Smart Test and Programming Device for IO-Link Sensors

By Michael Schultze (Marketing Manager, Carlo Gavazzi GmbH)

IO-Link turns smart sensors into comprehensive information that can be used for testing and adjusting sensors. Flexibility and speed through comfortable working on site achieve efficiency gains. The hand programmer Smart Configurator by Carlo Gavazzi is the right tool for this.

Sensors record measured values. Smart IO-Link sensors record numerous additional information in addition to the actual measured variable, which can be made available in almost its entirety by means of preparation by integrated microprocessors. But only the exchange of this sensor information with higher-level control or IT systems makes the data usable, especially for diagnostic purposes and for setting parameters. This is made possible by the IO-Link communication standard, allowing status and diagnostic information to be used for predictive maintenance and better planning of maintenance and repair cycles; real-time diagnostic data reduces troubleshooting effort. In addition, the possibility of quickly adjusting the sensor parameters, for example when changing products or under different production conditions, increases the utilization of the machines.

Work independently on-site

So far, sensors have been programmed via a master device connected to the network or an IO-Link master. As a rule, the devices do not have their own display and often no independent power supply and can only be used in conjunction with a PC or laptop and the corresponding software. For service technicians onsite, the convenience of diagnosing and parameterizing sensors can be greatly improved using a handheld such as Carlo Gavazzi's Smart Configurator. Designed for use with IO-Link standard sensors, the device includes a touch screen, memory, apps, communication interface, and power supply for at least five hours of operation, all components that allow the technician to operate independently. LED indicators inform him about battery and device status.

Plug in sensor... ready... go

After switching on, the device is immediately ready for use. The radio connection is activated to establish the Internet connection. Updates for the apps can be downloaded via WLAN. The technician then connects the desired sensor to the device. Sensors with a thread are plugged into the matching socket on the angled top of the Smart Configurator (**Figure 1**). A three-pole and a four-pole M8 connection as well as an M12 socket are available. Cable versions are connected with an adapter cable.

The WLAN connection provides the user with access to the device description, the IODD (IO Device Description), which contains information for sensor identification, device parameters, process and diagnos-

Figure 1: Threaded sensors are plugged onto the appropriate socket on the angled top of the Smart Configurator.

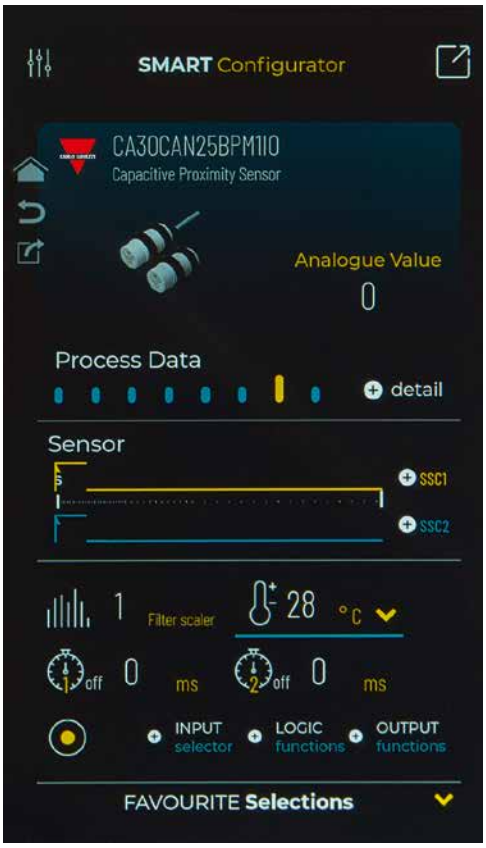

Figure 2: Carlo Gavazzi's Smart Configurator gives service technicians access to parameters, process data and diagnostic information from sensors and enables on-site adjustments.

tic data as well as communication properties and can be easily read and processed. If the corresponding files are not already stored on the Smart Configurator or are read in using a micro SD card, they are downloaded at the touch of a button via an Internet connection from the IO-Link database IODDfinder, the central storage location for information on all IO-Link sensors available on the market.

Set up user profiles and set measured variables

The apps of the Smart Configurator can be operated intuitively (**Figure 2**). Using the configuration menu, the technician can first make user settings for the sensor in the IODD. The three profiles "Observer", "Maintenance," and "Specialist" are available for this purpose. It determines the extent to which the respective profile can use the individual functional areas, for example access to diagnostic information or setting parameters. He can then assign the sensor to an existing project or create a new project. All work steps are completed by updating the IODD file and the IODD index.

From the configuration menu, the user switches to the process data. There he will find a list for his sensor with all parameters and settings, which he can activate or deactivate or for which he can enter or change values in submenus. The control commands with which sensor parameters are read in, changes discarded or written into the sensor are available as icons. So that the user does not have to scroll through the parameter list each time in order to display certain parameters for a sensor, he can combine them in a favorites list; important values can be displayed on the start page of the device.

Testing, monitoring, parameter-ing

The Smart Configurator gives the service technician access to diagnostic information such as operating hours, number of detections, operating cycles and alarm messages. With the adapter cable, IO-Link sensors on the machines and systems can be connected to the Smart Configurator Point-to-Point; the technician reads out parameters and process data and can readjust them if necessary. It can retrieve the status of sensors in the application and check the current temperature, process quality and process data. The IO-Link sensors are subjected to a performance test; values can be corrected in the application or the sensor can be replaced if necessary. The technician scrolls through the parameter list and changes the switching point, switching distance, time functions, output type and switching functions and adapts them to the respective process requirements.

Conclusion

With the Smart Configurator, diagnosis and parameterization of IO-Link sensors become mobile. Service technicians have on-site access to all information provided by the sensor manufacturer and can make changes and adjustments immediately.

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