

Digital Inverter

Synplus



BONFIGLIOLI



Specifications

- Compact size and economic
- Versatile
- Easy to use
- Field bus communication (optional): Profibus DP, DeviceNet
- Basic PLC functionality
- PC and PDA link
- Multilingual alphanumeric LCD control panel
- CE, UL and cUL approvals
- Internal Class A filter (optional external Class B filter)
- Integrated Brake Chopper Transistor
- Prepared for DIN rail mounting

Sample of model identification

Synplus Frequency Inverter	200	07	F
	Mains voltages	Canale A ingresso encoder	EMC filter
SPL	200 = 230 V single phase 400 = 400 V three phases	03 = 0.4 kW 07 = 0.75 kW 11 = 1.5 kW 13 = 2.2 kW 17 = 3.7 kW 19 = 5.5 kW 21 = 7.5 kW 23 = 11 kW	F = class A Filter integrated

Mounting dimensions

Synplus Frequency Inverter	W	W1*	H	H1*	D	Frame size
SPL200 03F SPL200 07F SPL400 07F SPL400 11F	90	78	163	150	141	size 1
SPL200 11F SPL200 13F SPL400 13F SPL400 17F	128	114,6	187,1	170,5	142,1	size 2
SPL400 19F SPL400 21F SPL400 23F	186	173	260	244	186	size 3

* Hole distance between centers

EMC external filter class B

Synplus Frequency Inverter	Filter Model	Filter Size (WxHxD)	Filter Mounting Dimensions
SPL200 03F SPL200 07F	FTS07SPL	91 x 192 x 28	74 x 181
SPL200 11F SPL200 13F	FTS13SPL	128 x 215 x 37	111 x 204
SPL400 07F SPL400 11F	FTT11SPL	128 x 215 x 37	74 x 181
SPL400 13F SPL400 17F	FTT17SPL	128 x 215 x 37	111 x 204
SPL400 19F SPL400 21F SPL400 23F	FTT23SPL	188 x 289 x 42	165 x 278

Brake resistor selection

Synplus Frequency Inverter	Brake resistor	Brake resistor specifications					
		Power (W)	Resistance (Ω)	Duty cycle (%)	Dimensions		
					Width	Height	Depth
SPL200 03F	BRS07SPL	60	200	8	40	115	20
SPL200 07F	BRS07SPL	60	200	8	40	115	20
SPL200 11F	BRS11SPL	150	100	10	40	215	20
SPL200 13F	BRS13SPL	200	70	9	60	165	30
SPL400 07F	BRT07SPL	60	750	8	40	115	20
SPL400 11F	BRT11SPL	150	400	10	40	215	20
SPL400 13F	BRT13SPL	200	250	8	60	165	30
SPL400 17F	BRT17SPL	300	150	8	60	215	30
SPL400 19F	BRT19SPL	500	100	8	60	335	30
SPL400 21F	BRT21SPL	600	80	8	60	335	30
SPL400 23F	BRT23SPL	1500	40	8	110	615	50

Drivelink Operating Software (included)

- Configuration and diagnosis of the SYNPLUS
- Online / Offline Parameter setting
- Offline - Programming of the PLC Functionalities (Ladder - Programs)
- Access up to 254 inverters
- Monitor Window:
 - Observing actual values and control signals
 - Read and Write - Function for all drive parameters
 - Motor-control by Buttons (RUN, STOP, FWD ,REV)
 - Parameter File Comparison Function

Optional Components

KPLED-SPL Control Panel

Display for actual values, Configuration of the frequency inverter
Motorpot-function
Drive control by set-up keys
Accessories for cabinet mounting (remote control)

KPMP-SPL Memory Card

Memory Card for copying parameter sets and PLC programs
Backup and transfer of data to multiple SYNPLUS inverters
Simple plug in and use at internal communication slot

CMPDP-SPL Communication Interface for Profibus - DP

Profibus DP - Gateway for connecting to the SYNPLUS
Supported field bus baudrates: 9.6 kBits/s to 12 Mbits/s
Configuration by multilingual Software Tools
DIN rail mounting

CMDN-SPL Communication Interface for DeviceNet

DeviceNet - Gateway for connecting to the SYNPLUS
Supported field bus baudrates: 125 to 500 kBits/s
Configuration by multilingual Software-Tools
DIN rail mounting

