# TEConcept

## Use ◉ IO-Link
### Universal · Smart · Easy

# IO-Link Devices

### What is an IO-Link Device?

The serial communication IO-Link technology allows transmission of parameterization and diagnostics data. This digital communication has advantages such as a reduction in system downtimes by using the DataStorage Configuration and predictive maintenance compared to analog or digitally switching sensors and actuators.

Basic low energy consuming IO-Link devices are connected with an unscreened 3, 4 or 5 wire standard cable M5, M8 or M15 up to a length of 20m to a master. The Pin 1 and Pin 3 are used for the power supply of 24V and the Pin 4 for the switching and communication (C/Q). In Port Class A usually Pin 2 can be used as an additional digital channel. In the Port Class B configuration the Pin 2 and Pin 5 are used for an additional power supply. This could be the case for high energy consuming actuators

### IODD (IO Device Description)

The IODD is an electronic datasheet for IO-Link Devices, structured as shown in the following figure.
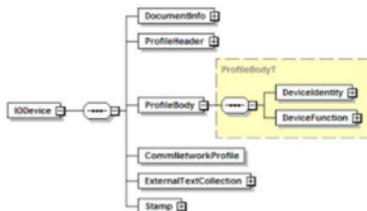


The IODD is provided as a set of files in a Zip and is structured the same for all devices from all manufacturers regarding the specifications. Use the IODDfinder (https://io-link.com/community/services/ioddfinder) to get more information about the available IODDs. The IODD contains the following information:

- Communication characteristics
- Device parameters with value range and default value
- Identification, process and diagnostic data
- Device details (Manufacturer ID, Device ID)
- Text description
- Image of the device
- Manufacturer's logo

### Advantages

Thanks to the IODD plug-and-work functionality, adding new devices does not change the overall system architecture. Due to the so called DataStorage mechanism implemented in IO-Link Devices and Masters, the master can save the current device parameters and in case the device fails, a replaced device can be easily reconfigured without any additional software tools. Also, device manufacturers do not have to worry about the communication to upper layers of the automation pyramid. This is part of the IO-Link masters and devices only have to communicate with the IO-Link protocol.

### Smart Device Profiles

Smart sensor profiles are already specified and contain a new switching scheme, a new subprofile, uncertainty indication and the teach window. This showed that the harmonization of frequently used parameters is necessary for more interoperability. Smart device profiles besides sensors are possible for actuators, diagnosis and identification and are seen by the community as another step on the way to more efficient integration of devices.