

AS-INTERFACE MASTER NEWS

THE BIHL+WIEDEMANN MAGAZINE

INTERVIEW WITH BERNHARD WIEDEMANN

**“The marketplace
provides our ideas”**

PORTFOLIO

Is something missing?



Interview with Bernhard Wiedemann,
CEO of Bihl+Wiedemann

“The marketplace provides our ideas”

Revolutionary, or at least evolutionary, describes the new products presented by Bihl+Wiedemann at the most recent industry trade shows. In advance of SPS IPC Drives the company is trading more quietly but with as much innovation as one is accustomed to seeing. This is because according to Managing Director Bernhard Wiedemann in this conversation with AS-i MASTER NEWS, efficient development has less to do with sensations and more with listening to customers.

AS-i MASTER NEWS: Mr. Wiedemann, you have recently created one quantum leap after the other. Now, shortly before SPS IPC Drives, one of your main announcements is: “We now also provide standard slaves.” Isn’t this something like a 3-star chef serving hamburgers?

BERNHARD WIEDEMANN: It might appear so at first glance. But when you take a closer look it quickly becomes clear why another series was not something we considered. The technological expertise for developing standard slaves was of course something we had from the very beginning. And we used them often and successfully under commission by many other companies. But to be able to offer standard slaves under one’s own name at competitive prices you need to produce large quantities. And that requires not only the corresponding production know-how but also the commensurate capacity. Before we expand that capacity we wanted to achieve a certain company size, so that the investment is in a reasonable proportion to our sales. This was in fact the case in the past year. And so in 2011 we started up new high-performance assembly lines, so that today we are ideally positioned with our production in Mannheim and Antalya. The orders can come in now – and fortunately this is exactly what is happening.

AS-i MASTER NEWS: What distinguishes – to remain with the same analogy – your hamburgers from those by the other chefs?

BERNHARD WIEDEMANN: For one thing of course quality plays a decisive role in the area of standard slaves as well. Here our perfectionism among other things stands us in good stead, as it has always guided our actions. We have always placed great value for example on electromechanics – in other words everything you can touch on a device – although that did not play such a large role with our early best-sellers like the AS-I Masters. But when it comes to the standard I/Os, everything that had long been second nature to us suddenly became extremely important. For another thing we have come up with a variety of useful extra features for our standard slaves: for example 2x2 terminals for the AS-i yellow cable, two multi-colored LEDs per output for status and overload indication – or an 8/80 version in IP20, just 22,5 millimeters wide.

AS-i MASTER NEWS: Did the successful launch of your standard slaves perhaps also have to do with the fact that your customers expect even more service involvement when there are problems in a system where also the standard I/Os are yours?

BERNHARD WIEDEMANN: No, definitely not. Our customers know for a fact that when a system containing even just a single master of ours goes down – and regardless of whether the problem was caused by our products or not – we take care of the problem. In my opinion the high acceptance our standard slaves was met with in the market from the very beginning is due not just to the top quality and many extra features we offer but also because we now represent a full provider both in safety technology and in the standard area of AS-Interface. Why should a user buy his I/Os somewhere else when he can get them just as easily from his systems provider?

AS-i MASTER NEWS: Becoming a full provider was a main objective in the course of your company’s development starting at some point. Does this mean you have now arrived where you wanted to be?

BERNHARD WIEDEMANN: There is no such thing as having arrived in our business. And to be completely honest: That would be rather boring anyway. It was never our plan to develop seven, twelve or nineteen ideas that we would carry around with us and simply lean on them. Our plan has always been to give our customers the most efficient technological answers to their immediate



questions. And so we started out as an AS-I Master specialist simply because we knew that the networking of actuators and sensors using AS-Interface is the best thing that can happen to the user. The emphasis was always on complex technology, great product variety and small quantities. Then came analog slaves: simpler than masters

but more complex than binary slaves. In response to customer requests we then soon began to develop and produce a regular “zoo” of OEM modules: small AS-i boards for very specific tasks. The quantities were often small, but this still made sense because of their family similarity. Then came our safety products: extremely development-intensive,

highly complex in terms of software – but with the irresistible option of being able to open up a whole world of new applications.

AS-i MASTER NEWS: And what’s next in the pipeline?

BERNHARD WIEDEMANN: I can’t say. Not because I want to keep anything secret, but rather because I really don’t know. We are constantly developing in a wide range of directions, but our strategy is not to present solutions and hope that there are problems somewhere that can be solved with them. We think just the other way around: we analyze what the user needs now – and that is exactly what we develop and produce. This means that our ideas come to a certain extent from the marketplace. This was already the case when we were still concentrating on only AS-i Masters. The feedback from our customers left no doubt that the advantages of AS-Interface increase exponentially the simply the customer’s link to other automation systems becomes. And so we developed Gateways for nearly every possible system which is commercially available. The same was true in the safety field: users themselves made it clear to us that the use of AS-i Safety has value under certain conditions in virtually any application – in large, distributed systems as well as in medium-size or small machines with just two or three safe signals. And is precisely these prerequisites that we have created with our products.

