

PRESS RELEASE

New possibilities for IO-Link through firmware update

IO-Link firmware update profile simplifies the updating of device software

Karlsruhe, Germany, January 31, 2017: The intelligence and complexity of sensors and actuators is constantly increasing, not only within the scope of Industry 4.0. Today, even the smallest sensors have a powerful microcontroller and several thousand lines of software code. Firmware updates may occasionally be necessary, for example, to enable new functionalities or to add newly supported profiles that were not yet known when the device was developed. To meet these needs, the IO-Link community has specified a firmware update profile.

At present, IO-Link is the only communication protocol that supports a uniform, vendor-neutral, firmware update mechanism. The firmware update profile is currently implemented by various manufacturers of IO-Link devices and uses the newly developed BLOB transfer (Binary Large Object) for the transfer of large quantities of data. In the future, it will thereby be possible to perform firmware updates quicker and easier.

The manufacturer of the device provides a special file (*.iolfw) for the firmware update. In addition to the actual device software, this file also includes additional information, e.g., for verification purposes or even with information for the customer. With the IO-Link profile, tools for the parameterization of the master for the firmware update can also be developed. With such a tool, the user can open the provided file and start the update process. The tool then checks whether the firmware and the device are compatible. If authentication was successful, the tool switches the device to bootload mode and starts the actual transfer and storage of the new software in the device. At the end of the process, the status of the update is displayed and, if the update was successful, the device is restarted to allow the new functionality to be used in the system. The update of a typical device takes less than 1 minute.

To guarantee both a high level of security as well as simplicity, the profile was developed according to strict guidelines. Thus, new firmware images – among other things – may only be written to compatible devices. In addition, updating of the software must function via standard IO-Link wiring in the field. Thus, no special IO-Link masters are needed for this purpose. Lastly, the new software can only be written to the device; it cannot be read out. And, should something actually go wrong when transferring the new software, every device offers a small bootloader for starting the process a second time.

Image: If firmware updates are desired, they can now be performed much quicker and easier with a new IO-Link profile.



Image: Festo AG & Co. KG



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