

SIEMENS - 6SN1118

The control units evaluate encoders with sin/cos 1 V_{PP} and absolute values with EnDat interface (pulse multiplication 128/2048). It is possible to parameterize the number of encoder pulses up to 65535.

One version can be additionally equipped with a direct measuring system (DMS) with the function "direct position sensing". The DMS is required for the "SINUMERIK Safety Integrated" function.

Some SSI encoders can be evaluated. An interference suppressor filter is available for the encoder power supply (see "Supplementary system components") and restrictions do apply with regard to the EMC.

The drive software with the control algorithms is stored in the SINUMERIK 810D powerline/840D powerline. Each time the control and drives are energized, the software is loaded into the digital control units.

Two-axis modules can be used in a single-axis power circuit.

Control unit with	High-Standard control	High-Performance control
Output frequency, max.	600 Hz	1400 Hz
Encoder limit frequencies incremental encoder sin/cos 1 V _{PP}	200 kHz	350 kHz ¹⁾
Pulse multiplication factor	128	2048
Max. cable length	50 m (164 ft)	50 m (164 ft)
1FT6/1FK feed motors		
1FN linear motors	–	
1FW6 torque motors	–	
1PM/1PH7 main spindle motors		
1FE1/2SP1 built-in spindle motors		
Smooth running		
» Single-axis version	0.2 µm	0.1 µm
» Two-axis version	1.5 µm	0.1 µm
Applications	Standard production machine	Microfinishing and dynamic high-performance machines

1) 420 kHz with boundary conditions (see Planning Guide).

Functions (selection):

- Encoder evaluation for incremental encoder sin/cos 1 V_{PP} and absolute encoder with EnDat for motor encoder and direct measuring system
- Dynamic measuring circuit switchover between motor encoder measuring system and direct measuring system
- Synchronous axes (gantry)
- Travel to fixed stop for axis and spindle
- Variable incremental weighting for 8 gear speeds
- C-axis operation with one encoder
- Torque pre-control
- Weight counterbalance

- Measurement on-the-fly
- Main spindle oscillation via PLC
- Operation of asynchronous motors without encoders in field-oriented control
- 4 selectable data sets for asynchronous and synchronous motors
- Brake management depending on controller enable or pulse disable
- Positive feedback sensing, plausibility check for the encoder signals
- Electrically controlled stopping in the event of an encoder fault
- Advanced Position Control APC, highly dynamic positioning
- Safety Integrated with internal pulse suppression via drive bus
- Mixed operation of 1PM/1PH/1FE1/2SP1/1FT6/1FK/1FN/1FW6 motors on one two-axis control unit

The available functions depend on the drive software version in the SINUMERIK 810D powerline/840D powerline.

Operation of the High-Standard/High-Performance controls requires NC software 06.04 09 or later, as well as HMI software 06.02 or later.

This software supports:

- Mixed operation with older modules in the same drive group.
- Start-up of the modules using HMI or the start-up tool "SinuCom NC".