



**SIEMENS**

Compact , economic, functionally optimized  
SIMOTICS M-1PH8 asynchronous version at SINAMICS G120

# SIMOTICS M-1PH8 & SINAMICS G120

# SIMOTICS M-1PH8<sup>\*)</sup> + SINAMICS G120 + PM240 Overview

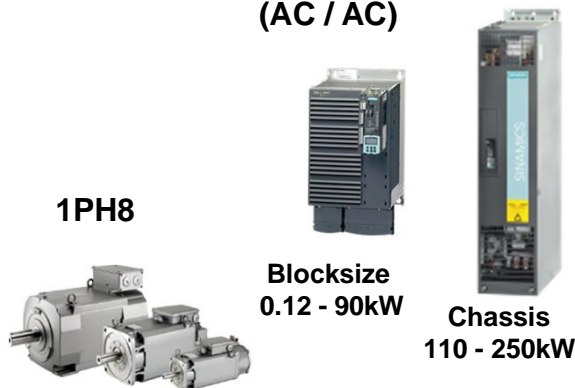
## Initial Situation

### Applications such as

- Kneaders / extruders with water cooling
- Test stands with high motor speeds, but reduced dynamics
- Retrofit of open-circuit air-cooled dc current motors

have been served with **1PH8** and **S120**

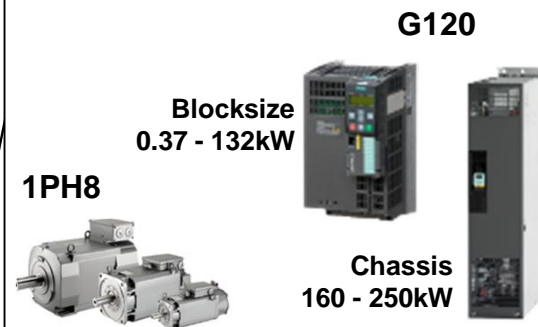
**S120 single axis  
(AC / AC)**



## Technology

### Release of 1PH8 with G120 for

- G120 with 1PH8 asynchronous version
- **Only (!)** PM240/ PM240-2 with
  - CU240B/E-2 FW  $\geq 4.5$
  - CU250S-2 FW  $\geq 4.6$  HF4



## Benefits

### Benefits provided by the G120 converter

- Simplicity of the standard converter
- Superior usability



- Blocksize unit up to 132 kW

- Notes:**
- SINAMICS G130 and G150 have also been released
  - Configuring and Commissioning see presenter's notes

\*) With asynchronous version

# **SIMOTICS M-1PH8 + SINAMICS G120 + PM240**

## **Reasons for use of 1PH8**

- **Compact machine**
- **Large speed range compared to standard ASM**
- **Forced ventilation in degree of protection IP23 resp. IP55**
- **Water cooling**
- **Holding brake**
- **Low-cost complete drive through the use of SINAMICS G120, but a compact resp. water-cooled motor is requested**

# SIMOTICS M-1PH8 + SINAMICS G120 + PM240

## Application examples

- **Kneaders**
- **Extruders**
- **Test stands featuring high motor speeds, but reduced dynamic requirements**
- **Coin presses with fly wheel drive, additionally request for compact design (replacement for dc machine)**
- **Replacement of (mainly open-circuit air-cooled) dc machines**

# SIMOTICS M-1PH8 asynchronous version

## Released SINAMICS G1x0 converters

### **SINAMICS G120 with PM240 (3 AC 380 – 480V; blocksize / chassis units):**

- Rated power 0.37 – 250 kW
- Rated output current 1.3 – 477 A (pulse frequency: 4 / 2 kHz)

### **SINAMICS G130 (3 AC 380 – 480V; chassis units):**

- Rated power 110 – 560 kW
- Rated output current 210 – 985 A (pulse frequency: 2 / 1.25 kHz)

### **SINAMICS G150 (3 AC 380 – 480V; cabinet units):**

- Rated power 110 – 900 kW
- Rated output current 210 – 1,560 A (pulse frequency: 2 / 1.25 kHz)

# SIMOTICS M-1PH8

## Characteristic data

### 1PH8 induction motors (from SH 80 to SH 355) with G1x0:

- Rated power in IP55
- Rated current in IP55
  
- Rated power in IP23
- Rated current in IP23

Range  
G130 & G150  
110 – 450 kW  
210 – 870 A

110 – 730 kW  
200 – 1,230 A

Range  
G120+PM240  
2.8 – 250 kW  
7.5 – 477 A

20.5 – 250 kW  
58 – 477 A

The stated currents and powers are rated values at

- 3 AC 400 V,
- Characteristic 1PH8 characteristic "400V SLM/ BLM
- IP23-Motors: G130/ G150 current derating is considered

# SIMOTICS M-1PH8 and SINAMICS G1x0

## Prerequisites for operation

- SIMOTICS M-1PH8 main motor in asynchronous version
- Operating modes, see slide "Operating modes and characteristics"
- CU modules with G120: CU240B-2 and CU240E-2 in all versions with Firmware Version  $\geq 4.5$
- CU320-2 with G130/ G150 with Firmware Version  $\geq 4.5$ ; if so previous Firmware Versions upon request
- Max. permissible output frequency on PM240: 240 Hz
- 1PH8 main motors must be operated with the following rated pulse frequencies:
  - SH 80 to SH 160: Pulse frequency  $\geq 4$  kHz \*)
  - SH 180 to SH 280: Pulse frequency  $\geq 2$  kHz \*)
  - SH 355:  $\geq 2.5$  kHz (only with SINAMICS G130/ G150)\*\*)

### Note regarding the pulse frequency:

\*) In general, when using SINAMICS G120 with PM240, current derating is not required

\*\*\*) When using SINAMICS G130/ G150 **current derating is mandatory.**

☞ see presenter's notes

# SIMOTICS M-1PH8 and SINAMICS G1x0

## Operating modes and characteristics

### Operating modes vector control:

- Encoderless: G120 with PM240/ PM240-2 and CU240B-2 or CU240E-2
- Optionally encoderless operation resp. operation with encoder
  - G130/ G150
  - G120 with PM240/ PM240-2 and CU250S-2

### Operating mode positioning control

- G120 with PM240/ PM240-2 and CU250S-2 with e. g. DRIVE-CLiQ absolut encoder

### Characteristics:

- Line voltage 400 V: Characteristic 1PH8 characteristic "400V SLM/ BLM"
- Line voltage 480 V: 1PH8 characteristic "480V SLM/ BLM"



# SIMOTICS M-1PH8 and SINAMICS G120 + PM240 Configuration and commissioning

## Configuration:

The configuration of the SIMOTICS M-1PH8 is supported by the current SIZER version.

## Commissioning with Startdrive/ STARTER:

- CU250S-2:
  - Selection of the motor from the motor list which can be found in the configuration mode
- CU240B-2/ CU240E-2:
  - select the motor code (P300/ P301) from [Intranet](#), enter the values into the expert list and go on with configuration mode or
  - enter the name plate data in the configuration mode

## Commissioning with operator panel (IOP):

- As described above.

☞ see presenter's notes

# Thank you for your attention!



Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

All product designations, product names, etc. may contain trademarks or other rights of Siemens AG, its affiliated companies or third parties. Their unauthorized use may infringe the rights of the respective owner.

**[siemens.com/answers](https://www.siemens.com/answers)**