SIEMENS

PM240-2 (Frame sizes A, B, C)

Product announcement

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The Motion Control and Low-voltage Drives team is excited to announce the new generation of power modules for SINAMICS G120 — the SINAMICS PM240-2. This new generation power module includes a broad range of ratings and will be released in several phases over the coming months. Phase one includes frame sizes A, B and C (FSA, FSB, FSC). The new PM240-2 will eventually replace existing PM240 units.

Product highlights

The new SINAMICS PM240-2 extends the use of SINAMICS G120 to include 230V line supplies (single-phase and three-phase), offers a smaller footprint and higher power density than its predecessor — and can be mounted side-by side without derating. For example, FSB offers a 50% higher power range at high overload than its predecessor and is one-third narrower. Pluggable connections on the cable and motor side simplify commissioning and maintenance. In addition, a push-through design allows the heat sink to extend through the rear of the cabinet and, when combined with an optional external mounting bracket, an IP55 / NEMA 12 seal can be achieved.

Product strategy

The introduction of the new SINAMICS PM240-2 is the first in a series of changes which are designed to achieve the ultimate goal of consolidating the SINAMICS S and G power modules into one platform in the near future. Look for more information in future announcements.

PM240-2 FSB with CU240B-2 and BOP-2

Release dates

The new power modules are expected to be available for ordering according to the following schedule.

Name	Availability in I-Mall
PM240-2 FSA-C 3-ph AC 480V	June 2014
PM240-2 FSA-C 3-ph AC 480V push-through	July 2014
PM240-2 FSA-C 1-ph / 3-ph AC 230V	July 2014
PM240-2 FSA-C 1-ph / 3-ph AC 230V push-through	August 2014

Customer benefits and technical details

Features

The new power modules set themselves apart as a result of the following features:

Features	Customer benefits
New voltage versions	▪ The 1-ph / 3-ph 230V AC and 3-ph 230V AC voltage versions are available with the PM240-2 FSA-C
High power density	▪ Higher power ratings in smaller devices ▪ Smaller control cabinet
Side-by-side mounting without derating	▪ Cost reduction through space-savings in the control cabinet
Push-through versions	▪ Less heat generated in the control cabinet ▪ Control cabinet can have smaller dimensions ▪ Designed for use in NEMA 12 / 3R cabinets
Removable terminals	▪ For line supply, motor and braking resistor ▪ Fast replacement when service is required
Optimized fans	▪ Fan is controlled based upon actual need ▪ Noise is reduced by reducing power to the fan
Optimized closed-loop control features	▪ Increased degree of robustness and stability

Compatibility

All overload cycles for the SINAMICS G120 and S120 Blocksize units are supported with the new PM240-2.

Please note the following:

- SINAMICS G120 — the CU230P-2, CU240B/E-2 and CU250S-2 control units will be supported from firmware version 4.6.
- SINAMICS S120 — the CU310-2 and the CU320-2 Control Units (via the CUA adapter) will be supported from firmware version 4.6.
- SINAMICS S110 — the CU305 Control Unit (firmware versoin4.4) does not support the PM240-2.

The following options are also available:

- Braking resistors
- Input reactors
- Output reactors
- Sine-wave filters

Technical data	
Type of protection	IP20 / UL open type
Power **Low Overload (LO)**	0.75–5 hp (1-ph 230V AC) 7.5–10 hp (3-ph 230V AC) 0.75–20 hp (3-ph 480V AC)
Rated output current **Low Overload (LO)**	3.0–17.5 A (1-ph 230V AC) 22–28 A (3-ph 230V AC) 1.7–32 A (3-ph 480V AC)
Line voltage	1-ph / 3-ph 200–240V AC ±10% 3-ph 200–240V AC ±10% 3-ph 380–480V AC ±10%
Line frequency	47–63 Hz
Overload capability **Low Overload (LO) for FSA–FSC**	1.5 x rated output current (150%) for 3 s every 300 s 1.1 x rated output current (110%) for 57 s every 300 s 1.0 x rated output current (100%) for 240 s every 300 s
Overload capability **High Overload (HO) for FSA–FSC**	2.0 x rated output current (200%) for 3 s every 300 s 1.5 x rated output current (150%) for 57 s every 300 s 1.0 x rated output current (100%) for 240 s every 300 s

