



www.siemens.co.uk/drives

Shortform Catalogue

Variable Speed Drives October 2014

کاتالوگ درایو زیمنس

SINAMICS V20
SINAMICS G120C
SINAMICS G120P
SINAMICS G120
SINAMICS G110M
SINAMICS G110D
SINAMICS G120D

SINAMICS S110
SINAMICS G130 / G150
SINAMICS S120
MICROMASTER 420 / 430 / 440
High Efficiency Motors
Integrated Drive Systems

Variable speed drives, low voltage motors and geared motor units. A world of applications - one solution

Siemens Industry supplies a comprehensive range of automation, electrical distribution and drives products worldwide and is the largest supplier of variable speed drives in Europe.



Our multi-award winning drives manufacturing facility in Congleton, Cheshire ranks amongst the world's largest variable speed drive factories, producing more than 2500 drives per day and a further 3500 options (Control Units and Operator Panels).

This latest edition of the shortform catalogue highlights the main features and benefits of our **SINAMICS** and **MICROMASTER** drives families, which compliment our latest drives, low voltage motors and geared motors catalogues. With a reputation for innovative technology and the highest quality, our complete family of **SINAMICS** and **MICROMASTER** drives can fulfil a vast range of application requirements. Add to that our high efficiency motors and gear boxes, then Siemens has the optimum cost effective solution for all drive applications.

No product range is complete without a comprehensive service, support and training package, which is where Siemens stands out amongst other suppliers. Whether you are looking for applications assistance, training solutions, or breakdown support, you can be assured of a professional and efficient service from Siemens. Our aim is to provide our customers with an outstanding level of support, which safeguards production and contributes to our customers future success.



Call our hotline to arrange a free consultation with one of our expert drive specialists –

From UK Tel: 08458 507600
From IRL Tel: 1890 507600

E-mail:
sales.gbi.industry@siemens.com

CONTENTS

Variable Speed Drives

SINAMICS News	01 & 02
SINAMICS Family & Typical Applications	03 & 04
Drives Overview	05 & 06
SINAMICS V20	07 & 08
SINAMICS G120C	09 & 10
SINAMICS G120P	11 & 12
SINAMICS G120 Modular Overview	13 & 14
SINAMICS G120 Modular PM230	15 & 16
SINAMICS G120 Modular PM240-2	17 & 18
SINAMICS G120 Modular PM240	19 & 20
SINAMICS G120 Modular PM250	21 & 22
SINAMICS G110M	23 & 24
SINAMICS G110D	25 & 26
SINAMICS G120D	27 & 28
SINAMICS S110	29 & 30
SINAMICS G130/G150/S120	31
SINAMICS Accessories & Options	32
SINAMICS V20/G120C Accessories	33
SINAMICS Accessories for PM230	34
SINAMICS Accessories for PM240-2	35
SINAMICS Accessories for PM240/PM250/PM340	36
SINAMICS V20 Dimensions	37
SINAMICS G120C Dimensions	38
SINAMICS G120P PM230 IP55 Dimensions	39
SINAMICS G120 Dimensions	40
SINAMICS G120/S110 Dimensions	41
SINAMICS G110M/G110D/G120D Dimensions	42
MICROMASTER 420	43 & 44
MICROMASTER 430	45 & 46
MICROMASTER 440	47 & 48
MICROMASTER Options	49
MICROMASTER Accessories	50
MICROMASTER Dimensions	51
Power Quality	52
Energy Efficient Drives	53
Integrated Safety	54
EMC	55
Integrated Drive Systems Overview	56
Motors	57
Gearboxes	58
TIA Portal Startdrive	59
Drives Software and Configurators	60
Industry Services	61
Useful Information	62
Enquiry Sheet	63
Price List insert	



SINAMICS G110M (see page 23 for full details)

The SINAMICS G110M is a 'Motor Mounted Drive' in Power Ratings of 0.37 kW to 4 kW. The drive can be combined with a number of Siemens motors or as a complete Drive/Motor/Gearbox solution.

Benefits

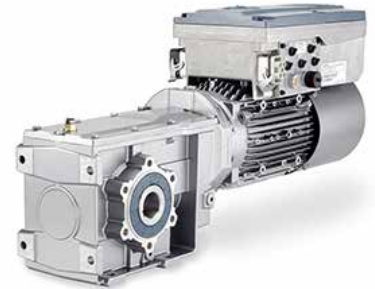
- Compact Design
- Integrated Safety (STO)
- Internal Braking Resistor option
- Local 24V Power Supply option

Please see pages 23 & 24 for details.

Watch the installation of the drive to the motor on Youtube at <http://www.youtube.com/watch?v=SWtHdXqMSUw>.



See Catalogue MD 50.1



SINAMICS V20 (see page 7 for full details)

The SINAMICS V20 makes it's first appearance in our 'ShortForm' catalogue and offers you a compact, simple and cost-effective drive solution for many automation tasks that is packed with features and benefits seldom found in a basic drive.

With four frame sizes, the V20 covers a power range of:

0.12 kW to 3kW in 200 ... 240 V 1 AC

0.37 kW to 15kW in 380 ... 480 V 3 AC

Please see page 7 & 8 for details or watch on Youtube at

<http://www.youtube.com/watch?v=xbPBwNi73gg>.



ATEX Applications

We can now provide two options for the connection of motor thermistors for ATEX applications.

The 'Chemical' Module CM240NE has now been certified to work with the CU250S-2 DP Control Unit and is designed with a NAMUR terminal strip according to NE 37.

CM240NE: 6SL3255-0BT01-0PA0

Fitting Kit: 6SL3260-4TA00-1AA6

Call 08458 507600 (option 2)

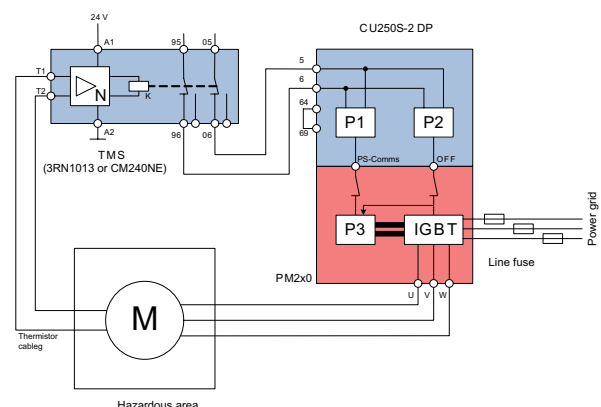
or mail sales.industry.gbi@siemens.com for prices.

See the D31 2014 Catalogue for full product details.

Alternatively the 3RN1013 has also been certified with the CU250S-2 Control Unit where a NAMUR terminal strip is not required.

Both solutions can be used to drive the STO (Safe Torque Off) input to switch off the Drive pulses off without the need for a line contactor.

Please see <http://support.automation.siemens.com/WW/view/en/96034800> for further details.



SINAMICS G120P Power Range Extended

The SINAMICS G120P, the specialist for Fans, Pump's and Compressors has it's power range increased to 400kW with the introduction of the new PM330 Power Modules.



The chassis version is available with ratings:
160 kW to 400 kW, 380 ... 480 V 3AC

The cabinet version is available with ratings:
110 kW to 400 kW, 380 ... 480 V 3AC

Control Units and Operators Panel remain the same as used with the PM230 Power Module to insure commonality of components and ease selection with Sizer and commissioning with Starter or Startdrive (TIA Portal).

How does the PM330 differ from the PM230?

- Dynamic Braking is possible via an optional braking chopper and resistor
- The Power Section is different so Input Reactors may be required to limit harmonics or when used on a weak supply.
If you are unsure then it's good practice to fit an Input Reactor
- If a Line Filter is used an Input Reactor must be used

Full details can be found in the new D35 catalogue for pump, fan and compressors with G120P available from: Literature on Line at <https://www.services.siemens.co.uk/LiteratureOnline/> or please call / mail the office on: 08458 507600
sales.industry.gbi@siemens.com.



SINAMICS G120 PM240-2

(see page 17 for full details)

The SINAMICS G120-PM240-2 range has been supplemented with additional modules:

380 ... 480 V, 3 AC FSA to FSC, 0.37 kW - 15 kW

200 ... 240 V, 1/3 AC units in FSA to FSC, 0.37 kW - 4 kW

200 ... 240 V, 3 AC units in FSC, 4 kW - 7.5 kW

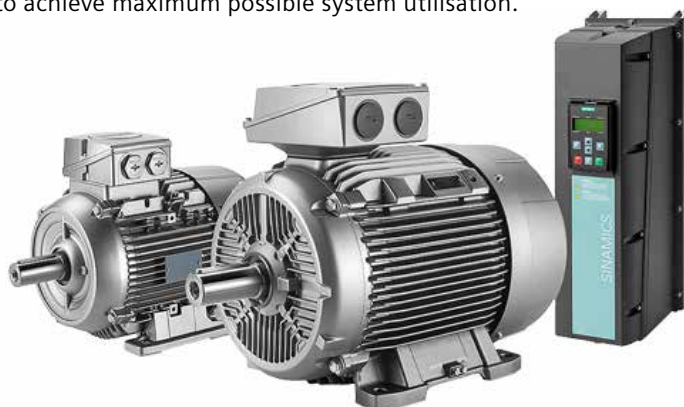


Benefits

- Higher Power Density – Higher Power rating in a smaller device saving space in the cabinet
- Side by side mounting without de-rating saving space
- Integrated EMC filter for FSA
- Removable connectors
- Cooling fan controlled by demand, quieter operation
- Shield plates supplied with unit
- 'Push Through' units available so less heat generated into the cabinet
- Use without Input Reactor – even for line supplies with uk < 1%, – by dimensioning the Power Modules by one power stage higher

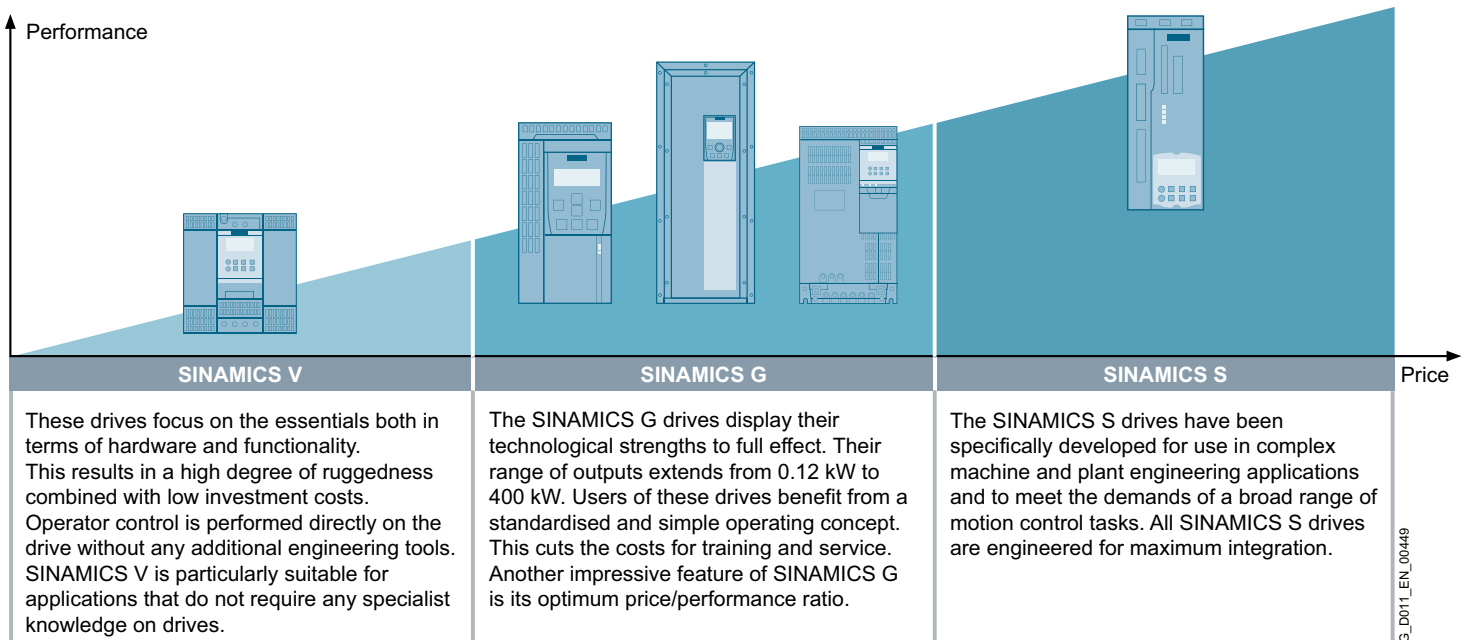
SIMOTICS GP/SD VSD10 Line

The motors in the VSD10 series are available in both aluminum housings (Simotics GP) and cast-iron housings (Simotics SD) and they cover the output range from 2.2 to 200 kW. As a central component of Integrated Drive Systems, the motors are optimized for 'Inverter' only operation with Sinamics VSD's so as to achieve maximum possible system utilisation.

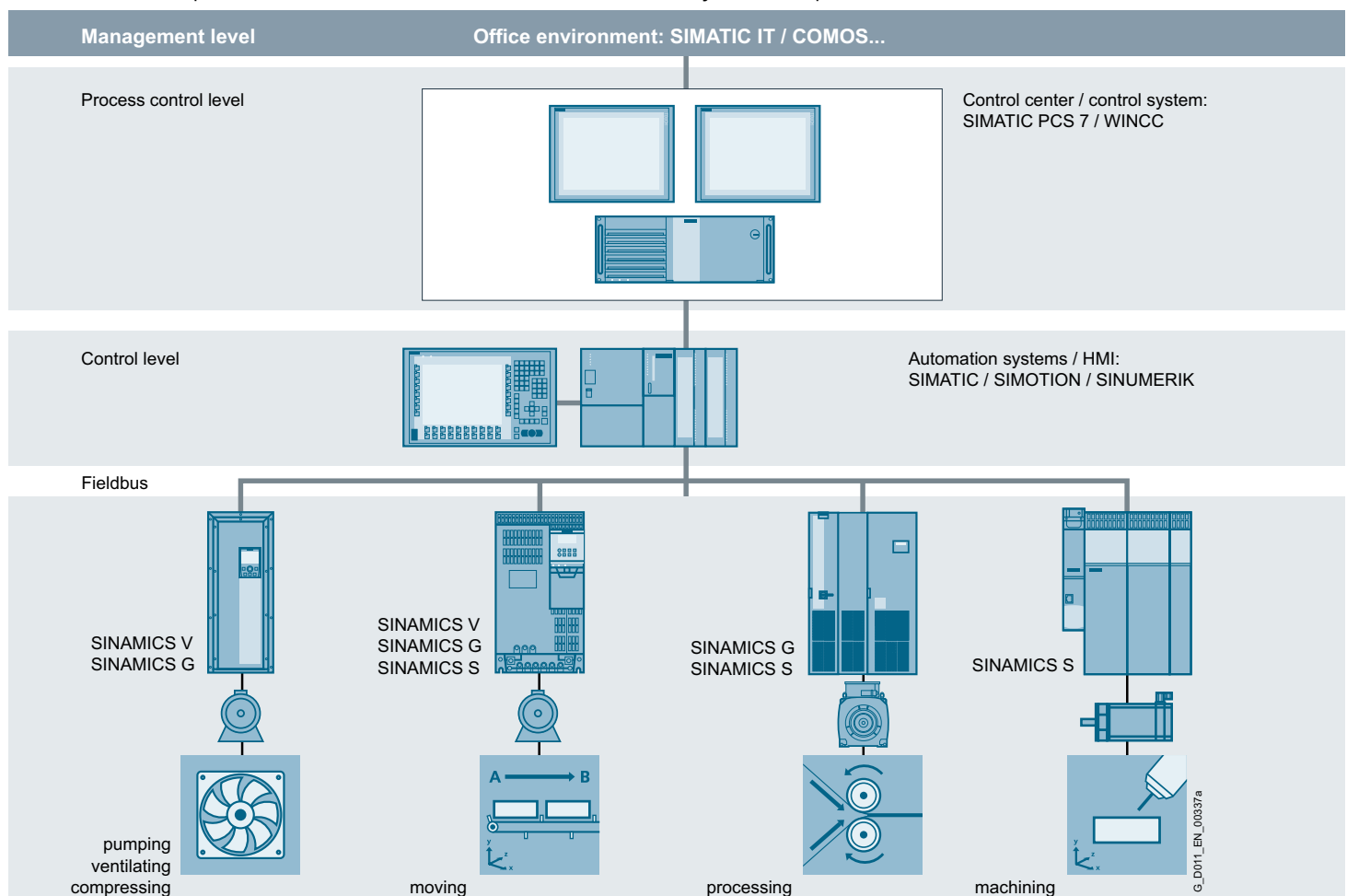


SINAMICS Family

SINAMICS is the most comprehensive drive family available today. It is based on a simple, integrated engineering concept, inherently providing innovative, energy-efficient solutions for the future. No matter which application you have, Siemens offers you the optimum drive — from one source.



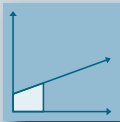
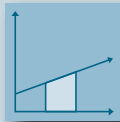
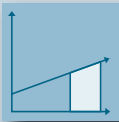
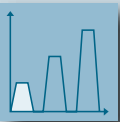
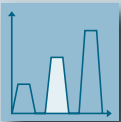
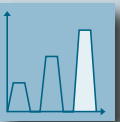

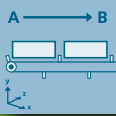
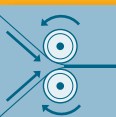
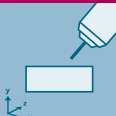
SINAMICS is also an integral component of the Siemens “Totally Integrated Automation” concept having a wide range of communications options available for connection to the automation system if required.



Typical applications that fall under the technology of Pumping/Ventilating/Compressing, Moving, Processing and Machining can be found opposite.

Typical Applications

Typical applications

Performance* Purpose	Continuous motion			Discontinuous motion		
	Basic 	Medium 	High 	Basic 	Medium 	High 
Pumping Ventilating Compressing 	Centrifugal pumps Radial / axial fans Compressors G110 G120C V20/G120P	Centrifugal pumps Radial / axial fans Compressors G120P G130/G150	Eccentric spiral / worm / screw pumps S120	Hydraulic pumps Dosing pumps G120	Hydraulic pumps Dosing pumps S110	Descaling pumps Hydraulic pumps S120
	G110 G110D G120C V20/G110D	G120 G120D G130/G150	S120 DCM	G120D G120	S110 DCM	S120 DCM
Moving 	Belt conveyors Roller conveyors Chain conveyors G110 G110D G120C V20/G110D	Belt conveyors Roller conveyors Chain conveyors Vertical / horizontal material handling Elevators / escalators Gantry cranes Ship's drives Cable railways G120 G120D G130/G150	Elevators Container cranes Mine hoists Open cast mine excavators Test stands S120 DCM	Accelerating conveyors Rack feeders G120D G120	Accelerating conveyors Rack feeders Cross cutters Roll changers S110 DCM	Rack feeders Robotics Pick & place Indexing tables Cross cutters Roller feeds Engaging/ disengaging S120 DCM
	G120C V20	G120 G130/G150	S120 DCM	G120	S110	S120 DCM
Processing 	Mills Mixers Kneaders Crushers Agitators Centrifuges G120C V20	Mills Mixers Kneaders Crushers Agitators Centrifuges Extruders Rotary furnaces G120 G130/G150	Extruders Winders / unwinders Leading / following drives Calendars Mechanical presses Printing machines Rotary furnaces S120 DCM	Tubular bagging machines Single axis motion control i.e. ■ Positioning profiles ■ Path profiles G120	Tubular bagging machines Single axis motion control i.e. ■ Positioning profiles ■ Path profiles S110	Servo presses Rolling mill drives Coordinated multi-axis motion control i.e. ■ Multi-axis positioning ■ Can discs ■ Interpolation S120 DCM
	G120C V20	G120 G130/G150	S120 DCM	G120	S110	S120 DCM
Machining 	Main drives i.e. ■ Turning ■ Milling ■ Drilling S110	Main drives i.e. ■ Drilling ■ Sawing S110 S120	Main drives i.e. ■ Turning ■ Milling ■ Drilling ■ Gear cutting ■ Grinding S120	Axis drives i.e. ■ Turning ■ Milling ■ Drilling S110	Axis drives i.e. ■ Drilling ■ Sawing S110 S120	Axis drives i.e. ■ Turning ■ Milling ■ Drilling ■ Laser machining ■ Gear cutting ■ Grinding ■ Nibbling and punching S120
	S110	S110 S120	S120	S110	S110 S120	S120

* Requirements regarding torque, speed and position precision/axis co-ordination/functionality.

Drives Overview

Variable Speed Drives



SINAMICS V20

Pages 07 and 08

0.12 kW ... 3 kW, 200 V ... 240 V 1 AC
0.37 kW ... 15 kW, 380 V ... 480 V 3 AC

A compact, simple and cost effective drive for many automation tasks that is packed with features seldom found in a basic drive.



SINAMICS G120C

Pages 09 and 10

0.37 kW ... 18.5 kW, 380 V ... 480 V 3 AC

The SINAMICS G120C is a compact variable speed specifically designed for OEMs who require a cost effective, space saving design that is simple to operate and has a broad range of functions.

Ideal for conveyors, pumps, fans, compressors, mixers and extruders.



SINAMICS G120P

Pages 11 and 12

IP55: 0.25 kW ... 90 kW, 380 V ... 480 V 3 AC
IP20: 0.25 kW ... 75 kW, 380 V ... 480 V 3 AC

The SINAMICS G120P is an IP55 or IP20 rated innovative, energy efficient variable-speed drive specifically tailored to pump, fan, compressor and HVAC applications.

This modular drive solution comprises a power modular (PM), control unit (CU) and optional operator panel.

For higher kW units see catalogue D35.



SINAMICS G120 Modular

Pages 13 and 14

0.25 kW ... 250 kW, 380 V ... 480 V / 500 V ... 690 V 3 AC

The SINAMICS G120 is a modular drive solution comprising a Power Module (PM) and Control Unit (CU) and is designed to provide precise and cost effective speed/torque control of AC motors in a wide range of industrial applications.



(depending on Control Unit and Power Module)

Distributed Drives



SINAMICS G110M

Pages 23 and 24

0.37 kW ... 4 kW, 380 V ... 480 V 3 AC

The SINAMICS G110M is a 'Motor-mounted drive' than can be combined with a number of Siemens motors or as a complete drive/motor/gearbox solution.



SINAMICS G110D

Pages 25 and 26

0.75 kW ... 7.5 kW, 380 V ... 500 V 3 AC

This is a simpler version of the higher-performance SINAMICS G120D and offers the same mounting footprint, low profile design and rugged metal enclosure so can be located close to the motor. Communications can be carried out using ASI interface.



SINAMICS G120D

Pages 27 and 28

0.75 kW ... 7.5 kW, 380 V ... 500 V 3 AC

Distributed version of the G120 for cabinet free applications. Compact design with Regenerative Energy capability, this drive has been specifically designed for sophisticated conveyor applications. Communication via Profibus or Profinet.



Simple Servo / Positioning Drive



SINAMICS S110

Pages 29 and 30

0.12 kW ... 0.75 kW, 200 V ... 240 V 1 AC
0.37 kW ... 90 kW, 380 V ... 480 V 3 AC



Many applications in machine construction require accurate positioning from point X to point Y quickly and precisely by the simplest possible method. The SINAMICS S110 is an ideal solution for this type of application and is specifically designed to position an axis accurately and effectively.



SINAMICS G130

Page 31

SINAMICS G150

Page 31

110 kW ... 560 kW, 380 V ... 480 V 3 AC
110 kW ... 560 kW, 500 V ... 600 V 3 AC
75 kW ... 800 kW, 660 V ... 690 V 3 AC

110 kW ... 900 kW, 380 V ... 480 V 3 AC
110 kW ... 1000 kW, 500 V ... 600 V 3 AC
75 kW ... 2700 kW, 660 V ... 690 V 3 AC

The SINAMICS G130 Chassis units and the SINAMICS G150 Cabinet units are variable speed drives specifically designed to meet single motor applications with square-law and constant load characteristics without regenerative feedback into the mains supply.



Engineered Drive



SINAMICS S120

Page 31

0.12 kW ... 0.75 kW, 200 V ... 240 V 1 AC
0.37 kW ... 3000 kW, 380 V ... 480 V 3 AC
75 kW ... 4500 kW, 500 V ... 690 V 3 AC



The SINAMICS S120 is a modular drive system with servo and vector control capabilities for sophisticated tasks. Versions are available for single and multi-axis applications.

Typical Applications

- Packaging, plastics, printing and paper machines
- Textiles
- Woodworking, glass and ceramics
- Machine tools
- Steel industry
- Hoisting and cranes
-and many more



MICROMASTER 420

Pages 43 & 44

0.12 kW ... 3 kW, 200 V ... 240 V 1 AC
0.37 kW ... 11 kW, 380 V ... 480 V 3 AC

The 'Universal' drive for a range of variable speed applications such as fans, pumps and conveyor systems.

MICROMASTER 430

Pages 45 & 46

7.5 kW ... 250 kW, 380 V ... 480 V 3 AC

The 'Specialist' for fans and pumps.

MICROMASTER 440

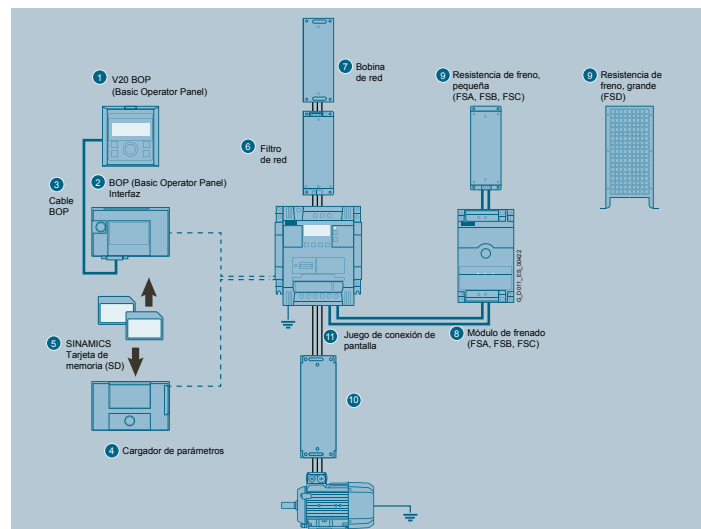
Pages 47 & 48

0.12 kW ... 3 kW, 200 V ... 240 V 1 AC
0.37 kW ... 250 kW, 380 V ... 480 V 3 AC

The 'All Purpose' drive where flexibility and performance make it suitable for a vast array of applications.

SINAMICS V20

The compact, versatile single-phase drive



Design

With the SINAMICS V20, Siemens offers you a compact, simple and cost-effective drive solution for many automation tasks and is packed with features and benefits seldom found in a basic drive.

With four frame sizes, V20 covers a power range from 0.12 kW up to 15 kW.

Benefits

- Push through and wall mounting – side by side possible for both
- Analogue, USS and Modbus RTU via terminal connections
- Integrated braking chopper for 7.5 kW to 15 kW
- Parameter loading without power connected
- Integrated application and connection macros
- Keep Running Mode' for uninterrupted operation
- Wide range of voltages, advanced cooling design and coated PCB's for increased robustness
- ECO mode, V/f, V²/f
- Hibernation mode
- DC coupling

Applications

- Centrifugal pumps, Radial / axial fans and compressors
- Belt, roller and chain conveyors
- Mills, mixers, kneaders, crushers, agitators, centrifuges and textile applications

Technical data

Electrical data	SINAMICS V20
Line voltages & Power Ranges	200 ...240V 1 AC (-10% +10%): 0.12 kW ...3.0 kW 380 ...480V 3 AC (-15% +10%) 0.37 kW ...15.0 kW
Line supply types	TN, TT, IT* (*only 3AC version)
Line frequency	50 / 60 Hz
Output frequency	0 ... 550 Hz
Overload	150% rated output current for 60s in a 300s cycle
Control Modes	V/f linear, square & multipoint, Flux Current Control
Digital Inputs (DI)	4, Optically isolated PNP/NPN (selectable)
Digital Outputs (DO)	2, 1 transistor output, 1 relay output
Analogue Inputs (AI)	2, Can be used as Digital Inputs
Analogue Outputs (AO)	1, (0 ...20mA)
Communication	RS485 / USS / Modbus RTU

Functions

Software Functions	ECO mode, Hibernation mode, energy consumption monitoring, auto restart, flying start, PID controller, BICO connection, hammer start, super torque mode, anti ragging, motor staging, boost, wobble, load failure detection, slip compensation, dual ramp
Monitoring/protection functions	Frost, anti condensation and cavitation protection. Kinetic buffering, Load failure protection Undervoltage, overvoltage, ground fault, short circuit, stall protection, thermal motor and power module protection, temperature

Mechanical data

Degree of protection	IP20
Cooling type	Convection / Fan (dependent on module)

Environment

Ambient temperature (operating)	0 ... 60°C, between 40 ... 60°C with derating
Motor Cable Length	Unshielded cable : 50m Shielded cable : 25m Longer cable lengths possible with output reactors

Standards

In conformance with the following standards	CE, cULus, C-tick, KC EN61800-3 catagory C2, 1st environment 1 AC 230V with integrated line filter, shielded cables ≤ 25m (FSA ≤ 10m *) 3 AC 400V without integrated line filter with external line filter, shielded cables ≤ 25m EN61800-3 catagory C3, 2nd environment 3 AC 400V with integrated line filter, shielded cables ≤ 25m (FSA ≤ 10m *)
---	--

SINAMICS V20

Part Numbers

Supply Voltage - 200 V ... 240 V 1 AC		Power Modules	
Rating at 230 V	Frame Size	Industrial	Filtered #
0.12 kW / 0.9 A	A	6SL3210-5BB11-2UV0	6SL3210-5BB11-2AV0
0.25 kW / 1.7 A	A	6SL3210-5BB12-5UV0	6SL3210-5BB12-5AV0
0.37 kW / 2.3 A	A	6SL3210-5BB13-7UV0	6SL3210-5BB13-7AV0
0.55 kW / 3.2 A	A	6SL3210-5BB15-5UV0	6SL3210-5BB15-5AV0
0.75 kW / 3.9 A	A	6SL3210-5BB17-5UV0	6SL3210-5BB17-5AV0
0.75 kW / 4.2 A	A*	6SL3210-5BB18-0UV0	6SL3210-5BB18-0AV0
1.1 kW / 6.0 A	B*	6SL3210-5BB21-1UV0	6SL3210-5BB21-1AV0
1.5 kW / 7.8 A	B*	6SL3210-5BB21-5UV0	6SL3210-5BB21-5AV0
2.2 kW / 11 A	C*	6SL3210-5BB22-2UV0	6SL3210-5BB22-2AV0
3 kW / 13.6 A	C*	6SL3210-5BB23-0UV0	6SL3210-5BB23-0AV0

Overload: 1.5 x Rated Current for 60s in a 300s cycle.

* with 1 Fan, # Catogry C2- see page 55 for specific categorisations.

Supply Voltage - 380 V ... 480 V 3 AC		Power Modules	
Rating at 400 V	Frame Size	Industrial	Filtered ##
0.37 kW / 1.3 A	A	6SL3210-5BE13-7UV0	6SL3210-5BE13-7CV0
0.55 kW / 1.7 A	A	6SL3210-5BE15-5UV0	6SL3210-5BE15-5CV0
0.75 kW / 2.2 A	A	6SL3210-5BE17-5UV0	6SL3210-5BE17-5CV0
1.1 kW / 3.1 A	A*	6SL3210-5BE21-1UV0	6SL3210-5BE21-1CV0
1.5 kW / 4.1 A	A*	6SL3210-5BE21-5UV0	6SL3210-5BE21-5CV0
2.2 kW / 5.6 A	A*	6SL3210-5BE22-2UV0	6SL3210-5BE22-2CV0
3 kW / 7.3 A	B*	6SL3210-5BE23-0UV0	6SL3210-5BE23-0CV0
4 kW / 8.8 A	B*	6SL3210-5BE24-0UV0	6SL3210-5BE24-0CV0
5.5 kW / 12.5 A	C*	6SL3210-5BE25-5UV0	6SL3210-5BE25-5CV0
7.5 kW / 16.5 A	D**	6SL3210-5BE27-5UV0	6SL3210-5BE27-5CV0
11 kW / 25 A	D**	6SL3210-5BE31-1UV0	6SL3210-5BE31-1CV0
15 kW / 31 A	D**	6SL3210-5BE31-5UV0	6SL3210-5BE31-5CV0

Overload: 1.5 x Rated Current for 60s in a 300s cycle

* with 1 Fan, ** with 2 Fans, ## Catogry C3- see page 55 for specific categorisations.

Options	
6SL3255-0VE00-0UA0	Parameter Loader
6SL3255-0VA00-4BA0	V20 Basic Operator Panel (for door mounting)
6SL3255-0VA00-2AA0	BOP Interface (for door mounting)
6SL3256-0VP00-0VA0	BOP cable (3 mtrs including 4 mounting screws)
6SL3201-2AD20-8VA0	Braking Module (230 V 1AC: 8A, 400 V 3AC: 7A)
6SL3054-4AG00-2AA0	SD Memory Card
6SL3255-0VC00-0HA0	RS485 Terminators (50 pieces)

Shield Connection Kits	
6SL3266-1AA00-0CVA0	FSA
6SL3266-1AB00-0CVA0	FSB
6SL3266-1AC00-0CVA0	FSC
6SL3266-1AD00-0CVA0	FSD

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 33.

SINAMICS G120C



Design

The SINAMICS G120C is a variable speed drive specifically designed for OEMs who require a cost effective, space saving design that is simple to operate and has a broad range of functions.

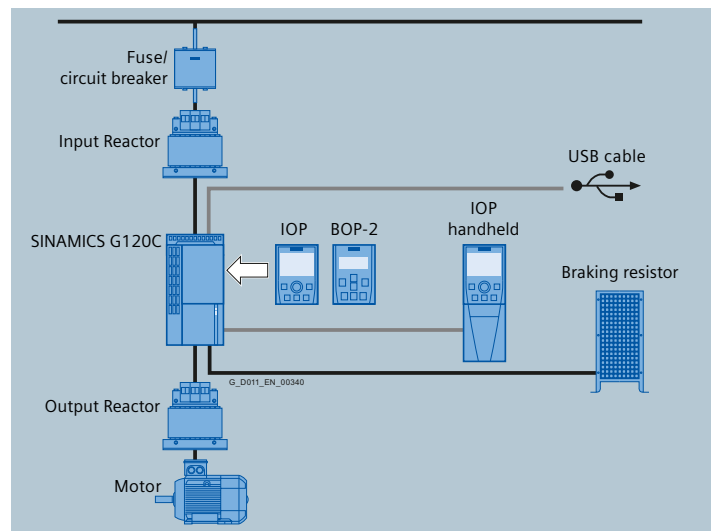
The compactness of this drive is achieved through the use of high power density components so only three frame sizes cover power ratings of 0.37 kW to 18.5 kW.

Benefits

- Compact design, high power density
- Available with and without filter and with Profibus DP, Profinet, CAN, USS & Modbus RTU Interfaces
- Simple commissioning with Starter or StartDrive
- Interchangeable memory card for backup and serial commissioning
- Side by side mounting without de-rating
- Pluggable terminals for easy installation
- Integrated braking chopper, motor holding brake control (simplified)
- Integrated PID controller
- Analogue Input - Selectable between -10V .. +10V, 0/4 .. 20mA)
- STO Safety Function
- Coated boards for robustness
- Energy saving calculator, energy consumption calculator, automatic flux reduction, automatic flow reduction
- Software functions for auto restart, flying restart, ramp smoothing and adjustable ramp up/down times
- Skip frequencies to avoid resonance
- Fast, repeatable digital inputs for fast reaction applications
- Extensive protection features
- USB connectivity
- Quick commissioning with BOP-2 and IOP operator panels

Applications

- Conveyors, pumps, fans, compressors, mixers & extruders



Technical data

Electrical data	SINAMICS G120C
Line voltages	380 V... 480 V 3 AC + 10%, -20%
Power ranges	0.37 kW ... 18.5 kW
Line supply types	TN, TT, IT (without filter)
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz from FW4.7
Pulse frequency	4 kHz (up to 16 kHz with derating)
Open-loop control	V/f (linear, square law, FCC, ECO) Vector control without encoder
Digital inputs (DI)	6
Digital outputs (DO)	2, 1 x relay, 1 x transistor
Analogue inputs (AI)	1 (selectable between -10 ... +10V, 0/4 ... 20mA)
Analogue outputs (AO)	1 (0 ... 10V, 0/4 ... 20mA)
Failsafe inputs (F-DI)	1 (uses 2 digital inputs - DI14 & DI15)
Communication interface	RS485/USS/Modbus RTU: PROFIBUS DP: PROFINET: CANopen
Interface to	PC via USB, BOP-2, IOP or Handheld IOP, Sinamics SD card

Functions

Software functions	Setpoint input, 16 fixed frequencies (programmable), ramp smoothing, jog, slip compensation, BICO technology, command sets (2), flying restart, automatic restart, PID controller, energy consumption counter, energy saving computer, auto ramping, kinetic buffering, DC braking, compound braking, braking with brake chopper, brake relay control via CU (simplified)
Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature
Safety functions	STO

Mechanical data

Degree of protection	IP20
Cooling type	Fan

Standards

In conformance with the following standards	EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2 cULus, CE, c-tick
---	--

SINAMICS G120C

Part Numbers

Supply Voltage - 380 V... 480 V 3 AC		Power Modules			
Rating		Frame Size	Communication Interface	Industrial	Filtered #
LO (VT)	HO (CT)				
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	USS/MOD Bus RTU	6SL3210-1KE11-8UB1	6SL3210-1KE11-8AB1
			Profibus	6SL3210-1KE11-8UP1	6SL3210-1KE11-8AP1
			Profinet	6SL3210-1KE11-8UF1	6SL3210-1KE11-8AF1
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	USS/MOD Bus RTU	6SL3210-1KE12-3UB1	6SL3210-1KE12-3AB1
			Profibus	6SL3210-1KE12-3UP1	6SL3210-1KE12-3AP1
			Profinet	6SL3210-1KE12-3UF1	6SL3210-1KE12-3AF1
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	USS/MOD Bus RTU	6SL3210-1KE13-2UB1	6SL3210-1KE13-2AB1
			Profibus	6SL3210-1KE13-2UP1	6SL3210-1KE13-2AP1
			Profinet	6SL3210-1KE13-2UF1	6SL3210-1KE13-2AF1
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	USS/MOD Bus RTU	6SL3210-1KE14-3UB1	6SL3210-1KE14-3AB1
			Profibus	6SL3210-1KE14-3UP1	6SL3210-1KE14-3AP1
			Profinet	6SL3210-1KE14-3UF1	6SL3210-1KE14-3AF1
2.2 kW / 5.6 A	1.5 kW / 4.1 A	A	USS/MOD Bus RTU	6SL3210-1KE15-8UB1	6SL3210-1KE15-8AB1
			Profibus	6SL3210-1KE15-8UP1	6SL3210-1KE15-8AP1
			Profinet	6SL3210-1KE15-8UF1	6SL3210-1KE15-8AF1
3.0 kW / 7.3 A	2.2 kW / 5.6 A	A	USS/MOD Bus RTU	6SL3210-1KE17-5UB1	6SL3210-1KE17-5AB1
			Profibus	6SL3210-1KE17-5UP1	6SL3210-1KE17-5AP1
			Profinet	6SL3210-1KE17-5UF1	6SL3210-1KE17-5AF1
4.0 kW / 8.8 A	3.0 kW / 7.3 A	A	USS/MOD Bus RTU	6SL3210-1KE18-8UB1	6SL3210-1KE18-8AB1
			Profibus	6SL3210-1KE18-8UP1	6SL3210-1KE18-8AP1
			Profinet	6SL3210-1KE18-8UF1	6SL3210-1KE18-8AF1
5.5 kW / 12.5 A	4.0 kW / 8.8 A	B	USS/MOD Bus RTU	6SL3210-1KE21-3UB1	6SL3210-1KE21-3AB1
			Profibus	6SL3210-1KE21-3UP1	6SL3210-1KE21-3AP1
			Profinet	6SL3210-1KE21-3UF1	6SL3210-1KE21-3AF1
7.5 kW / 16.5 A	5.5 kW / 12.5 A	B	USS/MOD Bus RTU	6SL3210-1KE21-7UB1	6SL3210-1KE21-7AB1
			Profibus	6SL3210-1KE21-7UP1	6SL3210-1KE21-7AP1
			Profinet	6SL3210-1KE21-7UF1	6SL3210-1KE21-7AF1
11 kW / 25 A	7.5 kW / 16.5 A	C	USS/MOD Bus RTU	6SL3210-1KE22-6UB1	6SL3210-1KE22-6AB1
			Profibus	6SL3210-1KE22-6UP1	6SL3210-1KE22-6AP1
			Profinet	6SL3210-1KE22-6UF1	6SL3210-1KE22-6AF1
15 kW / 31 A	11 kW / 25 A	C	USS/MOD Bus RTU	6SL3210-1KE23-2UB1	6SL3210-1KE23-2AB1
			Profibus	6SL3210-1KE23-2UP1	6SL3210-1KE23-2AP1
			Profinet	6SL3210-1KE23-2UF1	6SL3210-1KE23-2AF1
18.5 kW / 37 A	15 kW / 31 A	C	USS/MOD Bus RTU	6SL3210-1KE23-8UB1	6SL3210-1KE23-8AB1
			Profibus	6SL3210-1KE23-8UP1	6SL3210-1KE23-8AP1
			Profinet	6SL3210-1KE23-8UF1	6SL3210-1KE23-8AF1

LO = Low Overload rating (Variable Torque) - 1.5 x LO current rating for 3s plus 1.1 x LO output current rating for 57s in a 300s cycle.

