4.1 Closed–loop control with digital setpoint interface

General information

Digital control units in 1–axis and 2–axis versions (for 1PH, 2–axis control is only possible with High Performance) are available to operate motors 1FT6/1FK/1FN1/1FN3/1FE1/1PH/1PM/1FM6/2SP1.

During the initialization phase (power on or reset), the drive software is downloaded from the SINUMERIK 840D to the control board via the drive bus.

1–axis drive control

High Performance: Order No.: 6SN1118–0DJ2□–0AA□

The digital 1–axis High Performance control can be loaded with the drive software for either FD control or MSD control. MSD and FD have the same user interface. The board is available in the following versions:

- Basic version with sinusoidal **voltage signals** and the possibility of connecting absolute encoders with EnDat interface
- In addition, the evaluation of a direct position measuring system with sinusoidal **voltage signals** and the connection of absolute encoders with EnDat interface and SSI interface (as of SW 5.1.9) is possible.

2–axis drive control

The module is available in three basic versions that differ in the controller performance and in the evaluation of the direct position measuring systems:

High Performance: Order No.: 6SN1118–0DK2□–0AA□

- Basic version with sinusoidal **voltage signals** and the possibility of connecting absolute encoders with EnDat interface
- In addition, the evaluation of two direct measuring systems with sinusoidal **voltage signals** and the connection of absolute encoders with EnDat interface and SSI interface (as of SW 5.1.9) is possible.

High Standard: Order No.: 6SN1118–0DM3□–0AA□

- Basic version with sinusoidal **voltage signals** and the possibility of connecting absolute encoders with EnDat interface.
- Additionally with evaluation for 2 direct measuring systems with sinusoidal **voltage signals** and the possibility of connecting absolute encoders with EnDat interface and SSI interface (from SW 5.1.9).

Note

A 2–axis drive control can also be operated in a single axis power module for single axis applications. It is engineered as a 1–axis board.

For motor encoders without any adjustment to the EMF of the synchronous motor (1FE1/1FN1/1FN3) a configurable, automatic identification technique can be used to determine the electrical rotor position. In so doing, motion of typically < ± 5 degrees mechanical is not exceeded. The identification routine is performed after each power up operation.

© Siemens AG 2014 All Rights Reserved

Software versions

The digital drive controls can be used with the following software releases of the SIEMENS drive components:

Table 4-2 Software functions

	High Performance	High Standard
MLFB	6SN1118–0DJ2□–0AA□ 6SN1118–0DK2□–0AA□	6SN1118–0DM3□–0AA□
NCU version	≥ 6.4.9	≥ 6.4.9
drive version	≥ 6.3.11	≥ 6.5.4
PCU50/PCU20	≥ 6.2.18	≥ 6.2.18
Commissioning tool for the PC	≥ 6.2.18	≥ 6.2.18
NCU hardware	≥ 573.3; ≥ 572.3; 571.3	≥ 573.3; ≥ 572.3; 571.3
Mixed operation, FD/MSD	≥ 6.2.12	≥ 6.2.12

© Siemens AG 2014 All Rights Reserved

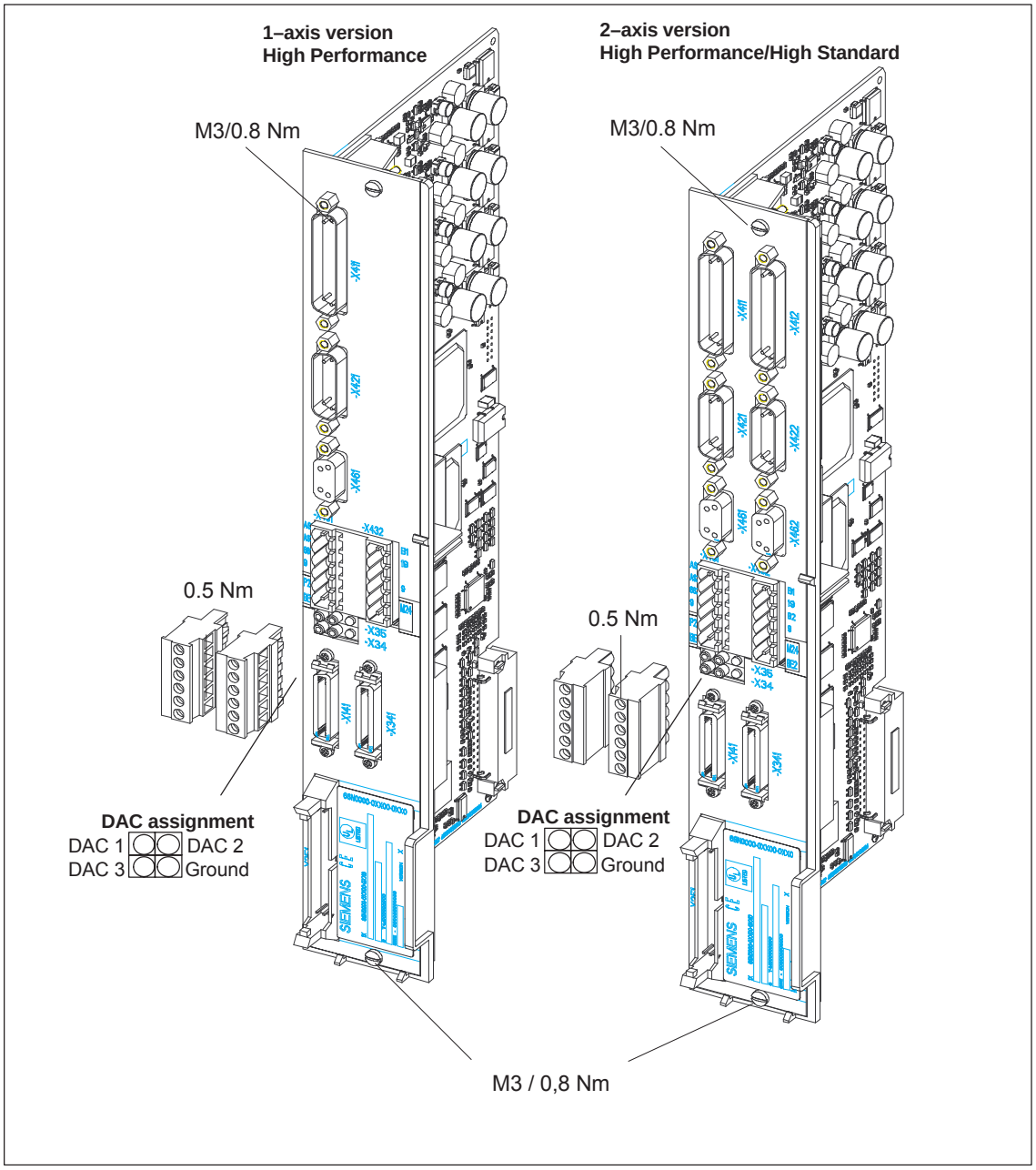


Fig. 4-1 Digital control High Performance and High Standard with direct measuring system

Notice

When using non–PELV/SELV circuits at terminals AS1, AS2, connectors must be coded to prevent the connectors being incorrectly inserted (refer to EN60204–1, Section 6.4).
For Order No. for coded connectors, refer to Catalog NC 60.

Warning

At terminals 19, P24 and M24, only PELV/SELV circuits may be connected. If this is not carefully observed, then this can result in personal injury in the form of electric shock.

© Siemens AG 2014 All Rights Reserved