

OFFICIAL MODEL-SPECIFIC GUIDE

Installation Instructions

FEN-21 68679303

ABB drive feedback interfaces · resolver interface module

01 VERIFIED CONFIGURATION

Resolver Excitation	4 to 12 Vrms
Excitation Frequency	1 to 20 kHz
Resolver Signal	2 to 7 Vrms
TTL Resolution	1 to 65535 pulses/rev
TTL Cable Length	30 to 100 m

02 DOCUMENTED INSTALLATION SCOPE

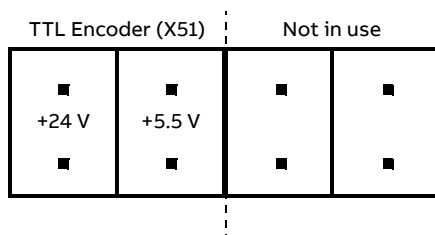
- Isolate all applicable electrical and process energy before work.
- Confirm the exact article number, option slot and connector assignments.
- Follow the official ABB mounting, wiring and commissioning sequence.

INSTALLATION CHECK

Confirm compatible drive or controller hardware and site procedure before work.

Setting the supply voltage X301

The supply voltage for the TTL encoder can be selected by vertically mounted jumper as described by the following figure



Note: If an external power supply is used, the appropriate jumper must be removed.

Note: If another FEN interface's TTL emulation output is connected to TTL input, the appropriate jumper must be removed.

Mounting



WARNING! Before installation, do the electrical safety precautions given in section [Safety instructions](#) (Page 2).

Note: Before mounting the module, set the supply voltage jumpers as described above.

Numbers in brackets refer to the layout drawing in section [Layout and connections](#) (Page 5).

1. Pull out the locking tab (8).
2. Insert the module carefully into the option slot until the retaining clips lock the module into position. Option slots are located on the drive control unit.
3. Push in the locking tab (8).
4. Fasten the screw (included) to the stand-off.

If you need to remove the adapter module after it has been installed into the drive, use a suitable tool (e.g. small pliers) to carefully pull out the locking tab.

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OFFICIAL INSTALLATION AND WIRING REFERENCE

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Note: Correct installation of the screw is essential for fulfilling the EMC requirements and for proper operation of the module.

Wiring



WARNING! You can connect a motor temperature sensor to the encoder module only if there is double or reinforced insulation between the live parts of the motor and the sensor. The module does not provide a safe isolation from the drive. Refer to the drive manuals for more information.

The encoder and resolver should be connected to the FEN-21 with a shielded instrumentation cable, preferably with twisted pairs. See also the encoder and resolver manual for additional requirements.

TTL encoder maximum cable length:

- 30 m with a 5 V encoder (0.5 mm² cable for power supply)
- 60 m with a 5 V encoder (two parallel 0.5 mm² cables for power supply)
- 100 m with a 10...30 V TTL incremental encoder

Resolver maximum cable length: 100 m

TTL encoder emulation maximum cable length: 100 m

Tightening torque is 0.3 Nm (2.7 lbf·in.).

Note: Do not route the encoder cables parallel to power (e.g. motor) cables.

Programming

The FEN-21 is programmed through drive parameters. These parameters must be checked and adjusted according to the encoder and resolver data sheet. For further information, see the drive Firmware manual.

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