HO = High Overload rating (Constant Torque) - 2 x HO current rating for 3s plus 1.5 x HO current rating for 57s in a 300s cycle.

EMC filtering suitable for 1st environment - see page 55 for specific categorisations.

Options	
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP-2)
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)
6SL3256-0AP00-0JA0	IOP/BOP-2 Door Mounting Kit
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2 for G120C and G120 control units CU230P-2, CU240BE-2, CU240E-2 and CU250S-2, G110M, G120D-2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 Mb

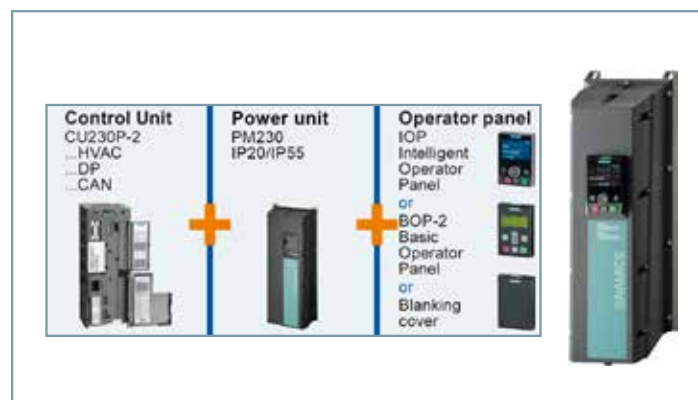
Shield Connection Kits for Power and Signal Cables

A set of shield plates is included in the scope of delivery dependent on G120C Frame Size.

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 33.

SINAMICS G120P

The versatile single-motor drive for pumps, fans and compressors



Design

The SINAMICS G120P is an innovative, energy efficient variable speed drive specifically designed for pump, fan and compressor applications in the process, water and building automation industries.

The SINAMICS G120P is a modular solution consisting of a Power Module (PM), Control Unit (CU) and optional Operator Panel (IOP or BOP-2) and suitable for 3 ph 380-480V AC mains supplies and with power ranges of 0.25 kW to 90 kW. Higher power ratings available with PM330 chassis and cabinet version up to 400 kW. See catalogue D35.

Benefits

- Flexible – choice of Power and Control Module
- Wide Power range
- Versions with different IP ratings
- Advanced hardware and software solutions to reduce energy consumption
- Minimum harmonics - line reactor not needed
- ECO mode – adaption to load conditions
- Hibernation mode
- Multi Zone Control
- Automatic restart after power failure or fault
- Flying restart – control of a rotating load
- Integrated PID Controllers
- Essential Service Mode
- Isolated Digital Inputs and Outputs, Analogue Input
- Fast commissioning with Starter or StartDrive
- Wizards functions for commissioning, maintenance and diagnostics with IOP
- Parameter backup or cloning with an SD card
- Real time clock

Applications

- Pumps for pressure boosting and level control
- Fans for cooling towers, air supply or extraction in tunnels, multi-story car parks of stairwells
- Compressors
- HVAC solutions

Technical data

Electrical data	SINAMICS G120P PM230 with CU230P-2
Line voltages	380 V ... 480 V 3 AC, $\pm 10\%$
Power ranges	IP55: 0.25 kW ... 90 kW IP20: 0.25 kW ... 75 kW
Line supply types IP55	TN
Line supply types IP20	TN (filtered), TN/IT/TT (unfiltered)
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 240 Hz Vector
Pulse frequency	4 kHz (up to 16 kHz with derating)
Open loop control	V/f (linear, square law, FCC, ECO) Vector & Torque control without encoder
Digital inputs (DI)	6
Digital outputs (DO)	3
Analog inputs (AI)	4 (2 selectable -10...+10V, 0/4 ...20mA)
Analog outputs (AO)	2
Communication interface	RS485/USS/Modbus RTU/BACnet: PROFIBUS DP: Profinet: CANopen
External interface to	PC via USB, BOP-2, IOP or Handheld IOP, SINAMICS MMC card or SIMATIC SD card

Functions

Software functions	Setpoint input, 16 fixed frequencies (programmable), ramp smoothing, jog, slip compensation, BICO technology, free function blocks, switchable data and command sets (4), flying restart, automatic restart, PID controllers (4), hibernation, belt and dry pump monitor, auto ramping, kinetic buffering, DC braking
Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature, parameter locking
Safety functions	None

Mechanical data

Degree of protection	IP55/UL Type 12 - with blanking cover or BOP-2 IP54/UL Type 12 - with IOP or IP20 version for cabinet mounting
Cooling type	Fan

Standards

In conformance with the following standards	UL, CUL*, CE, c-tick, SEMI F47 *FSA to FSC
---	---

SINAMICS G120P

Part Numbers

Control Units	Designation	Interfaces	DI	DO	AI	AO	Safety
6SL3243-0BB30-1HA3	CU230P-2 HVAC	RS485 / USS / Modbus / BACnet	6	3	4^	2	No
6SL3243-0BB30-1PA3	CU230P-2 DP	Profibus DP	6	3	4^	2	No
6SL3243-0BB30-1FA0	CU230P-2 PN	Profinet	6	3	4^	2	No
6SL3243-0BB30-1CA3	CU230P-2 CAN	CANopen	6	3	4^	2	No

^ 2 of the 4 Analogue inputs are selectable between 0...10V, -10... +10V, 0/...20mA, 0/4...20mA or can be used as digital inputs if required.

Power Module PM230						
Supply Voltage - 380 V ... 480 V 3 AC						
Power Modules						
Rating		Frame Size	PM230 IP55 Class A	PM230 IP55 Class B	PM230 IP20 Unfiltered	PM230 IP20 Class A
LO (VT)	HO (CT)					
0.37 kW / 1.3 A	0.25 kW / 0.9 A	A	6SL3223-ODE13-7AA0	6SL3223-ODE13-7BA0	6SL3210-1NE11-3UL1	6SL3210-1NE11-3AL1
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	6SL3223-ODE15-5AA0	6SL3223-ODE15-5BA0	6SL3210-1NE11-7UL1	6SL3210-1NE11-7AL1
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	6SL3223-ODE17-5AA0	6SL3223-ODE17-5BA0	6SL3210-1NE12-2UL1	6SL3210-1NE12-2AL1
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	6SL3223-ODE21-1AA0	6SL3223-ODE21-1BA0	6SL3210-1NE13-1UL1	6SL3210-1NE13-1AL1
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	6SL3223-ODE21-5AA0	6SL3223-ODE21-5BA0	6SL3210-1NE14-1UL1	6SL3210-1NE14-1AL1
2.2 kW / 5.9 A	1.5 kW / 4.1 A	A	6SL3223-ODE22-2AA0	6SL3223-ODE22-2BA0	6SL3210-1NE15-8UL1	6SL3210-1NE15-8AL1
3.0 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3223-ODE23-0AA0	6SL3223-ODE23-0BA0	6SL3210-1NE17-7UL1	6SL3210-1NE17-7AL1
4 kW / 10.2 A	3 kW / 7.7 A	B	6SL3223-ODE24-0AA0	6SL3223-ODE24-0BA0	6SL3210-1NE21-0UL1	6SL3210-1NE21-0AL1
5.5 kW / 13.2 A	4 kW / 10.2 A	B	6SL3223-ODE25-5AA0	6SL3223-ODE25-5BA0	6SL3210-1NE21-3UL1	6SL3210-1NE21-3AL1
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3223-ODE27-5AA0	6SL3223-ODE27-5BA0	6SL3210-1NE21-8UL1	6SL3210-1NE21-8AL1
11 kW / 26 A	7.5 kW / 18 A	C	6SL3223-ODE31-1AA0	6SL3223-ODE31-1BA0	6SL3210-1NE22-6UL1	6SL3210-1NE22-6AL1
15 kW / 32 A	11 kW / 26 A	C	6SL3223-ODE31-5AA0	6SL3223-ODE31-5BA0	6SL3210-1NE23-2UL1	6SL3210-1NE23-2AL1
18.5 kW / 38 A	15 kW / 32 A	C	6SL3223-ODE31-8AA0	-	6SL3210-1NE23-8UL1	6SL3210-1NE23-8AL1
18.5 kW / 38 A	15 kW / 32 A	D	-	6SL3223-ODE31-8BA0	-	-
22 kW / 45 A	18.5 kW / 38 A	D	6SL3223-ODE32-2AA0	6SL3223-ODE32-2BA0	6SL3210-1NE24-5UL0	6SL3210-1NE24-5AL0
30 kW / 60 A	22 kW / 45 A	D	6SL3223-ODE33-0AA0	6SL3223-ODE33-0BA0	6SL3210-1NE26-0UL0	6SL3210-1NE26-0AL0
37 kW / 75 A	30 kW / 60 A	E	6SL3223-ODE33-7AA0	6SL3223-ODE33-7BA0	6SL3210-1NE27-5UL0	6SL3210-1NE27-5AL0
45 kW / 90 A	37 kW / 75 A	E	6SL3223-ODE34-5AA0	6SL3223-ODE34-5BA0	6SL3210-1NE28-8UL0	6SL3210-1NE28-8AL0
55 kW / 110 A	45 kW / 90 A	F	6SL3223-ODE35-5AA0	6SL3223-ODE35-5BA0	6SL3210-1NE31-1UL0	6SL3210-1NE31-1AL0
75 kW / 145 A	55 kW / 110 A	F	6SL3223-ODE37-5AA0	6SL3223-ODE37-5BA0	6SL3210-1NE31-5UL0	6SL3210-1NE31-5AL0
90 kW / 178 A	75 kW / 145 A	F	6SL3223-ODE38-8AA0	6SL3223-ODE38-8BA0	-	-
Push Through Variant						
LO (VT)	HO (CT)				PM230 IP20 Unfiltered	PM230 IP20 Class A
3.0 kW / 7.7 A	2.2 kW / 5.9 A	A			6SL3211-1NE17-7UL1	6SL3211-1NE17-7AL1
7.5 kW / 18 A	5.5 kW / 13.3 A	B			6SL3211-1NE21-8UL1	6SL3211-1NE21-8AL1
18.5 kW / 38 A	15 kW / 32 A	C			6SL3211-1NE23-8UL1	6SL3211-1NE23-8AL1

EMC filtering - please refer to page 55 for specific categorisations. Class B filters for IP20 versions available on request.

LO (VT) = Low Overload (Variable Torque) - FSA to FSC: 1.5 x LO current rating for 3s plus 1.1 x LO current rating for 57s within a cycle time of 300s.
- FSD to FSF: 1.1 x LO current rating for 60s within a cycle time of 300s.

HO (CT) = High Overload (Constant Torque) - FSA to FSC: 2 x HO current rating for 3s plus 1.5 x HO current rating for 57s within a cycle time of 300s.
- FSD to FSF: 1.5 x HO current rating for 60s within a cycle time of 300s.

Options	
6SL3256-1BA00-0AA0	Blanking cover for IP55 modules - required if no OP fitted
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP2)
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (see page 30)
6SL3255-0AA00-4HA0	IOP Handheld
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2 for G120C and G120 control units CU230P-2, CU240BE-2, CU240E-2 and CU250S-2, G110M, G120D-2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB

Control Unit Shield Connection Kits	
6SL3264-1EA00-0FA0	Shield Connection Kit 1 for CU230P-2 HVAC/DP/CAN
6SL3264-1EA00-0HB0	Shield Connection Kit 3 for CU230P-2 PN
Power Module Shield Connection Kits	
PM230 IP20 FSA to FSC supplied with the Power Module IOP	
6SL3262-1AD00-0DA0	PM230 IP20 - Frame size FSD and FSE
6SL3262-1AF00-0DA0	PM230 IP20 - Frame size FSF
6SL3266-1EA00-0DA0	PM230 IP20 Push Through - Frame size FSA
6SL3266-1EB00-0DA0	PM230 IP20 Push Through - Frame size FSB
6SL3266-1EC00-0DA0	PM230 IP20 Push Through - Frame size FSC
Push Through Mounting Frames	
6SL3260-6AA00-0DA0	Push Through Mounting Frame - Frame size FSA
6SL3260-6AB00-0DA0	Push Through Mounting Frame - Frame size FSB
6SL3260-6AC00-0DA0	Push Through Mounting Frame - Frame size FSC

SINAMICS G120 Modular Overview



Design

The SINAMICS G120 is a modular drive solution comprising of a Control Unit (CU), Power Module (PM) and optional Operator panel (OP). The G120 drive is designed to provide precise and cost effective speed/torque control and now position control of AC motors in a wide range of industrial application.

Benefits

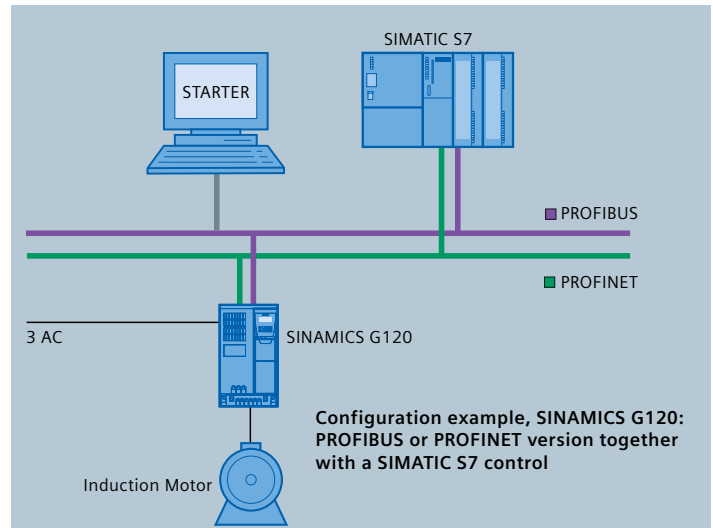
- Modular - flexible expansion capability
- Flexibility - with a wide range of control units, Power modules and additional components
- Compact space saving design
- Fast commissioning with Starter or StartDrive
- Operational Memory Card for backup and transfer of parameters for serial commissioning
- Integrated control functionality with BICO technology
- Innovative cooling concept and coated electronic boards
- Reduced harmonics (PM230/PM250)
- Fast commissioning with Starter or StartDrive

Integrated Safety

When used with the appropriate Control Unit and Power Module will provide integrated safety functions certified to EN ISO 13849-1 PLd, IEC61508 SIL2 and EN954-1 Cat.3.

Energy Saving

with 'Efficient Infeed Technology' (PM250) and innovative control functions e.g. ECO Mode, Hibernation, Profienergy.



Control Unit - overview on page 14

CU230P-2	specialist for pumps, fans, compressors and HVAC with additional features for these applications - see page 14
CU240B-2	for basic applications without encoder and without safety requirements
CU240E-2	with extended communication interfaces and Inputs/Outputs, is ideal for applications without encoder but where basic or extended safety is required
CU250S-2	for demanding applications where an encoder is required to give speed, torque or positioning accuracy

Power Modules

PM230 IP55: 0.25 kW ... 90 kW, IP20: 0.25 kW ... 75 kW 380 V - 480 V 3 AC $\pm 10\%$	Designed specifically for pumps, fans and compressors , this low harmonic drive for non-dynamic applications is available in an IP55, IP20 and IP20 push-through variants
PM240 0.37 kW ... 250 kW, 380 V - 480 V 3 AC $\pm 10\%$	The PM240 and PM240-2 have an integrated braking chopper so loads can be dynamically braked through an optional external resistor.
PM240-2 0.37 kW ... 4 kW 200 ... 240 V 1/3 AC $\pm 10\%$	
4 kW ... 7.5 kW 200 ... 240 V 3 AC $\pm 10\%$	
0.37 kW ... 15 kW 380 ... 480 V 3 AC $\pm 10\%$	Typical applications: A Universal Drive for a variety of industrial application e.g. fans, pumps, compressors, extruders, mixers, crushers and high performance conveyors.
PM250 5.5 kW ... 90 kW, 380 V - 480 V 3 AC $\pm 10\%$	
	Typical applications: A Universal Drive for a variety of industrial application e.g. fans, pumps, compressors, extruders, mixers, crushers, high performance conveyors and any regenerative applications where braking resistors would normally be used.

Operator Panel and additional components

Basic Operator Panel (BOP), Basic Operator Panel 2 (BOP-2), Intelligent Operator Panel (IOP) and Handheld IOP. Door Mounting Kits for BOP-2 and IOP.

Shield connection kits for Control Units and Power Modules, Memory cards and brake relays are also available.

See the 'SINAMICS ACCESSORIES' on page 34 for Input Reactors, Output Reactors and Braking Resistors.

* Selectable between 0...10V, -10...+10V, 0/2...20mA, 0/4...20mA or can be used as digital inputs if required.
 ^ 2 of the 4 Analogue inputs are selectable between 0...10V, -10...+10V, 0/...20mA, 0/4...20mA or can be used as digital inputs if required.
 ~ Each "Failsafe input utilises two digital inputs from the module." Each "Failsafe Output utilises two digital outputs from the module."
 Encoder: TTL/HTL incremental, SIN/COS incremental, SSI absolute, EndAt absolute and Resolvers are supported. See technical manual for possible combinations.

SINAMICS G120 Modular - PM230

The versatile single-motor drive for pumps, fans and compressors



Design

The G120 is a modular drive consisting of Control Unit (CU), Power Module (PM) and optional Operator Panel (OP) and is designed to provide precise and cost effective speed/torque control of AC Motors in a wide range of industrial applications. The PM230 is available in an IP55 or IP20 format and is designed for pump, fan and compressor applications with a square law characteristic. Braking choppers are not fitted so solutions using PM230 are not suited for dynamic applications.

PM 230 IP55 (0.25 kW to 90 kW)

- available with Class A or Class B EMC Filtering

The IP rating is maintained with a blanking cover or BOP-2 but reduces to IP54 if an IOP is fitted.

PM 230 IP20 (0.25 kW to 75 kW)

PM230 Push Through IP 20 (1.1 , 2.2 & 3.0 kW) - available unfiltered or Class A EMC Filtering and is designed for cabinet mounting. The highest power rating of FSA to FSC is also available as 'Push-through' where the heat sink pushes through the back of the cabinet minimising the heat inside the cabinet.

Benefits

- Modular with flexible expansion capability
- Compact space saving design
- Simple fast commissioning
- Wide range of Control Units with different communication interfaces available
- Line harmonics are significantly reduced: - the Total Harmonic Distortion (THD) is below the limit required by EN/IEC 61000-3-12. - additional line reactors are not needed and should not be connected
- High Active Power Component - draws less current from the supply for the same drive power so smaller cables can be used
- Optional SD card for backup and series commissioning

Applications

Pumps, fans and compressors.

Technical data	
Electrical data	SINAMICS G120 PM 230
Line voltages	380 V ... 480 V 3 AC, $\pm 10\%$
Power ranges	IP55: 0.25 kW to 90 kW, IP20: 0.25 kW to 75 kW
Line supply types IP55	TN
Line supply types IP20	TN (filtered), TN, TT, IT (unfiltered)
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 240 Hz Vector
Pulse frequency	4 kHz (up to 16 kHz with derating)
Functions	
Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature, parameter locking
Software functions	See Control Units overview on page 14
Mechanical data	
Degree of protection	IP20 version and IP55 version (IP54 with IOP)
Cooling type	Fan
Standards	
In conformance with the following standards	UL, cUL*, CE, c-tick, SEMI F47 *FSA to FSC

Control Units							
Control Unit	Designation	Interfaces	DI	DO	AI	AO	Can be used on PM230 in IP:
6SL3243-0BB30-1HA3	CU230P-2 HVAC	RS485/USS/Modbus/BACnet	6	3	4 [^]	2	IP55 & IP20
6SL3243-0BB30-1PA3	CU230P-2 DP	Profibus DP	6	3	4 [^]	2	IP55 & IP20
6SL3243-0BB30-1FA0	CU230P-2 PN	Profinet	6	3	4 [^]	2	IP55 & IP20
6SL3243-0BB30-1CA3	CU230P-2 CAN	CANopen	6	3	4 [^]	2	IP55 & IP20
6SL3244-0BB00-1BA1	CU240B-2	RS485/USS	4	1	1*	1	IP20
6SL3244-0BB00-1PA1	CU240B-2 DP	Profibus DP	4	1	1*	1	IP20
6SL3244-0BB12-1BA1	CU240E-2	RS485/USS	6	3	2*	2	IP20
6SL3244-0BB12-1PA1	CU240E-2 DP	Profibus DP	6	3	2*	2	IP20
6SL3244-0BB12-1FA0	CU240E-2 PN	Profinet	6	3	2*	2	IP20

* Selectable between 0...10V, -10...+10V, 0/2...20mA, 0/4...20mA or can be used as digital inputs if required.

[^] 2 of the 4 Analogue inputs are selectable between 0...10V, -10...+10V, 0/...20mA, 0/4...20mA or can be used as digital inputs if required.

NOTE: No Integrated Safety functions can be used with the PM230 Power Modules even if the Control Unit is capable.

SINAMICS G120 PM230

Part Numbers

Power Module PM230						
Supply Voltage - 380 V ... 480 V 3 AC		Power Modules				
Rating		Frame Size	PM230 IP55 Class A	PM230 IP55 Class B	PM230 IP20 Unfiltered	PM230 IP20 Class A
LO (VT)	HO (CT)					
0.37 kW / 1.3 A	0.25 kW / 0.9 A	A	6SL3223-0DE13-7AA0	6SL3223-0DE13-7BA0	6SL3210-1NE11-3UL1	6SL3210-1NE11-3AL1
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	6SL3223-0DE15-5AA0	6SL3223-0DE15-5BA0	6SL3210-1NE11-7UL1	6SL3210-1NE11-7AL1
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	6SL3223-0DE17-5AA0	6SL3223-0DE17-5BA0	6SL3210-1NE12-2UL1	6SL3210-1NE12-2AL1
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	6SL3223-0DE21-1AA0	6SL3223-0DE21-1BA0	6SL3210-1NE13-1UL1	6SL3210-1NE13-1AL1
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	6SL3223-0DE21-5AA0	6SL3223-0DE21-5BA0	6SL3210-1NE14-1UL1	6SL3210-1NE14-1AL1
2.2 kW / 5.9 A	1.5 kW / 4.1 A	A	6SL3223-0DE22-2AA0	6SL3223-0DE22-2BA0	6SL3210-1NE15-8UL1	6SL3210-1NE15-8AL1
3.0 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3223-0DE23-0AA0	6SL3223-0DE23-0BA0	6SL3210-1NE17-7UL1	6SL3210-1NE17-7AL1
4 kW / 10.2 A	3 kW / 7.7 A	B	6SL3223-0DE24-0AA0	6SL3223-0DE24-0BA0	6SL3210-1NE21-0UL1	6SL3210-1NE21-0AL1
5.5 kW / 13.2 A	4 kW / 10.2 A	B	6SL3223-0DE25-5AA0	6SL3223-0DE25-5BA0	6SL3210-1NE21-3UL1	6SL3210-1NE21-3AL1
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3223-0DE27-5AA0	6SL3223-0DE27-5BA0	6SL3210-1NE21-8UL1	6SL3210-1NE21-8AL1
11 kW / 26 A	7.5 kW / 18 A	C	6SL3223-0DE31-1AA0	6SL3223-0DE31-1BA0	6SL3210-1NE22-6UL1	6SL3210-1NE22-6AL1
15 kW / 32 A	11 kW / 26 A	C	6SL3223-0DE31-5AA0	6SL3223-0DE31-5BA0	6SL3210-1NE23-2UL1	6SL3210-1NE23-2AL1
18.5 kW / 38 A	15 kW / 32 A	C	6SL3223-0DE31-8AA0	-	6SL3210-1NE23-8UL1	6SL3210-1NE23-8AL1
18.5 kW / 38 A	15 kW / 32 A	D	-	6SL3223-0DE31-8BA0	-	-
22 kW / 45 A	18.5 kW / 38 A	D	6SL3223-0DE32-2AA0	6SL3223-0DE32-2BA0	6SL3210-1NE24-5UL0	6SL3210-1NE24-5AL0
30 kW / 60 A	22 kW / 45 A	D	6SL3223-0DE33-0AA0	6SL3223-0DE33-0BA0	6SL3210-1NE26-0UL0	6SL3210-1NE26-0AL0
37 kW / 75 A	30 kW / 60 A	E	6SL3223-0DE33-7AA0	6SL3223-0DE33-7BA0	6SL3210-1NE27-5UL0	6SL3210-1NE27-5AL0
45 kW / 90 A	37 kW / 75 A	E	6SL3223-0DE34-5AA0	6SL3223-0DE34-5BA0	6SL3210-1NE28-8UL0	6SL3210-1NE28-8AL0
55 kW / 110 A	45 kW / 90 A	F	6SL3223-0DE35-5AA0	6SL3223-0DE35-5BA0	6SL3210-1NE31-1UL0	6SL3210-1NE31-1AL0
75 kW / 145 A	55 kW / 110 A	F	6SL3223-0DE37-5AA0	6SL3223-0DE37-5BA0	6SL3210-1NE31-5UL0	6SL3210-1NE31-5AL0
90 kW / 178 A	75 kW / 145 A	F	6SL3223-0DE38-8AA0	6SL3223-0DE38-8BA0	-	-
Push Through Variant						
					PM230 IP20 Unfiltered	PM230 IP20 Class A
3.0 kW / 7.7 A	2.2 kW / 5.9 A	A			6SL3211-1NE17-7UL1	6SL3211-1NE17-7AL1
7.5 kW / 18 A	5.5 kW / 13.3 A	B			6SL3211-1NE21-8UL1	6SL3211-1NE21-8AL1
18.5 kW / 38 A	15 kW / 32 A	C			6SL3211-1NE23-8UL1	6SL3211-1NE23-8AL1

EMC filtering - please refer to page 55 for specific categorisations.

LO (VT) = Low Overload (Variable Torque) - FSA to FSC: 1.5 x LO current rating for 3s plus 1.1 x LO current fr 57s within a cycle time of 300s.
- FSD to FSF: 1.1 x LO current fo 60's within a cycle time of 300s.

HO (CT) = High Overload (Constant Torque) - FSA to FSC: 2 x HO current for 3s plus 1.5 x HO current for 57s within a cycle time of 300s.
- FSD to FSF: 1.5 x HO current for 60s within a cycle time of 300s.

Options	
6SL3256-1BA00-0AA0	Blanking cover for IP55 modules - required if no OP fitted
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP-2)
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (for IP20 version mounted in a cabinet)
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2 for G120C and G120 control units CU230P-2, CU240BE-2, CU240E-2 and CU250S-2, G110M, G120D-2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB
Control Unit Shield Connection Kits	
6SL3264-1EA00-0FA0	Shield Connection kit 1 for CU230P-2 Control Units
6SL3264-1EA00-0HA0	Shield Connection kit 2 for CU240B/E-2 Control Units
6SL3264-1EA00-0HB0	Shield Connection kit 3 for CU230P-2 PN and CU240B/E-2 PN Control Units

Power Module Shield connection kits. Note: Shielding kits for PM230 IP20 FSA to FSC are supplied with the Power Modules	
6SL3262-1AD00-0DA0	PM230 IP20 - Frame size FSD and FSE
6SL3262-1AF00-0DA0	PM230 IP20 - Frame size FSF
6SL3266-1EA00-0DA0	PM230 IP20 Push Through - Frame size FSA
6SL3266-1EB00-0DA0	PM230 IP20 Push Through - Frame size FSB
6SL3266-1EC00-0DA0	PM230 IP20 Push Through - Frame size FSC
Push Through Mounting Frames	
6SL3260-6AA00-0DA0	Push Through Mounting Frame - Frame size FSA
6SL3260-6AB00-0DA0	Push Through Mounting Frame - Frame size FSB
6SL3260-6AC00-0DA0	Push Through Mounting Frame - Frame size FSC

SINAMICS G120 Modular - PM240-2

The versatile single-motor drive



Design

The G120 is a modular drive consisting of Control Unit (CU), Power Module (PM) and optional Operator Panel (OP) and is designed to provide precise and cost effective speed/torque control of AC Motors in a wide range of industrial applications.

PM240-2 Industrial and Filtered
(0.37 kW to 15 kW) - see voltages

PM240-2 Industrial and Filtered Push Through
(0.75 kW, 1.5 kW & 4 kW 1/3 AC 200 V)
(3 kW, 7.5 kW & 15 kW 3 AC 400 V)

have the same functionality as the PM240 but based on a new hardware platform allowing higher power density products to be used so reducing the size of the modules and allow side by side mounting. The highest power rating of each frame size is also available as 'Push Through' where the heatsink pushes through the back of the cabinet reducing the heat inside the cabinet.

Benefits of G120 with PM240-2 over PM240

- Compact space saving design using High Density components
- Side by side mounting saves space
- Variants with 'Push Through' reduces heat in the cabinet

Applications

A Universal Drive for a variety of industrial application e.g. fans, pumps, compressors, extruders, mixers, crushers and high performance conveyors.

Technical data

Electrical data	SINAMICS G120 PM 240-2
Line voltage/Power ratings	200 V ... 240 V 1/3 AC, $\pm 10\%$: 0.37 kW ... 4 kW 200 V ... 240 V 3 AC, $\pm 10\%$: 4 kW ... 7.5 kW 380 V ... 480 V 3 AC, $\pm 10\%$: 0.37 kW ... 15 kW
Line supply types	TN (with filter), TN, TT, IT (without filter)
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 240 Hz Vector
Pulse frequency	4 kHz up to 16 kW - with derating

Functions

Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor over-temperature, inverter overtemperature, parameter locking
Software functions	See Control Unit Overview on page 14
Safety functions	See table below

Standards

In conformance with the following standards	UL, cUL, CE, c-tick, SEMI F47 EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2
---	--

Control Units											
Control Unit	Designation	Interfaces	DI	DO	DI/DO	AI	AO	F-DI	F-DO	Encoder	Safety
6SL3243-0BB30-1HA3	CU230P-2 HVAC	RS485/USS/Modbus/BACnet	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1PA3	CU230P-2 DP	Profibus DP	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1FA0	CU230P-2 PN	Profinet	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1CA3	CU230P-2 CAN	CANopen	6	3	-	4 [^]	1	-	-	-	-
6SL3244-0BB00-1BA1	CU240B-2	RS485/USS	4	1	-	1 [*]	1	-	-	-	-
6SL3244-0BB00-1PA1	CU240B-2 DP	Profibus DP	4	1	-	1 [*]	2	-	-	-	-
6SL3244-0BB12-1BA1	CU240E-2	RS485/USS	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB12-1PA1	CU240E-2 DP	Profibus DP	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB12-1FA0	CU240E-2 PN	Profinet	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB13-1BA1	CU240E-2 F	RS485/USS	6	3	-	2 [*]	2	3~	-	-	STO, SS1, SLS, SDI, SSM
6SL3244-0BB13-1PA1	CU240E-2 DP F	Profibus DP	6	3	-	2 [*]	2	3~	-	-	
6SL3244-0BB13-1FA0	CU240E-2 PN-F	Profinet	6	3	-	2 [*]	2	3~	-	-	
6SL3246-0BA22-1BA0	CU250S-2	RS485/USS	11	3	4	2	2	3~	1 [*]	Various □	Basic: STO, SS1, SBC Extended: SLS, SSM, SDI Extended functions via license (see below)
6SL3246-0BA22-1PA0	CU250S-2 DP	Profibus DP	11	3	4	2	2	3~	1 [*]	Various □	
6SL3246-0BA22-1FA0	CU250S-2 PN	Profinet	11	3	4	2	2	3~	1 [*]	Various □	
6SL3246-0BA22-1CA0	CU250S-2 CAN	CANopen	11	3	4	2	2	3~	1 [*]	Various □	

* Selectable between 0...10V, -10...+10V, 0/2...20mA, 0/4...20mA or can be used as digital inputs if required.

[^] 2 of the 4 Analogue inputs are selectable between 0...10V, -10...+10V, 0/...20mA, 0/4...20mA or can be used as digital inputs if required.

~ Each "Failsafe input utilises two digital inputs from the module." Each "Failsafe Output utilises two digital outputs from the module.

□ Encoder: TTL/HTL incremental, SIN/COS incremental, SSI absolute, EnDat absolute and Resolvers are supported. See technical manual for possible combinations.

SINAMICS G120 PM240-2

Part Numbers

Power Module PM240-2 - Supply Voltage - 200 ... 240 V 1/3 AC and 200 ... 240 V 3 AC only				Push Through variant		
Rating		Frame Size	PM240-2 Unfiltered	PM240-2 Filtered #	PM240-2 Unfiltered	PM240-2 Filtered #
LO (VT)	HO (CT)					
0.55 kW / 3.2 A	0.37 kW / 2.3 A	A	6SL3210-1PB13-0UL0	6SL3210-1PB13-0AL0	—	—
0.75 kW / 4.2 A	0.55 kW / 3.2 A	A	6SL3210-1PB13-8UL0	6SL3210-1PB13-8AL0	6SL3211-1PB13-8UL0	6SL3211-1PB13-8AL0
1.1 kW / 6 A	0.75 kW / 4.2 A	B	6SL3210-1PB15-5UL0	6SL3210-1PB15-5AL0	—	—
1.5 kW / 7.4 A	1.1 kW / 6 A	B	6SL3210-1PB17-4UL0	6SL3210-1PB17-4AL0	—	—
2.2 kW / 10.4 A	1.5 kW / 7.4 A	B	6SL3210-1PB21-0UL0	6SL3210-1PB21-0AL0	6SL3211-1PB21-0UL0	6SL3211-1PB21-0AL0
3 kW / 13.6 A	2.2 kW / 10.4 A	C	6SL3210-1PB21-4UL0	6SL3210-1PB21-4AL0	—	—
4 kW / 17.5 A	3 kW / 13.6 A	C	6SL3210-1PB21-8UL0	6SL3210-1PB21-8AL0	6SL3211-1PB21-8UL0	6SL3211-1PB21-8AL0
5.5 kW / 22 A (3 AC)	4 kW / 17.5 A	C	6SL3210-1PC22-2UL0	6SL3210-1PC22-2AL0	—	—
7.5 kW / 28 A (3 AC)	5.5 kW / 22 A	C	6SL3210-1PC22-8UL0	6SL3210-1PC22-8AL0	—	—

Power Module PM240-2 - Supply Voltage - 380 ... 480 V 3 AC				Push Through variant		
Rating		Frame Size	PM240-2 Unfiltered	PM240-2 Filtered #	PM240-2 Unfiltered	PM240-2 Filtered #
LO (VT)	HO (CT)					
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	6SL3210-1PE11-8UL1	6SL3210-1PE11-8AL1	—	—
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	6SL3210-1PE12-3UL1	6SL3210-1PE12-3AL1	—	—
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	6SL3210-1PE13-2UL1	6SL3210-1PE13-2AL1	—	—
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	6SL3210-1PE14-3UL1	6SL3210-1PE14-3AL1	—	—
2.2 kW / 5.9 A	1.5 kW / 4.1 A	A	6SL3210-1PE16-1UL1	6SL3210-1PE16-1AL1	—	—
3 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3210-1PE18-0UL1	6SL3210-1PE18-0AL1	6SL3211-1PE18-0UL1	6SL3211-1PE18-0AL1
4 kW / 10.2 A	3 kW / 7.7 A	B	6SL3210-1PE21-1UL0	6SL3210-1PE21-1AL0	—	—
5.5 kW / 13.3 A	4 kW / 10.2 A	B	6SL3210-1PE21-4UL0	6SL3210-1PE21-4AL0	—	—
7.5 kW / 18 A	5.5 kW / 13.3 A	B	6SL3210-1PE21-8UL0	6SL3210-1PE21-8AL0	6SL3211-1PE21-8UL0	6SL3211-1PE21-8AL0
11 kW / 26 A	7.5 kW / 18 A	C	6SL3210-1PE22-7UL0	6SL3210-1PE22-7AL0	—	—
15 kW / 32 A	11 kW / 26 A	C	6SL3210-1PE23-3UL0	6SL3210-1PE23-3AL0	6SL3211-1PE23-3UL0	6SL3211-1PE23-3AL0

EMC filtering suitable for the 1st environment; additional filter options available on request - please refer to page 55 for specific categorisations.

LO (VT) = Low Overload (Variable Torque): 1.5 x LO current for 3s plus 1.1 x LO current for 57s in a cycle time of 300s.

HO (CT) = High Overload (Constant Torque): 2 x HO current for 3s plus 1.5 x HO current for 57s in a cycle time of 300s.

Options	
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP2)
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (for IP20 version mounted in a cabinet)
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2 for G120C and G120 control units CU230P-2, CU240BE-2, CU240E-2 and CU250S-2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB
6SL3074-0AA10-0AA0	Extended Safety license (SLS, SSM, SDI) for CU250S-2
6SL3074-7AA04-0AA0	Extended Functions license (EPos) for CU250S-2
6SL3054-4AG00-2AA0-Z F01	SD card + Extended Safety license (SLS, SSM, SDI) for CU250S-2
6SL3054-4AG00-2AA0-Z E01	SD card + Extended Functions license (EPos) for CU250S-2
6SL3054-4AG00-2AA0-Z F01 E01	SD card + Extended Safety + Extended Functions license (EPos) for CU250S-2
6SL3252-0BB00-0AA0	Brake relay (including cable harness for connection to the Power Module)
6SL3252-0BB01-0AA0	Safe Brake Relay (including cable harness for connection to the Power Module)

Control Unit Shield Connection Kits	
6SL3264-1EA00-0FA0	Shield Connection kit 1 for CU230P-2 Control Units
6SL3264-1EA00-0HA0	Shield Connection kit 2 for CU240B/E-2 Control Units
6SL3264-1EA00-0HB0	Shield Connection kit 3 for CU230P-2 PN and CU240B/E-2 PN Control Units
6SL3264-1EA00-0LA0	Shield Connection kit 4 for CU250S-2 Control Units (all variants)
Power Module Shield connection Kits	
Shielding kits for PM240-2 FSA to FSC are supplied with the Power Modules	
Push Through Mounting Frames	
6SL3260-6AA00-0DA0	Push Through Mounting Frame - Frame size FSA
6SL3260-6AB00-0DA0	Push Through Mounting Frame - Frame size FSB
6SL3260-6AC00-0DA0	Push Through Mounting Frame - Frame size FSC

SINAMICS G120 Modular - PM240

The versatile single-motor drive



Design

The G120 is a modular drive consisting of Control Unit (CU), Power Module (PM) and optional Operator Panel (OP) and is designed to provide precise and cost effective speed/torque control of AC Motors in a wide range of industrial applications.

PM 240 Power Modules (0.37 kW to 250 kW)

- has an integrated braking chopper to enable loads to be dynamically braked. The energy produced during braking is dissipated through optional externally connected resistors. For frame size GX this is via an optional braking module to connect the braking resistor.

Applications

A Universal Drive for a variety of industrial application e.g. fans, pumps, compressors, extruders, mixers, crushers and high performance conveyors.