AS-i MASTER NEWS: But that only applies where the standard area of the system is also running AS-Interface, doesn’t it?

BERNHARD WIEDEMANN: No, and it is exactly this faulty conclusion that even recognized safety professionals come to again and again. I can understand this in a way, because I find the technological attraction of sending safe and non-safe signals over a single cable just as irresistible. But the fact is that AS-i Safety pays off – at least using our solutions – even when the standard actuators and sensors are connected to another, less economical system.

AS-i MASTER NEWS: Mr. Wiedemann, thank you for speaking with us.

Bihl+Wiedemann Portfolio

Is something missing?

Something is always missing: Tomorrow the market might want a little more performance here and the day after tomorrow an additional feature there. But for today the product portfolio of Bihl+Wiedemann already offers truly everything needed for maximum efficiency in networking actuators and sensors and in the safety technology of modern systems and equipment.

“Everything from a single source”: If there were a hit list for the most frequently used advertising slogans, this formulation would surely be near the top. When it comes to shower curtain rings or disposable lighters such statements may not be problematic,

but in such a fast-moving market as automation the picture is quite different: “In fact there is always something missing in our portfolio,” notes Bihl+Wiedemann Managing Director Bernhard Wiedemann. “Otherwise we could stop always looking

for even better, more efficient solutions.” Fine, then let’s put the question a different way: Is there, considering the current state of automation technology, something in the AS-Interface area that >>



Circuit Board Modules AS-i, PCB Solutions
- Special versions on request

Drive Solutions
- Especially for material handling and logistics
- Modules for 24 V drives or inverters

E-STOP / Switches / Buttons
- With bicolor LEDs (red/green)

AS-i Power Supplies
- Broad range from 1,8 A - 8 A

AS-Interface Masters/Gateways
- For nearly all bus systems and Ethernet derivations
- Perfect connection to nearly any PLC

Software for configuration, diagnostics and programming
Diagnostics/Commissioning

Digital Modules AS-i
- Cost-effective solution in IP20, 22,5 mm
- Rugged stainless steel in IP20

Speed Monitors
- Teach-key for time saving in setup

Safety I/O Modules
- The right module for virtually any task
- In IP20 and IP67

Analog Modules AS-i
- “Plug and Play” – as easy as digital I/Os
- In IP20 and IP65, M12

Repeater and Bus Termination
- Circuit extension up to 1000 m

Digital Modules AS-i
- IP67, M12 (large and small housings)
- 2x2 terminations for profile cable
- State (yellow), Overload (red)

is not in the Bihl+Wiedemann product range? "No, definitely not", says Wiedemann, while opening the door to the following statement: Following the production start of their own standard slaves his company does at least for today offer truly everything the user needs for efficient networking of actuators and sensors as well as for modern safety technology.

Thanks to the Gateways from Bihl+Wiedemann nearly any automation system can make cost-effective use of the efficiency offered by AS-Interface

The "AS-INTERFACE MASTERS" from Mannheim first grew because they recognized from the outset how much potential there is in a system that speaks almost every language of automaton: by using their Gateways AS-i can be incorporated into higher-level fieldbus networks as easily as a normal slave. PROFIBUS, PROFINET or sercos? EtherNet/IP, EtherCAT or Modbus TCP? CC-Link, DeviceNet or CANopen? Thanks to the bridge builders from Bihl+Wiedemann the efficiency that AS-Interface promises for the automation pyramid is virtually universally available.

Digital and analog data, acquired remotely by AS-i slaves, are passed through the respective bus system to the host controller, while the output signals from the controller are sent back to the AS-i actuators. The user profits from the variety of standard offering diagnostic functions such as recognition of duplicate AS-i addresses, earth fault and EMC monitoring as well as an optional PLC functionality. An especially cost-effective solution is the 2-Master version in one Gateway. This allows two AS-i networks to be controlled by one Gateway – powered by just one power supply if needed.

Of course the product offering also includes the complete range of AS-i-specific control and signal devices such as I/O-, motor- and PCB modules. Nor is there a lack of special feature devices, such as the Speed Monitors which reliably process sine/cosine or HTL signals to enable among other things a safely reduced speed for setup operations. Each Speed Monitor controls two axis simultaneously and is incorporated into the control circuit feedback by means of special adapters and cables without affecting the control process itself.

Bihl+Wiedemann also offers complete solutions in the area of safety technology.

Which brings us to the area of modern safety technology – a field in which Bihl+Wiedemann likewise has the right solution for any eventuality. Regardless of whether you are dealing with complex and distributed systems, medium-size applications with 10 to 100 safe in- and outputs, or small machines with just 3 to 10 safe signals: the intelligent solutions of the safety specialists from Mannheim promise considerable potential for savings on any level – usually with the added bonus of performance.