Frame size reduction

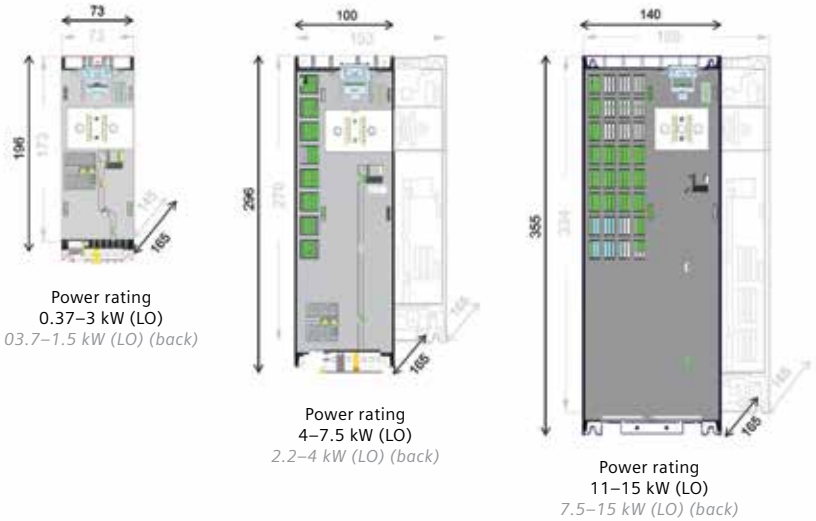
The frame size reduction is a primary focus for the new PM240-2 power units. The following figure shows the size comparison to the previous PM240 power units. To address the requirements for smaller control cabinets, the width of the power units has been optimized. The reduced width, in conjunction with the ability to mount them side-by-side without any derating, saves a significant amount of space in the control cabinet.

Exception: The PM240-2 FSA Power Module is taller than the PM240 FSA. This height has no effect on the control cabinet (the Control Unit is the limiting factor). However, the increased power density still applies to FSA (see details in the ordering data).

The new PM240-2 FSA is slightly taller than the PM240.

The PM240-2 FSB is slightly taller, but has a much smaller width.

The PM240-2 FSC is slightly taller. It has a much smaller width and depth.



Ordering data

1-ph / 3-ph 200–240V AC

Voltage	Rated power			Rated output current	Part number	Frame size
	kW (LO)	kW (HO)	hp	Amps - I_N (LO)		
1-ph / 3-ph AC	0.55	0.37	0.75	3.0	6SL3210-1PB13-0UL0	FSA
1-ph / 3-ph AC	0.75	0.55	1.0	3.9	6SL321□-1PB13-8UL0	
1-ph / 3-ph AC	1.1	0.75	1.5	5.5	6SL3210-1PB15-5UL0	FSB
1-ph / 3-ph AC	1.5	1.1	2.0	7.4	6SL3210-1PB17-4UL0	
1-ph / 3-ph AC	2.2	1.5	3.0	10.4	6SL321□-1PB21-0UL0	
1-ph / 3-ph AC	3	2.2	4.0	13.6	6SL3210-1PB21-4UL0	FSC
1-ph / 3-ph AC	4	3	5.0	17.5	6SL321□-1PB21-8UL0	
3-ph AC	5.5	4	7.5	22	6SL3210-1PC22-2UL1	FSC
3-ph AC	7.5	5.5	10	28	6SL3210-1PC22-8UL1	
IP20 (standard)					0	
Push-through					1	