Benefits

- Modular with flexible expansion capability
- Compact space saving design
- Wide range of Control Units with different communication interfaces available
- Simple fast commissioning
- Integrated safety with the appropriate CU
- Built in braking chopper (except for FSGX)
- Precise control with Encoder feedback and optional positioning with EPos (easy positioning) with CU250S-2
- Optional positioning with EPos (easy positioning)
- Optional SD card for backup and series commissioning

Technical data

Electrical data	SINAMICS G120 PM 240
Line voltage	380 V ... 480 V 3 AC, $\pm 10\%$
Power ranges	0.37 kW ... 250 kW
Line supply types	TN (with filter), TN, TT, IT (without filter)
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 240 Hz Vector
Pulse frequency	4 kHz (up to 75 kW (HO)) - up to 16 kHz with derating 2 kHz (from 90 kW (HO)) - up to 16 kHz with derating

Functions

Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor over-temperature, inverter overtemperature, parameter locking
Software functions	See Control Unit Overview on page 14
Safety functions	See table below

Standards

In conformance with the following standards	UL, cUL, CE, c-tick, SEMI F47 EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2
---	--

Control Units											
Control Unit	Designation	Interfaces	DI	DO	DI/DO	AI	AO	F-DI	F-DO	Encoder	Safety
6SL3243-0BB30-1HA3	CU230P-2 HVAC	RS485/USS/Modbus/BACnet	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1PA3	CU230P-2 DP	Profibus DP	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1FA0	CU230P-2 PN	Profinet	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1CA3	CU230P-2 CAN	CANopen	6	3	-	4 [^]	1	-	-	-	-
6SL3244-0BB00-1BA1	CU240B-2	RS485/USS	4	1	-	1 [*]	1	-	-	-	-
6SL3244-0BB00-1PA1	CU240B-2 DP	Profibus DP	4	1	-	1 [*]	2	-	-	-	-
6SL3244-0BB12-1BA1	CU240E-2	RS485/USS	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB12-1PA1	CU240E-2 DP	Profibus DP	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB12-1FA0	CU240E-2 PN	Profinet	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB13-1BA1	CU240E-2 F	RS485/USS	6	3	-	2 [*]	2	3~	-	-	STO, SS1, SLS, SDI, SSM
6SL3244-0BB13-1PA1	CU240E-2 DP F	Profibus DP	6	3	-	2 [*]	2	3~	-	-	
6SL3244-0BB13-1FA0	CU240E-2 PN-F	Profinet	6	3	-	2 [*]	2	3~	-	-	
6SL3246-0BA22-1BA0	CU250S-2	RS485/USS	11	3	4	2	2	3~	1 [*]	Various □	Basic: STO, SS1, SBC Extended: SLS, SSM, SDI Extended functions via license (see below)
6SL3246-0BA22-1PA0	CU250S-2 DP	Profibus DP	11	3	4	2	2	3~	1 [*]	Various □	
6SL3246-0BA22-1FA0	CU250S-2 PN	Profinet	11	3	4	2	2	3~	1 [*]	Various □	
6SL3246-0BA22-1CA0	CU250S-2 CAN	CANopen	11	3	4	2	2	3~	1 [*]	Various □	

* Selectable between 0...10V, -10...+10V, 0/2...20mA, 0/4...20mA or can be used as digital inputs if required.

[^] 2 of the 4 Analogue inputs are selectable between 0...10V, -10...+10V, 0/...20mA, 0/4...20mA or can be used as digital inputs if required.

~ Each "Failsafe input utilises two digital inputs from the module." Each "Failsafe Output utilises two digital outputs from the module.

□ Encoder: TTL/HTL incremental, SIN/COS incremental, SSI absolute, EnDat absolute and Resolvers are supported. See technical manual for possible combinations.

SINAMICS G120 PM240

Part Numbers

Power Module PM240					
Supply Voltage - 380 V ... 480 V 3 AC			Power Modules		
Rating		Frame Size	PM240 Unfiltered	PM240 Filtered #	Additional Filter to use with unfiltered PM240
LO (VT)	HO (CT)				
0.37 kW / 1.3 A		A	6SL3224-0BE13-7UA0	→ = ←	6SE6400-2FA00-6AD0
0.55 kW / 1.7 A		A	6SL3224-0BE15-5UA0	→ = ←	6SE6400-2FA00-6AD0
0.75 kW / 2.2 A		A	6SL3224-0BE17-5UA0	→ = ←	6SE6400-2FA00-6AD0
1.1 kW / 3.1 A		A	6SL3224-0BE21-1UA0	→ = ←	6SE6400-2FA00-6AD0
1.5 kW / 4.1 A		A	6SL3224-0BE21-5UA0	→ = ←	6SE6400-2FA00-6AD0
2.2 kW / 5.9 A		B	6SL3224-0BE22-2UA0	6SL3224-0BE22-2AA0	-
3 kW / 7.7 A		B	6SL3224-0BE23-0UA0	6SL3224-0BE23-0AA0	-
4 kW / 10.2 A		B	6SL3224-0BE24-0UA0	6SL3224-0BE24-0AA0	-
LO (VT)	HO (CT)				
7.5 kW / 18 A	5.5 kW / 13.2 A	C	6SL3224-0BE25-5UA0	6SL3224-0BE25-5AA0	-
11 kW / 25 A	7.5 kW / 19 A	C	6SL3224-0BE27-5UA0	6SL3224-0BE27-5AA0	-
15 kW / 32 A	11 kW / 26 A	C	6SL3224-0BE31-1UA0	6SL3224-0BE31-1AA0	-
18.5 kW / 38 A	15 kW / 32 A	D	6SL3224-0BE31-5UA0	6SL3224-0BE31-5AA0	-
22 kW / 45 A	18.5 kW / 38 A	D	6SL3224-0BE31-8UA0	6SL3224-0BE31-8AA0	-
30 kW / 60 A	22 kW / 45 A	D	6SL3224-0BE32-2UA0	6SL3224-0BE32-2AA0	-
37 kW / 75 A	30 kW / 60 A	E	6SL3224-0BE33-0UA0	6SL3224-0BE33-0AA0	-
45 kW / 90 A	37 kW / 75 A	E	6SL3224-0BE33-7UA0	6SL3224-0BE33-7AA0	-
55 kW / 110 A	45 kW / 90 A	F	6SL3224-0BE34-5UA0	6SL3224-0BE34-5AA0	-
75 kW / 145 A	55 kW / 110 A	F	6SL3224-0BE35-5UA0	6SL3224-0BE35-5AA0	-
90 kW / 178 A	75 kW / 145 A	F	6SL3224-0BE37-5UA0	6SL3224-0BE37-5AA0	-
110 kW / 205 A	90 kW / 178 A	F	6SL3224-0BE38-8UA0	→ = ←	6SL3203-0BE32-5AA0
132 kW / 250 A	110 kW / 205 A	F	6SL3224-0BE41-1UA0	→ = ←	6SL3203-0BE32-5AA0
160 kW / 302 A	132 kW / 250 A	FSGX	6SL3224-0XE41-3UA0	→ = ←	6SL3000-0BE34-4AA0
200 kW / 370 A	160 kW / 302 A	FSGX	6SL3224-0XE41-6UA0	→ = ←	6SL3000-0BE34-4AA0
250 kW / 477 A	200 kW / 370 A	FSGX	6SL3224-0XE42-0UA0	→ = ←	6SL3000-0BE36-0AA0

EMC filtering generally suitable for 1st environment; additional filter options available on request - please refer to page 55 for specific categorisations.

LO (VT) = Low Overload (Variable Torque) - Up to 90 kW (LO): 1.5 x LO current rating for 3s plus 1.1 x LO current rating for 57s within a cycle time of 300s.
 - From 110 kW (LO): 1.5 x LO current rating for 1s plus 1.1 x LO current rating for 57s within a cycle time of 300s.

HO (CT) = High Overload (Constant Torque) - Up to 75 kW (HO): 2 x HO current rating for 3s plus 1.5 x HO current rating for 57s within a cycle time of 300s.
 - From 90 kW (HO): 1.6 x HO current rating for 3s plus 1.36 x HO current rating for 57s within a cycle time of 300s.

Options	
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP2)
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (for IP20 version mounted in a cabinet)
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2 for G120C and G120 control units CU230P-2, CU240BE-2, CU240E-2 and CU250S-2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB
6SL3074-0AA10-0AA0	Extended Safety license (SLS, SSM, SDI) for CU250S-2
6SL3074-7AA04-0AA0	Extended Functions license (EPos) for CU250S-2
6SL3054-4AG00-2AA0-Z F01	SD card + Extended Safety license (SLS, SSM, SDI) for CU250S-2
6SL3054-4AG00-2AA0-Z E01	SD card + Extended Functions license (EPos) for CU250S-2
6SL3054-4AG00-2AA0-Z F01 E01	SD card + Extended Safety + Extended Functions license (EPos) for CU250S-2
6SL3252-0BB00-0AA0	Brake relay (including cable harness for connection to the Power Module)
6SL3252-0BB01-0AA0	Safe Brake Relay (including cable harness for connection to the Power Module)

Control Unit Shield Connection Kits	
6SL3264-1EA00-0FA0	Shield Connection kit 1 for CU230P-2 Control Units
6SL3264-1EA00-0HA0	Shield Connection kit 2 for CU240B/E-2 Control Units
6SL3264-1EA00-0HB0	Shield Connection kit 3 for CU230P-2 PN and CU240B/E-2 PN Control Units
6SL3264-1EA00-0LA0	Shield Connection kit 4 for CU250S-2 Control Units (all variants)
Power Module Shield Connection Kits	
6SL3262-1AA00-0BA0	Frame size FSA
6SL3262-1AB00-0DA0	Frame size FSB
6SL3262-1AC00-0DA0	Frame size FSC
6SL3262-1AD00-0DA0	Frame size FSD and FSE
6SL3262-1AF00-0DA0	Frame size FSF

SINAMICS G120 Modular - PM250

The versatile single-motor drive



Design

The G120 is a modular drive consisting of Control Unit (CU), Power Module (PM) and optional Operator Panel (OP) and is designed to provide precise and cost effective speed/torque control of AC Motors in a wide range of industrial applications.

PM 250 (5.5 kW to 90 kW)

- has 'Efficient Infeed Technology' (p53), which regenerates braking energy back into the mains supply. This saves space and wiring in the cabinet, time in dimensioning the braking resistor and the heat losses generated during braking. The innovative circuitry also reduces line harmonics so an input reactor is not required.

Benefits over PM240

- Efficient Infeed Technology
- Reduced harmonics

Control Units											
Control Unit	Designation	Interfaces	DI	DO	DI/DO	AI	AO	F-DI	F-DO	Encoder	Safety
6SL3243-0BB30-1HA3	CU230P-2 HVAC	RS485/USS/Modbus/BACnet	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1PA3	CU230P-2 DP	Profibus DP	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1FA0	CU230P-2 PN	Profinet	6	3	-	4 [^]	2	-	-	-	-
6SL3243-0BB30-1CA3	CU230P-2 CAN	CANopen	6	3	-	4 [^]	1	-	-	-	-
6SL3244-0BB00-1BA1	CU240B-2	RS485/USS	4	1	-	1 [*]	1	-	-	-	-
6SL3244-0BB00-1PA1	CU240B-2 DP	Profibus DP	4	1	-	1 [*]	2	-	-	-	-
6SL3244-0BB12-1BA1	CU240E-2	RS485/USS	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB12-1PA1	CU240E-2 DP	Profibus DP	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB12-1FA0	CU240E-2 PN	Profinet	6	3	-	2 [*]	2	1~	-	-	STO
6SL3244-0BB13-1BA1	CU240E-2 F	RS485/USS	6	3	-	2 [*]	2	3~	-	-	STO, SS1, SLS, SDI, SSM
6SL3244-0BB13-1PA1	CU240E-2 DP F	Profibus DP	6	3	-	2 [*]	2	3~	-	-	
6SL3244-0BB13-1FA0	CU240E-2 PN-F	Profinet	6	3	-	2 [*]	2	3~	-	-	
6SL3246-0BA22-1BA0	CU250S-2	RS485/USS	11	3	4	2	2	3~	1 [*]	Various □	Basic: STO, SS1, SBC Extended: SLS, SSM, SDI
6SL3246-0BA22-1PA0	CU250S-2 DP	Profibus DP	11	3	4	2	2	3~	1 [*]	Various □	
6SL3246-0BA22-1FA0	CU250S-2 PN	Profinet	11	3	4	2	2	3~	1 [*]	Various □	Extended functions via license (see below)
6SL3246-0BA22-1CA0	CU250S-2 CAN	CANopen	11	3	4	2	2	3~	1 [*]	Various □	

* Selectable between 0...10V, -10...+10V, 0/2...20mA, 0/4...20mA or can be used as digital inputs if required.

[^] 2 of the 4 Analogue inputs are selectable between 0...10V, -10...+10V, 0/...20mA, 0/4...20mA or can be used as digital inputs if required.

~ Each "Failsafe input utilises two digital inputs from the module." Each "Failsafe Output utilises two digital outputs from the module.

□ Encoder: TTL/HTL incremental, SIN/COS incremental, SSI absolute, EnDat absolute and Resolvers are supported. See technical manual for possible combinations.

Applications

A Universal Drive for a variety of industrial application e.g. fans, pumps, compressors, extruders, mixers, crushers and high performance conveyors.

Technical data

Electrical data

SINAMICS G120 PM250	
Line voltage	380 V ... 480 V 3 AC, ±10 %
Power ranges	5.5 kW ... 90 kW
Line supply types	TN (with filter), TN, TT, IT (without filter)
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 240 Hz Vector
Pulse frequency	4 kHz (up to 16 kHz with derating)

Common Functions

Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature, parameter locking
Software functions	See Control Unit Overview on page 14
Safety functions	See table below

Mechanical Data

Cooling Type	Fan
Degree of protection	IP20

Standards

In conformance with the following standards	UL*, cUL*, CE, c-tick * with Filter Class A EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2
---	--

SINAMICS G120 PM250

Part Numbers

Supply Voltage - 380 V... 480 V 3 AC		Power Modules		
Rating		Frame Size	Industrial	Filtered #
LO (VT)	HO (CT)			
7.5 kW / 18 A	5.5 kW / 13.2 A	C		6SL3225-0BE25-5AA1
11 kW / 25 A	7.5 kW / 19 A	C		6SL3225-0BE27-5AA1
15 kW / 32 A	11 kW / 26 A	C		6SL3225-0BE31-1AA1
18.5 kW / 38 A	15 kW / 32 A	D	6SL3225-0BE31-5UA0	6SL3225-0BE31-5AA0
22 kW / 45 A	18.5 kW / 38 A	D	6SL3225-0BE31-8UA0	6SL3225-0BE31-8AA0
30 kW / 60 A	22 kW / 45 A	D	6SL3225-0BE32-2UA0	6SL3225-0BE32-2AA0
37 kW / 75 A	30 kW / 60 A	E	6SL3225-0BE33-0UA0	6SL3225-0BE33-0AA0
45 kW / 90 A	37 kW / 75 A	E	6SL3225-0BE33-7UA0	6SL3225-0BE33-7AA0
55 kW / 110 A	45 kW / 90 A	F	6SL3225-0BE34-5UA0	6SL3225-0BE34-5AA0
75 kW / 145 A	55 kW / 110 A	F	6SL3225-0BE35-5UA0	6SL3225-0BE35-5AA0
90 kW / 178 A	75 kW / 145 A	F	6SL3225-0BE37-5UA0	6SL3225-0BE37-5AA0

LO (VT) = Low Overload (Variable Torque) - 1.5 x LO current rating for 3s plus 1.1 x LO current rating for 57s within a cycle time of 300s.

HO (CT) = High Overload (Constant Torque) - 2 x HO current rating for 3s plus 1.5 x HO current rating for 57s within a cycle time of 300s.

EMC filtering generally suitable for 1st environment; additional filter options available on request - please refer to page 55 for specific categorisations.

Options	
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP2)
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (for IP20 version mounted in a cabinet)
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2 for G120C and G120 control units CU230P-2, CU240BE-2, CU240E-2 and CU250S-2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB
6SL3074-0AA10-0AA0	Extended Safety license (SLS, SSM, SDI) for CU250S-2
6SL3074-7AA04-0AA0	Extended Functions license (EPos) for CU250S-2
6SL3054-4AG00-2AA0-Z F01	SD card + Extended Safety license (SLS, SSM, SDI) for CU250S-2
6SL3054-4AG00-2AA0-Z E01	SD card + Extended Functions license (EPos) for CU250S-2
6SL3054-4AG00-2AA0-Z F01 E01	SD card + Extended Safety + Extended Functions license (EPos) for CU250S-2
6SL3252-0BB00-0AA0	Brake relay (including cable harness for connection to the Power Module)
6SL3252-0BB01-0AA0	Safe Brake Relay (including cable harness for connection to the Power Module)
Control Unit Shield Connection Kits	
6SL3264-1EA00-0FA0	Shield Connection kit 1 for CU230P-2 Control Units
6SL3264-1EA00-0HA0	Shield Connection kit 2 for CU240B/E-2 Control Units
6SL3264-1EA00-0HB0	Shield Connection kit 3 for CU230P-2 PN and CU240B/E-2 PN Control Units
6SL3264-1EA00-0LA0	Shield Connection kit 4 for CU250S-2 Control Units (all variants)
Power Module Shield Connection Kits	
6SL3262-1AC00-0DA0	Frame size FSC
6SL3262-1AD00-0DA0	Frame size FSD and FSE
6SL3262-1AF00-0DA0	Frame size FSF

SINAMICS G110M

The distributed motor mounted drive



Compatible only with Siemens motors
Types: 1LE1 & 1LA with option for terminal box.

Design

The G110M is a motor-mounted drive in power ratings from 0.37 kW to 4 kW. The drive consists of a Power Module (PM) selected for the kW rating of the motor and Control Unit (CU) selected for the communication interface and the method of connection. The G110M can be combined with a selection of motors or as a complete drive/motor/gearbox.

Benefits

- Compact design
- Easy to commission
- Wide range of Communication choices
- Choice of connection methods
- Optional Integrated Braking Resistor
- Quick Stop Function
- Local Inputs / Outputs
- STO Safety Integrated Function. See page 54.

Applications

- Conveyors

Technical data

Electrical data	SINAMICS G110M
Line Voltages & Power Ranges	380 ...480V 3 AC (-10% +10%) 0.37 kW ...4.0 kW
Line Supply Types	TN, TT
Line Frequency	47 ...63 Hz
Output Frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 200 Hz Vector
Pulse Frequency	4 kHz Standard, 2 ... 16 kHz in 2 kHz steps possible (see de-rating table in catalogue)
Control modes	V/f linear, square & multipoint, Flux Current Control FCC, Sensorless Vector
Digital Inputs (DI)	4, Programmable, PNP, Simatic compatible Optional 1 safety input for STO uses 2 of the digital inputs
Digital Outputs (DO)	2, (24V DC 0 ... 0.5A), Programmable
Analogue Inputs (AI)	2, (0 ... 10V or 0 ... 20mA, 12 bit), can be used as additional DI if required
Communication interface	RS485 / USS / Modbus RTU, Profibus, Profinet/ EtherNet IP

Functions

Software Functions	16 fixed frequencies, BICO Connection, Auto Restart, Slip Compensation, Free Function Blocks, Ramp Smoothing, 3 switchable command and drive data sets, Flying Restart, Jog, Technology PID, Setpoint input, Motor Identification, Brake control
Monitoring/protection functions	Undervoltage, overvoltage, overload, ground fault, short circuit, stall protection, motor and power module temperature protection, parameter lock

Mechanical data

Degree of protection	IP65 with HANQ, IP66 with cable gland
Cooling type	Fan cooling from motor fan

Environment

Ambient temperature (operating)	10 ...40°C, between 40 ... 55°C with derating
---------------------------------	---

Standards

In conformance with the following standards	UL, cUL, CE, c-tick EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2
---	--

PM240M - Power Modules - Supply Voltage - 380 V... 480 V 3 AC

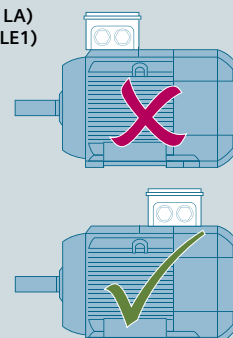
HO (CT) Rating	Frame Size	Filtered Class A
0.37 kW / 1.3 A	A	6SL3517-1BE11-3AM0
0.75 kW / 2.2 A	A	6SL3517-1BE12-3AM0
1.1 kW / 3.1 A	A	6SL3517-1BE13-3AM0
1.5 kW / 4.1 A	A	6SL3517-1BE14-3AM0
2.2 kW / 5.6 A	B	6SL3517-1BE16-3AM0
3.0 kW / 7.3 A	B	6SL3517-1BE17-7AM0
4.0 kW / 8.8 A	B	6SL3517-1BE21-0AM0

Overload: 0.37 ... 3kW - 2 x HO current for 3s plus 1.5 x HO current for 57s in a 300s cycle. Overload: 4 kW - 1.6 x HO current for 3s plus 1.5 x HO current for 57s in a 300s cycle.

400 V 3 AC 50 Hz Motors Pulse Frequency 4 kHz














G110M Frame Size	Power kW	SIMOTICS GP 2-pole		SIMOTICS GP 4-pole	
		2-pole	Frame Size	4-pole	Frame Size
FSA	0.37	1LA7070-2AA	71M IE1	1LA7073-4AB	71M IE1
FSA	0.37	1LA9070-2KA	71M IE2	1LA9073-4KA	71M IE2
FSA	0.75	1LE1001-ODA2	80M IE2	1LE1001-ODB3	80M IE2
FSA	1.1	1LE1001-ODA3	80M IE2	1LE1001-0EB0	90S IE2
FSA	1.5	1LE1001-0EA0	90S IE2	1LE1001-0EB4	90L IE2
FSB	2.2	1LE1001-0EA4	90L IE2	1LE1001-1AB4	100L IE2
FSB	3	1LE1001-1AA4	100L IE2	1LE1001-1AB5	100L IE2
FSB	4	1LE1001-1BA2	112M IE2	1LE1001-1BB2	112M IE2

Option M64 (1LA)
Option H08 (1LE1)



SINAMICS G110M

Part Numbers

Control Units										
Part Number	Designation		Interface	Connection	Motor Frame Size	DI	DO	AI	F-DI	Safety
6SL3544-0LB02-1BA0	CU240M		RS485/USS/Modbus RTU	Gland	71	4	2	2 ^	1*	STO
6SL3544-0MB02-1BA0	CU240M		RS485/USS/Modbus RTU	Gland	80/90	4	2	2 ^	1*	STO
6SL3544-0NB02-1BA0	CU240M		RS485/USS/Modbus RTU	Gland	100/112	4	2	2 ^	1*	STO
6SL3544-0LB02-1PA0	CU240M DP		Profibus	Gland	71	4	2	2 ^	1*	STO
6SL3544-0MB02-1PA0	CU240M DP		Profibus	Gland	80/90	4	2	2 ^	1*	STO
6SL3544-0NB02-1PA0	CU240M DP		Profibus	Gland	100/112	4	2	2 ^	1*	STO
6SL3544-0LB02-1FA0	CU240M PN		Profinet	Gland	71	4	2	2 ^	1*	STO
6SL3544-0MB02-1FA0	CU240M PN		Profinet	Gland	80/90	4	2	2 ^	1*	STO
6SL3544-0NB02-1FA0	CU240M PN		Profinet	Gland	100/112	4	2	2 ^	1*	STO
6SL3544-0TB02-1PA0	CU240M DP		Profibus	HANQ	71	4	2	2 ^	1*	STO
6SL3544-0PB02-1PA0	CU240M DP		Profibus	HANQ	80/90	4	2	2 ^	1*	STO
6SL3544-0QB02-1PA0	CU240M DP		Profibus	HANQ	100/112	4	2	2 ^	1*	STO
6SL3544-0TB02-1FA0	CU240M PN		Profinet	HANQ	71	4	2	2 ^	1*	STO
6SL3544-0PB02-1FA0	CU240M PN		Profinet	HANQ	80/90	4	2	2 ^	1*	STO
6SL3544-0QB02-1FA0	CU240M PN		Profinet	HANQ	100/112	4	2	2 ^	1*	STO

* Uses 2 Digital Inputs for 1 Safety Input ; ^ Can be used as additional Digital Inputs but only at 10V.

Overload: 0.37 kW ... 3 kW - 2 x HO current for 3s plus 1.5 x HO current for 57s in a 300s cycle.

Overload: 4 kW - 1.6 x HO current for 3s plus 1.5 x HO current for 57s in a 300s cycle.

Options		Options	
6SL3555-0PV00-0AA0	G110M 24 VDC power supply	3RK1922-2BP00	RS232 connecting cable
6SL3501-0BE18-8AA0	G110M internal braking resistor for FSA	6SL3255-0AA00-2CA0	PC Connection Kit 2
6SL3501-0BE22-0AA0	G110M internal braking resistor for FSB	6SL3566-2VA00 -0GA0	SINAMICS G110M INST-KIT-GLANDS
6SL3054-4AG00-2AA0	SINAMICS SD card (512 MB)	6SL3566-2LA00 -0GA0	SINAMICS G110M INST-KIT-HANQ
6SL3255-0AA00-4HA0	IOP Handheld with IOP as of V1.5	6SL3500-0TK02-0AA0	SPARE PARTS KIT

Preassembled cables - Communications			
Length	Profinet M12 to M12 - Straight	Profinet M12 to RJ45 - Straight	Profibus M12 to M12 - Straight
0.3m	6XV1870-8AE30	-	6XV1830-3DE30
0.5m	6XV1870-8AE50	-	6XV1830-3DE50
1.0m	6XV1870-8AH10	-	6XV1830-3DH10
1.5m	6XV1870-8AH15	-	6XV1830-3DH15
2m	6XV1870-8AH20	6XV1871-5TH20	6XV1830-3DH20
3m	6XV1870-8AH30	6XV1871-5TH30	6XV1830-3DH30
5m	6XV1870-8AH50	6XV1871-5TH50	6XV1830-3DH50
10m	6XV1870-8AN10	6XV1871-5TN10	6XV1830-3DN10
15m	6XV1870-8AN15	6XV1871-5TN15	6XV1830-3DN15
Connectors		Profinet M12 Pro Metal	
1 piece	6GK1901-0DB20-6AA0	-	-
8 piece	6GK1901-0DB20-6AA8	-	-
5 piece (male)	-	-	6GK1905-0EA00
5 piece (female)	-	-	6GK1905-0EB00

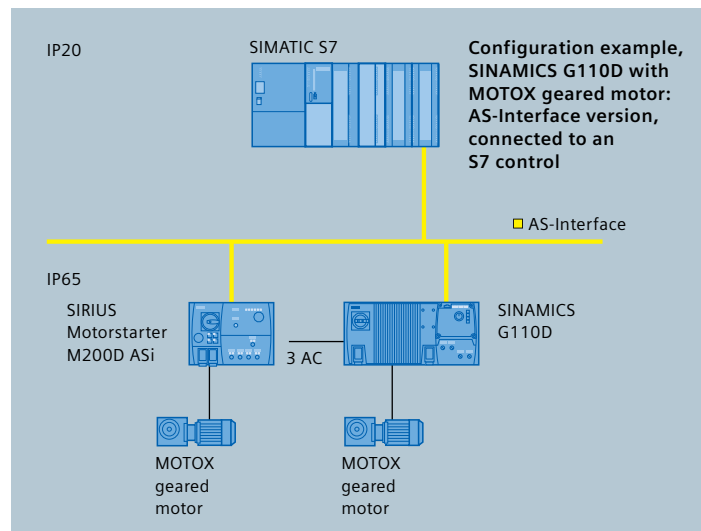
Preassembled cables - 24 V Power			
Length	7/8" to 7/8" 24V - Straight	7/8" 90° to free ends	7/8" 90° to 90°
0.3m	6XV1822-5BE30	-	-
0.5m	6XV1822-5BE50	-	-
1.0m	6XV1822-5BH10	-	-
1.5m	6XV1822-5BH15	-	-
2m	6XV1822-5BH20	-	-
3m	6XV1822-5BH30	3RK1902-3GB30	3RK1902-3NB30
5m	6XV1822-5BH50	3RK1902-3GB50	3RK1902-3NB50
10m	6XV1822-5BN10	3RK1902-3GC10	3RK1902-3NC10
15m	6XV1822-5BN15	-	-
Connectors		7/8" Straight	
5 pieces female	6GK1905-0FA00	-	3RK1902-3BA00
5 pieces male	6GK1905-0FB00	-	3RK1902-3DA00

Mains Supply Cable - HANQ		Mains connector - HANQ		
Length/CSA	Angled connector to free end		Feed - Female	Forward - Male
2.5m, 4x4mm ²	3RK1911-0DB13	For 2.5mm ² cable	3RK1911-2BE50	3RK1911-2BF50
5m, 4x4mm ²	3RK1911-0DB33	For 4mm ² cable	3RK1911-2BE10	3RK1911-2BF10

A complete list of connectors and cables can be found on our support site support.automation.siemens.com/ww/view/wn/65355810.

SINAMICS G110D

The distributed single-motor drive for basic solutions



Design

SINAMICS G110D distributed inverter is a simpler version of the higher-performance SINAMICS G120D. It still offers the same advantages of modularity, low-profile design and IP65 rated rugged metal enclosure so the drive can be located close to the motor.

Benefits

- Power Range - 0.75 kW to 7.5 kW
- Identical footprint for all power ranges (depth changes) and same as G120D drive
- Integrated chopper for braking with an optional resistor
- Integrated class A EMC filter (acc.to EN55011)
- High overload capacity
- Wide range of protection for drive and motor
- Rugged IP65 enclosure
- Versions with and without isolation (maintenance switch)
- Optional key selection switch for switching between manual-automatic and activating the 'Quick-Stop' function
- Drive is mounted close to the motor saving on expensive cabinets, long cable runs and EMC issues
- TIA integration through the AS Interface
- Interchangeable MMC Card for fast commissioning and backup

Applications

- Conveyor and logistics solutions
- Basic performance applications at airports or in food & beverage, packaging, automotive industries and material handling

Technical data

Electrical data	SINAMICS G110D
Line voltages	380 V ... 500 V 3 AC, $\pm 10\%$
Power ranges	0.75 kW ... 7.5 kW
Line supply types	TN, TT
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f
Pulse frequency	4 kHz (up to 16 kHz with derating)
Open loop control	V/f (linear, square law, FCC)
Digital inputs (DI)	4
Digital outputs (DO)	0
Analog inputs (AI)	1 (0 ... 10V)
Analog outputs (AO)	0
Failsafe inputs (F-DI)	0
Communication interface	AS Interface (Version 3)
External interface to	PC via RS232 or USB via optical interface, SINAMICS MMC card or SIMATIC SD card

Functions

Software functions	Setpoint input, 6 fixed frequencies (programmable), ramp smoothing, jog, slip compensation, BICO technology, free function blocks for logic operations, selectable data & command sets (3), flying restart, automatic restart, motor identification, PID controller, DC braking, brake control
Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature, parameter locking
Safety functions	

Mechanical data

Degree of protection	IP65
Cooling type	FSA Convection, FSB & FSC Fan

Standards

In conformance with the following standards	UL 508C (UL list No. E121068), CE, c-tick
---	---

SINAMICS G110D

Part Numbers

Supply Voltage - 380 V... 500 V 3 AC		Power Modules	
Rating	Frame Size	Filtered # without Maintenance Switch (isolator)	Filtered # with Maintenance Switch (isolator)
0.75 kW / 2.3 A	FSA	6SL3511-OPE17-5AM0	6SL3511-1PE17-5AM0
1.5 kW / 4.3 A	FSA	6SL3511-OPE21-5AM0	6SL3511-1PE21-5AM0
3.0 kW / 7.7 A	FSA	6SL3511-OPE23-0AM0	6SL3511-1PE23-0AM0
4.0 kW / 10.2 A	FSB	6SL3511-OPE24-0AM0	6SL3511-1PE24-0AM0
5.5 kW / 13.2 A	FSC	6SL3511-OPE25-5AM0	6SL3511-1PE25-5AM0
7.5 kW / 19.0 A	FSC	6SL3511-OPE27-5AM0	6SL3511-1PE27-5AM0

Control Units	Designation	Interfaces	DI	DO	AI	AO	F-DI	Safety
Inc. with PM		Analogue & ASI	4	-	1	-	-	-

DI - Digital Inputs, DO- Digital Outputs, AI - Analogue Inputs, AO - Analogue Outputs.
EMC filtering generally suitable for 1st environment. Please refer to page 55 for specific categorisations.

Options	
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)
3RK1922-2BP00	RS232 Interface cable for communication with a PC or Handheld IOP - 2.5m
6SL3555-0PA00-2AA0	USB Cable for communication with a PC - 2.5m
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB (requires Memory Card Holder)
6SL3555-0PM00-0AA0	SD Memory Card Holder
6SL3555-0PL00-2AA0	Manual / Local control key switch
Connectors/Cables	
3RK1901-1NR21	AS Interface Cable M12 Branch 1m
3RK1901-1NR22	AS Interface Cable M12 Branch 2m
3RK1902-4CA00-4AA0	M12 Socket (Angled)
3RK1902-4BH15-5AA0	M12 Plug-in cable for Inputs/Outputs 1.5m
3RK1902-4BH50-5AA0	M12 Plug-in cable for Inputs/Outputs 5m
3RK1902-4HC01-5AA0	M12 Plug-in cable for Inputs/Outputs 10m
3RK1902-4BA00-5AA0	M12 Connector (Straight)
3RK1902-4DA00-5AA0	M12 Connector (Angled)
3RK1911-0DB13	Connecting cable prefabricated at one end for Power Supply 1.5m
3RK1911-0DB33	Connecting cable prefabricated at one end for Power Supply 5m
3RK1911-2BE50	Connector Set for Power Supply 2.5 mm²
3RK1911-2BE10	Connector Set for Power Supply 4 mm²
3RK1911-2BE30	Connector Set for Power Supply 6 mm²

A complete list of connectors and cables can be found on our support site support.automation.siemens.com/ww/view/wn/65355810.



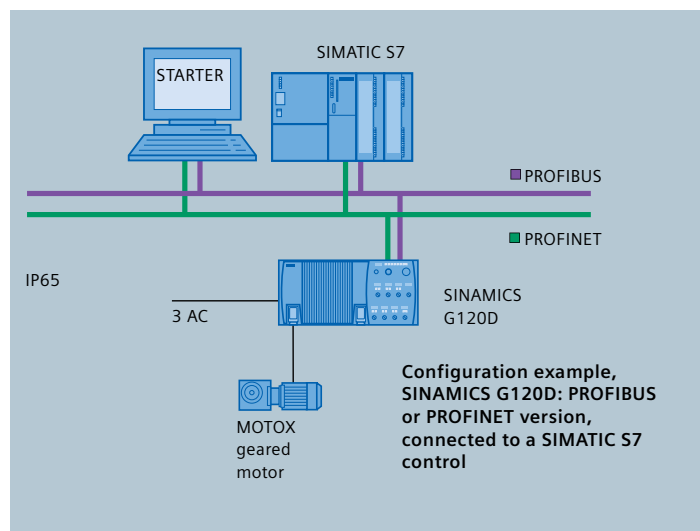
G110D
with Isolator (maintenance switch)



G110D
with Isolator (maintenance switch)
and optional key switch

SINAMICS G120D

The distributed single-motor drive for high-performance solutions



Design

The SINAMICS G120D inverter is the “distributed” brother of the SINAMICS G120 series. It’s inherited many of the PM250 power module features including ‘Efficient Infeed Technology’ and safety functions. With its modularity, communication and IP65 rating it’s the ideal choice for conveyor and logistics applications requiring 3-ph 380V to 480V AC, 0.75 kW to 7.5 kW distributed solution.

Benefits

- Power range - 0.75 kW to 7.5 kW
- Modular design – spare parts stock to a minimum
- Identical footprint for all power ranges (depth changes) and same as G110D drive
- Efficient Infeed Technology – regenerative braking energy is fed back into the mains supply (P53)
- Integrated class A EMC filter (acc.to EN55011)
- High overload capacity
- Wide range of protection for drive and motor
- Low harmonics
- Rugged IP65 enclosure
- Drive is mounted close to the motor saving on expensive cables, long cable runs and EMC issues
- TIA integration through Profibus and Profinet Communications
- Integrated Safety functions without an encoder STO, SS1 and SLS certified to EN ISO 13849-1 PLd, IEC61508 SIL2 and Cat 3
- Interchangeable MMC Card for fast commissioning and backup

Applications

- Demanding conveyor and logistics solutions
- High performance applications at airports or in food & beverage, automotive industry and material handling

Technical data

Electrical data	SINAMICS G120D
Line voltages	380 V ... 500 V 3 AC, $\pm 10\%$
Power ranges	0.75 kW ... 7.5 kW
Line supply types	TN, TT
Line frequency	47 ... 63 Hz
Output frequency	0 ... 550 Hz V/f (from FW 4.7), 0 ... 200 Hz Vector
Pulse frequency	4 kHz (up to 16 kHz with derating)
Open loop/closed loop	V/f (linear, square law, FCC) Vector control with and without encoder Torque control with and without encoder (not CU250-2)
Digital inputs (DI)	CU dependent - see page 28
Digital outputs (DO)	CU dependent - see page 28
Analogue inputs (AI)	CU dependent - see page 28
Failsafe inputs (F-DI)	CU dependent - see page 28
Failsafe outputs (F-DO)	CU dependent - see page 28
Communication interface	PROFIBUS DP, PROFINET
External interface to	PC via RS232 or USB via optical interface, SINAMICS SD card

Functions

Software functions	Setpoint input, 16 fixed frequencies (programmable), ramp smoothing, jog, slip compensation, BICO technology, command sets (3), flying restart, automatic restart, PID controller, regenerative braking, brake relay control via CU, free function blocks, 3 drive and command data sets, Motor ID
Protection functions	Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature
Safety functions	STO, SS1, SLS, SDI, SSM - CU dependent

Mechanical data

Degree of protection	IP65
Cooling type	FSA & FSB convection, FSC Fan

Standards

In conformance with the following standards	UL 508C (UL list No. E121068), CE, c-tick EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2
---	--

SINAMICS G120D

Part Numbers

Supply Voltage - 380 V ... 480 V 3 AC		Power Modules
Rating	Frame Size	Filtered #
0.75 kW / 2.2 A	A	6SL3525-OPE17-5AA1
1.5 kW / 4.1 A	A	6SL3525-OPE21-5AA1
3 kW / 7.7 A	B	6SL3525-OPE23-0AA1
4 kW / 10.2 A	C	6SL3525-OPE24-0AA1
5.5 kW / 13.2 A	C	6SL3525-OPE25-5AA1
7.5 kW / 19.0 A	C	6SL3525-OPE27-5AA1

EMC filtering generally suitable for 1st environment. Please refer to page 55 for specific categorisations.

Overload: Average maximum rated output current during a 300s cycle: 1.5 x rated current for 60s over a 300s cycle time, 2 x rated current for 3s over a 300s cycle time.

Control Units	Designation	Interfaces	DI	DO	F-DI	F-DO	AI	Encoder HTL / SSI	Safety	
Standard										
6SL3544-0FB20-1PA0	CU240D-2 DP	Profibus DP	6	2	1~	-	2	1 / -	STO	
6SL3544-0FB20-1FA0	CU240D-2 PN	Profinet	6	2	1~	-	2	1 / -	STO	
Fail-safe										
6SL3544-0FB21-1PA0	CU240D-2 DP-F	Profibus DP	6	2	3~	1*	2	1 / -	STO, SS1, SLS, SSM, SDI	
6SL3544-0FB21-1FA0	CU240D-2 PN-F	Profinet	6	2	3~	1*	2	1 / -	STO, SS1, SLS, SSM, SDI	
6SL3544-0FA21-1FB0	CU240D-2 PN-F PP	PushPull	6	2	3~	1*	2	1 / -	STO, SS1, SLS, SSM, SDI	
With Basic Positioner (EPos) and fail-safe										
6SL3546-0FB21-1PA0	CU2450D-2 DP-F	Profibus DP	6	2	3~	1*		1 / 1	STO, SS1, SLS, SSM, SDI	
6SL3546-0FB21-1FA0	CU250D-2 PN-F	Profinet	6	2	3~	1*		1 / 1	STO, SS1, SLS, SSM, SDI	
6SL3546-0FB21-1FB0	CU245D-2 PN-F PP	PushPull	6	2	3~	1*		1 / 1	STO, SS1, SLS, SSM, SDI	

~ Each "Failsafe input utilises two digital inputs from the module." Each "Failsafe output utilises two digital outputs from the module.