CM485-SPL Communication Interface for RS 485 Serial Bus systems

Communication to PCs, PLCs or other controllers supporting Modbus RTU-Protocol
Connecting to a PC with Drivelink Operating software and 32-bit Windows Operating
system
Supported baudrates: 9.6 to 38.4 kBit/s
Simple plug in and use at internal communication slot

CM232-SPL Communication Interface for RS 232 Serial Interfaces

Communication to a PC, PLC or other controller supporting Modbus RTU-Protocol
Connecting to a PC or PDA with Drivelink Operating software and 32-bit Windows
Operating system
Supported baudrates: 9.6 to 38.4 kBit/s
Simple plug in and use at internal communication slot
Serial cable and SUB-D connector included

Functional specifications SYNPLUS		SPL200				SPL400						
		03 F	07 F	11 F	13 F	07 F	11 F	13 F	17 F	19 F	21 F	23 F
Recommended Motor - Power Rating (kW)		0,4	0,75	1,5	2,2	0,75	1,5	2,2	3,7	5,5	7,5	11
Output Current (A)		3,1	4,5	7,5	10,5	2,3	3,8	5,2	8,8	13,0	17,5	25
Input Current (A)		8,5	12	19	27	4,2	5,6	6,0	10,2	15	20,5	30,2
Mains Voltage		Single phased 200-240V				Three phased 380 - 480V						
Output Voltage		Tolerance: voltage (-15%, +10%), frequency 50/60 Hz (+/-5%)										
Weight (kg)		3 x 0 ... Input Voltage										
Dimensions H x W x D (mm)		1,3	1,8	2,3		1,3	2,2			6,6		
EMC specification		163x90x141 187x128x142,1 163x90x141 187x128x142,1 260x186x188										
Digital Input - Signal Type		Class A (internal filter) , optional external footprint filter Class B										
Control Mode		PNP or NPN										
Frequency Control		Current Vector or V/F Control										
Resolution Setting		0.1... 650 Hz										
Control Panel Setting		Digital: 0.01 Hz ¹⁾ ; Analog: 0.06 Hz / 60 Hz (10 bits)										
External Signal Setting		Directly set-up and buttons										
Other function		0...10V, 0... 20mA , Control of Preset Frequencies by digital inputs										
Switching frequency		Frequency upper and lower limit, Skip Frequencies, S Curves										
Acceleration / Deceleration time		2 ... 16KHz										
V/F Pattern		0.1 ... 3600 s										
Torque control		18 Patterns, one programmable										
Multifunctional input		V/F Control: Torque boost level adjustable (manual torque boost)										
Multifunctional output		Current Vector Control: Variable Torque Mode Selection optional										
Braking Torque		6+1 input control and software functionalities configurable										
Other function		1 Relay with opening and closing contact, 1 Relay with closing contact										
Display		20 % of the nominal torque, 100 % with external brake resistor										
Optional Modules		Momentary Mains Failure Restart, Speed Search, Torque Boost, Slip Compensation, Auto Voltage Controller, PID Controller, Built in - PLC-Functionality, Modbus Interface Drivelink Operating Software										
Operating temperature		KPLCD: high resolution display, multilingual, parameter and actual value display										
Humidity		KPLED with Display and Motorpoti, Accessories for Control Panels, Memory Card										
Vibration		Communication Modules for RS 232, RS 485, Profibus DP and DeviceNet										
EMC specification		-10 ... +40 °C (with removed cover: -10°C... 50°C)										
UL		0 ... 95% Relative Humidity (not-condensing)										
Overload protection		1 G (9.8 m/s ²)										
Overvoltage		complies to EN 61800-3: Class A with internal filter, Class B with external optional filter										
Low voltage		UL508C										
Momentary Mains Failure time		configurable overload reaction										
Stall Prevention		DC link voltage: > 410V(200 series); > 820V(400 series)										
Output Short-circuit and Earth fault		DC link voltage: < 190V(200 series); < 380V(400 series)										
Other function		The inverter can be restarted using the speed search feature										
Installation		1s	2s	1s		2s						
		During Acceleration / Deceleration/ Constant speed										
		Electronic circuitry protection										
		Heat sink overheat protection, Current limit protection										
		Mounting screw or DIN rail										

¹⁾Resolution setting above 100 Hz: controlled by PC or programmable controller (PLC): 0.01 Hz; controlled by keypad: 0.1 Hz



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