

## **The rapid way to Foundation fieldbus H1 and PROFIBUS PA**

Up to now, fieldbus devices for the fieldbuses FOUNDATION fieldbus H1 and PROFIBUS PA have been realised exclusively within complete implementation projects including hardware development, commissioning and individual stack portings.

A new fieldbus Kit offers an alternative using pre-fabricated components. This kit integrates the necessary hardware platform as well as the corresponding protocol stack. Immediately available and adjustable to an existing device with low effort the product provides a fast realisation based on the existing device.

In the standard case the Softing Fieldbus Kit is used in a device with a HART interface. Devices with a serial interface can also be developed to a fieldbus device. The Fieldbus Kit allows applications in an intrinsically safe environment, and - due to its compact design - it can be used in a multitude of existing devices.

The well developed and maintained Softing hardware platform and protocol software is the basis for the Softing Fieldbus Kit and provides a well established standard solution for the implementation of FOUNDATION fieldbus H1 and PROFIBUS PA. Thus, intrinsically safe as well as not intrinsically safe devices can be realised. The hardware meets completely the requirements of the IEC 61158-2 type 2 standard and complies to the guidelines of the Fieldbus Foundation and the PROFIBUS Nutzerorganisation. Hardware modifications are not necessary. Consequently, the corresponding physical layer test has not to be implemented by the user. The conformance test required for the FOUNDATION fieldbus H1 certification has also already been realised and is not necessary for the fieldbus device.

The Softing Fieldbus Kit will be energised via the network. This product is pre-certified according to the ATEX guideline for intrinsically safe use. For individual use the Softing Fieldbus Kit is also available with the FOUNDATION fieldbus H1 link master option. Due to the physical fieldbus connection any combination of required function blocks is possible. A special software will be linked to the protocol firmware of the Fieldbus Kit and serves as a master for the HART resp. serial communication. This allows a mapping of the different supported commands to the parameters of the function blocks specified by the fieldbuses FOUNDATION fieldbus H1 and PROFIBUS PA. Beside normal use of the TTL UART interface in HART devices the interface can also be used for other serial device interfaces.

The pre-implemented HART-Master facilitates the enhancement of existing HART devices about the FOUNDATION fieldbus H1 and PROFIBUS. Appropriate masters for individual realisation of the fieldbus connection are available and can be enhanced and adjusted to each device with low effort. The implementation will be completed with the creation of the appropriate device description file, and the individual certifications. Based on the already pre-tested Softing Fieldbus Kit a fast realisation of intelligent fieldbus devices is guaranteed.

Unlike the common case the license fee for hardware and fieldbus stack is not compensated in advance, but is paid with each purchase of a Softing Fieldbus Kit. Thus, the license fees are stretched for a long period and combined with the production of single devices. This license model especially meets the demands of

manufacturers with small quantities.

The subsequent decision of using an independent fieldbus implementation instead of the Softing Fieldbus Kit causes no high implementation efforts. A large part of the implementation can be reused, provided that appropriate Softing components will be applied. In addition to the standard products a customer-specific integration of the Softing Fieldbus Kit is also possible (e.g. mechanical dimensions).

Using the Softing Fieldbus Kit for an individual device requires an adequate adaptation of the serial interface when mapping the commands. Softing offers this adaptation within the scope of a project. Alternatively, the Fieldbus Kit can be adapted by the device manufacturer or integration partner with the assistance of a software development kit. This software development kit is especially designed to integrate HART devices. For the programming of the command mapping which is the main component of the development effort a template in source code is provided.

The Software Development Kit also provides the creation of the appropriate device description file, a pre-certification and support for the implementation by Softing. Softing's kick-off training explains the fundamental features of the Software Development Kit and imparts a basic knowledge of the fieldbus systems. All things considered, an intelligent fieldbus device is available and ready for certification.

Softing offers a Starter Kit for an initial test of the Fieldbus Kit. This allows realisation of two fieldbus devices for FOUNDATION fieldbus H1 or PROFIBUS PA based on HART devices. A simple HART mapping for selected cyclic and acyclic HART commands is implemented in the Starter Kit and will be supported by all HART devices. This mapping of the Starter Kit cannot be modified. The provided documentation describes the connection of the Fieldbus Kit to the HART device and the installation of the fieldbus application, ie which HART information will be stored in which parameters. For operating the Starter Kit Softing offers an adequate fieldbus environment.

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