More Flexibility Right from the Factory: CANopen as a New Secondary Interface

TR Electronic is expanding the C__582 and CD_582 encoder families with a functionally independent CANopen secondary interface.

Two Interfaces in One Sensor

TR Electronic specializes in customer-specific customizations and integrates a wide range of industrial interfaces directly into its sensors. Whereas SSI and incremental signals (INK) were previously the primary options for output to a secondary interface, the company is now expanding its offerings: CANopen is now available as a full-featured secondary interface.

This interface is routed directly from the encoder via an additional connector. It is available for both the standard encoders of the C__582 family and the safety encoders of the CD_582 family (here as a non-safety secondary interface).

High functional independence thanks to raw data processing

Unlike traditional secondary interfaces such as +SSI or + INK, the new CANopen option offers greater independence. While SSI and INK rely on existing signal paths, the +CO option retrieves the values directly from the physical sampling.

Thanks to this self-contained raw data processing, the secondary interface uses the same shaft and the same sensor but processes the signals completely independently of the main interface.

For users, this means flexibility in configuration:

- Independent parameterization: Parameters such as resolution, gear ratio, position offset, scaling, and direction of rotation can be set for the CANopen interface completely independently of the main interface.
- Full range of functions: The interface offers the full range of features of the current TR absolute encoder series with CANopen. Exactly the same EDS files are used.
- Convenient addressing: Node ID and baud rate can be flexibly configured via LSS (Layer Setting Service).

Applications

Integrating two interfaces into a single housing provides cost-effective solutions when two independent systems require access to the same sensor:

- Local control loops: The main interface communicates with the central plant control system, while the secondary CANopen interface delivers measured values directly to a local frequency converter or decentralized controller.
- Fallback and emergency systems: If the primary bus

communication or the main control system fails, the emergency system connected via CANopen (e.g., an emergency control system) takes over monitoring.
- Direct displays and operator interfaces: Diagnostic data or position values can be displayed directly on local displays or alternative, higher-level operator units without burdening the bandwidth of the primary fieldbus.
- With the new CANopen secondary interface, TR-Electronic offers a compact, ready-to-use sensor solution for complex industrial architectures.

The new CANopen secondary interface at a glance:

Features & Parameters:

- Independent processing: Processes data directly at the sampling point (raw data processing on the same bus).
- Flexible scaling: Resolution, gear ratio, offset, and direction of rotation can be set completely independently of the main interface.
- LSS support: Addressing and baud rate configurable via Layer Setting Service.
- Full compatibility: Identical EDS files as the standard CANopen series from TR-Electronic.
- Availability & Connection:
- Standard Series: Can be integrated into the C__582 encoder family.
- Safety Series: Available as a non-safety secondary interface in the CD_582 family.
- Hardware: Separate connector mounted directly on the housing.
- Also available with a through-shaft.
- Can be combined with the primary interfaces PROFINET, PROFIBUS, EtherCAT, and Ethernet/IP in the 582 series.

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Absolute encoder with CANopen secondary interface based on the C__582 series from TR Electronic (shown here with PROFINET primary interface)



Functionally safe absolute encoder with a non-safe secondary CANopen interface from TR Electronic (primary interface: PROFINET/PROFIsafe)