3-ph 380–480V AC

Rated power			Rated output current	Part number	Frame size
kW (LO)	kW (HO)	hp	Amps - I_N (LO)		
0.55	0.37	0.75	1.7	6SL3210-1PE11-8UL1	FSA
0.75	0.55	1.0	2.2	6SL3210-1PE12-3UL1	
1.1	0.75	1.5	3.1	6SL3210-1PE13-2UL1	
1.5	1.1	2.0	4.1	6SL3210-1PE14-3UL1	
2.2	1.5	3.0	5.9	6SL3210-1PE16-1UL1	
3	2.2	4.0	7.7	6SL321□-1PE18-0UL1	
4	3	5.0	10.2	6SL3210-1PE21-1UL1	FSB
5.5	4	7.5	13.2	6SL3210-1PE21-4UL1	
7.5	5.5	10	18	6SL321□-1PE21-8UL1	
11	7.5	15	26	6SL3210-1PE22-7UL1	FSC
15	11	20	32	6SL321□-1PE23-3UL1	
IP20 (standard)				0	
Push-through				1	

Options

Optional components, which are common with other SINAMICS family products, such as line and load reactors, braking resistors and sinewave filters, can be used with the SINAMICS G120 PM240-2 Power Modules. See selection charts / catalogs / SIZER for more information.

The following are the push-through mounting frames which mount on the outside of the cabinet and provide an IP55 protection rating to the drive inside. One mounting frame is required per drive and must be ordered separately.

Description	Part number
SINAMICS G120 mounting frame FSA PT	6SL3260-6AA00-0DA0
SINAMICS G120 mounting frame FSB PT	6SL3260-6AB00-0DA0
SINAMICS G120 mounting frame FSC PT	6SL3260-6AC00-0DA0

PM240-2, Frame sizes A, B and C
with push-through mounting

Accessories

Shield plates for FSA, FSB and FSC are included with each power module.

Tools / documentation

- DT Configurator
- STARTER / Startdrive (from V4.3.3 / Startdrive from V13)
- SIZER (V 3.11+)
- Documentation (Getting Started Guide is now available; Operation Manual)

Marketing and promotional measures

The new PM240-2 Power Modules will be included in future marketing activities of SINAMICS G120. Existing documentation will also be updated (brochures, internet, intranet, PowerPoint presentations, SINAMICS selection tool, mobile selector app, etc.).

Frequently Asked Questions
1. Can I replace a PM240 with a PM240-2 without issues? **Yes.**
2. Are there issues with older version CUs and the new PM240-2 units? **None have been identified.**
3. Any issues with current version IOP or BOP units when using the PM240-2 drives? **No.**
4. Is there a cost difference between the PM240 and the new PM240-2? **No — they are the same price.**

Frequently Asked Questions — continued

5. **Do the overload characteristics and de-rating factors change for the PM240-2?**

   No.

6. **Are there any issues with old versions of STARTER and the new PM240-2?**

   Yes — STARTER version 4.3.3 or higher must be used in order to gain access to the PM240-2 in STARTER.

7. **Are there any issues with Startdrive V13 and the new PM240-2?**

   No.

8. **What NEMA rating can be expected or maintained by panel shops if they properly mount the PM240-2 push-through units in a cabinet?**

   IP55 / NEMA 12 / NEMA 3R.

9. **Are there any issues with the heat sink in push-through units when exposed to water / snow / ice in the case of a NEMA 3R outdoor system?**

   If the heat sinks are properly protected from direct contact with the environment, a NEMA 3R (outdoor) rating can be achieved.

10. **Are the fans removable from the heat sinks?**

    Yes — additionally, the fans are rated IP55 on push-through versions.

11. **Does the warranty change for the SINAMICS G120 when using the PM240-2 units?**

    No — the warranty remains the same.

12. **Can I install the new PM240-2 units side-by-side (no clearance) without derating?**

    Yes — side-by-side mounting with no derating requirement is one of the improvements offered with the new PM240-2.

13. **Do the clearances change top and bottom when using the new PM240-2?**

    No.

14. **Do the power terminal locations change in the new PM240-2?**

    No — the locations do not move. Even better, now the new terminals are removable for easy wiring.

15. **Why did Siemens develop the new PM240-2 designs?**

    Many reasons, which are summarized on page 3.

16. **Was there a warranty or design issue with the older units?**

    No — not at all. The new PM240-2 simply improves on the best.

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