

Digitizing measured data

The COS series by Deditec (Germany) are CANopen-connectible I/O modules with up to 64 diverse I/O combinations.



The COS modules are available with diverse I/O numbers (Source: Deditec)

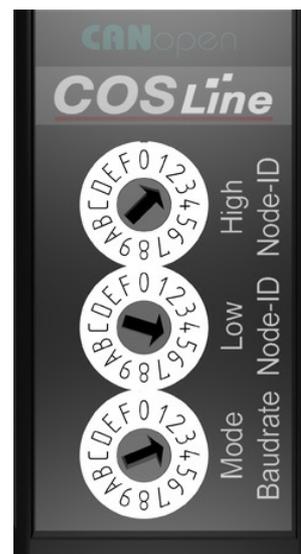
For example, the COS-AD16-16/18 is a 16-channel A/D converter module and is available with 16-bit or 18-bit resolution. It can be operated as a stand-alone device as well as in combination with other COS modules. The modules implement the CANopen application layer and communication profile (CiA 301) as well as the CiA 401 device profile for I/O modules. The implemented CiA 305 profile allows to set the device's node-ID and the bit-rate (up to 1 Mbit/s) via the CANopen interface using the layer setting services (LSS). It is also possible to configure both via a coding switch. The CAN interface is galvanically isolated (max. 500 V).

The devices are suitable for measuring and monitoring voltages and currents. Measuring transducers, for example, convert physical quantities such as pressure, temperature, humidity etc. into corresponding currents (0 mA to 24 mA) or voltages (0 V to 40 V) and can thus be recorded and digitally processed (A/D-conversion) within the I/O modules. The results are available on the CANopen interface.

Transmission of the digitalized data via PDOs (process data objects) can be optionally event-controlled, cyclic, or synchronous. For example, digital input states can be sent to other network participants every second and, additionally, if an event occurs (e.g. input status changes). Dynamic PDO mapping also allows different types of measurement data to be sent in one PDO (e.g. analog and digital states).

Other network participants can be monitored via the heartbeat protocol. Each node cyclically sends a dedicated CAN message (heartbeat). If the message of a node is missing (e.g. due to a connection loss), the I/O module registers the error and can send an appropriate emergency message.

Individual modules can be added or exchanged using the DIN-rail COS bus connector. CAN connection and the power supply is passed on to all connected modules via the DIN rail bus. The LEDs on the front side give an overview on such functions the switching states of the individual I/Os, I/O module status, or whether the communication via the DIN-rail is possible. This can be helpful for fast error analysis e.g. in the field applications.



It is possible to configure the node-ID and the bit-rate via a coding switch or via software (LSS) (Source: Deditec)