

SMC40 – Sensor Module Cabinet-Mounted from Siemens

EIB 2391 S – External Interface Box from HEIDENHAIN

Connection of purely serial encoders with EnDat22 interface to DRIVE-CLiQ

Encoder requirements

The EIB 2391 S external interface box and the sensor module cabinet-mounted SMC40 both make it possible to connect encoders with the ordering designation EnDat22 to the DRIVE-CLiQ interface. The following encoder series are supported (with or without functional safety):

- Absolute sealed linear encoders, such as:
 - LC 100, LC 400, LC 200
- Absolute exposed linear encoders, such as:
 - LIC 2000, LIC 4000
- Absolute angle encoders, such as:
 - RCN 2000, RCN 5000, RCN 8000, ECN 200, ECA 4000
- Absolute singleturn encoders, such as:
 - ROC 400, ROC 1000
 - ECN 100, ECN 400, ECN 1000, ECN 1100, ECN 1300
 - ECI 1100, ECI 1300
- Absolute multiturn encoders, such as:
 - ROQ 400, ROQ 1000
 - EQN 400, EQN 1000, EQN 1100, EQN 1300
 - EQI 1100, EQI 1300

In principle, it is possible to connect further encoders featuring the EnDat22 interface depending, however, on the firmware level of the EIB or SMC and the subsequent electronics. Please contact HEIDENHAIN or the manufacturer of the subsequent electronics for further information.

The following encoder series with the ordering designation EnDat22 cannot at present be connected to the DRIVE-CLiQ interface and therefore cannot be operated together with the EIB or SMC:

- Encoders with the “EnDat incremental” profile, such as ERM 2400, LIP 200, EIB 100, EIB 300, EIB 1500
- Encoders with battery-buffered revolution counter, such as EBI 100, EBI 1100, EBI 4000

After switch-on, the EIB or SMC tests various characteristics of the connected encoder and automatically adapts itself to it. If the encoder does not fulfill the specific requirements, an error message is transmitted over the DRIVE-CLiQ interface.

Temperature sensor information

The temperature information of an external temperature sensor connected with the EnDat encoder is transmitted by the EIB or SMC over the DRIVE-CLiQ interface. However, the value of the temperature sensor within the encoder is not transmitted. The EIB and SMC themselves have no separated input for a temperature sensor.

Functional safety

The EIB or SMC can be used in safety-related applications only if the connected encoder supports functional safety. The characteristics regarding functional safety are substantially determined by the connected encoder and the subsequent electronics (if necessary, contact the manufacturer; the EIB or SMC essentially passes on the characteristics of the encoder).

The **safe position** is substantially determined by the connected encoder and the subsequent electronics. The EIB and SMC themselves do not influence the safe position. The “safe position” and “safety-related measuring step (SM)” data of the connected EnDat encoder are required for calculating the safe position. Please contact the manufacturer of the subsequent electronics for further information.

The **PFH value** of the total system (EIB 2391S or SMC40 + encoder) is the sum of the PFH values of the EIB or SMC and the connected encoder. For information on the encoder, please refer to its documentation (Product Information, Catalog, and Mounting Instructions).

Please contact the manufacturer of the subsequent electronics for more information on using the EIB or SMC and encoder in safety-related applications.

Restrictions

For linear encoders with measuring lengths greater than approx. 50 m, there may be limitations on the output of the commutation angle over the DRIVE-CLiQ interface. There may also be limitations on saving a datum shift in the EnDat encoder. Please contact HEIDENHAIN in such cases.

DRIVE-CLiQ is a registered trademark of Siemens Aktiengesellschaft

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