Options	
6SL3255-0AA00-4HA0	IOP Handheld (inc. Rechargeable Batteries, Charging Unit, 3m RS232 Cable and 1m USB Cable)
6SL3255-0AA00-2CA0	PC Connection Kit 2
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB

Profint Connection Cables and connectors M12		7/8" Control Unit Power Cables	
6XV1870-8AE30	Preassembled Profinet Cable 0.3m	6XV1822-5BE30	Preassembled Cable 0.3m
6XV1870-8AE50	Preassembled Profinet Cable 0.5m	6XV1822-5BE50	Preassembled Cable 0.5m
6XV1870-8AH10	Preassembled Profinet Cable 1.0m	6XV1822-5BH10	Preassembled Cable 1.0m
6XV1870-8AH15	Preassembled Profinet Cable 1.5m	6XV1822-5BH15	Preassembled Cable 1.5m
6XV1870-8AH20	Preassembled Profinet Cable 2m	6XV1822-5BH20	Preassembled Cable 2m
6XV1870-8AH30	Preassembled Profinet Cable 3m	6XV1822-5BH30	Preassembled Cable 3m
6XV1870-8AH50	Preassembled Profinet Cable 5m	6XV1822-5BH50	Preassembled Cable 5m
6XV1870-8AN10	Preassembled Profinet Cable 10m	6XV1822-5BN10	Preassembled Cable 10m
6XV1870-8AN15	Preassembled Profinet Cable 15m	6XV1822-5BN15	Preassembled Cable 15m
6GK1901-0DB20-6AA0	M12 Plug PRO Metal Enclosure - 1 unit	6GK1905-0FA00	7/8" Plastic Enclosure with Pin insert (5 uniuts)
6GK1901-0DB20-6AA8	M12 Plug PRO Metal Enclosure - 8 units	6GK1905-0FB00	7/8" Plastic Enclosure with Socket insert (5 uniuts)
6SL3255-0AH00-2CA0	PC Connection Kit 2	6GK1907-0AB10-6AA0	Power Plug PRO for PP units
6GK1901-1BB10-6AA0	RJ45 PLUG PRO connector		

Profibus Connecting Cables and connectors M12		Conection cable for Digital Inputs and Outputs	
6XV1830-3DE30	Preassembled Profibus Cable 0.3m	3RK1902-4HB15-5AA0	Preassembled Cable 1.5m
6XV1830-3DE50	Preassembled Profibus Cable 0.5m	3RK1902-4HB50-5AA0	Preassembled Cable 5m
6XV1830-3DH10	Preassembled Profibus Cable 1.0m	3RK1902-4HC01-5AA0	Preassembled Cable 10m
XV1830-3DH15	Preassembled Profibus Cable 1.5m	3RK1902-4BA00-5AA0	M12 Connector Straight
6XV1830-3DH20	Preassembled Profibus Cable 2m	3RK1902-4DA00-5AA0	M12 Connector Angled
6XV1830-3DH30	Preassembled Profibus Cable 3m	Power Connecting Cable for Power Modules	
6XV1830-3DH50	Preassembled Profibus Cable 5m	3RK1911-0DB13	Preassembled Cable 1.5m
6XV1830-3DN10	Preassembled Profibus Cable 10m	3RK1911-0DB33	Preassembled Cable 5m
6XV1830-3DN15	Preassembled Profibus Cable 15m	3RK1911-2BE50	Connector set 2.5mm2
6GK1905-0EA00	Profibus M12 Metal Enclosure with Pin insert (5 uniuts)	3RK1911-2BE10	Connector set 4mm2
6GK1905-0EA00	Profibus M12 Metal Enclosure with socket insert (5 units)	3RK1911-2BE30	Connector set 6mm2

A complete list of connectors and cables can be found on our support site support.automation.siemens.com/ww/view/wn/65355810.

SINAMICS S110

The specialist for basic positioning tasks



Design

The SINAMICS S110 positioning drive with its built-in basic positioning system is the ideal solution when you need to position a machine axis simply, quickly and accurately.

This modular drive solution consists of a Power Module (PM340) and Control Module (CU305) offering maximum flexibility whilst simplifying spare stock holding. Single phase and three phase versions are available with power ratings of 0.12 kW to 0.75 kW and 0.37 kW to 90 kW respectively.

The SINAMICS S110 offers you a choice of control via an analogue input (+/-10V), USS, PROFIBUS DP and PROFINET. All with a wide range of integrated safety functions as standard. Both synchronous servo and asynchronous induction motors can be controlled ensuring precise control and accurate positioning. Please refer to Chapter 11 of the DA31 Catalogue for suitable motors.

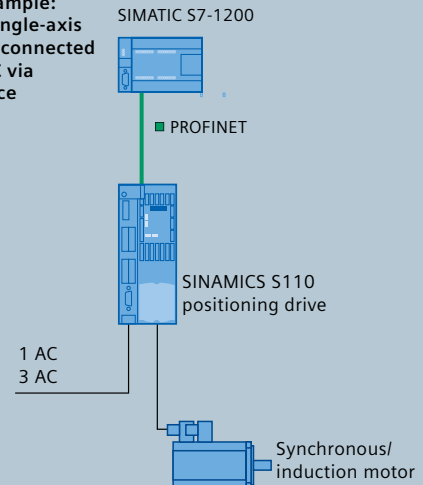
Benefits

- Wide range of power ranges
- A selection of control methods
- Closed-loop servo control
- Integrated safety functions
- EPos positioning functions for the most commonly used positioning tasks
- 16 positioning blocks
- BICO technology
- Simple drive engineering with SIZER
- User-friendly commissioning with STARTER including auto configuration using the electronic type plate and controller optimisation using auto-tuning

Applications

- Handling equipment
- Feeder and removal devices
- Stacking equipment
- Automatic assembly machines
- Laboratory automation
- Tool changers
- Tracking equipment, e.g. for solar panels
- Medical technology, e.g. for examination tables

Configuration example:
SINAMICS S110 single-axis positioning drive connected to an S7 1200 PLC via PROFINET interface



Technical data

Electrical data	SINAMICS S110 PM340/CU305	
Line voltages; Power ranges	200 V ... 240 V 1 AC $\pm 10\%$; 0.12 kW ... 0.75 kW 380 V ... 480 V 3 AC $\pm 10\%$; 0.37 kW ... 90 kW	
Line supply types	TN (with filter), TN, TT, IT (without filter)	
Line frequency	47 ... 63 Hz	
Output frequency (servo)	0 ... 330 Hz	
Open-loop/closed-loop control	Induction Motor - torque/position control with encoder, speed control with & w/o encoder (V/f) Servo Motor - torque/position/speed control with encoder	
	Without Safety	With Safety
Digital inputs (DI)	11	5
Digital outputs (DO)	1	0
Digital inputs/outputs DIO	4	4
Failsafe digital inputs (F-DI)	0	3
Failsafe digital outputs (F-DO)	0	1
Analogue inputs	1 (-10 ... +10V (12 bit))	
Communication interfaces	PROFIBUS DP/RS485/USS, PROFINET or CANBus	
External interface to	PC via RS232 or USB via optical interface, SINAMICS MMC card or SIMATIC SD card	

Functions

Technological functions	EPos positioning functions: Point-to-point positioning, absolute/relative; linear/rotary axis; flying positioning; traversing blocks (up to 16); BICO technology
Safety functions	Basic: STO, SBC~, SS1. Extended: SS1, SS2 with SBR (Safe brake ramp), SOS, SLS, SDI, SSM
Limits	Torque, current, power, speed
Monitoring/Protection functions	Traversing range limits; following error; standstill; Overvoltage, undervoltage, overload, ground fault, short circuit, stall, motor blocking, motor overtemperature, inverter overtemperature
Motors that can be connected	Synchronous Motors (e.g. 1FK7, 1FT7) Induction Motors (e.g. 1LA, 1PH8)

Mechanical data

Degree of protection	IP20
Cooling type	Fan

Standards

In conformance with the following standards	cULus EN ISO 13849-1 PLd & Cat 3, IEC61508 SIL2
---	--

~ Safe Brake Control on the Power Module via Safe Brake Relay.



SINAMICS S110

Part Numbers

Supply Voltage - 200 V ... 240 V 1 AC		Power Modules		
Rating	Frame Size	PM340 Industrial	PM340 Filtered #	Additional Filter to use with unfiltered PM340*
0.12 kW / 0.9 A	A	6SL3210-1SB11-0UA0	6SL3210-1SB11-0AA0	-
0.37 kW / 2.3 A	A	6SL3210-1SB12-3UA0	6SL3210-1SB12-3AA0	-
0.75 kW / 3.9 A	A	6SL3210-1SB14-0UA0	6SL3210-1SB14-0AA0	-
Supply Voltage - 380 V ... 480 V 3 AC		Power Modules		
Rating	Frame Size	PM340 Industrial	PM340 Filtered #	Additional Filter to use with unfiltered PM340*
0.37 kW / 1.3 A	A	6SL3210-1SE11-3UA0	→ = ←	6SE6400-2FA00-6AD0
0.55 kW / 1.7 A	A	6SL3210-1SE11-7UA0	→ = ←	6SE6400-2FA00-6AD0
0.75 kW / 2.2 A	A	6SL3210-1SE12-2UA0	→ = ←	6SE6400-2FA00-6AD0
1.1 kW / 3.1 A	A	6SL3210-1SE13-1UA0	→ = ←	6SE6400-2FA00-6AD0
1.5 kW / 4.1 A	A	6SL3210-1SE14-1UA0	→ = ←	6SE6400-2FA00-6AD0
2.2 kW / 5.9 A	B	6SL3210-1SE16-0UA0	6SL3210-1SE16-0AA0	-
3 kW / 7.7 A	B	6SL3210-1SE17-7UA0	6SL3210-1SE17-7AA0	-
4 kW / 10.2 A	B	6SL3210-1SE21-0UA0	6SL3210-1SE21-0AA0	-
7.5 kW / 18 A	C	6SL3210-1SE21-8UA0	6SL3210-1SE21-8AA0	-
11 kW / 25 A	C	6SL3210-1SE22-5UA0	6SL3210-1SE22-5AA0	-
15 kW / 32 A	C	6SL3210-1SE23-2UA0	6SL3210-1SE23-2AA0	-
18.5 kW / 38 A	D	6SL3210-1SE23-8UA0	6SL3210-1SE23-8AA0	-
22 kW / 45 A	D	6SL3210-1SE24-5UA0	6SL3210-1SE24-5AA0	-
30 kW / 60 A	D	6SL3210-1SE26-0UA0	6SL3210-1SE26-0AA0	-
37 kW / 75 A	E	6SL3210-1SE27-5UA0	6SL3210-1SE27-5AA0	-
45 kW / 90 A	E	6SL3210-1SE31-0UA0	6SL3210-1SE31-0AA0	-
55 kW / 100 A	F	6SL3210-1SE31-1UA0	6SL3210-1SE31-1AA0	-
75 kW / 145 A	F	6SL3210-1SE31-5UA0	6SL3210-1SE31-5AA0	-
90 kW / 178 A	F	6SL3210-1SE31-8UA0	6SL3210-1SE31-8AA0	-

EMC filtering generally suitable for 1st environment; additional filter options available on request - please refer to page 55 for specific categorisations.

* Additional unit to be used with the industrial drive.

Control Units	Designation	Interfaces	Inputs and Outputs
6SL3040-0JA01-0AA0	CU305 PN	 Profinet	see page 29
6SL3040-0JA00-0AA0	CU305 DP	 Profibus DP / RS485 / USS	see page 29
6SL3040-0JA02-0AA0	CU305 CAN	 CAN	see page 29

Options	
6SL3054-4AG00-0AA0	MMC Memory Card - Empty
6SL3054-4EE00-0AA0	MMC Memory Card with Firmware V 4.4
6SL3054-4EE00-0AA0-Z (Z=F01)	MMC Memory Card with Firmware V 4.4 and license for extended safety functions
6SL3074-0AA10-0AA0	License for extended safety functions (for separate order)
6SL3055-0AA00-4BA0	Basic Operator Panel 20 (BOP-20)
6SL3255-0AA00-4JA1	IOP - Intelligent Operator Panel - No direct connection on to CU, only for Door mounting
6SL3256-0AP00-0JA0	IOP Door Mounting Kit
6SL3255-0AA00-4HA0	IOP Handheld (including charging unit, rechargeable batteries and connecting cables)
6SL3252-0BB01-0AA0	Safe Brake Relay (including cable harness for connection to the power module)

Shield Connection Kits	
6SL3262-1AA00-0BA0	Frame Size FSA
6SL3262-1AB00-0DA0	Frame Size FSB
6SL3262-1AC00-0DA0	Frame Size FSC
6SL3262-1AD00-0DA0	Frame Size FSD and FSE
6SL3262-1AF00-0DA0	Frame Size FSF

SINAMICS G130 / G150



Design

The SINAMICS G130 Chassis units and SINAMICS G150 Cabinet units are variable speed drives specifically designed to meet single motor applications with square-law and constant load characteristics without regenerative feedback into the mains supply.

Technical data

	G130	G150
380 V ... 480 V 3 AC, $\pm 10\%$	110 kW ... 560 kW	110 kW ... 900 kW
500 V ... 600 V 3 AC, $\pm 10\%$	110 kW ... 560 kW	110 kW ... 1000 kW
660 V ... 690 V 3 AC, $\pm 10\%$	110 kW ... 560 kW	75 kW ... 2700 kW

Typical Applications

- Pumps, fans and compressors
- Mixers, extruders and crushers

Further information: Catalogue D11

G130 online: www.siemens.com/sinamics-G130

G150 online: www.siemens.com/sinamics-G150

Contact our Customer Care Centre

From UK Tel: 08458 507600

From IRL Tel: 1890 507600

Email: sales.gbi.industry@siemens.com

SINAMICS S120

Engineered Drives



Design

The SINAMICS S120 is a modular drive system with servo and vector control capabilities for sophisticated tasks. Versions are available as single and multi-axis applications.

Technical data

	S120
200 V ... 240 V 1 AC, $\pm 10\%$	0.12 kW ... 0.75 kW
380 V ... 480 V 3 AC, $\pm 10\%$	0.37 kW ... 3000 kW
500 V ... 690 V 3 AC, $\pm 10\%$	750 kW ... 4500 kW

Typical Applications

- Packaging, plastics, printing and paper machines
- Textiles
- Woodworking, glass and ceramics
- Machine tools
- Steel industry
- Hoisting and cranes
- ... and many more

Further information: Catalogue PM21

S120 online: www.siemens.com/sinamics-S120

Contact our Customer Care Centre

From UK Tel: 08458 507600

From IRL Tel: 1890 507600

Email: sales.gbi.industry@siemens.com

Contact our Motion distributor, HMK Technical Services on 01260 279411, email to enquiries@hmkdirect.com or visit their website at www.hmkdirect.com

SINAMICS Accessories & Options

Line Reactors

The purpose of a line reactor is to reduce line side harmonic currents and harmonic effects. This applies particularly in the case of weak power supplies (network short circuit power $UK > 1\%$).

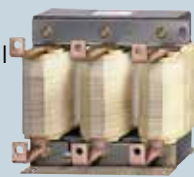
Not required for:
PM250 (G120)
PM250D (G120D)
PM230 (G120P)
Upto 90 kW



Output Reactors

Output Reactors reduce the voltage loading on the motor windings. They also reduce the capacitive charge/discharge currents which place an additional load on the power module when long cables are used.

Please see the technical information for the drive in the D31 catalogue.



Braking Resistors

Braking Resistors can be used to absorb the energy fed back by the motor during braking. The G120 PM240 and G120C have integrated braking choppers across the Complete power range except for PM240 FSDX which is by external braking chopper.



BOP-2 Operator Panel

The Basic Operator Panel 2 can be used to commission and monitor the drive as well as input parameters. With its 2 line menu driven display and ability to display parameter number and value, basic commissioning can be carried out easily and in most cases without a parameter list.



IOP / Handheld IOP

The Intelligent Operator Panel is a very user friendly powerful Operator Panel. Thanks to its large clear text display, menu prompting and Application Wizards you are easily guided through the commissioning process. Mounted on the Control Unit or on the control cabinet door using a door mounting kit. Also available as a 'Hand Held' unit, comes supplied with IOP, holder, cable, charging unit and rechargeable batteries.

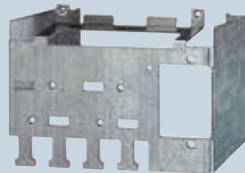


Shield Connection Kit

Makes it easy to bond the shields of supply cables and ensures optimum EMC performance.

Includes

- A shield bonding plate for the power module
- A shield bonding plate for the control module
- Connection elements
- Mounting surface for Brake Relay and Safe Brake Relay



SD Card

The SD card allows.

- Parameter settings can be written from the card to the drive or saved from the drive to the card
- Up to 100 parameter sets can be stored
- Supports series commissioning without the use of additional commissioning tools (e.g. BOP & STARTER)



Brake Relay

The brake relay has a switch contact (NO contact) to control the motor brake coil.

Order no.: 6SL3252-0BB00-0AA0



Safe Brake Relay

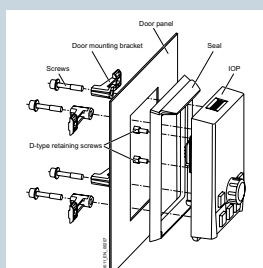
The Safe Brake Relay controls a 24 V motor brake. The inverter monitors the brake control using the Safe Brake Relay as part of the Integrated Safety Function Safe Brake Control (SBC).

Order number: 6SL3252-0BB01-0AA0



Mounting Kits

Using the optional door mounting kit, the IOP can be easily fitted in a control cabinet.



PC Inverter Connection Kit

For controlling or commissioning a drive directly from a PC via STARTER commissioning software.

PC Inverter Connection Kit 2 (for Control Units G120C, G120 CU230P-2, CU240B-2, CU240E-2, CU250S-2, G110M & G120D)

SINAMICS V20 Accessories

Input Reactors / Output Reactors & Braking Resistors

V20 - Supply Voltage: 200 ... 240V 1Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.12 kW	A	6SE6400-3CC00-4AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.25 kW	A	6SE6400-3CC00-4AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.37 kW	A	6SE6400-3CC01-0AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.55 kW	A	6SE6400-3CC01-0AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.75 kW	A	6SE6400-3CC01-0AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
1.1 kW	B	6SE6400-3CC02-6BB3	6SE6400-3TC01-0BD3	6SE6400-4BC11-2BA0
1.5 kW	B	6SE6400-3CC02-6BB3	6SE6400-3TC01-0BD3	6SE6400-4BC11-2BA0
2.2 kW	C	6SE6400-3CC02-6BB3	6SE6400-3TC01-0BD3	6SE6400-4BC11-2BA0
3 kW	C	6SE6400-3CC03-5CB3	6SE6400-3TC03-2CD3	6SE6400-4BC12-5CA0

V20 Supply Voltage: 380 ... 480V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.37 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
0.55 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
0.75 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
1.1 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
1.5 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
2.2 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	6SL3201-OBE21-0AA0
3 kW	B	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	6SL3201-OBE21-0AA0
4 kW	B	6SL3203-OCE21-0AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-0AA0
5.5 kW	C	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
7.5 kW	D	6SL3203-OCE21-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE21-8AA0
11 kW	D	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0
15 kW	D	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0

SINAMICS G120C Accessories

Input Reactors / Output Reactors & Braking Resistors

G120C Supply Voltage: 380 ... 480V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.55 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
0.75 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
1.1 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
1.5 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
2.2 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE16-1CA0	6SL3201-OBE21-0AA0
3.0 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	6SL3201-OBE21-0AA0
4.0 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	6SL3201-OBE21-0AA0
5.5 kW	B	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
7.5 kW	B	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
11 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0
15 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0
18.5 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0

SINAMICS Accessories for PM230

Input Reactors / Output Reactors & Braking Resistors

PM230 Supply Voltage 380 ... 480 V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.37 kW	A	-	6SL3202-0AE16-1CA0	-
0.55 kW	A	-	6SL3202-0AE16-1CA0	-
0.75 kW	A	-	6SL3202-0AE16-1CA0	-
1.1 kW	A	-	6SL3202-0AE16-1CA0	-
1.5 kW	A	-	6SL3202-0AE16-1CA0	-
2.2 kW	A	-	6SL3202-0AE16-1CA0	-
3 kW	A	-	6SL3202-0AE18-8CA0	-
4 kW	B	-	6SL3202-0AE21-8CA0	-
5.5 kW	B	-	6SL3202-0AE21-8CA0	-
7.5 kW	B	-	6SL3202-0AE21-8CA0	-
11 kW	C	-	6SL3202-0AE23-8CA0	-
15 kW	C	-	6SL3202-0AE23-8CA0	-
18.5 kW	C/D	-	6SL3202-0AE23-8CA0	-
22 kW	D	-	6SE6400-3TC03-8DD0	-
30 kW	D	-	6SE6400-3TC05-4DD0	-
37 kW	E	-	6SE6400-3TC08-0ED0	-
45 kW	E	-	6SE6400-3TC07-5ED0	-
55 kW	F	-	6SE6400-3TC14-5FD0	-
75 kW	F	-	6SE6400-3TC15-4FD0	-
90 kW	F	-	6SE6400-3TC14-5FD0	-

PM230 Supply Voltage 380 ... 480 V 3Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
3 kW	A	-	6SL3202-0AE18-8CA0	-
7.5 kW	B	-	6SL3202-0AE21-8CA0	-
18.5 kW	C	-	6SL3202-0AE23-8CA0	-

SINAMICS Accessories for PM240-2

Input Reactors / Output Reactors & Braking Resistors

PM240-2 Supply Voltage: 200 ... 240 V 1Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.55 kW	A	In preparation	6SL3202-OAE16-1CA0	In preparation
0.75 kW	A	In preparation	6SL3202-OAE16-1CA0	In preparation
1.1 kW	B	In preparation	6SL3202-OAE16-1CA0	In preparation
1.5 kW	B	In preparation	6SL3202-OAE18-8CA0	In preparation
2.2 kW	B	In preparation	6SL3202-OAE21-8CA0	In preparation
3 kW	C	In preparation	6SL3202-OAE21-8CA0	In preparation
4 kW	C	In preparation	6SL3202-OAE21-8CA0	In preparation

PM240-2 Supply Voltage: 200 ... 240 V 1Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.75 kW	A	In preparation	6SL3202-OAE16-1CA0	In preparation
2.2 kW	B	In preparation	6SL3202-OAE21-8CA0	In preparation
4 kW	C	In preparation	6SL3202-OAE21-8CA0	In preparation

PM240-2 Supply Voltage: 200 ... 240 V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.55 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	In preparation
0.75 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	In preparation
1.1 kW	B	6SL3203-OCE21-0AA0	6SL3202-OAE16-1CA0	In preparation
1.5 kW	B	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	In preparation
2.2 kW	B	6SL3203-OCE21-0AA0	6SL3202-OAE21-8CA0	In preparation
3 kW	C	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	In preparation
4 kW	C	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	In preparation
5.5 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	In preparation
7.5 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	In preparation

PM240-2 Supply Voltage: 200 ... 240 V 3Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.75 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	In preparation
2.2 kW	B	6SL3203-OCE21-0AA0	6SL3202-OAE21-8CA0	In preparation
4 kW	C	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	In preparation

PM240-2 Supply Voltage: 380 ... 480 V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.55 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
0.75 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
1.1 kW	A	6SL3203-OCE13-2AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
1.5 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE16-1CA0	6SL3201-OBE14-3AA0
2.2 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE16-1CA0	6SL3201-OBE21-0AA0
3 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	6SL3201-OBE21-0AA0
4 kW	B	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
5.5 kW	B	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
7.5 kW	B	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
11 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0
15 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0

PM240-2 Supply Voltage: 380 ... 480 V 3Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
3.0 kW	A	6SL3203-OCE21-0AA0	6SL3202-OAE18-8CA0	6SL3201-OBE21-0AA0
7.5 kW	B	6SL3203-OCE21-8AA0	6SL3202-OAE21-8CA0	6SL3201-OBE21-8AA0
15 kW	C	6SL3203-OCE23-8AA0	6SL3202-OAE23-8CA0	6SL3201-OBE23-8AA0

SINAMICS Accessories for PM240 & PM340

Input Reactors / Output Reactors & Braking Resistors

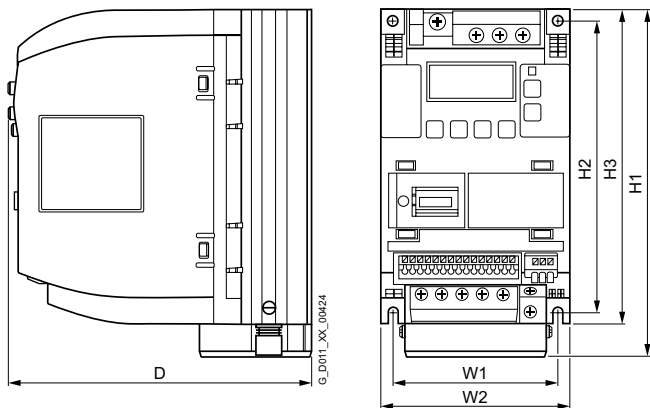
S110 PM340 Supply Voltage: 200 ... 240 V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	Output Reactor	Brake Resistor
0.12 kW	A	6SE6400-3CC00-4AB3	-	6SE6400-4BC05-0AA0
0.37 kW	A	6SE6400-3CC00-4AB3	-	6SE6400-4BC05-0AA0
0.75 kW	A	6SE6400-3CC01-0AB3	-	6SE6400-4BC05-0AA0

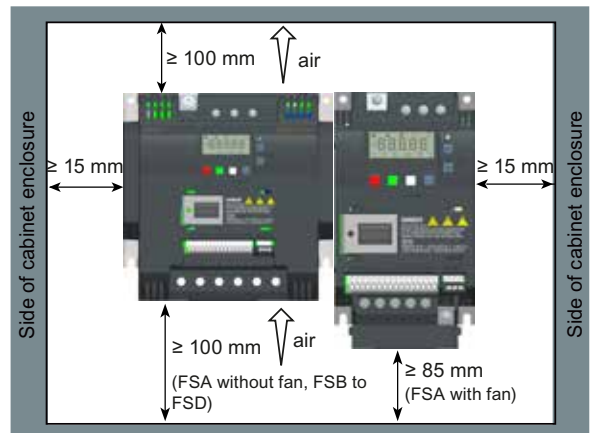
G120 PM240/PM250 & S110 PM340 Supply Voltage: 380 ... 480 V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor PM240 & PM340	Output Reactor PM240, PM250 & PM340	Brake Resistor PM240 & PM340
0.37 kW	A	6SE6400-3CC00-2AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
0.55 kW	A	6SE6400-3CC00-2AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
0.75 kW	A	6SE6400-3CC00-4AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
1.1 kW	A	6SE6400-3CC00-4AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
1.5 kW	A	6SE6400-3CC00-6AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
2.2 kW	B	6SL3203-0CD21-0AA0	6SL3202-0AE21-0CA0	6SL3201-0BE12-0AA0
3.0 kW	B	6SL3203-0CD21-0AA0	6SL3202-0AE21-0CA0	6SL3201-0BE12-0AA0
4 kW	B	6SL3203-0CD21-4AA0	6SL3202-0AE21-0CA0	6SL3201-0BE12-0AA0
7.5 kW	C	6SL3203-0CD22-2AA0	6SL3202-0AJ23-2CA0	6SE6400-4BD16-5CA0
11 kW	C	6SL3203-0CD22-2AA0	6SL3202-0AJ23-2CA0	6SE6400-4BD16-5CA0
15 kW	C	6SL3203-0CD23-5AA0	6SL3202-0AJ23-2CA0	6SE6400-4BD16-5CA0
18.5 kW	D	6SL3203-0CJ24-5AA0	6SE6400-3TC05-4DD0	6SE6400-4BD21-2DA0
22 kW	D	6SL3203-0CJ24-5AA0	6SE6400-3TC03-8DD0	6SE6400-4BD21-2DA0
30 kW	D	6SL3203-0CD25-3AA0	6SE6400-3TC05-4DD0	6SE6400-4BD21-2DA0
37 kW	E	6SL3203-0CJ28-6AA0	6SE6400-3TC08-0ED0	6SE6400-4BD22-2EA1
45 kW	E	6SL3203-0CJ28-6AA0	6SE6400-3TC07-5ED0	6SE6400-4BD22-2EA1
55 kW	F	6SE6400-3CC11-2FD0	6SE6400-3TC14-5FD0	6SE6400-4BD24-0FA0
75 kW	F	6SE6400-3CC11-2FD0	6SE6400-3TC15-4FD0	6SE6400-4BD24-0FA0
90 kW	F	6SE6400-3CC11-7FD0	6SE6400-3TC14-5FD0	6SE6400-4BD24-0FA0
110kW	F	6SL3000-0CE32-3AA0	6SL3000-2BE32-1AA0	6SE6400-4BD26-0FA0
132kW	F	6SL3000-0CE32-8AA0	6SL3000-2BE32-6AA0	6SE6400-4BD26-0FA0
160 kW	GX	6SL3000-0CE33-3AA0	6SL3000-2BE33-2AA0	6SL3000-1BE31-3AA0
200 kW	GX	6SL3000-0CE35-1AA0	6SL3000-2BE33-8AA0	6SL3000-1BE32-5AA0
250 kW	GX	6SL3000-0CE35-1AA0	6SL3000-2BE35-8AA0	6SL3000-1BE32-5AA0

SINAMICS V20 Dimensions



Ventilation Clearances



Dimensions

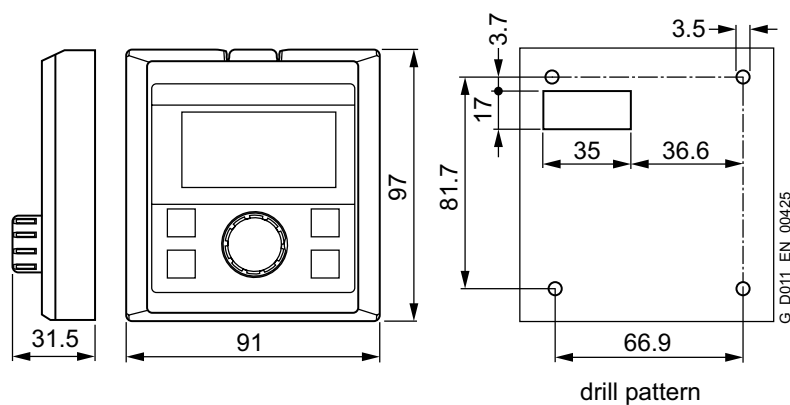
Frame size	Width		Height			Depth	Weight (kg)
	W1	W2	H1	H2	H3	D	approx.
FSA without fan	79mm	90mm	-	140mm	150mm	145.5mm	1mm
FSA	79mm	90mm	166mm	140mm	150mm	145.5mm	1.05mm
FSB	127mm	140mm	160mm	135mm	-	164.5mm	1.8mm
FSC	170mm	184mm	182mm	140mm	-	169mm	2.6mm
FSD	223mm	240mm	206.5mm	166mm	-	172.5mm	4.3mm

Outline dimensions and drill patterns (push-through mounting)

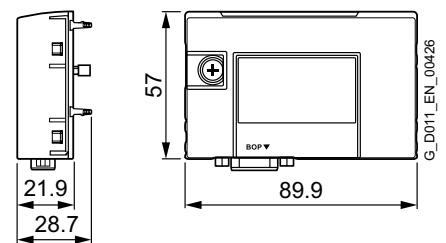
	Frame size B	Frame size C	Frame size D
Drill pattern and cutout (mm)			
Fixings	4 x M4 screws	4 x M5 screws	4 x M5 screws
Tightening Torque	1.8 Nm \pm 10 %	2.5 Nm \pm 10 %	2.5 Nm \pm 10 %

For more information about the push-through mounting and the installation of the flat plate inverter, please refer to the SINAMICS V20 Inverter Operator Instructions.

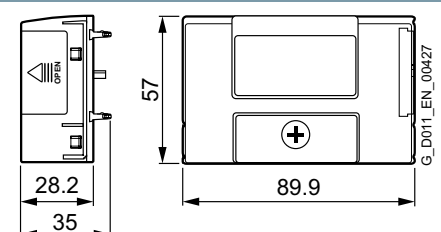
External BOP



Parameter Loader

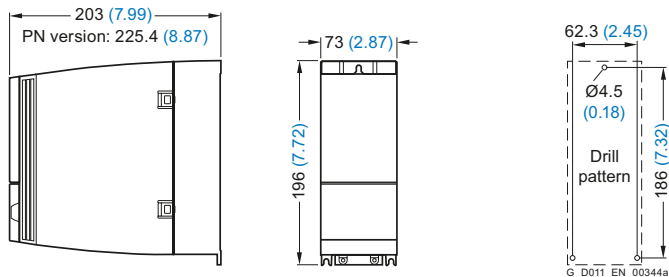


External BOP Interface

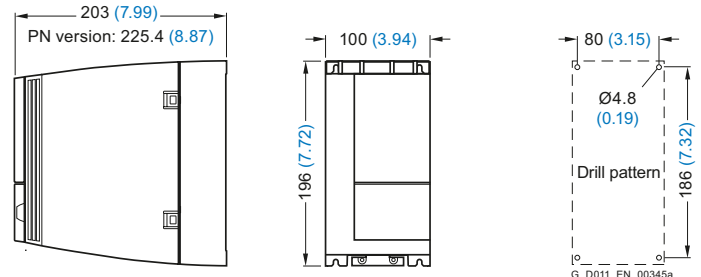


SINAMICS G120C Dimensions

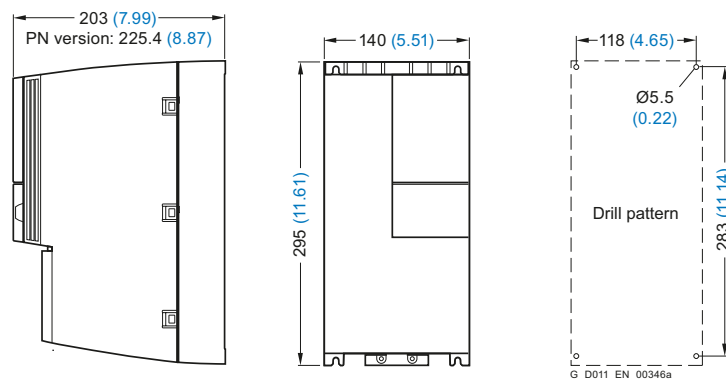
Dimension Diagrams - G120C



Frame size A



Frame size B



Frame size C

Notes G120C Installation

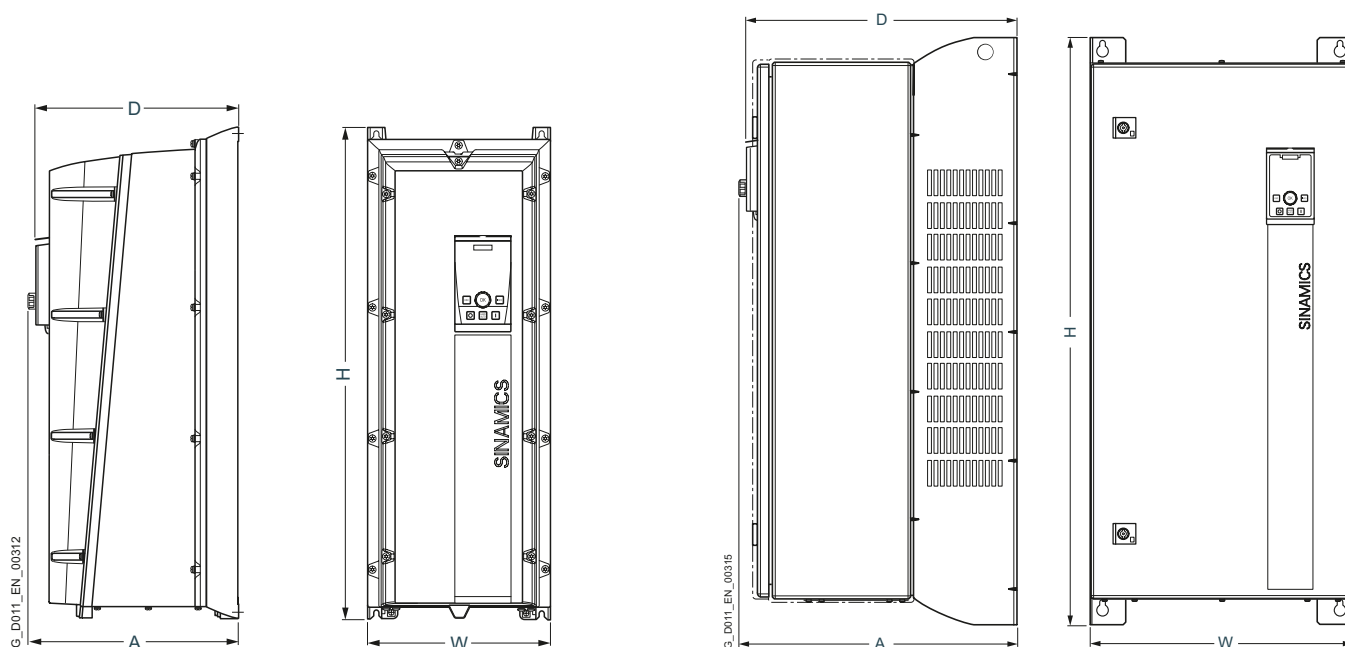
For cabinet sizing purposes, please allow 3% of the drive rating as heat loss.

Frame size	Dimensions			Allow ventilation clearances around the drives as follows:			Fixing
	W	H	D	Above / Below mm	Side < 40°C	Side > 40°C	
A	73mm	196mm	203mm 225.4mm (PN)	80 / 100	0	0	2 x M4
B	100mm	196mm	203mm 225.4mm (PN)	80 / 100	0	0	4 x M4
C	140mm	295mm	203mm 225.4mm (PN)	80 / 100	0	0	4 x M5

Note: Depth increases by 11mm with BOP-2 or 21mm with IOP.

SINAMICS G120P PM230 IP55

Dimension Diagrams - G120P IP55



Frame sizes A, B and C

Frames size D, E and F

Notes G120P IP55 Installation

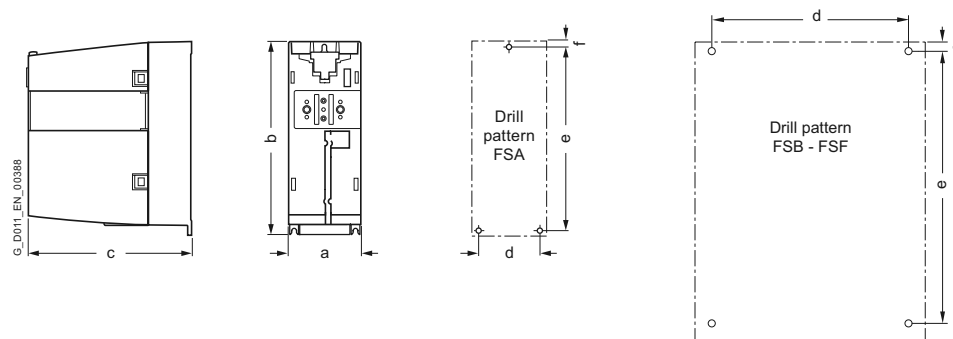
For cabinet sizing purposes, please allow 3% of the drive rating as heat loss.

Frame size	Dimensions				Allow ventilation clearances around the drives as follows:			Drill & Fixing Pattern	
	D	W	H	A	Above / Below mm	Side < 40°C	Side > 40°C	Fixing	Drill - W x L
A	249mm	154mm	460mm	264mm	100	0	0	4 x M4	132 x 445 x 4.5 Ø
B	249mm	180mm	540mm	264mm	100	0	0	4 x M4	158 x 224 x 4.5 Ø
C	249mm	230mm	620mm	264mm	125	0	0	4 x M5	208 x 604 x 5.5 Ø
D	329mm	320mm	640mm	344mm	300	0	50	4 x M8	285 x 600 x 8.5 Ø
E	329mm	320mm	751mm	344mm	300	0	50	4 x M8	285 x 710 x 8.5 Ø
F	416mm	410mm	910mm	431mm	350	0	50	4 x M8	370 x 870 x 8.5 Ø

Note: Depth increases by 5mm with BOP-2 / Blanking plate or 15mm with IOP (dimension A).

SINAMICS G120 Dimensions

PM230 IP20 / PM240-2 IP20



PM230 IP20 / PM240-2 IP20 Standard Variant

Frame size	Dimensions			Drilling dimensions			Cooling clearances		Mounting
	a (width)	b (height)	c (depth)	d	e	f	Top/Bottom	Side *	
FSA	73mm	196mm	165mm	62.3mm	186mm	6mm	80/100mm	0mm	3 x M4
FSB	100mm	292mm	165mm	80mm	281mm	6mm	80/100mm	0mm	4 x M4
FSC	140mm	355mm	165mm	120mm	343mm	6mm	80/100mm	0mm	4 x M5
FSD w/o filter	275mm	419mm	204mm	235mm	325mm	11mm	300/300mm	50mm	4 x M6
FSD with filter	275mm	512mm	204mm	235mm	419mm	11mm	300/300mm	50mm	4 x M6
FSE w/o filter	275mm	499mm	204mm	235mm	405mm	11mm	300/300mm	50mm	4 x M6
FSE with filter	275mm	635mm	204mm	235mm	514mm	11mm	300/300mm	50mm	4 x M6
FSF w/o filter	350mm	634mm	316mm	300mm	598mm	11mm	350/350mm	50mm	4 x M8
FSF with filter	350mm	934mm	316mm	300mm	899mm	11mm	350/350mm	50mm	4 x M8

PM240-2 IP20 Standard variant

FSA	73mm	196mm	165mm	62.3mm	186mm	6mm	80/100mm	0mm	3 x M4
-----	------	-------	-------	--------	-------	-----	----------	-----	--------

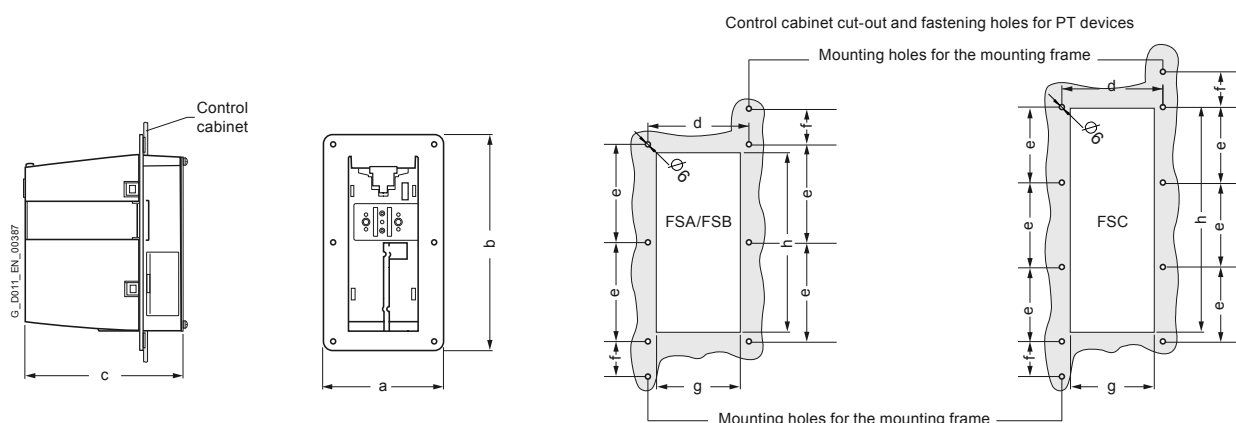
When the CU230P-2 Control Unit is plugged on, the depth increases by 58mm.

