



SIPLUS G120 PM240-2 IP20-FSE-U-400V 45 kW based on 6SL3210-1PE28-8UL0 with conformal coating, -20...+50 °C, unfiltered with integrated braking chopper 380-480 V 3 AC +10/-20% 47-63 Hz power high overload: 37 kW at 200% 3 s, 150% 57 s, 100% 240 s power low overload: 45 kW at 150% 3 s, 110% 57 s, 100% 240 s 551x 275x 237 (HxWxD), design FSE degree of protection IP20 without CU and operating unit released as of CU FW version V4.7 HF8

General information	
Product type designation	PM240-2
Product version	FSE 45 kW
Design of the converter	FSE
based on	<a href="#">6SL3210-1PE28-8UL0</a>
Protection function	
• Undervoltage protection	Yes
• Overvoltage protection	Yes
• Overload protection	Yes
• Ground-fault protection	Yes
• short-circuit protection	Yes
• Stall protection	Yes
• With blocked rotor	Yes
• Temperature monitor for motor	Yes
• Temperature monitor for converter	Yes
• Parameter locking	Yes
Input voltage	
Type of input voltage	AC
Mains filter	
• present	No
Input current	
Input current with low overload	86 A
Input current with high overload	78 A
Output voltage	
Output voltage in relation to input voltage, min.	0 %
Output voltage in relation to input voltage, max.	95 %
Pulse frequency	4 kHz
Output current	
Output current, max.	150 A
Output current without overload	90 A
Output current with low overload	90 A
Output current with high overload	75 A
Power loss	
Power loss, max.	1.194 kW
Power loss of the CDM in standby mode	32 W
Power loss of the CDM at the operating point (0/25)	406 W
Power loss of the CDM at the operating point (0/50)	543 W
Power loss of the CDM at the operating point (0/100)	955 W
Power loss of the CDM at the operating point (50/25)	424 W

Power loss of the CDM at the operating point (50/50)	599 W
Power loss of the CDM at the operating point (50/100)	1 092 W
Power loss of the CDM at the operating point (90/50)	674 W
Power loss of the CDM at the operating point (90/100)	1 317 W
Relative power loss of the CDM at the operating point (0/25)	0.65 %
Relative power loss of the CDM at the operating point (0/50)	0.87 %
Relative power loss of the CDM at the operating point (0/100)	1.53 %
Relative power loss of the CDM at the operating point (50/25)	0.68 %
Relative power loss of the CDM at the operating point (50/50)	0.96 %
Relative power loss of the CDM at the operating point (50/100)	1.75 %
Relative power loss of the CDM at the operating point (90/50)	1.08 %
Relative power loss of the CDM at the operating point (90/100)	2.11 %
Ratio of converter losses / reference converter losses at the operating point (90/100)	55.58
IE class of the CDM	IE2
<b>Power electronics</b>	
emitted active power with low overload	45 kW
emitted active power with high overload	37 kW
active power output with low overload [hp]	60 hp
active power output with high overload [hp]	50 hp
apparent power output	62.4 kVA
Efficiency	0.98
Type of duty cycle duration with low overload	1.1x rated output current (i.e. 110 % overload) for 57 s with a cycle time of 300 s; 1.5x rated output current (i.e. 150 % overload) for 3 s with a cycle time of 300 s
Type of duty cycle duration with high overload	1.5x output current rating (i.e. 150 % overload) for 57 s with a cycle time of 300 s; 2x output current rating (i.e. 200 % overload) for 3 s with a cycle time of 300 s
Cooling method	Internal air cooling
Cooling air flow	0.083 m³/s
Short-time withstand current (SCCR) of the entire control cabinet in accordance with UL 508A	65 kA
<b>Isolation</b>	
Degree of pollution	2 according to EN 61800-5-1
<b>Degree and class of protection</b>	
IP degree of protection	IP20
Equipment protection class according to EN 61800-5-1	Class I (with protective bonding circuit) and Class III (PELV)
Touch protection according to EN 61800-5-1	Assuming use as prescribed
<b>Standards, approvals, certificates</b>	
Certificate of suitability	CE / TÜV
Standard for EMC according to EN 61800-3	the EMC product standard EN 61800-3 does not apply directly to a frequency inverter but to a PDS (Power Drive System), which comprises the complete circuitry, motor and cables in addition to the inverter
<b>Ambient conditions</b>	
Ambient temperature during operation	
• min.	-20 °C; = Tmin
• max.	50 °C; = Tmax
Ambient temperature during storage/transportation	
• Storage, min.	-25 °C
• Storage, max.	55 °C
• Storage, min. [°F]	-13 °F
• Storage, max. [°F]	131 °F; Class 1K3 acc. to EN 60721-3-1
• Transportation, min.	-40 °C
• Transportation, max.	70 °C
• Transport, min. [°F]	-40 °F
• Transport, max. [°F]	158 °F; Class 2K3 according to EN 60721-3-2
Altitude during operation relating to sea level	
• Installation altitude above sea level without derating, max.	1 000 m
Relative humidity	
• Operation, max.	98 %
• Condensation permissible	No

