	£93
0.55 kW / 3.2 A	A	6SL3211-0AB15-5UB0	£89	6SL3211-0AB15-5BB0	£100
0.75 kW / 3.9 A	A	6SL3211-0AB17-5UB0	£97	6SL3211-0AB17-5BB0	£110
1.1 kW / 6.0 A	B	6SL3211-0AB21-1UB0	£112	6SL3211-0AB21-1AB0	£128
1.5 kW / 7.8 A	B	6SL3211-0AB21-5UB0	£127	6SL3211-0AB21-5AB0	£147
2.2 kW / 11.0 A	C	6SL3211-0AB22-2UB0	£152	6SL3211-0AB22-2AB0	£174
3.0 kW / 13.6 A	C	6SL3211-0AB23-0UB0	£175	6SL3211-0AB23-0AB0	£202

MICROSYSTEMS without Heatsink – For direct connection to Siemens S7200 PLC via communication link

Rating	Frame size	Industrial	List price	Filtered	List price
0.12 kW / 0.9 A	A	6SL3211-0KB11-2UB0	£71	6SL3211-0KB11-2BB0	£79
0.25 kW / 1.7 A	A	6SL3211-0KB12-5UB0	£76	6SL3211-0KB12-5BB0	£86
0.37 kW / 2.3 A	A	6SL3211-0KB13-7UB0	£81	6SL3211-0KB13-7BB0	£93
0.55 kW / 3.2 A	A	6SL3211-0KB15-5UB0	£89	6SL3211-0KB15-5BB0	£100
0.75 kW / 3.9 A	A	6SL3211-0KB17-5UB0	£97	6SL3211-0KB17-5BB0	£110

Accessories					
Basic Operator Panel				6SL3255-0AA00-4BA0	£12
Connection kit for PC to Inverter				6SL3255-0AA00-2AA0	£11
Adapter for mounting on DIN rail, (FS A)				6SL3261-1BA00-0AA0	£6
Commissioning tool STARTER on CD-ROM					
(Inc. Operating instructions, parameter list, getting started guide)				6SL3271-0CA00-0AG0	£8

Documentation is also available on the internet at <http://www.siemens.com/sinamics-g110>

Further information is contained in the following catalogues which can be obtained from our literature hotline 0845 770 50 70:

Standard Drives Short Form Catalogue 2003/2004.1

LOGO! MICRO AUTOMATION LOGO!

Simply Different – Simply Ingenious – E20001 A1120 P271 X 7600

Simatic S7-200 MICRO AUTOMATION Control Technology

A Class Of Its Own – E20001 A1020 P272 X7600

Low-Voltage Motors - Breathtakingly Powerful Drive Solutions

In Their Element – E80001 A320 P220 X 7600



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www.siemens.com/drives

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