When the CU240B-2 or CU240E-2 Control Unit is plugged on, the depth increases by 40mm or with CU250S-2 by 62mm.

When the IOP is plugged on, the depth increases by a further 25mm.

When the BOP-2 is plugged on, the depth increases by a further 15mm.

The power modules can be mounted side by side but a clearance of 1mm is recommended for tolerance reasons.



PM230 IP20 / PM240-2 IP20 Push Through Variant

Frame size	Dimensions			Drilling dimensions			Section of cabinet		Cooling clearances		Mounting
	a (width)	b (height)	c (depth)	d	e	f	g (width)	h (height)	Top/Bottom	Side *	
FSA	125.9mm	238mm	171mm	106mm	103mm	27mm	88mm	198mm	80/100mm	0mm	M5
FSB	153.9mm	345mm	171mm	134mm	147.5mm	34.5mm	116mm	304mm	80/100mm	0mm	M5
FSC	200mm	410.5mm	171mm	174mm	123mm	30.5mm	156mm	365mm	80/100mm	0mm	M5

Overall depth, of which 117.7mm is inside and 53.1mm is outside the control cabinet.

When the CU230P-2 Control Unit is plugged on, the depth increases by 58mm.

When the CU240B-2 or CU240E-2 Control Unit is plugged on, the depth increases by 40mm or with CU250S-2 by 62mm.

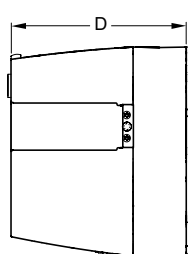
When the IOP is plugged on, the depth increases by a further 25mm.

When the BOP-2 is plugged on, the depth increases by a further 15mm.

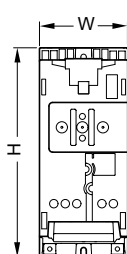
The power modules can be mounted side by side but a clearance of 1mm is recommended for tolerance reasons.

SINAMICS G120 / S110 Dimensions

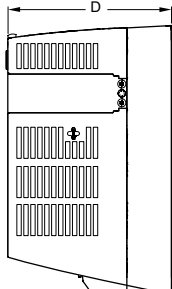
PM240 / PM250 / PM260 / PM340



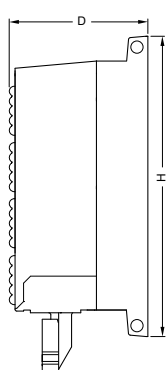
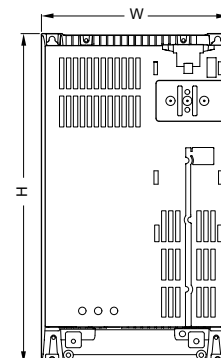
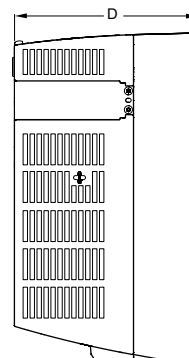
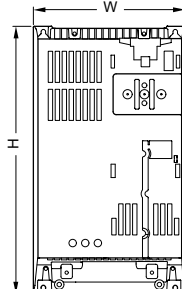
Frame size A



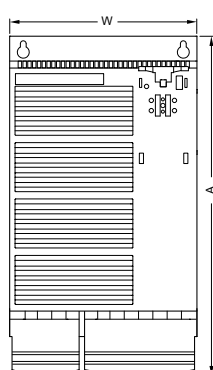
Frame size B



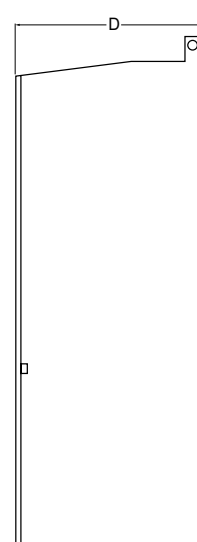
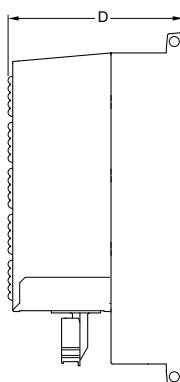
Frame size C



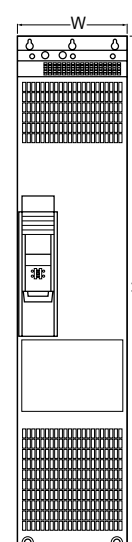
Frame size D & D with Filter
Frame size E & E with filter



Frame size F & F with filter



Frame size GX



Notes on Power Module Installation:

PM240/PM250/PM260 - for cabinet sizing purposes, please allow 3% of the drive rating as heat loss.

PM340 - for cabinet sizing purposes, please allow 4% of the drive rating as heat loss.

Frame size	Dimensions				Allow ventilation clearances around the drives as follows:				Drill & Fixing Pattern	
	A	W	H	D	Above / Below mm	Side < 40°C	Side > 40°C	Front	Fixing	Drill - W x L
A	-	73mm	173mm	145mm	100	0	30	0	2 x M4	0 x 160 x 4.5 Ø
B	-	153mm	270mm	165mm	100	0	40	30 ~	4 x M4	133 x 258 x 4.5 Ø
C / C + filter	-	189mm	334mm	185mm	125	0	50	30 ~	4 x M5	167 x 323 x 5.5 Ø
D	419mm	275mm	361mm	204mm	300	0	0	30 ~	4 x M8	235 x 325 x 8.5 Ø
D + filter	512mm	275mm	455mm	204mm	300	0	0	30 ~	4 x M8	235 x 419 x 8.5 Ø
E	499mm	275mm	441mm	204mm	300	0	0	30 ~	4 x M8	235 x 405 x 8.5 Ø
E + filter	635mm	275mm	577mm	204mm	300	0	0	30 ~	4 x M8	235 x 541 x 8.5 Ø
F	-	350mm	634mm	316mm	350	0	0	30 ~	4 x M8	300 x 598 x 8.5 Ø
F + filter	-	350mm	934mm	316mm	350	0	0	30 ~	4 x M8	300 x 899 x 8.5 Ø
GX	-	326mm	1533mm	547mm	250 / 150	0	0	50	6 x M8	125 x 125 x 1506 x 8.5 Ø

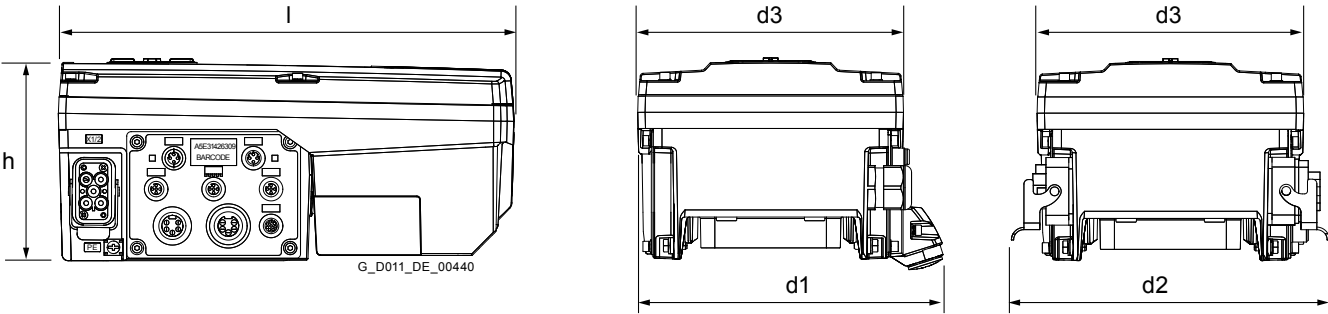
Note: PM240 & PM250 depth increases by 65mm with CU230P-2 or 46mm with CU240B-2/E-2 or 62mm with CU250S-2 and a further 12mm with BOP-2 / Blanking Plate or 22mm with an IOP.

PM340 FSA depth increases by 46mm with CU240E-2 and a further 12mm with BOP-2 / Blanking Plate or 22mm with an IOP.

PM340 depth increases by 90mm with CU305 PB/CU305 CAN or 70mm with CU305 PN.

~ PM340 only.

SINAMICS G110M Dimensions



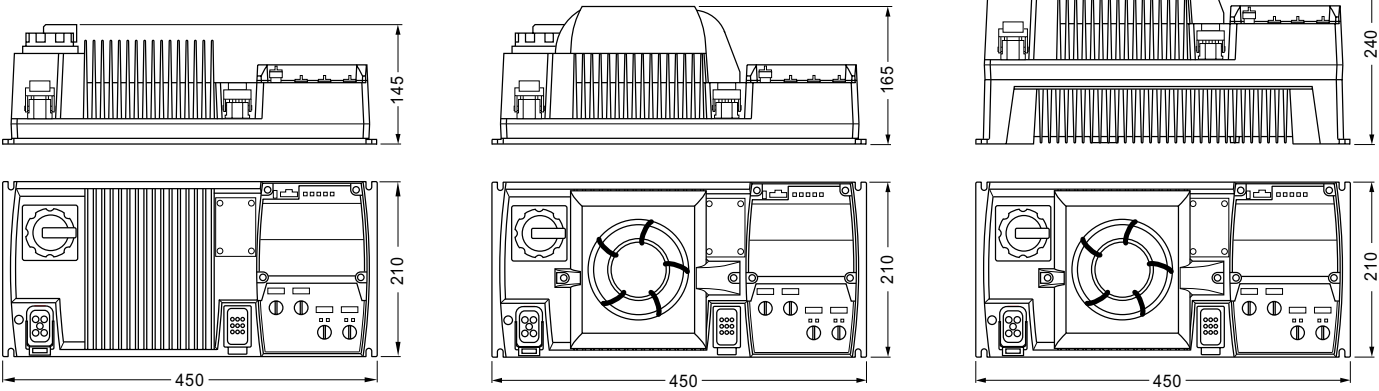
Gland Version

HAN Q Version

Frame size	Dimensions				
	H	I	D1	D2	D3
FSA	135mm	270mm	208mm	216mm	161mm
FSB	135mm	309mm	208mm	216mm	161mm

SINAMICS G110D & G120D Dimensions

G110D - Sizes shown with maintenance switch fitted. Frame size 'A' height reduces by 20mm without maintenance switch fitted. Ventilation clearances please see below. Installation of the flat plate inverter, please refer to the SINAMICS V20 Inverter Operator Instructions.

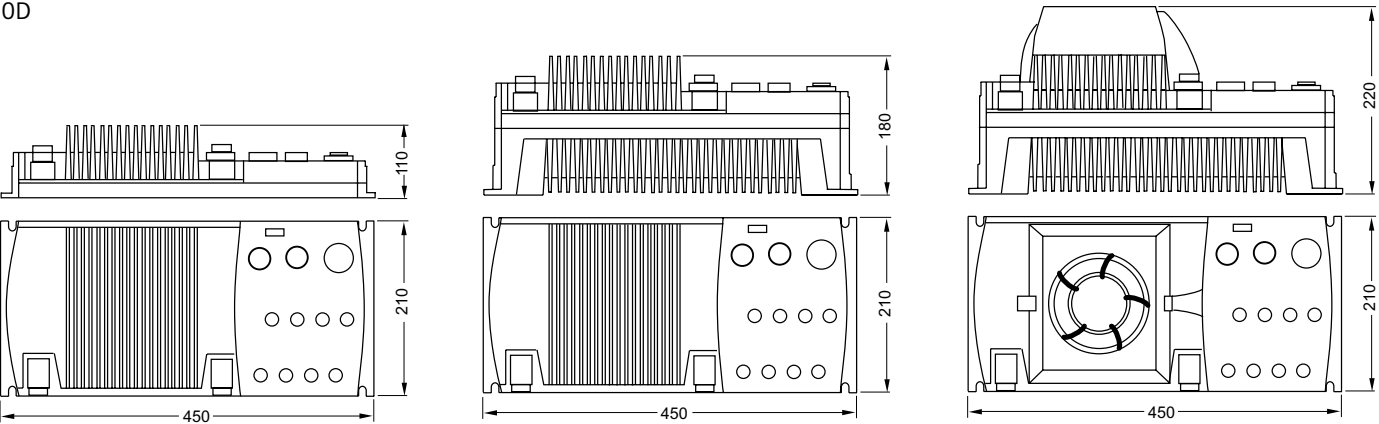


Frame size A

Frame size B

Frame size C

G120D



Frame size A

Frame size B

Frame size C

G110D & G120D - Allow ventilation clearances around the drive			
Frame size	Above mm	Below mm	Drill & Fixing Pattern - Drill - W x L
A	150	150	425 x 195
B	150	150	425 x 195
C	150	150	425 x 195

MICROMASTER 420

Technical data

MICROMASTER 420

Output - up to 11 kW

Compact housing dimensions

Simple to install and commission

Robust construction

Designed to make EMC compliance easy

Wide range of user interfaces and communications options

Operating temperature -10°C to +50°C

Integrated PI Controller

Remote I/O function via serial communication or fieldbus link

Integrated compound braking function - often eliminates the need for external braking modules



Design

The universal inverter is suitable for motor speed control in a vast range of industrial variable speed drive applications such as pumps, fans and conveyor systems. It is especially characterised by its performance, flexibility, and ease of use.

Performance Features and Benefits

- Flux-current control (FCC) to optimise the dynamic response and motor control
- Slip compensation ensuring constant motor speeds under changing load conditions
- "Flying re-start" function allows the inverter to be re-connected to motors which are still spinning after brief power interruptions
- Freely-programmable digital inputs and outputs
- The analogue I / O can be flexibly programmed (offset, range, addition to the digital set point etc)
- Multi-point V / f characteristics for simple adaption to different motor types
- Sophisticated dc injection braking and "compound braking" to assure minimum motor stopping times
- Fast current limit (FCL) guarantees that if the specified ramp times are too short for the load the drive adapts and does not trip
- Integrated kilowatt-hour (kWh) measurement for energy consumption
- Binary and analogue connection technology (BICO) allows the inputs / outputs to be soft-wired to internal function blocks
- Complete inverter and motor protection comprising under-voltage / overvoltage, inverter over-temperature, earth fault protection, short circuit protection, motor thermal protection, locked motor and stall prevention
- MICROMASTER 420 carries the CE mark for conformance to the low voltage and EMC directives. It is UL and cUL listed

The Details

- Three fully programmable opto-isolated digital inputs (4th binary input available via the analogue input)
- Analogue input, 0 - 10 V (can accommodate 0 / 4 - 20 mA using a resistor link)
- Programmable and scalable analogue output, 0 (4) mA to 20 mA
- Fully programmable relay output, DC 30 V / 5 A resistive, AC 230 V / 2 A inductive
- Opto-isolated digital inputs for improved EMC immunity
- Fast reaction time to analogue, digital and fieldbus commands
- Integrated RS485 port for serial communications

MICROMASTER 420

Part Numbers

Supply Voltage - 200 V ... 240 V 1 AC		Power Modules	
Rating	Frame Size	Industrial	Filtered #
0.12 kW / 0.9 A	A	6SE6420-2UC11-2AA1	6SE6420-2AB11-2AA1
0.25 kW / 1.7 A	A	6SE6420-2UC12-5AA1	6SE6420-2AB12-5AA1
0.37 kW / 2.3 A	A	6SE6420-2UC13-7AA1	6SE6420-2AB13-7AA1
0.55 kW / 3.0 A	A	6SE6420-2UC15-5AA1	6SE6420-2AB15-5AA1
0.75 kW / 3.9 A	A	6SE6420-2UC17-5AA1	6SE6420-2AB17-5AA1
1.1 kW / 5.5 A	B	6SE6420-2UC21-1BA1	6SE6420-2AB21-1BA1
1.5 kW / 7.4 A	B	6SE6420-2UC21-5BA1	6SE6420-2AB21-5BA1
2.2 kW / 10.4 A	B	6SE6420-2UC22-2BA1	6SE6420-2AB22-2BA1
3 kW / 13.6 A	C	6SE6420-2UC23-0CA1	6SE6420-2AB23-0CA1

200 V ... 240 V 3 AC units available on request.

EMC filtering generally suitable for 1st environment. Please refer to page 55 for specific categorisations.

Supply Voltage - 380 V... 480 V 3 AC		Power Modules	
Rating	Frame Size	Industrial	Filtered #
0.37 kW / 1.2 A	A	6SE6420-2UD13-7AA1	6SE6400-2AF00-6AD0*
0.55 kW / 1.6 A	A	6SE6420-2UD15-5AA1	6SE6400-2AF00-6AD0*
0.75 kW / 2.1 A	A	6SE6420-2UD17-5AA1	6SE6400-2AF00-6AD0*
1.1 kW / 4.0 A	A	6SE6420-2UD21-1AA1	6SE6400-2AF00-6AD0*
1.5 kW / 4.0 A	A	6SE6420-2UD21-5AA1	6SE6400-2AF00-6AD0*
2.2 kW / 5.9 A	B	6SE6420-2UD22-2BA1	6SE6420-2AD22-2BA1
3 kW / 7.7 A	B	6SE6420-2UD23-0BA1	6SE6420-2AD23-0BA1
4 kW / 10.2 A	B	6SE6420-2UD24-0BA1	6SE6420-2AD24-0BA1
5.5 kW / 13.6 A	C	6SE6420-2UD25-5CA1	6SE6420-2AD25-5CA1
7.5 kW / 19.0 A	C	6SE6420-2UD27-5CA1	6SE6420-2AD27-5CA1
11 kW / 26.0 A	C	6SE6420-2UD31-1CA1	6SE6420-2AD31-1CA1

* Additional footprint module to be used with the industrial drive.

EMC filtering generally suitable for 1st environment. Please refer to page 55 for specific categorisations.

Options	
6SE6400-0BP00-0AA1	BOP - Basic Operator Panel
6SE6400-0AP00-0AA1	AOP - Advanced Operator Panel
6SE6400-1PC00-0AA0	PC - Micromaster Connection Kit
6SE6400-0MD00-0AA0	Multidrop Panel Mounting Kit (for AOP)
6SE6400-0PM00-0AA0	Standard Panel Mounting Kit (for BOP or AOP)
6SE6400-1PB00-0AA0	Profibus Module
6SE6400-1DN00-0AA0	Device Net Module
6SE6400-1CB00-0AA0	Can Bus Module
6SE6400-0GP00-0AA0	Frame Size A Gland Plate
6SE6400-0GP00-0BA0	Frame Size B Gland Plate
6SE6400-0GP00-0CA0	Frame Size C Gland Plate
6SL3072-0AA00-0AG0	Starter Commissioning Tool on DVD

MICROMASTER 430

The specialist for pumps and fans



Technical data

MICROMASTER 430

Up to 250 kW for centrifugal pumps & fans
Compact IP20 housing
Simple to install and commission
Robust construction
Energy saving mode and hibernation facility
Motor / pump staging
Manual / auto mode
Load torque detection (detects dry running pumps)
Designed to make EMC compliance easy
Facility for external bypass control
Direct PTC or KTY motor temperature protection
Remote I/O function via serial communication or fieldbus link
Different ratings may apply for constant torque pumps and fans

Design

The MICROMASTER 430 is specifically designed for integration into systems requiring variable speed control on industrial pump and fan applications including HVAC.

Performance Features and Benefits

- Flux-current control (FCC) to optimise the dynamic response and motor control
- Programmable V/f characteristic
- Energy saving mode (eg stopping of a pump at low speeds)
- Motor staging (connection and disconnection of additional motors, use of inverter as the control drive in a pump cascade system - for example duty/assist) - see example opposite
- Manual / automatic mode with Basic Operator Panel 2 (BOP-2)
- Slip compensation ensuring constant motor speeds under changing load conditions
- "Flying re-start" function allows the inverter to be re-connected to motors which are still spinning after brief power interruptions
- Multi-point V / f characteristics for simple adaption to different motor types
- Fast current limit (FCL) guarantees that if the specified ramp times are too short for the load the drive adapts and does not trip
- Integrated kilowatt-hour (kWh) measurement for energy consumption monitoring
- Binary and analogue connection technology (BICO) allows the inputs / outputs to be soft-wired to internal function blocks for logic and arithmetic functions
- Complete inverter and motor protection comprising under-voltage / overvoltage, inverter over temperature, earth fault protection, short circuit protection, motor thermal protection, locked motor and stall prevention
- MICROMASTER 430 carries the CE mark for conformance to the low voltage and EMC directives. It is U_L and C_U listed

The Details

- 6 fully programmable opto-isolated digital inputs (7th / 8th inputs via analogue inputs)
- 2 scalable, freely programmable analogue inputs, 0-10 V, 0 / 4 - 20 mA
- 2 programmable and scalable analogue outputs, 0 (4) mA to 20 mA
- 3 fully programmable relay outputs
- Integrated RS485 serial port for communication
- Fast and repeatable reaction time to analogue, digital and fieldbus commands
- Detachable control board

MICROMASTER 430

Part Numbers

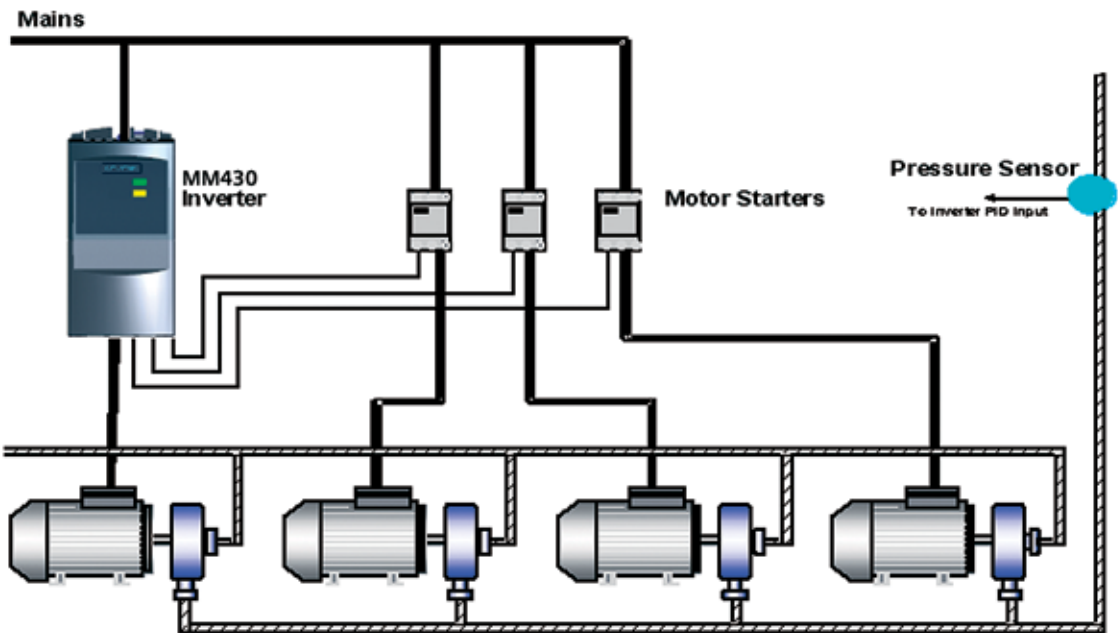
Supply Voltage - 380 V... 480 V 3 AC		Power Modules	
Rating	Frame Size	Industrial	Filtered #
7.5 kW / 19A	C	6SE6430-2UD27-5CA0	6SE6430-2AD27-5CA0
11 kW / 26 A	C	6SE6430-2UD31-1CA0	6SE6430-2AD31-1CA0
15 kW / 32 A	C	6SE6430-2UD31-5CA0	6SE6430-2AD31-5CA0
18.5 kW / 38 A	D	6SE6430-2UD31-8DA0	6SE6430-2AD31-8DA0
22 kW / 45 A	D	6SE6430-2UD32-2DA0	6SE6430-2AD32-2DA0
30 kW / 62 A	D	6SE6430-2UD33-0DA0	6SE6430-2AD33-0DA0
37 kW / 75 A	E	6SE6430-2UD33-7EA0	6SE6430-2AD33-7EA0
45 kW / 90 A	E	6SE6430-2UD34-5EA0	6SE6430-2AD34-5EA0
55 kW / 110 A	F	6SE6430-2UD35-5FA0	6SE6430-2AD35-5FA0
75 kW / 145 A	F	6SE6430-2UD37-5FA0	6SE6430-2AD37-5FA0
90 kW / 178 A	F	6SE6430-2UD38-8FA0	6SE6430-2AD38-8FA0
110 kW / 205 A	FX	6SE6430-2UD41-1FA0	6SL3000-0BE32-5AA0*
132 kW / 250 A	FX	6SE6430-2UD41-3FA0	6SL3000-0BE34-4AA0*
160 kW / 302 A	GX	6SE6430-2UD41-6GA0	6SL3000-0BE34-4AA0*
200 kW / 370 A	GX	6SE6430-2UD42-0GA0	6SL3000-0BE34-4AA0*
250 kW / 477 A	GX	6SE6430-2UD42-5GA0	6SL3000-0BE36-0AA0*

* Additional block module to be used with the industrial drive. When using the combination of the industrial drive and block filter (90 kW and above), the appropriate 'Line Reactor' must be used.

EMC filtering generally suitable for 1st environment. Please refer to page 55 for specific categorisations.

Options	
6SE6400-0BE00-0AA1	BOP 2 - Basic Operator Panel
6SE6400-1PC00-0AA0	PC - Micromaster Connection Kit
6SE6400-0PM00-0AA0	Standard Panel Mounting Kit (for BOP or AOP)
6SE6400-1PB00-0AA0	Profibus Module
6SE6400-1DN00-0AA0	Device Net Module
6SE6400-1CB00-0AA0	Can Bus Module
6SL3072-0AA00-0AG0	Starter Commissioning Tool on DVD

Cascade pump control example



MICROMASTER 440

The All Purpose Drive



Technical data

MICROMASTER 440

Output up to 250 kW for centrifugal pumps & fans
Overloads available up to 200%
Compact IP20 housing
Simple to install and commission
Integrated logic control functions
Robust construction
Designed to make EMC compliance easy
Wide range of user interface and communications options
Operating temperature -10°C to +50°C (0°C to +40°C over 75 kW and variable torque ratings)
Integrated PID Controller
Integrated (100% rated) brake chopper for all units to 75 kW - (separate module available for units 90-250 kW)
Remote I/O function via serial communication or fieldbus link
Direct "plc" connection for low cost networking

Design

The MM440 is the flagship model in the MICROMASTER family whose flexibility and performance ensure its suitability for a vast array of drive applications. In addition to variable torque pump and fan applications, for which dual ratings are provided, the 440 also covers more demanding tasks such as cranes and hoisting gear, extruders, high bay warehouses and packaging machines.

Performance Features and Benefits

- High quality sensorless Vector control system as standard with encoder feedback option when required
- Flux Current Control (FCC) for improved dynamic response and optimised motor control
- Torque control mode
- Simple positioning function
- Kinetic buffering for ride through of brief supply interruptions
- Slip compensation ensuring constant motor speeds under changing load conditions
- "Flying re-start" function allows the inverter to be re-connected to motors which are still spinning after brief power interruptions
- Multi-point V / f characteristics for simple adaption to different motor types
- Sophisticated dc injection braking and "compound braking" to ensure minimum motor stopping times without external braking resistors
- Fast current limit (FCL) guarantees that if the specified ramp times are too short for the load the drive adapts and does not trip
- Integrated kilowatt-hour (kWh) measurement for energy consumption monitoring
- Binary and analogue connection technology (BICO) allows the inputs / outputs to be soft-wired to blocks in the drive inverter. (Includes logic and arithmetic functions)
- Complete inverter and motor protection comprising under-voltage / overvoltage, inverter over temperature, earth fault protection, short circuit protection, motor thermal protection, locked motor and stall prevention
- MICROMASTER 440 carries the CE mark for conformance to the low voltage and EMC directives. It is UL and cUL listed

The Details

- 6 fully programmable opto-isolated digital inputs (7th / 8th inputs via analogue inputs)
- 2 scalable, freely programmable analogue inputs, 0-10 V, 0 / 4 - 20 mA
- 2 programmable and scalable analogue outputs, 0 (4) mA to 20 mA
- 3 fully programmable relay outputs
- Integrated RS485 serial port for communication
- Fast and repeatable reaction time to analogue, digital and fieldbus commands
- Detachable control board

MICROMASTER 440

Part Numbers

Supply Voltage - 200 V... 240 V 1 AC		Power Modules	
Rating	Frame Size	Industrial	Filtered #
0.12 kW / 0.9 A	A	6SE6440-2UC11-2AA1	6SE6440-2AB11-2AA1
0.25 kW / 1.7 A	A	6SE6440-2UC12-5AA1	6SE6440-2AB12-5AA1
0.37 kW / 2.3 A	A	6SE6440-2UC13-7AA1	6SE6440-2AB13-7AA1
0.55 kW / 3.0 A	A	6SE6440-2UC15-5AA1	6SE6440-2AB15-5AA1
0.75 kW / 3.9 A	A	6SE6440-2UC17-5AA1	6SE6440-2AB17-5AA1
1.1 kW / 5.5 A	B	6SE6440-2UC21-1BA1	6SE6440-2AB21-1BA1
1.5 kW / 7.4 A	B	6SE6440-2UC21-5BA1	6SE6440-2AB21-5BA1
2.2 kW / 10.4 A	B	6SE6440-2UC22-2BA1	6SE6440-2AB22-2BA1
3 kW / 13.6 A	C	6SE6440-2UC23-0CA1	6SE6440-2AB23-0CA1

Supply Voltage - 380 V... 480 V 3 AC			Power Modules	
Rating		Frame Size	Industrial	Filtered #
0.37 kW / 1.2 A		A	6SE6440-2UD13-7AA1	6SE6400-2FA00-6AD0*
0.55 kW / 1.7 A		A	6SE6440-2UD15-5AA1	6SE6400-2FA00-6AD0*
0.75 kW / 2.2 A		A	6SE6440-2UD17-5AA1	6SE6400-2FA00-6AD0*
1.1 kW / 3.1 A		A	6SE6440-2UD21-1AA1	6SE6400-2FA00-6AD0*
1.5 kW / 4.4 A		A	6SE6440-2UD21-5AA1	6SE6400-2FA00-6AD0*
2.2 kW / 5.9 A		B	6SE6440-2UD22-2BA1	6SE6440-2AD22-2BA1
3 kW / 7.7 A		B	6SE6440-2UD23-0BA1	6SE6440-2AD23-0BA1
4 kW / 10.2 A		B	6SE6440-2UD24-0BA1	6SE6440-2AD24-0BA1
LO (VT)	HO (CT)			
7.5 kW / 19 A	5.5 kW / 13.2 A	C	6SE6440-2UD25-5CA1	6SE6440-2AD25-5CA1
11 kW / 26 A	7.5 kW / 19.0 A	C	6SE6440-2UD27-5CA1	6SE6440-2AD27-5CA1
15 kW / 32 A	11 kW / 26.0 A	C	6SE6440-2UD31-1CA1	6SE6440-2AD31-1CA1
18.5 kW / 38 A	15 kW / 32 A	D	6SE6440-2UD31-5DA1	6SE6440-2AD31-5DA1
22 kW / 45 A	18.5 kW / 38 A	D	6SE6440-2UD31-8DA1	6SE6440-2AD31-8DA1
30 kW / 62 A	22 kW / 45 A	D	6SE6440-2UD32-2DA1	6SE6440-2AD32-2DA1
37 kW / 75 A	30 kW / 62 A	E	6SE6440-2UD33-0EA1	6SE6440-2AD33-0EA1
45 kW / 90 A	37 kW / 75 A	E	6SE6440-2UD33-7EA1	6SE6440-2AD33-7EA1
55 kW / 110 A	45 kW / 90 A	F	6SE6440-2UD34-5FA1	6SE6440-2AD34-5FA1
75 kW / 145 A	55 kW / 110 A	F	6SE6440-2UD35-5FA1	6SE6440-2AD35-5FA1
90 kW / 278 A	75 kW / 145 A	F	6SE6440-2UD37-5FA1	6SE6440-2AD37-5FA1
110 kW / 205 A	90 kW / 178 A	FX	6SE6440-2UD38-8FA1	6SL3000-0BE32-5AA0*
132 kW / 250 A	110 kW / 205 A	FX	6SE6440-2UD41-1FA1	6SL3000-0BE34-4AA0*
160 kW / 302 A	132 kW / 250 A	GX	6SE6440-2UD41-3GA1	6SL3000-0BE34-4AA0*
200 kW / 370 A	160 kW / 302 A	GX	6SE6440-2UD41-6GA1	6SL3000-0BE34-4AA0*
250 kW / 477 A	250 kW / 477 A	GX	6SE6440-2UD42-0GA1	6SL3000-0BE36-0AA0*

200 V ... 240 V 3 AC and 500 V ... 600 V 3 AC units available on request.

NOTE: HO = High Overload Rating (0.12 kW ... 75 kW - 1.5 x rated current for 60s in a 300s cycle, 90 kW ... 200 kW - 1.36 x rated current for 57s in a 300s cycle).
LO = Low Overload Rating (5.5 kW ... 90 kW - 1.1 x rated current for 60s in 300s cycle, 110 kW ... 250 kW - 1.1 x rated current for 59s in 300s cycle).

* Additional footprint module to be used with the industrial drive. From 90 kW and above is block mounted. When using the combination of the industrial drive and block filter (90 kW and above),the appropriate 'Line Reactor' must be used.

EMC filtering generally suitable for 1st environment. Please refer to page 55 for specific categorisations.

Options	
6SE6400-0BP00-0AA1	BOP - Basic Operator Panel (see MM420 info)
6SE6400-0AP00-0AA1	AOP - Advanced Operator Panel
6SE6400-1PC00-0AA0	PC - Micromaster Connection Kit
6SE6400-0MD00-0AA0	Multidrop Panel Mounting Kit (for AOP)
6SE6400-0PM00-0AA0	Standard Panel Mounting Kit (for BOP or AOP)
6SE6400-0EN00-0AA0	Encoder Feedback Module
6SE6400-1PB00-0AA0	Profibus Module

Options	
6SE6400-1DN00-0AA0	Device Net Module
6SE6400-1CB00-0AA0	Can Bus Module
6SE6400-0GP00-0AA0	Frame Size A Gland Plate
6SE6400-0GP00-0BA0	Frame Size B Gland Plate
6SE6400-0GP00-0CA0	Frame Size C Gland Plate
6SL3072-0AA00-0AGO	Starter Commissioning Tool on DVD

MICROMASTER Options Overview

Drive Programming Basic Operator Panel (BOP)

With the BOP, individual parameter settings can be made. Values and units are on a 5-digit display. It can be directly mounted on the inverter or in a control-cabinet door using a mounting kit.



Basic Operator Panel 2 (BOP-2) (MICROMASTER 430 Only)

With the BOP-2, individual parameter settings can be made. Values and units are on a 5-digit display.



Advanced Operator Panel (AOP)

The AOP enables MICROMASTER parameter sets to be easily read and modified. The value and meaning can be displayed in several languages.



The AOP can be directly mounted on the drive or communicate via a door mounting kit. With the door mounting kit for multiple inverter control the AOP can communicate with up to 31 drives.

For servicing purposes the AOP supports download and upload of complete parameter sets.

Operator Panel Mounting Kits

BOP / AOP door mounting kit for single drive control

For mounting an operator panel in a control cabinet door. Degree of protection is IP56. Contains a cable adaptor board with screwless terminals for use with standard cables.

AOP door mounting kit for multiple drive control

For mounting an operator panel in a control cabinet door. Degree of protection is IP56. The AOP can communicate with 31 drives over the RS-485 connection.

PC to Drive Connection Kit

For parameterising the drive directly from a PC. Kit consists of an isolated RS-232 adaptor board for reliable point-to-point connection and an RS-232 standard cable.

Fieldbus Communication & Encoder Module

Profibus module

Remote connection at up to 12 Mbaud is possible on the PROFIBUS network. The module has a separate 24 V connection which can be used if access is required with the main power removed.



CAN bus module

For integrating MICROMASTERS into the CAN bus fieldbus system.

Remote and local operation of the inverter can be combined by using an operator panel with any of the communication modules.

DeviceNet module

For networking the inverters to the DeviceNet fieldbus system. A maximum transmission rate of 500 kbaud is possible.

Encoder module

The module enables direct connection of the most widely used HTL and TTL digital pulse encoders. This offers the following functions.

- Full load torque at zero speed
- Extremely accurate speed control
- Increased dynamic response of speed and torque control



Compatibility - Operator Panels		(✓ Possible combination)		
Accessories	Order No.	420	430	440
BOP	6SE6400-0BP00-0AA1	✓		✓
AOP	6SE6400-0AP00-0AA1	✓		✓
BOP-2	6SE6400-0BE00-0AA1		✓	

Compatibility - Modules		(✓ Possible combination)		
Accessories	Order No.	420	430	440
PROFIBUS	6SE6400-1PB00-0AA0	✓	✓	✓
DeviceNet	6SE6400-1DN00-0AA0	✓	✓	✓
CAN bus	6SE6400-1CB00-0AA0	✓	✓	✓
Pulse Encoder Evaluation	6SE6400-0EN00-0AA0		✓	✓

Braking Resistors

MICROMASTER 440 has an integrated 100% rated braking chopper (to 75 kW CT) for direct connection of a braking resistor where high braking duties are required. Selections opposite are nominally rated. For drives over 90 kW, please contact our internal sales department for advice on brake resistor and chopper module.

LC / Sinusoidal Filters

The LC filter/sinusoidal filter limits the rate of rise of voltage and the capacitive charge/discharge currents which usually occur with inverter operation. This means that much longer shielded motor cables are possible when using LC filters/ sinusoidal filters and the service life of the motor achieves values similar to those with direct mains operation. This only applies to motors with an underlined motor insulation characteristics.

Gland Plates

Gland plates are available for drives with frame sizes A, B and C. In frame sizes D and above the gland plates are integrated in the basic design. The gland plate enables shielded connection of the power and control cables, ensuring optimum EMC performance.

MICROMASTER Accessories

MICROMASTER Line Reactors / Output Reactors / Braking Resistors



Line Reactor

Used to smooth voltage peaks, bridge commutating dips and reduce harmonics on the power supply. Footprint mounted to 45 kW VT (Block type for 55 kW VT-250 kW VT). Standard reactors 2%, 4% reactors available on application.

Output Reactor

Output reactors (chokes) should be used to reduce capacitive currents and dV / dt in long motor cables.

Typically required when the cable length exceeds 50-150 m depending on power rating and cable type with higher powers allowing longer cable lengths. Motor cable runs of several hundred metres can be accommodated. Footprint mounted to 15 kW VT (Block type for 18.5 kW VT-250 kW VT).

