



NEW GENERATION OF AS-I GATEWAYS

Future on Board

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For years the AS-i Gateways from Bihl+Wiedemann have been setting efficiency standards when it comes to integrated automation. And now the bar has been set even higher: the new generation scores with further optimized diagnostics, several additional functions and even greater operating convenience. And the future is already part of the package: the new Gateways can be programmed in C, making them ready today for the challenges of tomorrow.

A sports reporter might write at this point: the AS-i Gateways from Bihl+Wiedemann always played in their own league. And then he would probably try to figure out how it was possible not only to defend their lead over so many years, but even to increase it. He would almost certainly come to the conclusion that it all has to do mainly with the ability to concentrate. Specifically: the ability to concentrate on the essential – and to optimize it a little more every day.

The essential point about the AS-i Gateways from Bihl+Wiedemann: it was always their unbeatable efficiency, their unique ruggedness and their versatility when it comes to diagnostics that plays out in cost-saving benefits, especially in the ever more critical area of condition-based maintenance. But it was also the outstanding team player qualities together with the other automation systems, which AS-Interface offered thanks to a continually growing offering that came more and more to bear: by today AS-i Gateways are available for

nearly all the commonly used field buses and Ethernet solutions.

Reinforcing the already existing strengths: this was the guiding thought behind the development of the new AS-i gateways generation

Reinforcing one's own strengths: this approach has always stood behind each individual innovation level. And the same thought guides the AS-Interface specialists at Bihl+Wiedemann this time as well: in the development of the new Gateway generation that offers a whole series of additional talents. For example the ability to diagnose the device and the entire AS-i circuit including its safety technology via Ethernet and without any additional software. The AS-Interface network can now be simply and easily integrated into the remote maintenance concept of the system. In addition, the configuration files for the devices – for example the GSD file for PROFIBUS or the GSDML file for PROFINET – will now be stored directly on the web server. No more

cumbersome internet research or time-consuming searching for CD-ROMs.

More efficiency and more convenience are promised by these optimizing features as well:

- All the relevant data can now be saved on a memory card which can be simply replaced in case of a device defect or failure
- An optimized earth fault monitor detects whether an earth fault is directly on AS-i or on a sensor line
- On the display of the Gateways in the “1 Gateway, 1 power supply for 2 AS-i circuits” version the current can be read on both AS-i circuits. The user can not only check whether his power supply selection is correct, but also how much power is being taken from the AS-i line in the individual AS-i circuits
- Thanks to self-resetting fuses in the “1 Gateway, 1 power supply for 2 AS-i circuits” Gateway version, when there is a short circuit in one of the two AS-i circuits the other circuit and the Gateway remain operational – the host controller keeps receiving diagnostic information from AS-Interface, which also provides meaningful assistance towards rapid troubleshooting

In addition to all these individual improvements, the new generation of AS-i Gateways from Bihl+Wiedemann also features a true innovation: you have the future already on board. The “AS-Interface Masters” from Mannheim are convinced that programmable Gateways will play an ever greater role in the automation market of tomorrow. But: the programming languages generally used in this area have made it virtually impossible to meet the increasing demands for pre-process-

ing the actuator/sensor information and handling diagnostics data.

The modular programming language C guarantees the greatest flexibility even with respect to future applications

In order to provide users with the investment security they have become accustomed to from Bihl+Wiedemann, the engineers decided on a paradigm change right from the start of the design process: they used C, a modern, modular programming language that guarantees the greatest flexibility even with respect to future applications, in developing their new solution. Not only that: today many systems builders are using C to handle sub-tasks – a trend that has of course not escaped the PLC manufacturers either. To this extent the use of C for programming the AS-i Gateways enhances the team player qualities of the system. In terms of recruiting new talent C is winning the game against many different programming languages thanks to its increasing popularity.

With this innovative functionality the new AS-i Gateway generation from Bihl+Wiedemann is programmed for high performance in every respect – both literally and figuratively. The devices programmed in C are able themselves to take over a great number of control tasks. In smaller systems the user will even be able to do without a PLC altogether: if desired the C program can function as a full mini-PLC.

This new option also benefits the AS-i user of course in more complex applications as well: there the C-programmable Gateways make the work of the PLC easier – for example by pre-processing special functions for the drives in conveying applications. Ideally even here the complete machine or at least entire parts of the machine can be controlled directly

from Gateways – all that's left for the control level is to give the marching orders. All this of course not only makes life easier for the PLC, but also for the user: a completely autonomous actuator/sensor level not only helps in simple cascading his system, it also offers him additional security in case the PLC develops problems. A third decisive advantage of programming in C lies in the area of time-critical applications. Whereas before the AS-i information had to take a detour through the field bus to the PLC and back when data were exchanged, now the AS-i Gateway together with the C program itself takes over the command on the actuator/sensor level, suddenly enabling vastly more efficient solutions in such applications.

The calming feeling of being ideally prepared for the future was always a free bonus with AS-Interface

The new AS-i Gateway generation also offers a number of additional plus points. For example, the user is free to affect the actuator/sensor

information as he wishes, which makes things like plausibility checks noticeably easier. In addition, the user programs can be protected by a manufacturer-specific 32-bit key so that they will only run on the corresponding units. This provides AS-i users who develop comprehensive program modules for their equipment both reliable and broad-based know-how protection.

With the ability to program in C Bihl+Wiedemann thus has taken yet another great step towards the future of AS-Interface. Just in time for Hanover 2011 the new Gateways from the manufacturer will be equipped with the latest innovative functionality. The modest added cost for this is paid however only by the users who really want to use the new feature right away and have the additional option unlocked. For all other customers nothing changes for now: because the feeling of assurance that comes with being ready today for the challenges of tomorrow has always come at no charge with AS-Interface.

The plus points of the new Gateway generation from Bihl+Wiedemann at a glance:



- Gateways now programmable in C
- Interchangeable memory card: redundant memory for C program and device configuration
- Ethernet diagnostics interface for remote diagnostics
- Integrated web server: diagnostics for the Gateways and the AS-i circuits over Ethernet possible with no additional software
- GSD file for PROFIBUS and GSDML file for PROFINET already stored in the web server
- Earth fault monitor distinguishes between AS-i cable and sensor cable
- Current from both AS-i circuits in the "1 Gateway, 1 power supply for 2 AS-i circuits" version can now be read directly on the unit
- Self-resetting fuses in the "1 Gateway, 1 power supply for 2 AS-i circuits" version
- Device temperature display
- AS-i Power24V capable
- Interfaces for virtually every bus system and Ethernet solution