<b>Vibrations</b>	
<ul style="list-style-type: none"> <li>• Vibration frequency with constant acceleration during operation according to EN 60068-2-6, min.</li> </ul>	10 Hz
<ul style="list-style-type: none"> <li>• Vibration frequency with constant acceleration during operation according to EN 60068-2-6, max.</li> </ul>	200 Hz; Constant acceleration = 9.81 m/s <sup>2</sup> (1 g)
<ul style="list-style-type: none"> <li>• Vibration frequency with constant deflection during operation according to EN 60068-2-6, min.</li> </ul>	13 Hz
<ul style="list-style-type: none"> <li>• Vibration frequency with constant deflection during operation according to EN 60068-2-6, max.</li> </ul>	58 Hz; Constant deflection 0.075 mm
<ul style="list-style-type: none"> <li>• Oscillation frequency during transport in accordance with EN 60721-3-2</li> </ul>	Class 2M3
<b>Shock testing</b>	
<ul style="list-style-type: none"> <li>• Shock load during operation</li> </ul>	(15x g)/11 ms
<ul style="list-style-type: none"> <li>• Shock acceleration during operation according to EN 60068-2-27</li> </ul>	147 m/s <sup>2</sup>
<ul style="list-style-type: none"> <li>• Shock acceleration during transport according to EN 60721-3-2</li> </ul>	Class 2M3
<b>Resistance</b>	
<b>Use in stationary industrial systems</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul style="list-style-type: none"> <li>— to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul style="list-style-type: none"> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	No
<b>Usage in industrial process technology</b>	
<ul style="list-style-type: none"> <li>— Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul style="list-style-type: none"> <li>— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
<b>Remark</b>	
<ul style="list-style-type: none"> <li>— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>	
<ul style="list-style-type: none"> <li>• Coatings for printed circuit board assemblies acc. to EN 61086</li> </ul>	Yes; Class 2 for high reliability
<ul style="list-style-type: none"> <li>• Military testing according to MIL-I-46058C, Amendment 7</li> </ul>	Yes; Discoloration of coating possible during service life
<ul style="list-style-type: none"> <li>• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	Yes; Conformal coating, Class A
<b>Cables</b>	
Cable length for motor, shielded, max.	200 m
Cable length for braking resistor, max.	10 m
<b>Connection method</b>	
Design of electrical connection of motor	Screw terminals
<ul style="list-style-type: none"> <li>• connectable cable cross-section for motor supply line, min.</li> </ul>	25 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• connectable cable cross-section for motor supply line, max.</li> </ul>	70 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• Connectable conductor cross-section for AWG cables, min.</li> </ul>	4
Type of electrical connection for mains supply line	Screw terminals
<ul style="list-style-type: none"> <li>• connectable cable cross-section for mains supply line, min.</li> </ul>	25 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• connectable cable cross-section for mains supply line, max.</li> </ul>	70 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• Connectable conductor cross-section for AWG cables, min.</li> </ul>	4
Type of electrical connection for supply cable to braking resistor	Screw terminals
<ul style="list-style-type: none"> <li>• Connectable cable cross-section for supply cable to braking resistor, min.</li> </ul>	10 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• Connectable cable cross-section for supply cable to braking resistor, max.</li> </ul>	35 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• Connectable conductor cross-section for AWG cables, min.</li> </ul>	8

• Connectable conductor cross-section for AWG cables, max.	2
Design of electrical connection for the PE conductor	Screw terminals
<b>Dimensions</b>	
Width	275 mm
Height	551 mm
Depth	237 mm
<b>Weights</b>	
Weight (without packaging)	26 kg
<b>Other</b>	
Sound pressure level (1 m), max.	70.6 dB
Brake design	DC braking, compound braking, resistance braking with integrated brake chopper (for size FSGX optional)

<b>Classifications</b>			
		<b>Version</b>	<b>Classification</b>
	eClass	16	27-02-31-01
	eClass	14	27-02-31-01
	eClass	12	27-02-31-01
	eClass	9.1	27-02-31-01
	eClass	9	27-02-31-01
	eClass	8	27-02-31-01
	eClass	7.1	27-02-31-01
	eClass	6	27-02-31-01
	ETIM	10	EC001857
	ETIM	9	EC001857
	ETIM	8	EC001857
	ETIM	7	EC001857
	IDEA	4	4139
	UNSPSC	15	39-12-10-07

**Approvals / Certificates**

General Product Approval

[Manufacturer Declaration](#)



[China RoHS](#)



[China RoHS](#)



General Product Approval	Functional Safety	Test Certificates
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