Supply Voltage - 200 V ... 240 V 1 AC

Rating	Frame Size	Line Reactor	Output Reactor	Brake Resistor (MM440 only)
0.12 kW	A	6SE6400-3CC00-4AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.25 kW	A	6SE6400-3CC00-4AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.37 kW	A	6SE6400-3CC01-0AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.55 kW	A	6SE6400-3CC01-0AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
0.75 kW	A	6SE6400-3CC01-0AB3	6SE6400-3TC00-4AD3	6SE6400-4BC05-0AA0
1.1 kW	B	6SE6400-3CC02-6BB3	6SE6400-3TC01-0BD3	6SE6400-4BC11-2BA0
1.5 kW	B	6SE6400-3CC02-6BB3	6SE6400-3TC01-0BD3	6SE6400-4BC11-2BA0
2.2 kW	B	6SE6400-3CC02-6BB3	6SE6400-3TC01-0BD3	6SE6400-4BC11-2BA0
3 kW	C	6SE6400-3CC03-5CB3	6SE6400-3TC03-2CD3	6SE6400-4BC12-5CA0

Supply Voltage - 380 V... 480 V 3 AC

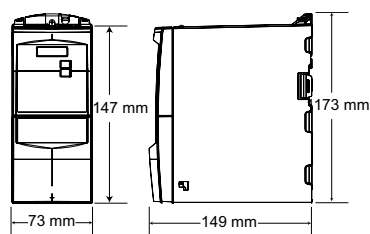
Rating	Frame Size	Line Reactor	Output Reactor	Brake Resistor (MM440 only)
0.37 kW	A	6SE6400-3CC00-2AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
0.55 kW	A	6SE6400-3CC00-2AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
0.75 kW	A	6SE6400-3CC00-4AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
1.1 kW	A	6SE6400-3CC00-4AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
1.5 kW	A	6SE6400-3CC00-6AD3	6SE6400-3TC00-4AD2	6SE6400-4BD11-0AA0
2.2 kW	B	6SE6400-3CC01-0BD3	6SE6400-3TC01-0BD3	6SE6400-4BD12-0BA0
3 kW	B	6SE6400-3CC01-0BD3	6SE6400-3TC01-0BD3	6SE6400-4BD12-0BA0
4 kW	B	6SE6400-3CC01-4BD3	6SE6400-3TC01-0BD3	6SE6400-4BD12-0BA0
LO (VT)	HO (CT)			
7.5 kW	5.5 kW	C	6SE6400-3CC02-2CD3	6SE6400-4BD16-5CA0
11 kW	7.5 kW	C	6SE6400-3CC02-2CD3	6SE6400-4BD16-5CA0
15 kW	11 kW	C	6SE6400-3CC03-5CD3	6SE6400-4BD16-5CA0
18.5 kW	15 kW	D	6SE6400-3CC04-4DD0	6SE6400-4BD21-2DA0 ¹⁾
22 kW	18.5 kW	D	6SE6400-3CC04-4DD0	6SE6400-4BD21-2DA0 ¹⁾
30 kW	22 kW	D	6SE6400-3CC05-2DD0	6SE6400-4BD21-2DA0 ¹⁾
37 kW	30 kW	E	6SE6400-3CC08-3ED0	6SE6400-4BD22-2EA1 ¹⁾
45 kW	37 kW	E	6SE6400-3CC08-3ED0	6SE6400-4BD22-2EA1 ¹⁾
55 kW	45 kW	F	6SE6400-3CC11-2FD0 ¹⁾	6SE6400-4BD24-0FA0 ¹⁾
75 kW	55 kW	F	6SE6400-3CC11-2FD0 ¹⁾	6SE6400-4BD24-0FA0 ¹⁾
90 kW	75 kW	F	6SE6400-3CC11-7FD0 ¹⁾	6SE6400-4BD24-0FA0 ¹⁾
110 kW	90 kW	FX	6SL3000-0CE32-3AA0 ¹⁾	ON APPLICATION
132 kW	110 kW	FX	6SL3000-0CE32-8AA0 ¹⁾	ON APPLICATION
160 kW	132 kW	GX	6SL3000-0CE33-3AA0 ¹⁾	ON APPLICATION
200 kW	160 kW	GX	6SL3000-0CE35-1AA0 ¹⁾	ON APPLICATION
250 kW	200 kW	GX	6SL3000-0CE35-1AA0 ¹⁾	ON APPLICATION

HO = High Overload rating (Constant Torque) LO = Low Overload rating (Variable Torque).

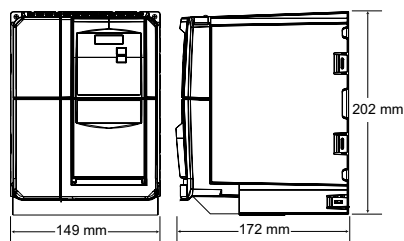
1) Block mounted.

MICROMASTER Dimensions

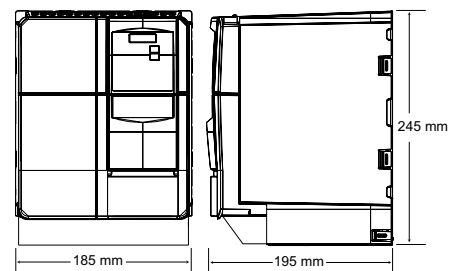
420/430/440 - Standard Frame Sizes



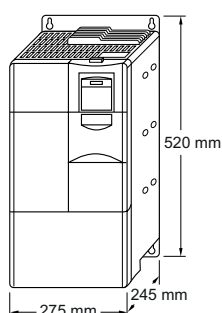
Frame Size A



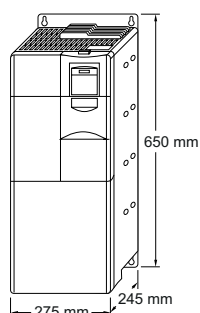
Frame Size B



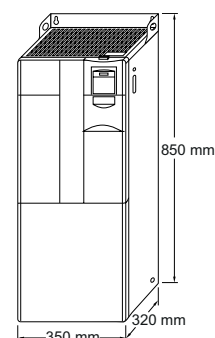
Frame Size C



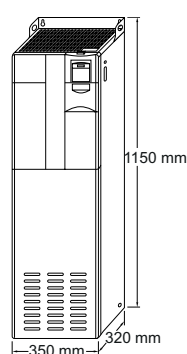
Frame Size D



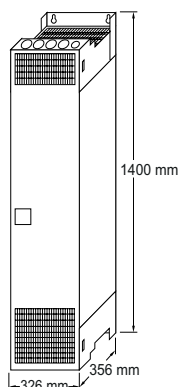
Frame Size E



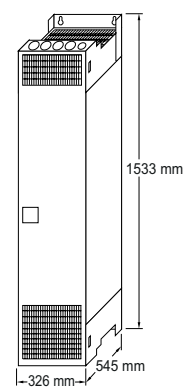
Frame Size F
without filter



Frame Size F
with class A EMC filter



Frame Size FX



Frame Size GX

Notes

For cabinet sizing purposes, please allow 3% of the drive rating as heat loss.

Allow ventilation clearances around the drives as follows:

Frame size	Above / Below mm	Side < 40°C	Front	Drill & Fixing Pattern	
				Fixing	Drill - W x L
A*	100	0	0	2 x M4	0 x 160 x 4.5 Ø
B*	100	0	0	4 x M4	138 x 174 x 4.5 Ø
C*	100	0	0	4 x M5	174 x 204 5.5 Ø
D	300	0	0	4 x M8	235 x 486 x 8.5 Ø
E	300	0	0	4 x M8	275 x 650 x 8.5 Ø
F without filter	350	0	0	4 x M8	300 x 810 x 8.5 Ø
F with filter	350	0	0	4 x M8	300 x 1110 x 8.5 Ø
FX	250 / 150	0	40	6 x M8	125 / 125 x 1375 x 8.5 Ø
GX	250 / 150	0	50	6 x M8	125 / 125 x 1508 x 8.5 Ø

Note: If a Communication Module is fitted the depth increases by 23mm. If a Encoder module is fitted in addition the depth increases by a further 23mm.

*Height increases by 48mm, 56mm and 64mm respectively with Gland Plate.

Power Quality and Energy Efficiency

Power Quality Services

Harmonic Measurement Service and Power Quality Analysis

Power frequency harmonics are a key consideration for many users and Siemens is able to offer a comprehensive package of products, system analysis, software tools and the services to guarantee compliance to the UK regulations G5/4-1: Planning levels for harmonic distortion in the UK supply network (available from the energy networks association). Available both as pre and post installation services in order to measure harmonic levels, determine regulatory compliance and to identify any practical measures required.

The Siemens offer consists of the following:

- Harmonic prediction service
- System design consultation
- Site surveys – including 7 day “ER G5/4-1” measurements across multiple supply transformers
- Evaluation of optimum harmonic solution – cost and size
- Comprehensive and authoritative reporting tools

Energy Efficiency Consultation

The issues of high and unstable energy prices, increased costs, mandatory regulatory demands, carbon reduction targets and corporate social responsibility have all conspired to increase pressure on hard pressed UK manufacturing. In combination, these demands are squeezing margins, reducing profits and ultimately, negatively impacting shareholder value.

Correctly managed, energy costs are one of the easiest ways to reduce cost in a modern organisation. In order to help industry control its energy costs. Siemens has developed a series of best practice procedures which can create a systematic energy plan leading to a virtuous circle of reduced costs, lower emissions, improved profitability and enhanced shareholder value.

Siemens energy solutions are characterised by:-

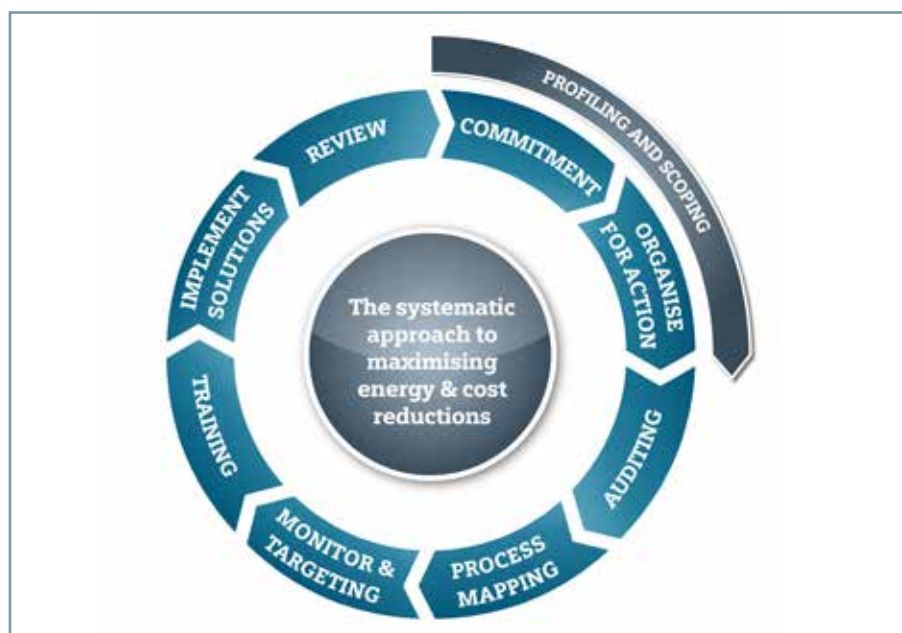
- Dramatically reduced energy and utility costs (typically 10 - 50%)
- Simplified regulatory compliance
- Waste minimisation and process improvements

- Reduced carbon footprint
- Increased brand value / company reputation

Reflecting the challenges of the current financial landscape, Siemens has developed a range of financially sympathetic solutions which maximise operating cost reductions - without placing unacceptable strain on capital expenditure:

- Professional energy and utility audits
- Direct energy saving products
- Measuring and monitoring tools
- Management and control solutions
- Innovative financing solutions
- **Evaluation of energy reduction with VSDs and motors using the SINASAVE simulation tool**

The implementation of a systematic energy plan can help mitigate against rising energy costs, deliver real competitive advantage, safeguard margin and thereby enhance corporate profitability. The on-going savings from following the systematic approach could be 400% greater when compared to the ad-hoc approach.



Energy Efficient Drives

Electric motors represent almost two thirds of the total industrial power demand. The amount of energy used will have a big impact on operating costs as well as the effects on the environment.

Efficient Infeed Technology - provides the ability to feed back regenerative energy developed with motor braking into the mains supply. Traditionally this energy would be dissipated as heat through an additional braking resistor.

Efficient Infeed Technology has significant benefits:

- Continuous braking with 100% rated power
- Energy savings through regenerative feedback
- Braking resistor, line reactor and brake chopper are eliminated
- Configuration costs for brake resistor and cabling eliminated
- Lower harmonic content than standard inverters
- Less space than a conventional converter
- Up to 22% lower power infeed
- No additional heat generated through braking
- Cost and space savings

Example:

An application with a hoist drive of a stacker crane was made using standard technology compared with 'Efficient Infeed Technology'. The result was a cost saving of 40% and a space saving of 77%. How was this achieved?

Reduced costs:

No Input Choke required
No braking resistors required
Lower Energy costs

Reduced space:

No Input Choke required
No braking resistors required

Release energy-saving potential and optimise energy usage

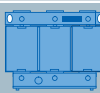





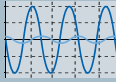

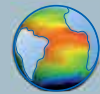







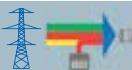

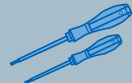

SINAMICS inverters with intelligent functions make it possible. Depending on the application and the load profile, with the intelligent energy-saving functions in SINAMICS inverters, energy usage can be reduced.

ECOMode - In the ECOMode, the motor operating point in the partial load range is automatically adapted and optimised. This function reduces motor losses for machines that do not require the high torque over the complete operating range.

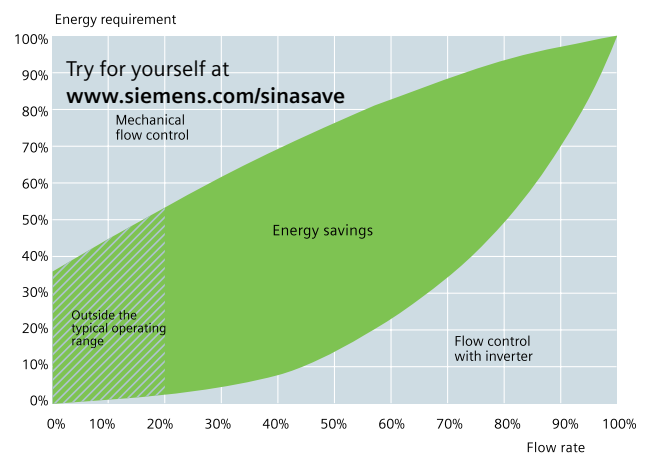
Hibernation mode - Variable-speed drives that are temporarily used are switched into the hibernation mode. The drive is automatically reactivated depending on the demand.

Bypass mode - Using the bypass mode, the inverter is electrically bypassed as soon as the motor frequently operates close to its operating speed. This allows inverter losses to be avoided, and the overall efficiency increases.

Motor staging - In pump, fan and compressor applications requiring high power ratings, the complete power demand is distributed over several motors. These motors are switched in and out using partially or fully controlled cascades in conjunction with inverters, therefore facilitating an energy-efficient drive system.

	Standard Technology	Efficient Infeed Technology
Line reactor 	Required	Not required 
Braking resistor 	Required	Not required 
Configuration overhead 	Standard	Low 
Generated harmonics 	Standard	Minimal 
Heat generated when braking 	Yes	No 
Power infeed 	Standard	Approx. 22% less 
Power consumption 	Standard	Approx. 22% less 
Energy efficiency 	Standard	Good 
Reactive power compensation 	No	Yes 
Installation outlay 	Standard	Low 

G_D011_EN_00182



Energy consumption values/energy-saving counter - During operation, the actual energy consumption can be output - or using an energy-saving counter - the amount of energy accumulated over the operating hours is compared to a fixed speed drive and the difference is output.

PROFInergy for sustainability - SINAMICS G with PROFINET interface supports PROFInergy. PROFInergy is a PROFINET-based profile that allows loads to be centrally coordinated and controlled independent of any particular manufacturer and device. Further, it can also provide standardised analytical data for the energy management process.

www.siemens.com/energy-efficiency-production

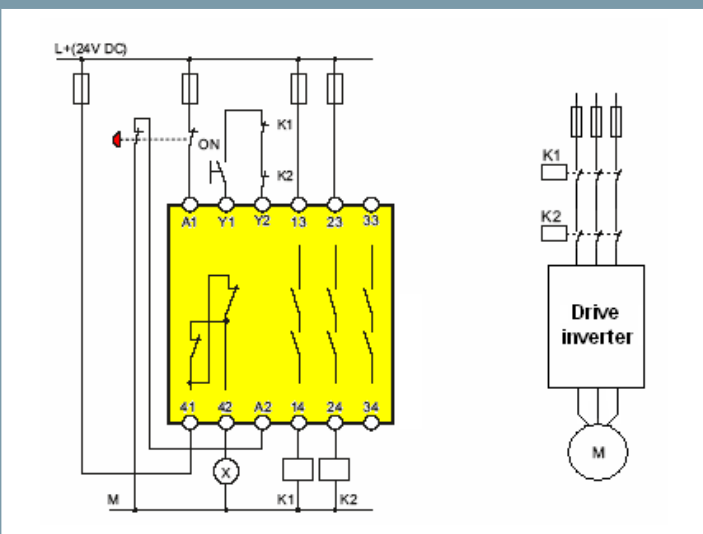
"The prevention of accidents should not be seen as a piece of legislation, but as moral obligation and sound economic sense."

Werner von Siemens, 1880

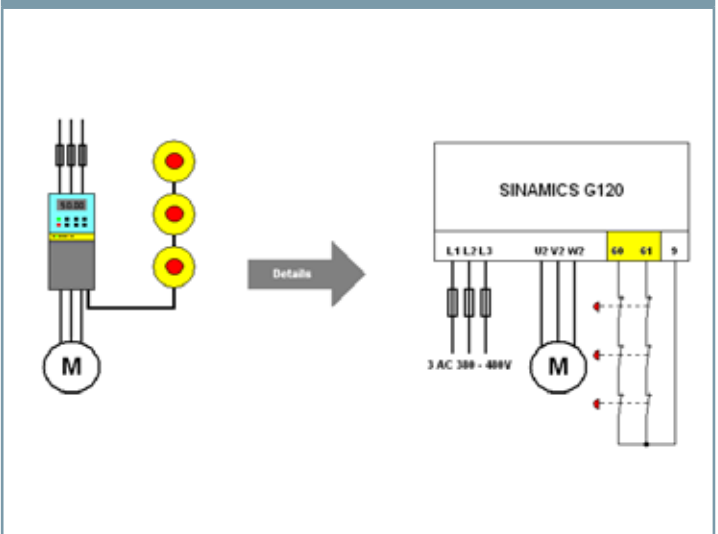
The trend towards greater complexity and increasing modularity in machines has seen a shift in safety functions away from traditional design (using contactors between drive and motor) and into the machine control system and drives. This gives many benefits:

- Complex hardware used to implement safety functions is no longer necessary
- Integrated safety functions act much faster than the traditional designs
- Implementation over a fieldbus e.g. Profibus to reduce wiring overheads
- Perceived to be less interfering so the temptation to bypass the safety system by the machine operator is significantly reduced
- Comprehensive diagnostics reduce downtimes increasing productivity

Example - Traditional Safety System (STO)



Example - Integrated Safety Technology (STO)



The use of certified integrated safety functions simplifies the certification of the safety category that is required for a machine.

The implementation of safety concepts is based on the idea that safety-relevant events will first be detected, then evaluated, and then reacted upon. Fail-safe drives are characterised by their integrated safety functions, which they provide to the user as possible responses to safety-relevant events. The most important integrated safety functions available for Siemens drives are described below, as defined in Part 5-2 of the international standard IEC 61800 for variable-speed drive systems.

Description of Safety functions:

■ Safe Torque Off (STO)

This function disables the drive pulses and stops the motor developing torque - zero torque condition

■ Safe Stop 1 (SS1)

The drive brakes the motor and then activates the STO function and SBC (if used)

■ Safely Limited Speed (SLS)

This function monitors the drive and depending on the mode selected either limits the motor speed to a safe value or monitors for maximum speed as set in parameters

■ Safe Brake Control (SBC)

This function safely applies a holding brake after STO is activated, which means that the drive can no longer move, e.g. due to gravity

■ Safe Direction Detection (SDI)

This function ensures that a selected direction of rotation is maintained

■ Safe Stop 2 (SS2)

Like the SSI function, the SS2 function actively decelerates the motor, however when stationary the SOS function is used instead of STO

■ Safe Operating Stop (SOS)

The stationary motor is held in position and monitored by the drive. Full torque is available. SOS is ideal for applications where the drive must apply a holding torque i.e waiting for a machine function to finish

■ Safe Speed Monitor (SSM)

This function reports if the speed goes below a specified speed. No drive-autonomous response occurs

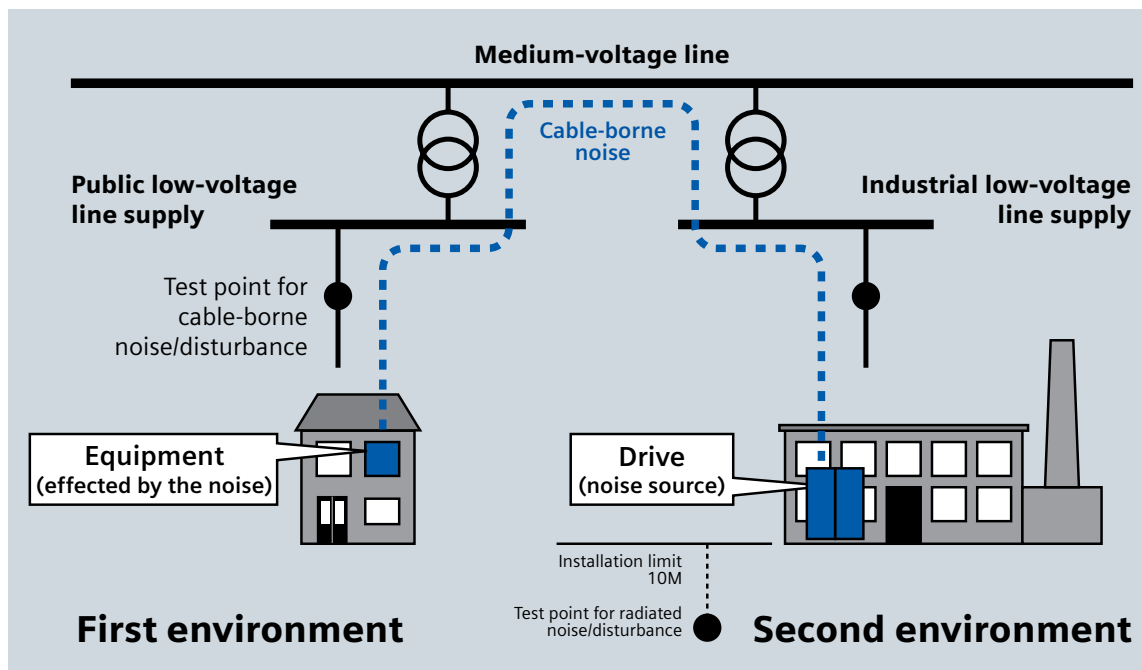
Safety Integrated certified to EN954-1, EN ISO 13849-1 PLd & Cat3, IEC61508 SIL2.

Note: Not all Siemens drives have integrated safety functions. The functions available on each drive are drive dependent and some functions may require a licence.

Electromagnetic Compatibility (EMC)

Electromagnetic compatibility describes - according to the definition of the EMC directive - "the capability of a device to work satisfactorily in the electromagnetic environment without itself causing electromagnetic interferences which are unacceptable for other devices present in this environment". To guarantee that the appropriate EMC directives are observed, the devices must demonstrate sufficiently high noise immunity, and also the emitted interference must be limited to acceptable values.

The EMC requirements for variable-speed drive systems are described in the product standard EN 61800-3. A variable speed drive system (or power drive system, PDS) consists of the drive converter and the electric motor including cables. The driven machine is not part of the drive system. EN 61800-3 defines different limits depending on the location of the drive system, referred to as the first and second environments:



The **first environment** comprises living accommodation or locations where the drive system is directly connected to the public low-voltage network without an intermediate transformer.

The **second environment** is understood to be all locations outside living areas. These are basically industrial areas which are powered from the medium-voltage network via their own transformers.

Four different categories are defined in EN 61800-3 Ed.2 depending on the location and the power of the drive:

Category C1: Drive systems for rated voltages < 1000 V for unlimited use in the first environment.

Category C2: Stationary drive systems for rated voltages < 1000 V for use in the second environment. Use in the first environment is possible if the drive system is installed and used by qualified personnel. The warning and installation information supplied by the manufacturer must be observed.

Category C3: Drive systems for rated voltages < 1000 V for exclusive use in the second (industrial) environment.

Category C4: Drive systems for rated voltages > 1000 V or for rated currents > 400 A for use in complex systems in the second environment.

First environment	C1	Second environment
	C2	
	C3	
	C4	

Notes: The level of EMC filtering should be selected to match the specific application and environment.

Correct installation techniques are mandatory in order to meet the requirements of the EMC directive and to comply with warranty requirements.

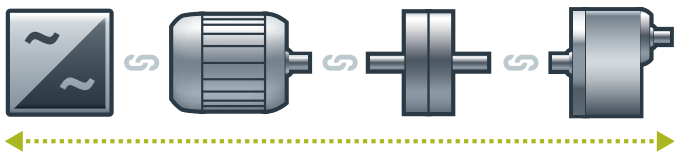
Integrated Drive Systems

Integrated Drive Systems is Siemens' trendsetting answer to the high degree of complexity that characterises drive and automation technology today. The world's only true one-stop solution for entire drive systems is characterised in particular by its threefold integration: Horizontal, vertical, and lifecycle integration ensure that every drive system component fits seamlessly into the whole system, into any automation environment, and even into the entire lifecycle of a plant.

The outcome is an optimal workflow – from engineering all the way to service that entails more productivity, increased efficiency, and better availability. That's how Integrated Drive Systems reduces time to market and time to profit.

Horizontal integration

Integrated drive portfolio: The core elements of a fully integrated drive portfolio are frequency converters, motors, couplings, and gear units. At Siemens, they're all available from a single source. Perfectly integrated, perfectly interacting. For all power and performance classes. As standard solutions or fully customized. No other player in the market can offer a comparable portfolio. Moreover, all Siemens drive components are perfectly matched, so they are optimally interacting.

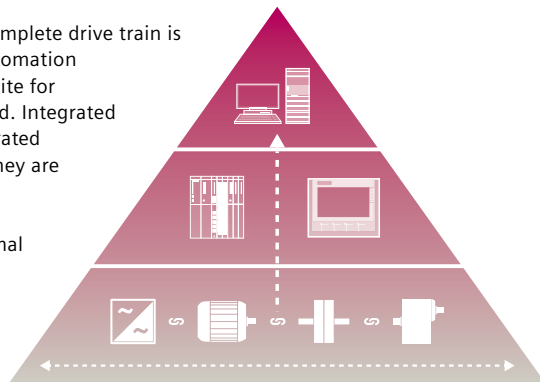


You can boost the availability of your application or plant to up to

99%*
*e.g., conveyor application

Vertical integration

Thanks to **vertical integration**, the complete drive train is seamlessly integrated in the entire automation environment – an important prerequisite for production with maximum value added. Integrated Drive Systems are part of Totally Integrated Automation (TIA), which means that they are perfectly embedded into the system architecture of the entire industrial production process. This enables optimal processes through maximum communication and control.



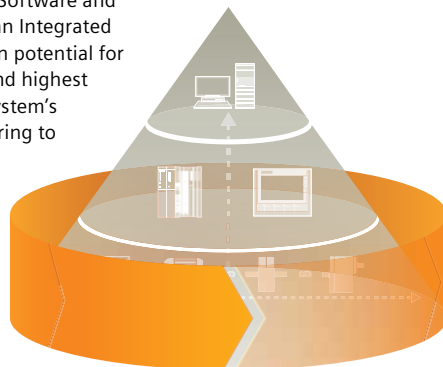
With TIA Portal you can cut your engineering time by up to

30%

Lifecycle integration

Lifecycle integration adds the factor of time: Software and service are available for the entire lifecycle of an Integrated Drive System. That way, important optimization potential for maximum productivity, increased efficiency, and highest availability can be leveraged throughout the system's lifecycle – from planning, design, and engineering to operation, maintenance, and all the way even to modernization.

With Integrated Drive Systems, assets become important success factors. They ensure shorter time to market, maximum productivity and efficiency in operation, and shorter time to profit.



With Integrated Drive Systems you can reduce your maintenance costs by up to

15%

Low Voltage Motors

The World's Best Selling Motors

Low Voltage Motors

As global market leaders, we ship more than 16,000MW of motor power annually - a complete portfolio of standard motors and customised designs which cover every application from pumps, fans and compressors through to highly sophisticated drive systems.



Technical data

Frame sizes	63 - 450
Power range	0.09 to 1,250 kW
Number of Poles	2, 4, 6, 8
Degree of protection	IP55 (or greater)
Voltages	All common voltages
Frequency	50Hz and 60Hz
Design	B3, B5, B35, B14 and others
Enclosure	Aluminium: 63 - 225 frame Cast Iron: 71 - 450 frame
Type of cooling	Fan or forced cooled
Temperature class	F, utilised according to B
Insulating system	Inverter-proof insulation system DURIGNIT® IR 2000

Features and Benefits

- Lower running costs, longer lifetimes, resulting in quicker payback time of your capital
- IE3 efficiency in standard frame sizes - no increase in frame due to efficiency
- Service factor of 1.15 for IE2 and IE3
- Inverter resistant patented insulation system (supply voltages <500V)
- Energy Technology List qualified motors
- Modular mounting concept including force ventilation kits, encoders and brake modules
- Improved Bearing Life

Energy Efficiency Legislation

Important dates and minimum efficiency requirement as per EuP are;

16th June 2011

IE2 for 0.75kW to 375kW

1st Jan 2015

IE3 for 7.5kW to 375kW or IE2 plus Inverter

1st Jan 2017

IE3 for 0.75kW to 375kW or IE2 plus Inverter

General Purpose Range

- Available in IE2, IE3 and IE4 Efficiencies
- Aluminium frame for General Purpose applications e.g. Pumps and Fans
- Cast Iron frame for Severe Duty applications e.g. Chemical and Oil & Gas industries
- Increased power line: with one standard power step higher with the same shaft height
- Available with options like thermistors, heaters, encoders, brake and external earth etc
- Performance line motors - Supplied standard with PTC, steel rating plate & fan cowl and 3 year warranty



SIMOTICS FD Motors

- Converter-optimised low-voltage induction motors
- Rugged cast iron design available in Air Cooled (IC411/ IC416), Water Cooled and Open Air Cooled
- 200 kW - 1600 kW in Shafts 315, 355, 400 and 450
- Flexible terminal box positions
- Motor designed for rated pulse frequency of Siemens Drives
- Options for Condition Monitoring
- Hazardous Zones 2 or 22 version
- Cooling is realized through the slots in square laminated stator core. Two separate cooling circuits ensure even temperature distribution in the active motor area increasing motor's life-time



VSD10 Motor Range

- Motors designed specifically for inverter duty
- Available from 2.2 kW - 200 kW
- KTY protection as standard
- Guaranteed motor power when fed from Siemens drive
- Fast and straightforward commissioning by transferring the motor code to the converter
- Flexible operation (4Q) possible with SINAMICS G/S converters (ALM,SLM,BLM)
- Suited for frequent switching operation cycles due to low moment of inertia







Hazardous Area Motors

- Up to IE3 efficiency Hazardous Area Motors
- Cast Iron design for Zone 1
- Zone 2, 21 & 22 in Cast Iron and Aluminium
- The motors are designed in accordance with Directive 94/9/EC (ATEX 95 previously ATEX 100a)
- LOHER Chemstar range - specifically designed for extreme hazardous environments. Available with up to IP67 protection, temperature range of -55°C to 70°C and Grade B Vibration












Please send motor enquiries to Sales.GBI.industry@siemens.com or call 08458 507600 for assistance

Gearboxes

SIMOGEAR - Siemens Standard Geared Motor						
	Inline Geared Motor	Flange Mounted Geared Motor	Helical Bevel 2-stage	Helical bevel 3-stage	Worm Geared Motor 2-stage	Worm Geared Motor 1-stage
						
Gear Unit Size	E39...E149 (1-stage) Z19...Z189 (2-stage) D19...D189 (2-stage)	FZ29...FZ229 (2-stage) FD29...FD229 (3-stage)	B19...B49 (2-stage)	K39...K229 (3-stage)	C29...C89 (2-stage)	S09...S29 (1-stage)
Ratio Range	1,1...10 (1-stage) 3,4...60,97 (2-stage) 39.34...330 (3-stage) 250...50,000 (multi-stage)	3,57...60,21 (2-stage) 46,36...357 (3-stage) 250...50,000 (multi-stage)	3,47...59,28 (2-stage)	5,17...244 (3-stage) 250...50,000 (multi-stage)	10,290 (2-stage) 250...25,000 (multi-stage)	5...100 (1-stage)
Max Motor Power (kW)	200	200	7.5	200	15	0.75

SIEMENS Standard Gear units offer you all the options you need to drive your equipment. With the most comprehensive range of Mechanical Transmission products in the field Siemens can give you a standard solution with a fast delivery from our site in Leeds or an industry specific solution. Alternatively we can use our onsite design department to help you design a fully customised mixture of our products to give you the most optimised solution.

Siemens - Comprehensive Range of Couplings				
Overall torque range 10...10,000,000 Nm	Overall size range: 48...2800 mm	Couplings	Flexible Couplings	High Flexible Couplings
		FLUDEX (Fluid Coupling)	N-EUPEX (Claw Coupling)	ELPEX (Rubber Coupling)
				
		ARPEX (All steel disc Coupling)	BIPEX (Jaw Coupling)	ELPEX-B (Rubber Tire Coupling)
				
		ZAPEX (Gear Coupling)	RUPEX (Pin & Bush Coupling)	ELPEX-S (Rubber Disc Coupling)
				

Siemens has the most comprehensive range of couplings in the world. So regardless of what your application is we have the right coupling for you. We can meet any torque or speed requirement you have and bridge any DBSE your systems demands. Using our vast range we can create hybrid systems to include mechanical torque limiters and/or soft starts. We can absorb your high vibrational loads or give precise positioning.

TIA Portal - StartDrive



PROFINET

With the Totally Integrated Automation Portal (TIA Portal), Siemens follows a vision of providing an engineering framework for implementing automation solutions in all industries around the globe. From designing, commissioning, operating and maintaining to upgrading automation systems, TIA Portal saves engineering time, cost, and effort. and second environments:

With the integration of SINAMICS Startdrive, our vision now extends to drive technology. This means that a wealth of functions are provided – but at the same time with simple usability.

- The same user navigation for control system, HMI and drive technology increases the engineering productivity and reduces the potential for making errors
- A common hardware configuration for all components of the application facilitates that the converter automatically goes online, even beyond network boundaries (routing functionality). This significantly simplifies commissioning.
- Common data management for the control system and converter in one tool automatically guarantees consistency, e.g. the bus address and message frame types. As a consequence, commissioning times and potential errors are significantly reduced
- A common library concept guarantees the simple reusability of the converter, including the parameters and hardware components
- The effective and intuitive communication connection between the converter and the control using drag & drop simplifies configuring considerably
- Useful functions such as undo/redo or copy/paste, known from the Windows environment, facilitate an intuitive workstyle and allow drive configurations to be simply copied

SINAMICS StartDrive is available with Simatic V13, can be ordered as a 'Stand' alone package with the following Order number: 6SL3072-4DA02-0XG0 or can be downloaded via our support site via the following link:

<http://support.automation.siemens.com/WW/view/en/68034568>.

The following drives are integrated into StartDrive:
G120 (CU230P-2, CU240B-2, CU240E-2, CU250S-2), G120P, G120C, G120D & G110M.

SINAMICS StartDrive offers significant benefits

- Users can easily parameterize their converters supported by user-friendly wizards and screen forms
- For the experienced user the complete parameter list is available
- The various steps when engineering a converter are intuitively structured according to the particular task and promote a structured workflow
- Additional user-friendly functions – for example toggling between SI/US units for the converters – simplify engineering
- Intuitive parameterization of the safety functions integrated in the drive using graphic screen forms.
- Simple configuration of the matching SIMOTICS motors.
- Diagnostics are passed through to the PLC/HMI in plain text
- The trace function allows you to easily remedy faults when commissioning on after installation

Experience once gained – for example how to configure a control system – can be simply applied when configuring the converter. This significantly reduces training and engineering costs.

Drives Software and Configurators

SIZER Configuring Tool

The SINAMICS MICROMASTER SIZER tool supports the sizing, configuration and selection of the components required for drive applications step by step. A parts list, technical specifications, characteristic curves and dimensions drawings are then available to export.

Sizer can be purchased on DVD with order code 6SL3070-0AA00-0AG0 or downloaded free of charge if you hold a license from a purchased version at: www.siemens.com/sizer



STARTER Commissioning Tool

STARTER is the graphical commissioning package for the MICROMASTER and SINAMICS Drive range. Simple wizards to guide you through the commissioning stages gives you the ability to generate user definable parameter sets and take control of the drive locally. STARTER can run as a stand-alone PC application, however the tool is also integrated Drives ES and SIMOTION SCOUT.

Starter can be purchased on DVD with order code 6SL3072-0AA00-0AG0 or downloaded free of charge if you hold a license from a purchased version at: www.siemens.com/starter



SINAMICS StartDrive

SINAMICS StartDrive is the optional Drive Tool that can be integrated into the TIA Portal and can be used for configuring, commissioning and performing diagnostics.

For more information please see the information on the opposite page or on the web at www.siemens.com/startdrive



DRIVE ES Engineering System

Drive ES is the engineering system used to integrate the communication, configuration and data management functions of Siemens drive technology into the SIMATIC automation world through SIMATIC Manager of Step7. The functions of Drives ES basic are available with Starter V3.4 SP2 for Sinamics & Micromaster function with a full integration of Step 7 from V4.4. Drives ES Basic is still required for Masterdrive and Simodrive Drive ES SIMATIC also offers standard libraries and uniform operator control interfaces for a standard 'look and feel' and for a simpler handling of all TIA and drive components and Drive ES PCS7 Package enables simple integration into a PCS7 SCADA package.

* Requires an installation of SIMATIC Step 7 V5.4 minimum.



Drive ES Basic V5.5*	6SW1700-5JA00-5AA0
Drive ES SIMATIC	Call for part number
Drive ES PCS7	Call for part number

DT Configurator

The Drive Technology (DT) Configurator supports you when selecting the optimum products for your application – starting from gearboxes, motors, converters as well as the associated options and components up to control systems, software licenses and connection systems. Whether with little or detailed product knowledge you can easily, quickly and efficiently configure your particular drive using product group pre-selectors, targeted navigation through selection menus or by entering item numbers directly to select the products. You can find the DT Configurator at: www.siemens.com/dtconfigurator

SINASAVE

SinaSave software calculates the great savings possible for your motor and drive applications (up to 70 percent are possible) and how quickly your investment in an energy-efficient technology will pay off. Frequently, the payback period is just a few months:

www.siemens.com/sinasave



APPs

The following Apps are available free of charge for both Apple and Android devices at: www.siemens.com/industry-apps



Sinamics Selector



Sinamics Support



Online Support

Industry Services

Service, Spares, Technical Support

From project concept to implementation and beyond, Siemens Industry provides comprehensive life cycle support:

- Field service – Service Engineers performing installation, commissioning, maintenance and breakdown recovery
- Technical support
- Application consultancy and Product Specialists
- Spares - Warranty handling, spare parts, service exchange and repairs
- Optimisation and Modernisation
- Online – a comprehensive information system available on the internet

In addition to the above, we offer a number of proactive services to enhance the availability and performance of all types of installations, such as:

Service / maintenance contract options

- 7 days / week, 365 days / year
- Fast response to site
- Tailored service contracts available to meet individual customer requirements

Asset management options

- Plant maintenance management – including preventative measures
- Bonded stock availability
- Repair contracts
- Software update service (SUS)
- Leasing

Process improvement strategies

- Consultancy
- Site audits

SITRAIN - Customer Training Solutions

Customer training is part of a range of Siemens support programmes aimed at optimising the skills of staff involved in designing, installing and maintaining Siemens automation and drives systems.

Professional Training from SITRAIN

- Is the fastest way to acquire knowledge
- Reduces the cost of downtime and system building
- Assists the retention of staff
- Builds staff confidence and competence
- Supported QA and Health & safety requirements
- Offers Siemens certification options

As part of the comprehensive programme of training solutions for Siemens automation and drives applications, SITRAIN offers the following SINAMICS G120 Drives Course which can be attended in standard format as a scheduled course. Alternatively the course can be tailored to customer requirements and delivered either at Siemens or the customer site.

SINAMICS G120 Servicing and Start-up.

Code: DR-G120-SI (3 days) £1,430.00 + VAT per person.

This is a practical introduction to commissioning and maintaining the SINAMIC G120 drive, as well as the use of associated software, and includes:

- SINAMICS Overview
- SINAMICS G120 Hardware Overview
- Commissioning with STARTER
- Control Word, Status Word, Setpoint
- Parameters and BICO Technology
- Integration in SIMATIC
- Control
- Converter Functions
- Data Management
- Diagnostics
- Safety Functions – Safety Integrated

Drives Training Solutions

As well as training for the SINAMICS G120 drives family, SITRAIN UK can deliver drives training solutions for Masterdrive VC, Micromaster MM4, SINAMICS G110, S120, S150, G130, G150, SINAMICS DC and Perfect Harmony Drives.

Customer Care Centre
From UK Tel: 08458 507600
From IRL Tel: 1890 507600

E-mail: service.gbi.industry@siemens.com

Send your Technical Support request directly to a Siemens Technical Support expert via our on-line Support Request:

www.siemens.co.uk/automation-sr

For all your training needs and to make a booking, contact:

Tel: +44 (0)161 446 6111

Fax: +44 (0)161 446 5742

E-mail: training.ad.uk@siemens.com

Internet: www.siemens.co.uk/sitrain

Useful Information



Catalogues

Standard Drives	SINAMICS G110	D31
	SINAMICS G120C	D31
	SINAMICS G120	D31
	SINAMICS G110M	D31
	SINAMICS G110D	D31
	SINAMICS G120D	D31
	SINAMICS S110	D31
	SINAMICS G120P	D35
Engineered Drives	SINAMICS S120	PM21
Large Drives	SINAMICS G130 / G150	D11
DC Drives	SINAMICS DCM	D23.1
Motion Control Motors		PM21
Low Voltage Motors		D81.1
Gearboxes	Simogear Geared Motors	MD50.1
	G110M	MD50.1
	Simogear Gearboxes	MD50.11

Please call our literature hotline on **0845 7 70 50 70** to obtain any of the above catalogues or further information on the complete range of automation and drives products. Alternatively, literature can be ordered on line at:
www.siemens.co.uk/automationliterature

Websites

Siemens Industry	www.siemens.co.uk/industry
Siemens Drives Technologies Home page	www.siemens.co.uk/drives
SINAMICS V20	www.siemens.com/sinamics-V20
SINAMICS G110	www.siemens.com/sinamics-G110
SINAMICS G120C	www.siemens.com/sinamics-G120C
SINAMICS G120P	www.siemens.com/sinamics-G120P
SINAMICS G120	www.siemens.com/sinamics-G120
SINAMICS G110D	www.siemens.com/sinamics-G110D
SINAMICS G120D	www.siemens.com/sinamics-G120D
SINAMICS MICROMASTER	www.siemens.com/micromaster
SINAMICS S110	www.siemens.com/sinamics-S110
SINAMICS S120	www.siemens.com/sinamics-S120
SINAMICS G130	www.siemens.com/sinamics-G130
SINAMICS G150	www.siemens.com/sinamics-G150
Motors	www.siemens.com/motors
Geared Motors	www.siemens.com/gearedmotors
Pumps, Fans and Compressors	www.siemens.com/pumps www.siemens.com/fans www.siemens.com/compressors
Solution Partners	www.siemens.com/automation/solutionpartner
SINASAVE	www.siemens.com/dtconfigurator
DT Configurator	www.siemens.com/automation/solutionpartner
Industry Apps	www.siemens.com/industry-apps

From UK Tel: 08458 507600

From IRL Tel: 1890 507600

E-mail: sales.gbi.industry@siemens.com

Siemens Drives and Motor Enquiry Sheet

Type of Application

Quantity

Supply Voltage

Type of Drive

Basic project requirement

Cable lengths

Environmental Conditions

Customer Contact Details

Name

Company

Tel

Email

Customer Ref.

Siemens Ref.

Notes

Company Structure

Specified Business/Relationship with Siemens

Decision Maker

Timescales

Assistance required

Serial/one off

Trading Information

Budget or detailed quote

Motor Specifications

Speed (rpm)

Load Torque (Nm)

Rated Voltage (v)

Rated Output (kW)

Min Load Speed (rpm)

Power at Min Load Speed

Max Load Speed

Power at Max Load Speed

Paint finish, if any

Type of cooling

Motor Altitude (m)

Feed back device

Rotary/Linear movement

Mass to be moved

Interis or torque speed requirements

Required velocity

Type of mechanical arrangement

Brake required

Hanging load or hoisting application

Environment conditions

Special considerations

Drive Specifications

Power (kW)

Drive Altitude (m)

Type of Control Required

Load Characteristics

Overload Requirements

IP Protection

Braking

Braking Cycle

Number of axis required

Power ride through function

Safety Integrated

Harmonic Considerations

Type of Cooling Required

RFI / EMC Requirements

Output Choke

Machine duty cycle

Panel Requirements

Type of cooling

Panel Glanding

Cable requirements
std/flexStandard panel
mounting kit

Bulkhead connections

Door mounted operator
interface

Customer specific requirements

Customer Capability of PLCs

Is training/support required

Is a RSC contract required

PLC - Will system include PLC control, if so which

Type of communication bus

Is there a size restriction for the elcetrical panels

The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of 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. Availability and technical specifications are subject to change without notice.

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.

All prices exclude VAT and are subject to change without notice.

Siemens standard terms and conditions apply.

© Siemens plc 2014

Siemens

Sir William Siemens House
Princess Road
Manchester M20 2UR

From UK Tel: 08458 507600

From IRL Tel: 1890 507600

E-mail: sales.gbi.industry@siemens.com

www.siemens.co.uk/drives

SIEMENS

Siemens Variable Speed Drives

Price List

Effective October 2014

SINAMICS V20

Supply Voltage 200 ...240V 1 AC			Power Modules		
Rating	Frame Size	Industrial	List Price	Filtered	List Price
0.12 kW / 0.9 A	A	6SL3210-5BB11-2UV0	£112	6SL3210-5BB11-2AV0	£123
0.25 kW / 1.7 A	A	6SL3210-5BB12-5UV0	£119	6SL3210-5BB12-5AV0	£130
0.37 kW / 2.3 A	A	6SL3210-5BB13-7UV0	£127	6SL3210-5BB13-7AV0	£138
0.55 kW / 3.2 A	A	6SL3210-5BB15-5UV0	£138	6SL3210-5BB15-5AV0	£150
0.75 kW / 3.9 A	A	6SL3210-5BB17-5UV0	£150	6SL3210-5BB17-5AV0	£161
0.75 kW / 4.2 A	A	6SL3210-5BB18-0UV0	£157	6SL3210-5BB18-0AV0	£168
1.1 kW / 6.0 A	B	6SL3210-5BB21-1UV0	£168	6SL3210-5BB21-1AV0	£183
1.5 kW / 7.8 A	B	6SL3210-5BB21-5UV0	£190	6SL3210-5BB21-5AV0	£205
2.2 kW / 11 A	C	6SL3210-5BB22-2UV0	£231	6SL3210-5BB22-2AV0	£250
3 kW / 13.6 A	C	6SL3210-5BB23-0UV0	£267	6SL3210-5BB23-0AV0	£291

Supply Voltage 380 ...480V 3 AC			Power Modules		
Rating	Frame Size	Industrial	List Price	Filtered	List Price
0.37 kW / 1.3 A	A	6SL3210-5BE13-7UV0	£217	6SL3210-5BE13-7CV0	£235
0.55 kW / 1.7 A	A	6SL3210-5BE15-5UV0	£228	6SL3210-5BE15-5CV0	£246
0.75 kW / 2.2 A	A	6SL3210-5BE17-5UV0	£235	6SL3210-5BE17-5CV0	£254
1.1 kW / 3.1 A	A	6SL3210-5BE21-1UV0	£254	6SL3210-5BE21-1CV0	£272
1.5 kW / 4.1 A	A	6SL3210-5BE21-5UV0	£280	6SL3210-5BE21-5CV0	£303
2.2 kW / 5.6 A	A	6SL3210-5BE22-2UV0	£324	6SL3210-5BE22-2CV0	£350
3 kW / 7.3 A	B	6SL3210-5BE23-0UV0	£370	6SL3210-5BE23-0CV0	£399
4 kW / 8.8 A	B	6SL3210-5BE24-0UV0	£414	6SL3210-5BE24-0CV0	£448
5.5 kW / 12.5 A	C	6SL3210-5BE25-5UV0	£508	6SL3210-5BE25-5CV0	£549
7.5 kW / 16.5 A	D	6SL3210-5BE27-5UV0	£642	6SL3210-5BE27-5CV0	£694
11 kW / 25 A	D	6SL3210-5BE31-1UV0	£825	6SL3210-5BE31-1CV0	£892
15 kW / 31 A	D	6SL3210-5BE31-5UV0	£1004	6SL3210-5BE31-5CV0	£1086

Options			List Price
6SL3255-OVE00-0UA0	Parameter Loader		£63
6SL3255-OVA00-4BA0	V20 Basic Operator Panel (for door mounting)		£37
6SL3255-OVA00-2AA0	BOP Interface (for door mounting)		£27
6SL3256-OVP00-0VA0	BOP cable (3 mtrs including 4 mounting screws)		£19
6SL3201-2AD20-8VA0	Braking Module (230 V 1AC: 8A, 400 V 3AC: 7A)		£97
6SL3054-4AG00-2AA0	Sinamics SD Card (512 Mb)		£55
6SL3255-OVC00-0HA0	RS485 Terminators (50 pieces)		£27

Control Unit Shield Connection Kits			List Price
6SL3266-1AA00-0VA0	FSA		£8
6SL3266-1AB00-0VA0	FSB		£17
6SL3266-1AC00-0VA0	FSC		£17
6SL3266-1AD00-0VA0	FSD		£17

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 11.

SINAMICS G120C

Supply Voltage - 380 V... 480 V 3 AC				Power Modules			
Rating		Frame Size	Type	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)						
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	USS/MOD Bus	6SL3210-1KE11-8UB1	£335	6SL3210-1KE11-8AB1	£397
			Profibus	6SL3210-1KE11-8UP1	£407	6SL3210-1KE11-8AP1	£469
			Profinet	6SL3210-1KE11-8UF1	£407	6SL3210-1KE11-8AF1	£469
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	USS/MOD Bus	6SL3210-1KE12-3UB1	£350	6SL3210-1KE12-3AB1	£412
			Profibus	6SL3210-1KE12-3UP1	£422	6SL3210-1KE12-3AP1	£484
			Profinet	6SL3210-1KE12-3UF1	£422	6SL3210-1KE12-3AF1	£484
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	USS/MOD Bus	6SL3210-1KE13-2UB1	£371	6SL3210-1KE13-2AB1	£430
			Profibus	6SL3210-1KE13-2UP1	£443	6SL3210-1KE13-2AP1	£503
			Profinet	6SL3210-1KE13-2UF1	£443	6SL3210-1KE13-2AF1	£503
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	USS/MOD Bus	6SL3210-1KE14-3UB1	£400	6SL3210-1KE14-3AB1	£452
			Profibus	6SL3210-1KE14-3UP1	£472	6SL3210-1KE14-3AP1	£524
			Profinet	6SL3210-1KE14-3UF1	£472	6SL3210-1KE14-3AF1	£524
2.2 kW / 5.6 A	1.5 kW / 4.1 A	A	USS/MOD Bus	6SL3210-1KE15-8UB1	£445	6SL3210-1KE15-8AB1	£497
			Profibus	6SL3210-1KE15-8UP1	£517	6SL3210-1KE15-8AP1	£569
			Profinet	6SL3210-1KE15-8UF1	£517	6SL3210-1KE15-8AF1	£569
3.0 kW / 7.3 A	2.2 kW / 5.6 A	A	USS/MOD Bus	6SL3210-1KE17-5UB1	£520	6SL3210-1KE17-5AB1	£582
			Profibus	6SL3210-1KE17-5UP1	£593	6SL3210-1KE17-5AP1	£654
			Profinet	6SL3210-1KE17-5UF1	£593	6SL3210-1KE17-5AF1	£654
4.0 kW / 8.8 A	3.0 kW / 7.3 A	A	USS/MOD Bus	6SL3210-1KE18-8UB1	£577	6SL3210-1KE18-8AB1	£660
			Profibus	6SL3210-1KE18-8UP1	£649	6SL3210-1KE18-8AP1	£731
			Profinet	6SL3210-1KE18-8UF1	£649	6SL3210-1KE18-8AF1	£731
5.5 kW / 12.5 A	4.0 kW / 8.8 A	B	USS/MOD Bus	6SL3210-1KE21-3UB1	£696	6SL3210-1KE21-3AB1	£773
			Profibus	6SL3210-1KE21-3UP1	£768	6SL3210-1KE21-3AP1	£844
			Profinet	6SL3210-1KE21-3UF1	£768	6SL3210-1KE21-3AF1	£844
7.5 kW / 16.5 A	5.5 kW / 12.5 A	B	USS/MOD Bus	6SL3210-1KE21-7UB1	£839	6SL3210-1KE21-7AB1	£947
			Profibus	6SL3210-1KE21-7UP1	£912	6SL3210-1KE21-7AP1	£1020
			Profinet	6SL3210-1KE21-7UF1	£912	6SL3210-1KE21-7AF1	£1020
11 kW / 25 A	7.5 kW / 16.5 A	C	USS/MOD Bus	6SL3210-1KE22-6UB1	£1081	6SL3210-1KE22-6AB1	£1232
			Profibus	6SL3210-1KE22-6UP1	£1151	6SL3210-1KE22-6AP1	£1303
			Profinet	6SL3210-1KE22-6UF1	£1151	6SL3210-1KE22-6AF1	£1303
15 kW / 31 A	11 kW / 25 A	C	USS/MOD Bus	6SL3210-1KE23-2UB1	£1571	6SL3210-1KE23-2AB1	£1712
			Profibus	6SL3210-1KE23-2UP1	£1641	6SL3210-1KE23-2AP1	£1783
			Profinet	6SL3210-1KE23-2UF1	£1641	6SL3210-1KE23-2AF1	£1783
18.5 kW / 37 A	15 kW / 31 A	C	USS/MOD Bus	6SL3210-1KE23-8UB1	£1879	6SL3210-1KE23-8AB1	£2010
			Profibus	6SL3210-1KE23-8UP1	£1954	6SL3210-1KE23-8AP1	£2081
			Profinet	6SL3210-1KE23-8UF1	£1954	6SL3210-1KE23-8AF1	£2081

Options	Description	List Price
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP2)	£41
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)	£158
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (for IP20 version mounted in a cabinet)	£33
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)	£284
6SL3255-0AA00-2CA0	PC Inverter connection kit 2 for G120C, G120P and G120 Control Units CU230P-2, CU230B-2, CU230E-2 & CU250S-2, G110M & G120-D	£20
6SL3054-4AG00-2AA0	SINAMICS SD card (512 Mb)	£55
Shield Connection Kits for Power and Signal Cables		
A set of shield plates is included in the scope of delivery dependent on G120C Frame Size		

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 11.

SINAMICS G120P Power Modules

PM230 IP55 Supply Voltage - 380 V ... 480 V 3 AC			Power Modules			
Rating		Frame Size	PM230 IP55 Class A Filter	List Price	PM230 IP55 Class B Filter	List Price
LO (VT)	HO (CT)					
0.37 kW / 1.3 A	0.25 kW / 0.9 A	A	6SL3223-0DE13-7AA0	£227	6SL3223-0DE13-7BA0	£252
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	6SL3223-0DE15-5AA0	£239	6SL3223-0DE15-5BA0	£269
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	6SL3223-0DE17-5AA0	£261	6SL3223-0DE17-5BA0	£291
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	6SL3223-0DE21-1AA0	£278	6SL3223-0DE21-1BA0	£307
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	6SL3223-0DE21-5AA0	£316	6SL3223-0DE21-5BA0	£353
2.2 kW / 5.9 A	1.5 kW / 4.1 A	A	6SL3223-0DE22-2AA0	£383	6SL3223-0DE22-2BA0	£430
3 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3223-0DE23-0AA0	£479	6SL3223-0DE23-0BA0	£534
4 kW / 10.2 A	3 kW / 7.7 A	B	6SL3223-0DE24-0AA0	£567	6SL3223-0DE24-0BA0	£631
5.5 kW / 13.2 A	4 kW / 10.2 A	B	6SL3223-0DE25-5AA0	£664	6SL3223-0DE25-5BA0	£740
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3223-0DE27-5AA0	£862	6SL3223-0DE27-5BA0	£966
11 kW / 26 A	7.5 kW / 18 A	C	6SL3223-0DE31-1AA0	£1220	6SL3223-0DE31-1BA0	£1368
15 kW / 32 A	11 kW / 26 A	C	6SL3223-0DE31-5AA0	£1580	6SL3223-0DE31-5BA0	£1829
18.5 kW / 38 A	15 kW / 32 A	C	6SL3223-0DE31-8AA0	£1935	-	
18.5 kW / 38 A	15 kW / 32 A	D	-	-	6SL3223-0DE31-8BA0	£2519
22 kW / 45 A	18.5 kW / 38 A	D	6SL3223-0DE32-2AA0	£2274	6SL3223-0DE32-2BA0	£2858
30 kW / 60 A	22 kW / 45 A	D	6SL3223-0DE33-0AA0	£2879	6SL3223-0DE33-0BA0	£3738
37 kW / 75 A	30 kW / 60 A	E	6SL3223-0DE33-7AA0	£3531	6SL3223-0DE33-7BA0	£4730
45 kW / 90 A	37 kW / 75 A	E	6SL3223-0DE34-5AA0	£4311	6SL3223-0DE34-5BA0	£5759
55 kW / 110 A	45 kW / 90 A	F	6SL3223-0DE35-5AA0	£5048	6SL3223-0DE35-5BA0	£6702
75 kW / 145 A	55 kW / 110 A	F	6SL3223-0DE37-5AA0	£6055	6SL3223-0DE37-5BA0	£8070
90 kW / 178 A	75 kW / 145 A	F	6SL3223-0DE38-8AA0	£7084	6SL3223-0DE38-8BA0	£9571

PM230 IP20 Supply Voltage - 380 V ... 480 V 3 AC			Power Modules			
Rating		Frame Size	PM230 IP20 Unfiltered	List Price	PM230 IP20 Class A Filter	List Price
LO (VT)	HO (CT)					
0.37 kW / 1.3 A	0.25 kW / 0.9 A	A	6SL3210-1NE11-3UL1	£172	6SL3210-1NE11-3AL1	£206
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	6SL3210-1NE11-7UL1	£183	6SL3210-1NE11-7AL1	£219
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	6SL3210-1NE12-2UL1	£200	6SL3210-1NE12-2AL1	£237
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	6SL3210-1NE13-1UL1	£208	6SL3210-1NE13-1AL1	£250
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	6SL3210-1NE14-1UL1	£240	6SL3210-1NE14-1AL1	£285
2.2 kW / 5.9 A	1.5 kW / 4.1 A	A	6SL3210-1NE15-8UL1	£274	6SL3210-1NE15-8AL1	£328
3 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3210-1NE17-7UL1	£346	6SL3210-1NE17-7AL1	£412
4 kW / 10.2 A	3 kW / 7.7 A	B	6SL3210-1NE21-0UL1	£403	6SL3210-1NE21-0AL1	£487
5.5 kW / 13.2 A	4 kW / 10.2 A	B	6SL3210-1NE21-3UL1	£473	6SL3210-1NE21-3AL1	£570
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3210-1NE21-8UL1	£616	6SL3210-1NE21-8AL1	£737
11 kW / 26 A	7.5 kW / 18 A	C	6SL3210-1NE22-6UL1	£842	6SL3210-1NE22-6AL1	£1008
15 kW / 32 A	11 kW / 26 A	C	6SL3210-1NE23-2UL1	£1148	6SL3210-1NE23-2AL1	£1296
18.5 kW / 38 A	15 kW / 32 A	C	6SL3210-1NE23-8UL1	£1413	6SL3210-1NE23-8AL1	£1576
22 kW / 45 A	18.5 kW / 38 A	D	6SL3210-1NE24-5UL0	£1683	6SL3210-1NE24-5AL0	£1862
30 kW / 60 A	22 kW / 45 A	D	6SL3210-1NE26-0UL0	£2147	6SL3210-1NE26-0AL0	£2346
37 kW / 75 A	30 kW / 60 A	E	6SL3210-1NE27-5UL0	£2611	6SL3210-1NE27-5AL0	£2912
45 kW / 90 A	37 kW / 75 A	E	6SL3210-1NE28-8UL0	£3208	6SL3210-1NE28-8AL0	£3550
55 kW / 110 A	45 kW / 90 A	F	6SL3210-1NE31-1UL0	£3790	6SL3210-1NE31-1AL0	£4188
75 kW / 145 A	55 kW / 110 A	F	6SL3210-1NE31-5UL0	£4473	6SL3210-1NE31-5AL0	£4891

PM230 IP20 Supply Voltage - 380 V ... 480 V 3 AC Push Through						
Rating		Frame Size	PM230 IP20 Unfiltered	List Price	PM230 IP20 Class A Filter	List Price
LO (VT)	HO (CT)					
3 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3211-1NE17-7UL1	£388	6SL3211-1NE17-7AL1	£458
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3211-1NE21-8UL1	£691	6SL3211-1NE21-8AL1	£819
18.5 kW / 38 A	15 kW / 32 A	C	6SL3211-1NE23-8UL1	£1584	6SL3211-1NE23-8AL1	£1761

For Output Reactors please see SINAMICS Accessories on page 12.
For Options i.e. BOP-2, IOP, Shield plates etc, please see Control Units and Options on page 6.

SINAMICS G120 PM240-2 Power Modules

PM240-2				Power Modules		
Supply Voltage - 200 V ... 240 V 1/3 AC						
Rating		Frame Size	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)					
0.55 kW / 3.2 A	0.37 kW / 2.3 A	A	6SL3210-1PB13-0UL0	£179	6SL3210-1PB13-0AL0	£212
0.75 kW / 4.2 A	0.55 kW / 3.2 A	A	6SL3210-1PB13-8UL0	£194	6SL3210-1PB13-8AL0	£230
1.1 kW / 6.0 A	0.75 kW / 4.2 A	B	6SL3210-1PB15-5UL0	£208	6SL3210-1PB15-5AL0	£244
1.5 kW / 7.4 A	1.1 kW / 6.0 A	B	6SL3210-1PB17-4UL0	£237	6SL3210-1PB17-4AL0	£280
2.2 kW / 10.4 A	1.5 kW / 7.4 A	B	6SL3210-1PB21-0UL0	£280	6SL3210-1PB21-0AL0	£330
3.0 kW / 13.6 A	2.2 kW / 10.4 A	C	6SL3210-1PB21-4UL0	£351	6SL3210-1PB21-4AL0	£412
4.0 kW / 17.5 A	3.0 kW / 13.6 A	C	6SL3210-1PB21-8UL0	£423	6SL3210-1PB21-8AL0	£495

PM240-2				Power Modules		
Supply Voltage - 200 V ... 240 V 3 AC						
Rating		Frame Size	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)					
5.5 kW / 22 A (3 AC)	4.0 kW / 17.5 A	C	6SL3210-1PC22-2UL0	£490	6SL3210-1PC22-2AL0	£575
7.5 kW / 28 A (3 AC)	5.5 kW / 22 A	C	6SL3210-1PC22-8UL0	£639	6SL3210-1PC22-8AL0	£746

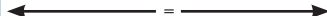


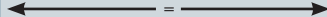
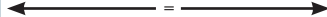
PM240-2				Power Modules		
Supply Voltage - 200 V ... 240 V 1/3 AC Push Through						
Rating		Frame Size	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)					
0.75 kW / 4.2 A	0.55 kW / 3.2 A	A	6SL3211-1PB13-8UL0	£213	6SL3211-1PB13-8AL0	£252
2.2 kW / 10.4 A	1.5 kW / 7.4 A	B	6SL3211-1PB21-0UL0	£308	6SL3211-1PB21-0AL0	£363
4.0 kW / 17.5 A	3.0 kW / 13.6 A	C	6SL3211-1PB21-8UL0	£466	6SL3211-1PB21-8AL0	£544

PM240-2		Power Modules				
Supply Voltage - 380 V ... 480 V 3 AC						
Rating		Frame Size	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)					
0.55 kW / 1.7 A	0.37 kW / 1.3 A	A	6SL3210-1PE11-8UL1	£212	6SL3210-1PE11-8AL1	£250
0.75 kW / 2.2 A	0.55 kW / 1.7 A	A	6SL3210-1PE12-3UL1	£229	6SL3210-1PE12-3AL1	£270
1.1 kW / 3.1 A	0.75 kW / 2.2 A	A	6SL3210-1PE13-2UL1	£246	6SL3210-1PE13-2AL1	£287
1.5 kW / 4.1 A	1.1 kW / 3.1 A	A	6SL3210-1PE14-3UL1	£283	6SL3210-1PE14-3AL1	£329
2.2 kW / 5.9 A	1.5 kW / 4.1 A	A	6SL3210-1PE16-1UL1	£329	6SL3210-1PE16-1AL1	£391
3.0 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3210-1PE18-0UL1	£414	6SL3210-1PE18-0AL1	£458
4.0 kW / 10.2 A	3.0 kW / 7.7 A	B	6SL3210-1PE21-1UL0	£470	6SL3210-1PE21-1AL0	£550
5.5 kW / 13.2 A	4.0 kW / 10.2 A	B	6SL3210-1PE21-4UL0	£550	6SL3210-1PE21-4AL0	£646
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3210-1PE21-8UL0	£717	6SL3210-1PE21-8AL0	£837
11 kW / 26 A	7.5 kW / 18 A	C	6SL3210-1PE22-7UL0	£956	6SL3210-1PE22-7AL0	£1116
15 kW / 32 A	11 kW / 26 A	C	6SL3210-1PE23-3UL0	£1275	6SL3210-1PE23-3AL0	£1435

PM240-2			Power Modules			
Supply Voltage - 380 V ... 480 V 3 AC Push Through						
Rating		Frame Size	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)					
3.0 kW / 7.7 A	2.2 kW / 5.9 A	A	6SL3211-1PE18-0UL1	£430	6SL3211-1PE18-0AL1	£504
7.5 kW / 18 A	5.5 kW / 13.2 A	B	6SL3211-1PE21-8UL0	£789	6SL3211-1PE21-8AL0	£921
15 kW / 32 A	11 kW / 26 A	C	6SL3211-1PE23-3UL0	£1403	6SL3211-1PE23-3AL0	£1578

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 13.
For Options i.e. BOP-2, IOP, Shield plates etc, please see Control Units and Options on page 6.

SINAMICS G120 PM240/PM250 Power Modules

PM240 Supply Voltage - 380 V... 480 V 3 AC		Power Modules						
Rating		Frame Size	Industrial	List Price	Filtered	List Price	Additional Filter to use with Industrial PM240	List Price
0.37 kW / 1.3 A		A	6SL3224-0BE13-7UA0	£200			6SE6400-2FA00-6AD0	£67
0.55 kW / 1.7 A		A	6SL3224-0BE15-5UA0	£215			6SE6400-2FA00-6AD0	£67
0.75 kW / 2.2 A		A	6SL3224-0BE17-5UA0	£227			6SE6400-2FA00-6AD0	£67
1.1 kW / 3.1 A		A	6SL3224-0BE21-1UA0	£264			6SE6400-2FA00-6AD0	£67
1.5 kW / 4.1 A		A	6SL3224-0BE21-5UA0	£311			6SE6400-2FA00-6AD0	£67
2.2 kW / 5.9 A		B	6SL3224-0BE22-2UA0	£388	6SL3224-0BE22-2AA0	£452	-	-
3 kW / 7.7 A		B	6SL3224-0BE23-0UA0	£460	6SL3224-0BE23-0AA0	£540	-	-
4 kW / 10.2 A		B	6SL3224-0BE24-0UA0	£541	6SL3224-0BE24-0AA0	£637	-	-
LO (VT)	HO (CT)							
7.5 kW / 18 A	5.5kW / 13.2A	C	6SL3224-0BE25-5UA0	£701	6SL3224-0BE25-5AA0	£815	-	-
11 kW / 25 A	7.5 kW / 19 A	C	6SL3224-0BE27-5UA0	£896	6SL3224-0BE27-5AA0	£1056	-	-
15 kW / 32 A	11 kW / 26 A	C	6SL3224-0BE31-1UA0	£1219	6SL3224-0BE31-1AA0	£1393	-	-
18.5 kW / 38 A	15 kW / 32 A	D	6SL3224-0BE31-5UA0	£1586	6SL3224-0BE31-5AA0	£1744	-	-
22 kW / 45 A	18.5 kW / 38 A	D	6SL3224-0BE31-8UA0	£1831	6SL3224-0BE31-8AA0	£2040	-	-
30 kW / 60 A	22 kW / 45 A	D	6SL3224-0BE32-2UA0	£2152	6SL3224-0BE32-2AA0	£2356	-	-
37 kW / 75 A	30 kW / 60 A	E	6SL3224-0BE33-0UA0	£2795	6SL3224-0BE33-0AA0	£3101	-	-
45 kW / 90 A	37 kW / 75 A	E	6SL3224-0BE33-7UA0	£3290	6SL3224-0BE33-7AA0	£3632	-	-
55 kW / 110A	45 kW / 90 A	F	6SL3224-0BE34-5UA0	£3836	6SL3224-0BE34-5AA0	£4244	-	-
75 kW / 145 A	55 kW / 110 A	F	6SL3224-0BE35-5UA0	£4381	6SL3224-0BE35-5AA0	£4810	-	-
90 kW / 178 A	75 kW / 145 A	F	6SL3224-0BE37-5UA0	£5407	6SL3224-0BE37-5AA0	£5993	-	-
110 kW / 205 A	90 kW / 178 A	F	6SL3224-0BE38-8UA0	£6136	-	-	6SL3203-0BE32-5AA0	£796
132 kW / 250 A	110 kW / 205 A	F	6SL3224-0BE41-1UA0	£7105	-	-	6SL3203-0BE32-5AA0	£796
160 kW / 302 A	132 kW / 250 A	GX	6SL3224-0XE41-3UA0	£8446	-	-	6SL3000-0BE34-4AA0	£1753
200 kW / 370 A	160 kW / 302 A	GX	6SL3224-0XE41-6UA0	£9502	-	-	6SL3000-0BE34-4AA0	£1753
250 kW / 477 A	200 kW / 370 A	GX	6SL3224-0XE42-0UA0	£10982	-	-	6SL3000-0BE36-0AA0	£2019

PM250 Supply Voltage - 500 V... 690 V 3 AC				Power Modules		
Rating		Frame Size	Industrial	List Price	Filtered	List Price
LO (VT)	HO (CT)					
7.5 kW / 18 A	5.5 kW / 13.2 A	C	-	-	6SL3225-0BE25-5AA1	£1097
11 kW / 25 A	7.5 kW / 19 A	C	-	-	6SL3225-0BE27-5AA1	£1393
15 kW / 32 A	11 kW / 26 A	C	-	-	6SL3225-0BE31-1AA1	£1749
18.5 kW / 38 A	15 kW / 32 A	D	6SL3225-0BE31-5UA0	£2086	6SL3225-0BE31-5AA0	£2158
22 kW / 45 A	18.5 kW / 38 A	D	6SL3225-0BE31-8UA0	£2443	6SL3225-0BE31-8AA0	£2520
30 kW / 60 A	22 kW / 45 A	D	6SL3225-0BE32-2UA0	£2856	6SL3225-0BE32-2AA0	£2928
37 kW / 75 A	30 kW / 60 A	E	6SL3225-0BE33-0UA0	£3708	6SL3225-0BE33-0AA0	£3820
45 kW / 90 A	37 kW / 75 A	E	6SL3225-0BE33-7UA0	£4315	6SL3225-0BE33-7AA0	£4437
55 kW / 110 A	45 kW / 90 A	F	6SL3225-0BE34-5UA0	£4963	6SL3225-0BE34-5AA0	£5085
75 kW / 145 A	55 kW / 110 A	F	6SL3225-0BE35-5UA0	£5636	6SL3225-0BE35-5AA0	£5779
90 kW / 178 A	75 kW / 145 A	F	6SL3225-0BE37-5UA0	£6926	6SL3225-0BE37-5AA0	£7120

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 14.
For Options i.e. BOP-2, IOP, Shield plates etc, please see Control Units and Options on page 6.

SINAMICS G120 Control Units and Options

Control Units	Description	List Price
6SL3243-0BB30-1HA3	CU230P-2 HVAC	£270
6SL3243-0BB30-1FA0	CU230P-2 PN	£328
6SL3243-0BB30-1PA3	CU230P-2 DP	£328
6SL3243-0BB30-1CA3	CU230P-2 CAN	£339
6SL3244-0BB00-1BA1	CU240B-2	£133
6SL3244-0BB00-1PA1	CU240B-2 DP	£174
6SL3244-0BB12-1BA1	CU240E-2	£194
6SL3244-0BB12-1FA0	CU240E-2 PN	£233
6SL3244-0BB12-1PA1	CU240E-2 DP	£233
6SL3244-0BB13-1BA1	CU240E-2 F	£281
6SL3244-0BB13-1FA0	CU240E-2 PN F	£324
6SL3244-0BB13-1PA1	CU240E-2 DP-F	£324
6SL3246-0BA22-1BA0	CU250S-2	£303
6SL3246-0BA22-1CA0	CU250S-2 CAN	£364
6SL3246-0BA22-1PA0	CU250S-2 DP	£347
6SL3246-0BA22-1FA0	CU250S-2 PN	£347
Options	Description	List Price
6SL3255-0AA00-4CA1	Basic Operator Panel 2 (BOP2)	£41
6SL3255-0AA00-4JA1	Intelligent Operator Panel (IOP)	£158
6SL3256-0AP00-0JA0	IOP / BOP2 Door Mounting Kit (for IP20 version mounted in a cabinet)	£33
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)	£284
6SL3256-1BA00-0AA0	Blanking cover for PM230 IP55	£15
6SL3255-0AA00-2CA0	PC Inverter connection kit 2 for G120C, G120P and G120 Control Units CU230P-2, CU230B-2, CU230E-2 & CU250S-2, G110M, G120D	£20
6SL3072-0AA00-0AG0	Starter Commissioning Tool	£28
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB	£55
6SL3054-4AG00-2AA0-Z F01	SD card + Extended Safety license (SLS, SSM, SDI) for CU250S-2	£216
6SL3054-4AG00-2AA0-Z E01	SD card + Extended Functions license (EPos) for CU250S-2	£157
6SL3054-4AG00-2AA0-Z F01 E01	SD card + Extended Safety + Extended Functions license (EPos) for CU250S-2	£320
6SL3074-0AA10-0AA0	Extended Safety license for CU250S-2	£164
6SL3074-7AA04-0AA0	Extended Functions license (Epos) for CU250S-2	£105
6SL3252-0BB00-0AA0	Brake relay (including cable harness for connection to the Power Module)	£54
6SL3252-0BB01-0AA0	Safe Brake Relay (including cable harness for connection to the Power Module)	£83
Control Unit Shield Connection Kits		List Price
6SL3264-1EA00-0FA0	Shield Connection Kit 1 for CU230P-2 Control Units	£12
6SL3264-1EA00-0HA0	Shield Connection Kit 2 for CU240B/E-2 Control Units	£11
6SL3264-1EA00-0HB0	Shield Connection Kit 3 for CU230P-2 PN and CU240B/E-2 PN Control Units	£16
6SL3264-1EA00-0LA0	Shield Connection Kit 4 for CU250S-2 Control Units (all variants)	£16
PM230 Power Module Shield connection kits. Note: Shielding kits for PM230 IP20 FSA to FSC are supplied with the Power Modules		List Price
6SL3262-1AD00-0DA0	PM230 IP20 - Frame size FSD and FSE	£71
6SL3262-1AF00-0DA0	PM230 IP20 - Frame size FSF	£93
6SL3266-1EA00-0DA0	PM230 IP20 Push Through - Frame size FSA	£47
6SL3266-1EB00-0DA0	PM230 IP20 Push Through - Frame size FSB	£53
6SL3266-1EC00-0DA0	PM230 IP20 Push Through - Frame size FSC	£59
PM240 & PM250 Power Module Shield connection kits		List Price
6SL3262-1AA00-0BA0	Frame size FSA	£34
6SL3262-1AB00-0DA0	Frame size FSB	£38
6SL3262-1AC00-0DA0	Frame size FSC	£41
6SL3262-1AD00-0DA0	Frame size FSD and FSE	£71
6SL3262-1AF00-0DA0	Frame size FSF	£93
Push Through Mounting Frames for PM230 IP20 & PM240-2		List Price
6SL3260-6AA00-0DA0	Push through mounting frame Frame size FSA	£42
6SL3260-6AB00-0DA0	Push through mounting frame Frame size FSB	£47
6SL3260-6AC00-0DA0	Push through mounting frame Frame size FSC	£53

SINAMICS G110M

Supply Voltage - 380 V... 500 V 3 AC			Power Modules
Rating HO (CT)	Frame Size	Filtered	List Price
0.37 kW / 1.3 A	A	6SL3517-1BE11-3AM0	£243
0.75 kW / 2.2 A	A	6SL3517-1BE12-3AM0	£271
1.1 kW / 3.1 A	A	6SL3517-1BE13-3AM0	£294
1.5 kW / 4.1 A	A	6SL3517-1BE14-3AM0	£338
2.2 kW / 5.6 A	B	6SL3517-1BE16-3AM0	£452
3.0 kW / 7.3 A	B	6SL3517-1BE17-7AM0	£612
4.0 kW / 8.8 A	B	6SL3517-1BE21-0AM0	£734

Supply Voltage - 380 V... 500 V 3 AC			Power Modules	
Control Units	Description	Interface	Connection	List Price
6SL3544-0LB02-1BA0	CU240M	RS485/USS/Modbus RTU	Gland	£182
6SL3544-0MB02-1BA0	CU240M	RS485/USS/Modbus RTU	Gland	£182
6SL3544-0NB02-1BA0	CU240M	RS485/USS/Modbus RTU	Gland	£182
6SL3544-0LB02-1PA0	CU240M DP	Profibus	Gland	£509
6SL3544-0MB02-1PA0	CU240M DP	Profibus	Gland	£509
6SL3544-0NB02-1PA0	CU240M DP	Profibus	Gland	£509
6SL3544-0LB02-1FA0	CU240M PN	Profinet	Gland	£509
6SL3544-0MB02-1FA0	CU240M PN	Profinet	Gland	£509
6SL3544-0NB02-1FA0	CU240M PN	Profinet	Gland	£509
6SL3544-0TB02-1PA0	CU240M DP	Profibus	HANQ	£591
6SL3544-0PB02-1PA0	CU240M DP	Profibus	HANQ	£591
6SL3544-0QB02-1PA0	CU240M DP	Profibus	HANQ	£591
6SL3544-0TB02-1FA0	CU240M PN	Profinet	HANQ	£591
6SL3544-0PB02-1FA0	CU240M PN	Profinet	HANQ	£591
6SL3544-0QB02-1FA0	CU240M PN	Profinet	HANQ	£591

Options	Description	List Price
6SL3555-0PV00-0AA0	G110M 24 VDC power supply	£134
6SL3501-0BE18-8AA0	G110M internal braking resistor for FSA	£36
6SL3501-0BE22-0AA0	G110M internal braking resistor for FSB	£46
6SL3054-4AG00-2AA0	SD card 512 MB	£55
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)	£284
6SL3255-0AA00-2CA0	PC Inverter Connection Kit 2	£20
6SL3566-2VA00-0GA0	SINAMICS G110M INST-KIT-GLANDS	£16
6SL3566-2LA00-0GA0	SINAMICS G110M INST-KIT-HANQ	£12
6SL3500-0TK02-0AA0	Spare Parts Kit	£62

SINAMICS G110D

Supply Voltage - 380 V... 500 V 3 AC			Power Modules		
Rating	Frame Size	Filtered without Maintenance Switch (isolator)	List Price	Filtered with Maintenance Switch (isolator)	List Price
0.75 kW / 2.3 A	A	6SL3511-OPE17-5AM0	£642	6SL3511-1PE17-5AM0	£699
1.5 kW / 4.3 A	A	6SL3511-OPE21-5AM0	£756	6SL3511-1PE21-5AM0	£812
3.0 kW / 7.7 A A	A	6SL3511-OPE23-0AM0	£970	6SL3511-1PE23-0AM0	£1025
4 kW / 10.2 A	B	6SL3511-OPE24-0AM0	£1137	6SL3511-1PE24-0AM0	£1194
5.5 kW / 13.2 A	C	6SL3511-OPE25-5AM0	£1383	6SL3511-1PE25-5AM0	£1443
7.5 kW / 19.0 A	C	6SL3511-OPE27-5AM0	£1704	6SL3511-1PE27-5AM0	£1759

Options	Description	List Price
6SL3255-0AA00-4HA0	IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)	£284
3RK1922-2BP00	RS232 Interface cable for communication with a PC or Handheld IOP - 2.5m	POA
6SL3555-0PA00-2AA0	USB Cable for communication with a PC - 2.5m	£124
6SL3054-4AG00-2AA0	SINAMICS SD card 512 MB (requires Memory Card Holder)	£55
6SL3555-0PM00-0AA0	SD Memory Card Holder	£32
6SL3555-0PL00-2AA0	Local / Auto Keyswitch	£96
Connectors/Cables		List Price
3RK1901-1NR21	AS Interface Cable M12 Branch 1m	POA
3RK1901-1NR22	AS Interface Cable M12 Branch 2m	POA
3RK1902-4CA00-4AA0	M12 Socket (Angled)	POA
3RK1902-4BH15-5AA0	M12 Plug-in cable for Inputs/Outputs 1.5m	POA
3RK1902-4BH50-5AA0	M12 Plug-in cable for Inputs/Outputs 5m	POA
3RK1902-4HC01-5AA0	M12 Plug-in cable for Inputs/Outputs 10m	POA
3RK1902-4BA00-5AA0	M12 Connector (Straight)	POA
3RK1902-4DA00-5AA0	M12 Connector (Angled)	POA
3RK1911-0DB13	Connecting cable prefabricated at one end for Power Supply 1.5m	POA
3RK1911-0DB33	Connecting cable prefabricated at one end for Power Supply 5m	POA
3RK1911-2BE50	Connector Set for Power Supply 2.5 mm²	POA
3RK1911-2BE10	Connector Set for Power Supply 4 mm²	POA
3RK1911-2BE30	Connector Set for Power Supply 6 mm²	POA

SINAMICS G120D

PM250D Supply Voltage - 380 V ... 500 V 3 AC		Power Modules	
Rating	Frame Size	Filtered	List Price
0.75 kW / 2.2 A	A	6SL3525-0PE17-5AA1	£465
1.5 kW / 4.1 A	A	6SL3525-0PE21-5AA1	£629
3 kW / 7.7 A	B	6SL3525-0PE23-0AA1	£934
4 kW / 10.2 A	C	6SL3525-0PE24-0AA1	£1137
5.5 kW / 13.2 A	C	6SL3525-0PE25-5AA1	£1423
7.5 kW / 19.0 A	C	6SL3525-0PE27-5AA1	£1754
Control Units		Description	List Price
6SL3544-0FB20-1PA0		CU240D-2 DP	£477
6SL3544-0FB20-1FA0		CU240D-2 PN	£477
6SL3544-0FB21-1PA0		CU240D-2 DP-F	£600
6SL3544-0FB21-1FA0		CU240D-2 PN-F	£600
6SL3544-0FB21-1FB0		CU240D-2 PN-F PP	£749
6SL3546-0FB21-1PA0		CU250D-2 DP-F	£773
6SL3546-0FB21-1FA0		CU250D-2 PN-F	£773
6SL3546-0FB21-1FB0		CU250D-2 PN-F PP	£904
Options			List Price
6SL3255-0AA00-4HA0		IOP Handheld (inc. Holder, IOP, cable, charging unit and rechargeable batteries)	£284
6SL3255-0AA00-2CA0		PC Inverter Connection Kit 2	£20
6SL3054-4AG00-2AA0		SINAMICS SD card 512 MB	£55

Supplementary Components				List Price	List Price
Profinet Connection Cables and Connectors M12			7/8" Control Unit Power Cables		
6XV1870-8AE30	Preassembled Profinet Cable 0.3m	POA	6XV1822-5BE30	Preassembled Cable 0.3m	POA
6XV1870-8AE50	Preassembled Profinet Cable 0.5m	POA	6XV1822-5BE50	Preassembled Cable 0.5m	POA
6XV1870-8AH10	Preassembled Profinet Cable 1.0m	POA	6XV1822-5BH10	Preassembled Cable 1.0m	POA
6XV1870-8AH15	Preassembled Profinet Cable 1.5m	POA	6XV1822-5BH15	Preassembled Cable 1.5m	POA
6XV1870-8AH20	Preassembled Profinet Cable 2m	POA	6XV1822-5BH20	Preassembled Cable 2m	POA
6XV1870-8AH30	Preassembled Profinet Cable 3m	POA	6XV1822-5BH30	Preassembled Cable 3m	POA
6XV1870-8AH50	Preassembled Profinet Cable 5m	POA	6XV1822-5BH50	Preassembled Cable 5m	POA
6XV1870-8AN10	Preassembled Profinet Cable 10m	POA	6XV1822-5BN10	Preassembled Cable 10m	POA
6XV1870-8AN15	Preassembled Profinet Cable 15m	POA	6XV1822-5BN15	Preassembled Cable 15m	POA
6GK1901-0DB20-6AA0	M12 Plug PRO Metal Enclosure - 1 unit	POA	6GK1905-0FA00	7/8" Plastic Enclosure with Pin insert (5 uniuts)	POA
6GK1901-0DB20-6AA8	M12 Plug PRO Metal Enclosure - 8 units	POA	6GK1905-0FB00	7/8" Plastic Enclosure with Socket insert (5 uniuts)	POA
3RK1902-2DA00	M12 Plug PRO Metal Enclosure -1 unit (angled)	POA	6GK1907-0AB10-6AA0	Power Plug PRO for PP units	POA
6GK1901-1BB10-6AA0	RJ45 PLUG PRO connector	POA			
Profibus Connecting Cables and connectors M12			Conection cable for Digital Inputs and Outputs		
6XV1830-3DE30	Preassembled Profibus Cable 0.3m	POA	3RK1902-4HB15-5AA0	Preassembled Cable 1.5m	POA
6XV1830-3DE50	Preassembled Profibus Cable 0.5m	POA	3RK1902-4HB50-5AA0	Preassembled Cable 5m	POA
6XV1830-3DH10	Preassembled Profibus Cable 1.0m	POA	3RK1902-4HC01-5AA0	Preassembled Cable 10m	POA
6XV1830-3DH15	Preassembled Profibus Cable 1.5m	POA	3RK1902-4BA00-5AA0	M12 Connector Straight	POA
6XV1830-3DH20	Preassembled Profibus Cable 2m	POA	3RK1902-4DA00-5AA0	M12 Connector Angled	POA
6XV1830-3DH30	Preassembled Profibus Cable 3m	POA	Power Connecting Cable for Power Modules		
6XV1830-3DH50	Preassembled Profibus Cable 5m	POA	3RK1911-0DB13	Preassembled Cable 1.5m	POA
6XV1830-3DN10	Preassembled Profibus Cable 10m	POA	3RK1911-0DB33	Preassembled Cable 5m	POA
6XV1830-3DN15	Preassembled Profibus Cable 15m	POA	3RK1911-2BE50	Connector set 2.5mm2	POA
6GK1905-0EA00	Profibus M12 Metal Enclosure with Pin insert (5 uniuts)	POA	3RK1911-2BE10	Connector set 4mm2	POA
6GK1905-0EA00	Profibus M12 Metal Enclosure with socket insert (5 units)	POA	3RK1911-2BE30	Connector set 6mm2	POA

SINAMICS S110

Supply Voltage - 200 V ... 240 V 1 AC		PM340		Power Modules	PM340		Additional Filter to use with Industrial PM340*	
Rating	Frame Size	Industrial	List Price		Filtered	List Price	Additional Filter	List Price
0.12 kW / 0.9 A	A	6SL3210-1SB11-0UA0	£245		6SL3210-1SB11-0AA0	£283	-	-
0.37 kW / 2.3 A	A	6SL3210-1SB12-3UA0	£283		6SL3210-1SB12-3AA0	£325	-	-
0.75 kW / 3.9 A	A	6SL3210-1SB14-0UA0	£325		6SL3210-1SB14-0AA0	£379	-	-
Supply Voltage - 380 V ... 480 V 3 AC		PM340		Power Modules	PM340		Additional Filter to use with Industrial PM340*	
Rating	Frame Size	Industrial	List Price		Filtered	List Price	Additional Filter	List Price
0.37 kW / 1.3 A	A	6SL3210-1SE11-3UA0	£267		-	-	6SE6400-2FA00-6AD0	£67
0.55 kW / 1.7 A	A	6SL3210-1SE11-7UA0	£288		-	-	6SE6400-2FA00-6AD0	£67
0.75 Kw / 2.2 A	A	6SL3210-1SE12-2UA0	£309		-	-	6SE6400-2FA00-6AD0	£67
1.1 kW / 3.1 A	A	6SL3210-1SE13-1UA0	£352		-	-	6SE6400-2FA00-6AD0	£67
1.5 kW / 4.1 A	A	6SL3210-1SE14-1UA0	£416		-	-	6SE6400-2FA00-6AD0	£67
2.2 kW / 5.9 A	B	6SL3210-1SE16-0UA0	£523		6SL3210-1SE16-0AA0	£613	-	-
3 kW / 7.7 A	B	6SL3210-1SE17-7UA0	£629		6SL3210-1SE17-7AA0	£736	-	-
4 kW / 10.2 A	B	6SL3210-1SE21-0UA0	£736		6SL3210-1SE21-0AA0	£864	-	-
7.5 kW / 18 A	C	6SL3210-1SE21-8UA0	£960		6SL3210-1SE21-8AA0	£1120	-	-
11 kW / 25 A	C	6SL3210-1SE22-5UA0	£1280		6SL3210-1SE22-5AA0	£1493	-	-
15 kW / 32 A	C	6SL3210-1SE23-2UA0	£1706		6SL3210-1SE23-2AA0	£1920	-	-
18.5 kW 38 A	D	6SL3210-1SE23-8UA0	£2133		6SL3210-1SE23-8AA0	£2346	-	-
22 kW / 45 A	D	6SL3210-1SE24-5UA0	£2453		6SL3210-1SE24-5AA0	£2719	-	-
30 kW / 60 A	D	6SL3210-1SE26-0UA0	£3093		6SL3210-1SE26-0AA0	£3413	-	-
37 kW / 75 A	E	6SL3210-1SE27-5UA0	£3786		6SL3210-1SE27-5AA0	£4186	-	-
45 kW / 90 A	E	6SL3210-1SE31-0UA0	£4586		6SL3210-1SE31-0AA0	£5066	-	-
55 kW / 100 A	F	6SL3210-1SE31-1UA0	£5279		6SL3210-1SE31-1AA0	£5812	-	-
75 kW / 145 A	F	6SL3210-1SE31-5UA0	£6345		6SL3210-1SE31-5AA0	£6985	-	-
90 kW / 178 A	F	6SL3210-1SE31-8UA0	£7412		6SL3210-1SE31-8AA0	£8158	-	-

Control Units	Designation	List Price
6SL3040-0JA01-0AA0	CU305 PN	£543
6SL3040-0JA00-0AA0	CU305 DP	£543
6SL3040-0JA02-0AA0	CU305 CAN	£543

Options		List Price
6SL3054-4AG00-0AA0	MMC Memory Card - Empty	£54
6SL3054-4EE00-0AA0	MMC Memory Card with Firmware V 4.4	£65
6SL3054-4EE00-0AA0-Z Z=F01	MMC Memory Card with Firmware V 4.4 with extended functions and License	£227
6SL3074-0AA10-0AA0	Safety License (for separate order)	£162
6SL3055-0AA00-4BA0	Basic Operator Panel 20	£35
6SL3252-0BB01-0AA0	Safe Brake Relay (including cable harness for connection to the Power Module)	£83

Shield Connection Kits		List Price
6SL3262-1AA00-0BA0	Frame size FSA	£34
6SL3262-1AB00-0DA0	Frame size FSB	£38
6SL3262-1AC00-0DA0	Frame size FSC	£41
6SL3262-1AD00-0DA0	Frame size FSD and FSE	£71
6SL3262-1AF00-0DA0	Frame size FSF	£93

For Input / Output Reactors and Braking Resistors please see SINAMICS Accessories on page 14.

SINAMICS V20 Accessories

Input Reactors / Output Reactors / Braking Resistors

V20 - Supply Voltage - 200 ...240V 1Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.12 kW	A	6SE6400-3CC00-4AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.25 kW	A	6SE6400-3CC00-4AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.37 kW	A	6SE6400-3CC01-0AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.55 kW	A	6SE6400-3CC01-0AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.75 kW	A	6SE6400-3CC01-0AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
1.1 kW	B	6SE6400-3CC02-6BB3	£86	6SE6400-3TC01-0BD3	£130	6SE6400-4BC11-2BA0	£158
1.5 kW	B	6SE6400-3CC02-6BB3	£86	6SE6400-3TC01-0BD3	£130	6SE6400-4BC11-2BA0	£158
2.2 kW	C	6SE6400-3CC02-6BB3	£86	6SE6400-3TC01-0BD3	£130	6SE6400-4BC11-2BA0	£158
3 kW	C	6SE6400-3CC03-5CB3	£87	6SE6400-3TC03-2CD3	£131	6SE6400-4BC12-5CA0	£179

V20 - Supply Voltage - 380 ...480V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.37 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
0.55 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
0.75 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
1.1 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
1.5 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
2.2 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-8CA0	£111	6SL3201-OBE21-0AA0	£111
3 kW	B	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-8CA0	£111	6SL3201-OBE21-0AA0	£111
4 kW	B	6SL3203-OCE21-0AA0	£77	6SL3202-OAE21-8CA0	£152	6SL3201-OBE21-0AA0	£111
5.5 kW	C	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-OBE21-8AA0	£157
7.5 kW	D	6SL3203-OCE21-8AA0	£106	6SL3202-OAE23-8CA0	£207	6SL3201-OBE21-8AA0	£157
11 kW	D	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-OBE23-8AA0	£212
15 kW	D	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-OBE23-8AA0	£212

SINAMICS G120C Accessories

Input Reactors / Output Reactors / Braking Resistors

V20 - Supply Voltage - 380 ...480V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.55 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
0.75 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
1.1 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
1.5 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE16-1CA0	£95	6SL3201-OBE14-3AA0	£79
2.2 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE16-1CA0	£95	6SL3201-OBE21-0AA0	£111
3.0 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-8CA0	£111	6SL3201-OBE21-0AA0	£111
4.0 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-8CA0	£111	6SL3201-OBE21-0AA0	£111
5.5 kW	B	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-OBE21-8AA0	£157
7.5 kW	B	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-OBE21-8AA0	£157
11 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-OBE23-8AA0	£212
15 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-OBE23-8AA0	£212
18.5 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-OBE23-8AA0	£212

SINAMICS Accessories for G120P/PM230

Input Reactors / Output Reactors / Braking Resistors

PM230 - Supply Voltage - 380 ...480V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.37 kW	A	-	-	6SL3202-0AE16-1CA0	£95	-	-
0.55 kW	A	-	-	6SL3202-0AE16-1CA0	£95	-	-
0.75 kW	A	-	-	6SL3202-0AE16-1CA0	£95	-	-
1.1 kW	A	-	-	6SL3202-0AE16-1CA0	£95	-	-
1.5 kW	A	-	-	6SL3202-0AE16-1CA0	£95	-	-
2.2 kW	A	-	-	6SL3202-0AE16-1CA0	£95	-	-
3 kW	A	-	-	6SL3202-0AE18-8CA0	£111	-	-
4 kW	B	-	-	6SL3202-0AE21-8CA0	£152	-	-
5.5 kW	B	-	-	6SL3202-0AE21-8CA0	£152	-	-
7.5 kW	B	-	-	6SL3202-0AE21-8CA0	£152	-	-
11 kW	C	-	-	6SL3202-0AE23-8CA0	£207	-	-
15 kW	C	-	-	6SL3202-0AE23-8CA0	£207	-	-
18.5 kW	C/D	-	-	6SL3202-0AE23-8CA0	£207	-	-
22 kW	D	-	-	6SE6400-3TC03-8DD0	£305	-	-
30 kW	D	-	-	6SE6400-3TC05-4DD0	£305	-	-
37 kW	E	-	-	6SE6400-3TC08-0ED0	£442	-	-
45 kW	E	-	-	6SE6400-3TC07-5ED0	£452	-	-
55 kW	F	-	-	6SE6400-3TC14-5FD0	£478	-	-
75 kW	F	-	-	6SE6400-3TC15-4FD0	£478	-	-
90 kW	F	-	-	6SE6400-3TC14-5FD0	£478	-	-

PM230 - Supply Voltage - 380 ...480V 3Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
3 kW	A	-	-	6SL3202-0AE18-8CA0	£111	-	-
7.5 kW	B	-	-	6SL3202-0AE21-8CA0	£152	-	-
18.5 kW	C/D	-	-	6SL3202-0AE23-8CA0	£207	-	-

SINAMICS Accessories for G120 PM240-2

Input Reactors / Output Reactors / Braking Resistors

PM240-2 - Supply Voltage - 200 ...240V 1Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.55 kW	A	In preparation	-	6SL3202-OAE16-1CA0	£95	In preparation	-
0.75 kW	A	In preparation	-	6SL3202-OAE16-1CA0	£95	In preparation	-
1.1 kW	B	In preparation	-	6SL3202-OAE16-1CA0	£95	In preparation	-
1.5 kW	B	In preparation	-	6SL3202-OAE18-8CA0	£111	In preparation	-
2.2 kW	B	In preparation	-	6SL3202-OAE21-8CA0	£152	In preparation	-
3 kW	C	In preparation	-	6SL3202-OAE21-8CA0	£152	In preparation	-
4 kW	C	In preparation	-	6SL3202-OAE21-8CA0	£152	In preparation	-

PM240-2 - Supply Voltage - 200 ...240V 1Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.75 kW	A	In preparation	-	6SL3202-OAE16-1CA0	£95	In preparation	-
2.2 kW	B	In preparation	-	6SL3202-OAE21-8CA0	£152	In preparation	-
4 kW	C	In preparation	-	6SL3202-OAE21-8CA0	£152	In preparation	-

PM240-2 - Supply Voltage - 200 ...240V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.55 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	In preparation	-
0.75 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	In preparation	-
1.1 kW	B	6SL3203-OCE21-0AA0	£77	6SL3202-OAE16-1CA0	£95	In preparation	-
1.5 kW	B	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-8CA0	£111	In preparation	-
2.2 kW	B	6SL3203-OCE21-0AA0	£77	6SL3202-OAE21-8CA0	£152	In preparation	-
3 kW	C	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	In preparation	-
4 kW	C	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	In preparation	-
5.5 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	In preparation	-
7.5 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	In preparation	-

PM240-2 - Supply Voltage - 200 ...240V 3Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.75 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	In preparation	-
2.2 kW	B	6SL3203-OCE21-0AA0	£77	6SL3202-OAE21-8CA0	£152	In preparation	-
4 kW	C	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	In preparation	-

PM240-2 - Supply Voltage - 380 ...480V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.55 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-0BE14-3AA0	£79
0.75 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-0BE14-3AA0	£79
1.1 kW	A	6SL3203-OCE13-2AA0	£57	6SL3202-OAE16-1CA0	£95	6SL3201-0BE14-3AA0	£79
1.5 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE16-1CA0	£95	6SL3201-0BE14-3AA0	£79
2.2 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE16-1CA0	£95	6SL3201-0BE21-0AA0	£111
3 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-8CA0	£111	6SL3201-0BE21-0AA0	£111
4 kW	B	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-0BE21-8AA0	£157
5.5 kW	B	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-0BE21-8AA0	£157
7.5 kW	B	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-0BE21-8AA0	£157
11 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-0BE23-8AA0	£212
15 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-0BE23-8AA0	£212

PM240-2 - Supply Voltage - 380 ...480V 3Ø AC Push Through

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
3.0 kW	A	6SL3203-OCE21-0AA0	£77	6SL3202-OAE18-1CA0	£111	6SL3201-0BE21-0AA0	£111
7.5 kW	B	6SL3203-OCE21-8AA0	£106	6SL3202-OAE21-8CA0	£152	6SL3201-0BE21-8AA0	£157
15 kW	C	6SL3203-OCE23-8AA0	£140	6SL3202-OAE23-8CA0	£207	6SL3201-0BE23-8AA0	£212

SINAMICS Accessories for PM240/250 & PM340

Input Reactors / Output Reactors / Braking Resistors

S110 PM340 - Supply Voltage - 200 ...240V 3Ø AC

Rating LO (VT)	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor	List Price
0.12 ...0.37kW	A	6SE6400-3CC00-4AB3	£61	-	-	6SE6400-4BC05-0AA0	£105
0.75 kW	A	6SE6400-3CC01-0AB3	£61	-	-	6SE6400-4BC05-0AA0	£105

G120 PM240 / PM250 & S110 PM340 - Supply Voltage - 380 ...480V 3Ø AC

Rating - LO (VT)	Frame Size	Line Reactor PM240 & PM340	List Price	Output Reactor PM240, PM250, PM340	List Price	Brake Resistor PM240 & PM340	List Price
0.37 kW	A	6SE6400-3CC00-2AD3	£74	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
0.55 kW	A	6SE6400-3CC00-2AD3	£74	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
0.75 kW	A	6SE6400-3CC00-4AD3	£92	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
1.1 kW	A	6SE6400-3CC00-4AD3	£92	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
1.5 kW	A	6SE6400-3CC00-6AD3	£94	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
2.2 kW	B	6SL3203-0CD21-0AA0	£112	6SL3202-0AE21-0CA0	£135	6SL3201-0BE12-0AA0	£193
3 kW	B	6SL3203-0CD21-0AA0	£112	6SL3202-0AE21-0CA0	£135	6SL3201-0BE12-0AA0	£193
4 kW	B	6SL3203-0CD21-4AA0	£112	6SL3202-0AE21-0CA0	£135	6SL3201-0BE12-0AA0	£193
7.5 kW	C	6SL3203-0CD22-2AA0	£131	6SL3202-0AJ23-2CA0	£155	6SE6400-4BD16-5CA0	£263
11 kW	C	6SL3203-0CD22-2AA0	£131	6SL3202-0AJ23-2CA0	£155	6SE6400-4BD16-5CA0	£263
15 kW	C	6SL3203-0CD23-5AA0	£132	6SL3202-0AJ23-2CA0	£155	6SE6400-4BD16-5CA0	£263
18.5 kW	D	6SL3203-0CJ24-5AA0	£208	6SE6400-3TC05-4DD0	£305	6SE6400-4BD21-2DA0	£329
22 kW	D	6SL3203-0CJ24-5AA0	£208	6SE6400-3TC03-8DD0	£305	6SE6400-4BD21-2DA0	£329
30 kW	D	6SL3203-0CD25-3AA0	£208	6SE6400-3TC05-4DD0	£305	6SE6400-4BD21-2DA0	£329
37 kW	E	6SL3203-0CJ28-6AA0	£294	6SE6400-3TC08-0ED0	£442	6SE6400-4BD22-2EA1	£437
45 kW	E	6SL3203-0CJ28-6AA0	£294	6SE6400-3TC07-5ED0	£452	6SE6400-4BD22-2EA1	£437
55 kW	F	6SE6400-3CC11-2FDO	£324	6SE6400-3TC14-5FDO	£478	6SE6400-4BD24-0FA0	£704
75 kW	F	6SE6400-3CC11-2FDO	£324	6SE6400-3TC15-4FDO	£478	6SE6400-4BD24-0FA0	£704
90 kW	F	6SE6400-3CC11-7FDO	£316	6SE6400-3TC14-5FDO	£478	6SE6400-4BD24-0FA0	£704
110kW	F	6SL3000-0CE32-3AA0	£613	6SL3000-2BE32-1AA0	£1316	6SE6400-4BD26-0FA0	£883
132kW	F	6SL3000-0CE32-8AA0	£628	6SL3000-2BE32-6AA0	£1566	6SE6400-4BD26-0FA0	£883
160 kW	GX	6SL3000-0CE33-3AA0	£697	6SL3000-2BE33-2AA0	£1754	6SL3000-1BE31-3AA0	£1241
200 kW	GX	6SL3000-0CE35-1AA0	£1107	6SL3000-2BE33-8AA0	£2067	6SL3000-1BE32-5AA0	£2483
250 kW	GX	6SL3000-0CE35-1AA0	£1107	6SL3000-2BE35-0AA0	£2694	6SL3000-1BE32-5AA0	£2483

MICROMASTER 420

Supply Voltage - 200 V ... 240 V 1 AC			Power Modules		
Rating	Frame Size	Industrial	List Price	Filtered	List Price
0.12 kW / 0.9 A	A	6SE6420-2UC11-2AA1	£144	6SE6420-2AB11-2AA1	£164
0.25 kW / 1.7 A	A	6SE6420-2UC12-5AA1	£158	6SE6420-2AB12-5AA1	£174
0.37 kW / 2.3 A	A	6SE6420-2UC13-7AA1	£167	6SE6420-2AB13-7AA1	£190
0.55 kW / 3.0 A	A	6SE6420-2UC15-5AA1	£182	6SE6420-2AB15-5AA1	£205
0.75 kW / 3.9 A	A	6SE6420-2UC17-5AA1	£201	6SE6420-2AB17-5AA1	£225
1.1 kW / 5.5 A	B	6SE6420-2UC21-1BA1	£228	6SE6420-2AB21-1BA1	£259
1.5 kW / 7.4 A	B	6SE6420-2UC21-5BA1	£261	6SE6420-2AB21-5BA1	£299
2.2 kW / 10.4 A	B	6SE6420-2UC22-2BA1	£310	6SE6420-2AB22-2BA1	£353
3 kW / 13.6 A	C	6SE6420-2UC23-0CA1	£356	6SE6420-2AB23-0CA1	£412

200 V ... 240 V 3 AC units available on request.

Supply Voltage - 380 V... 480 V 3 AC			Power Modules		
Rating	Frame Size	Industrial	List Price	Filtered	List Price
0.37 kW / 1.2 A	A	6SE6420-2UD13-7AA1	£358	6SE6400-2FA00-6AD0 ¹⁾	£67
0.55 kW / 1.6 A	A	6SE6420-2UD15-5AA1	£371	6SE6400-2FA00-6AD0 ¹⁾	£67
0.75 kW / 2.1 A	A	6SE6420-2UD17-5AA1	£388	6SE6400-2FA00-6AD0 ¹⁾	£67
1.1 kW / 4.0 A	A	6SE6420-2UD21-1AA1	£410	6SE6400-2FA00-6AD0 ¹⁾	£67
1.5 kW / 4.0 A	A	6SE6420-2UD21-5AA1	£434	6SE6400-2FA00-6AD0 ¹⁾	£67
2.2 kW / 5.9 A	B	6SE6420-2UD22-2BA1	£488	6SE6420-2AD22-2BA1	£546
3 kW / 7.7 A	B	6SE6420-2UD23-0BA1	£553	6SE6420-2AD23-0BA1	£620
4 kW / 10.2 A	B	6SE6420-2UD24-0BA1	£608	6SE6420-2AD24-0BA1	£682
5.5 kW / 13.2 A	C	6SE6420-2UD25-5CA1	£774	6SE6420-2AD25-5CA1	£868
7.5 kW / 19.0 A	C	6SE6420-2UD27-5CA1	£932	6SE6420-2AD27-5CA1	£1044
11 kW / 26.0 A	C	6SE6420-2UD31-1CA1	£1199	6SE6420-2AD31-1CA1	£1347

¹⁾ Additional footprint module to be used with the industrial drive.

Options		List Price
6SE6400-OBP00-0AA1	Basic Operator Panel (BOP)	£34
6SE6400-OAP00-0AA1	Advanced Operator Panel (AOP)	£130
6SE6400-1PC00-0AA0	PC-MICROMASTER Connection Kit	£30
6SE6400-OMD00-0AA0	Multidrop Panel Mounting Kit (for AOP)	£95
6SE6400-OPM00-0AA0	Standard Panel Mounting Kit (for BOP or AOP)	£87
6SE6400-1PB00-0AA0	PROFIBUS Module	£117
6SE6400-1DN00-0AA0	Device Net Module	£117
6SE6400-1CB00-0AA0	Can Bus Module	£117
6SE6400-0GP00-0AA0	Frame Size A Gland Plate	£11
6SE6400-0GP00-0BA0	Frame Size B Gland Plate	£20
6SE6400-0GP00-0CA0	Frame Size C Gland Plate	£29
6SL3072-0AA00-0AG0	Starter Commissioning Tool on DVD	£28

MICROMASTER 430

Supply Voltage - 380 V... 480 V 3 AC			Power Modules		
Rating	Frame Size	Industrial	List Price	Filtered	List Price
7.5 kW / 19 A	C	6SE6430-2UD27-5CA0	£1013	6SE6430-2AD27-5CA0	£1247
11 kW / 26 A	C	6SE6430-2UD31-1CA0	£1209	6SE6430-2AD31-1CA0	£1369
15 kW / 32 A	C	6SE6430-2UD31-5CA0	£1517	6SE6430-2AD31-5CA0	£1708
18.5 kW / 38 A	D	6SE6430-2UD31-8DA0	£1920	6SE6430-2AD31-8DA0	£2085
22 kW / 45 A	D	6SE6430-2UD32-2DA0	£2180	6SE6430-2AD32-2DA0	£2366
30 kW / 62 A	D	6SE6430-2UD33-0DA0	£2530	6SE6430-2AD33-0DA0	£2748
37 kW / 75 A	E	6SE6430-2UD33-7EA0	£3236	6SE6430-2AD33-7EA0	£3501
45 kW / 90 A	E	6SE6430-2UD34-5EA0	£3740	6SE6430-2AD34-5EA0	£4053
55 kW / 110 A	F	6SE6430-2UD35-5FA0	£4302	6SE6430-2AD35-5FA0	£4658
75 kW / 145 A	F	6SE6430-2UD37-5FA0	£4859	6SE6430-2AD37-5FA0	£5257
90 kW / 178 A	F	6SE6430-2UD38-8FA0	£5718	6SE6430-2AD38-8FA0	£6180
110 kW / 205 A	FX	6SE6430-2UD41-1FA0	£7362	6SL3000-0BE32-5AA0 ²	£1066
132 kW / 250 A	FX	6SE6430-2UD41-3FA0	£8514	6SL3000-0BE34-4AA0 ²	£1753
160 kW / 302 A	GX	6SE6430-2UD41-6GA0	£9569	6SL3000-0BE34-4AA0 ²	£1753
200 kW / 370 A	GX	6SE6430-2UD42-0GA0	£10811	6SL3000-0BE34-4AA0 ²	£1753
250 kW / 477 A	GX	6SE6430-2UD42-5GA0	£12683	6SL3000-0BE36-0AA0 ²	£2019

² Block mounted module to be used in conjunction with the standard industrial drive.

Options		List Price
6SE6400-0BE00-0AA1	Basic Operator Panel (BOP)	£34
6SE6400-1PC00-0AA0	PC-MICROMASTER Connection Kit	£30
6SE6400-0PM00-0AA0	Standard Panel Mounting Kit (for BOP or AOP)	£87
6SE6400-1PB00-0AA0	PROFIBUS Module	£117
6SE6400-1DN00-0AA0	Device Net Module	£117
6SE6400-1CB00-0AA0	Can Bus Module	£117
6SL3072-0AA00-0AGO	Starter Commissioning Tool on DVD	£28

MICROMASTER 440

Supply Voltage - 200 V... 240 V 1 AC				Power Modules		
Rating		Frame Size	Industrial	List Price	Filtered	List Price
0.12 kW / 0.9 A		A	6SE6440-2UC11-2AA1	£206	6SE6440-2AB11-2AA1	£230
0.25 kW / 1.7 A		A	6SE6440-2UC12-5AA1	£215	6SE6440-2AB12-5AA1	£245
0.37 kW / 2.3 A		A	6SE6440-2UC13-7AA1	£235	6SE6440-2AB13-7AA1	£267
0.55 kW / 3.0 A		A	6SE6440-2UC15-5AA1	£255	6SE6440-2AB15-5AA1	£290
0.75 kW / 3.9 A		A	6SE6440-2UC17-5AA1	£268	6SE6440-2AB17-5AA1	£305
1.1 kW / 5.5 A		B	6SE6440-2UC21-1BA1	£309	6SE6440-2AB21-1BA1	£349
1.5 kW / 7.4 A		B	6SE6440-2UC21-5BA1	£352	6SE6440-2AB21-5BA1	£397
2.2 kW / 10.4 A		B	6SE6440-2UC22-2BA1	£416	6SE6440-2AB22-2BA1	£467
3 kW / 13.6 A		C	6SE6440-2UC23-0CA1	£484	6SE6440-2AB23-0CA1	£545
Supply Voltage - 380 V... 480 V 3 AC				Power Modules		
Rating		Frame Size	Industrial	List Price	Filtered	List Price
0.37 kW / 1.2 A		A	6SE6440-2UD13-7AA1	£440	6SE6400-2FA00-6AD0 ¹	£67
0.55 kW / 1.7 A		A	6SE6440-2UD15-5AA1	£461	6SE6400-2FA00-6AD0 ¹	£67
0.75 kW / 2.2 A		A	6SE6440-2UD17-5AA1	£477	6SE6400-2FA00-6AD0 ¹	£67
1.1 kW / 3.1 A		A	6SE6440-2UD21-1AA1	£509	6SE6400-2FA00-6AD0 ¹	£67
1.5 kW / 4.1 A		A	6SE6440-2UD21-5AA1	£571	6SE6400-2FA00-6AD0 ¹	£67
2.2 kW / 5.9 A		B	6SE6440-2UD22-2BA1	£662	6SE6440-2AD22-2BA1	£744
3 kW / 7.7 A		B	6SE6440-2UD23-0BA1	£744	6SE6440-2AD23-0BA1	£835
4 kW / 10.2 A		B	6SE6440-2UD24-0BA1	£836	6SE6440-2AD24-0BA1	£940
LO (VT)	HO (CT)					
7.5 kW / 19 A	5.5 kW / 13.2 A	C	6SE6440-2UD25-5CA1	£1026	6SE6440-2AD25-5CA1	£1151
11 kW / 26 A	7.5 kW / 19.0 A	C	6SE6440-2UD27-5CA1	£1252	6SE6440-2AD27-5CA1	£1411
15 kW / 32 A	11 kW / 26.0 A	C	6SE6440-2UD31-1CA1	£1618	6SE6440-2AD31-1CA1	£1814
18.5 kW / 38 A	15 kW / 32 A	D	6SE6440-2UD31-5DA1	£2048	6SE6440-2AD31-5DA1	£2212
22 kW / 45 A	18.5 kW / 38 A	D	6SE6440-2UD31-8DA1	£2345	6SE6440-2AD31-8DA1	£2541
30 kW / 62 A	22 kW / 45 A	D	6SE6440-2UD32-2DA1	£2732	6SE6440-2AD32-2DA1	£2949
37 kW / 75 A	30 kW / 62 A	E	6SE6440-2UD33-0EA1	£3512	6SE6440-2AD33-0EA1	£3793
45 kW / 90 A	37 kW / 75 A	E	6SE6440-2UD33-7EA1	£4058	6SE6440-2AD33-7EA1	£4376
55 kW / 110 A	45 kW / 90 A	F	6SE6440-2UD34-5FA1	£4689	6SE6440-2AD34-5FA1	£5066
75 kW / 145 A	55 kW / 110 A	F	6SE6440-2UD35-5FA1	£5320	6SE6440-2AD35-5FA1	£5745
90 kW / 178 A	75 kW / 145 A	F	6SE6440-2UD37-5FA1	£6265	6SE6440-2AD37-5FA1	£6763
110 kW / 205 A	90 kW / 178 A	FX	6SE6440-2UD38-8FA1	£7798	6SL3000-0BE32-5AA0 ²	£1066
132 kW / 250 A	110 kW / 205 A	FX	6SE6440-2UD41-1FA1	£9007	6SL3000-0BE34-4AA0 ²	£1753
160 kW / 302 A	132 kW / 250 A	GX	6SE6440-2UD41-3GA1	£10121	6SL3000-0BE34-4AA0 ²	£1753
200 kW / 370 A	160 kW / 302 A	GX	6SE6440-2UD41-6GA1	£11431	6SL3000-0BE34-4AA0 ²	£1753
250 kW / 477 A	200 kW / 370 A	GX	6SE6440-2UD42-0GA1	£13357	6SL3000-0BE36-0AA0 ²	£2019

¹ Additional footprint module to be used with the Industrial Drive.

² Additional block mounted module to be used with the Industrial Drive.

Options		List Price	Options		List Price
6SE6400-0BP00-0AA1	Basic Operator Panel (BOP)	£34	6SE6400-1DN00-0AA0	Device Net Module	£117
6SE6400-0AP00-0AA1	Advanced Operator Panel (AOP)	£130	6SE6400-1CB00-0AA0	Can Bus Module	£117
6SE6400-1PC00-0AA0	PC-MICROMASTER Connection Kit	£30	6SE6400-0GP00-0AA0	Frame Size A Gland Plate	£11
6SE6400-0MD00-0AA0	Multidrop Panel Mounting Kit (for AOP)	£95	6SE6400-0GP00-0BA0	Frame Size B Gland Plate	£20
6SE6400-0PM00-0AA0	Standard Panel Mounting Kit (for BOP or AOP)	£87	6SE6400-0GP00-0CA0	Frame Size C Gland Plate	£29
6SE6400-0EN00-0AA0	Encoder Feedback Module	£145	6SL3072-0AA00-0AG0	Starter Commissioning Tool on DVD	£28
6SE6400-1PB00-0AA0	PROFIBUS Module	£117			

1* Additional module to be used in conjunction with the standard industrial drive 2). Block mounted module.

MICROMASTER Accessories

Supply Voltage - 200 V ... 240 V 1 AC							
Rating	Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor (MM440 only)	List Price
0.12 kW	A	6SE6400-3CC00-4AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.25 kW	A	6SE6400-3CC00-4AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.37 kW	A	6SE6400-3CC01-0AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.55 kW	A	6SE6400-3CC01-0AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
0.75 kW	A	6SE6400-3CC01-0AB3	£61	6SE6400-3TC00-4AD3	£93	6SE6400-4BC05-0AA0	£105
1.1 kW	B	6SE6400-3CC02-6BB3	£86	6SE6400-3TC01-0BD3	£130	6SE6400-4BC11-2BA0	£158
1.5 kW	B	6SE6400-3CC02-6BB3	£86	6SE6400-3TC01-0BD3	£130	6SE6400-4BC11-2BA0	£158
2.2 kW	B	6SE6400-3CC02-6BB3	£86	6SE6400-3TC01-0BD3	£130	6SE6400-4BC11-2BA0	£158
3 kW	C	6SE6400-3CC03-5CB3	£87	6SE6400-3TC03-2CD3	£131	6SE6400-4BC12-5CA0	£179

Supply Voltage - 380 V... 480 V 3 AC								
Rating		Frame Size	Line Reactor	List Price	Output Reactor	List Price	Brake Resistor (MM440 only)	List Price
0.37 kW		A	6SE6400-3CC00-2AD3	£74	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
0.55 kW		A	6SE6400-3CC00-2AD3	£74	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
0.75 kW		A	6SE6400-3CC00-4AD3	£92	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
1.1 kW		A	6SE6400-3CC00-4AD3	£92	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
1.5 kW		A	6SE6400-3CC00-6AD3	£94	6SE6400-3TC00-4AD2	£124	6SE6400-4BD11-0AA0	£135
2.2 kW		B	6SE6400-3CC01-0BD3	£118	6SE6400-3TC01-0BD3	£130	6SE6400-4BD12-0BA0	£191
3.0 kW		B	6SE6400-3CC01-0BD3	£118	6SE6400-3TC01-0BD3	£130	6SE6400-4BD12-0BA0	£191
4 kW		B	6SE6400-3CC01-4BD3	£118	6SE6400-3TC01-0BD3	£130	6SE6400-4BD12-0BA0	£191
LO (VT)	HO (CT)							
7.5 kW	5.5 kW	C	6SE6400-3CC02-2CD3	£138	6SE6400-3TC03-2CD3	£131	6SE6400-4BD16-5CA0	£263
11 kW	7.5 kW	C	6SE6400-3CC02-2CD3	£138	6SE6400-3TC03-2CD3	£131	6SE6400-4BD16-5CA0	£263
15 kW	11 kW	C	6SE6400-3CC03-5CD3	£139	6SE6400-3TC03-2CD3	£131	6SE6400-4BD16-5CA0	£263
18.5 kW	15 kW	D	6SE6400-3CC04-4DD0	£220	6SE6400-3TC05-4DD0	£305	6SE6400-4BD21-2DA0	£329
22 kW	18.5 kW	D	6SE6400-3CC04-4DD0	£220	6SE6400-3TC03-8DD0	£305	6SE6400-4BD21-2DA0	£329
30 kW	22 kW	D	6SE6400-3CC05-2DD0	£220	6SE6400-3TC05-4DD0	£305	6SE6400-4BD21-2DA0	£329
37 kW	30 kW	E	6SE6400-3CC08-3ED0	£312	6SE6400-3TC08-0ED0	£442	6SE6400-4BD22-2EA1	£437
45 kW	37 kW	E	6SE6400-3CC08-3ED0	£312	6SE6400-3TC07-5ED0	£452	6SE6400-4BD22-2EA1	£437
55 kW	45 kW	F	6SE6400-3CC11-2FD0	£324	6SE6400-3TC14-5FD0	£478	6SE6400-4BD24-0FA0	£704
75 kW	55 kW	F	6SE6400-3CC11-2FD0	£324	6SE6400-3TC15-4FD0	£478	6SE6400-4BD24-0FA0	£704
90 kW	75 kW	F	6SE6400-3CC11-7FD0	£316	6SE6400-3TC14-5FD0	£478	6SE6400-4BD24-0FA0	£704
110 kW	90 kW	FX	6SL3000-0CE32-3AA0	£613	6SL3000-2BE32-1AA0	£1316	ON APPLICATION	-
132 kW	110 kW	FX	6SL3000-0CE32-8AA0	£628	6SL3000-2BE32-6AA0	£1566	ON APPLICATION	-
160 kW	132 kW	GX	6SL3000-0CE33-3AA0	£697	6SL3000-2BE33-2AA0	£1754	ON APPLICATION	-
200 kW	160 kW	GX	6SL3000-0CE35-1AA0	£1107	6SL3000-2BE33-8AA0	£2067	ON APPLICATION	-
250 kW	200 kW	GX	6SL3000-0CE35-1AA0	£1107	6SL3000-2BE35-0AA0	£2694	ON APPLICATION	-

SINAMICS Software

Software	Description	List Price
6SL3070-0AA00-0AG0	Sizer Configuration Tool	£34
6SL3072-0AA00-0AG0	Starter Commissioning Tool	£28
6SW1700-5JA00-5AA0 *	Drives ES Basic	£471
Call for Part Number	Drives ES Simatic	POA
Call for Part Number	Drives ES PCS7	POA

* Requires an installation of SIMATIC Step 7 V5.4 minimum.