One of these is SafeLink over Ethernet using the newest AS-i Gateway generation with integrated Safety Monitor. In the maximum configuration this allows you to collect almost 2.000 safe 2-channel input signals and control safe outputs either centrally or remotely. These innovative devices automatically and continuously exchange the safe in- and output data from all the connected machines and make the data available to the respective program. This approach allows up to 31 of the new

Gateways with integrated Safety Monitor to be coupled together – without losing performance at any point and without the use of additional hardware. The safety concepts from Bihl+Wiedemann also offer numerous advantages in the large number of medium-size safety applications compared both to traditional safety relays as well as to so-called safety controllers. The two most important plus points for the AS-i Gateways with integrated Safety Monitor, which can collect and process up to 62 safe signals, are the incomparably simple wiring and the optimal interface to the systems commonly used in automation.

Even in the smallest applications with three safe signals or more AS-i Safety wins the cost race against conventional wiring thanks to the Safety Basic Monitor from Bihl+Wiedemann. Like its bigger brother, the unit consists of a Safety Monitor and a selectable AS-i Master, but otherwise it has been developed according to the "reduce to the max" philosophy: For example it does not include a fieldbus interface, but rather just indication outputs for communicating with any host controller which may be present. And its inner sanctum is enclosed not in the rugged stainless steel housing, but rather in a slim IP20 plastic one.

And there is always the right module for any safe input signal – for the control cabinet in IP20, and for the field in IP67. In other words: whether a single safe input or output or safe multi-I/O modules the Bihl+Wiedemann portfolio always provides the right slave. But the question as to whether something is missing will still likely be answered by Bernhard Wiedemann the same way even three innovations from now: "Something is always missing."

Bihl+Wiedemann news at SPS IPC Drives



AS-i 3.0 EtherNet/IP+Modbus TCP Gateway with integrated Safety Monitor and SafeLink (BWU2579)

Besides the PROFIBUS, PROFINET and sercos Gateways also EtherNet/IP+Modbus TCP Gateways are now available with SafeLink ■ SafeLink over Ethernet diagnostic interface or fieldbus interface: ✓ Efficient and cost-effective collecting and evaluating of nearly 2.000 safe 2-channel input signals ✓ Centralized or decentralized control of safe outputs ✓ The simplest way of coupling many safe signals ■ Supports the DLR-Technology: ✓ Redundant Ethernet communication without switches ✓ Increases network failsafe level ✓ Optimizes machine run times ■ The unit also offers the familiar advantages of the EtherNet/IP+Modbus TCP Safety Gateway from Bihl+Wiedemann, e.g.: ✓ High cost-effectiveness from up-front cost savings, installation effort and control cabinet space as well as the ability to easily exchange units and rapid commissioning thanks to the Chip Card ✓ High efficiency from monitoring of the release circuits up to SIL3/Cat4/PLe while offering expanded Bihl+Wiedemann AS-i diagnostics including recognition of duplicate AS-i addresses, AS-i Earth Fault Detector and AS-i Noise Detector in a single housing ✓ Up to 62 safety slaves per device



New functions for the Safety Basic Monitors BWU2567 and BWU2569

Read and write AS-i parameters: ✓ Programming of AS-i compatible door switches with interlocking now complete in the Safety Basic Monitor ✓ Interlock control possible without a PLC ■ Speed Monitors: ✓ Added Speed Monitor function of the Standstill Monitor for monitoring frequency settable up to 400 Hz. Higher frequencies on request ✓ Diagnostics module "Color of a device." The device color can be diagnosed directly in the Safety Basic Monitor ✓ The color to be diagnosed is selectable in the module; as soon as one of the connected devices assumes the selected color, the module is "true". ✓ Multiple devices can be connected to the module ■ Half-sequence detection, non-safe diagnosis of the safety half-sequences: Diagnosing of which channel (half-sequence) was triggered in a safe slave is now possible in the Safety Basic Monitor

without the need for a PLC ■ Diagnostic slave for user diagnostics (especially for BWU2567 in Monitor mode): The user is provided with 16-bit I/O data which can be exchanged with a host controller ■ System device "Non-safe unit ok": ✓ Simple monitoring of the non-safe parts in the Safety Basic Monitor ✓ The system device is "true" as soon as the non-safe unit reports an error



AS-i Safety 16I/10 Module, 16 / 8 safe inputs and 1 (2) electronic safe outputs, IP20 (BWU2578)

Enhances the line of AS-i Safety I/O Modules ■ 8x 2-channel or 16x 1-channel safe inputs ■ Space-saving, cost-effective solution: ✓ Replaces 8 Safety Input Modules BWU1939 and 1 Safety Output Module BWU2173 ✓ Maximum number of safe inputs in 22,5 mm control cabinet width, optimized for service and commissioning ✓ Supports applications up to SIL3/Cat4/PLe



Display menu in Bihl+Wiedemann Gateways now also in Asian languages

AS-i Safety Input Module IP67, M12 for optoelectronic protective devices now also with reset output (BWU2689)

Enhances the line of AS-i Safety Input Modules for optoelectronic protective devices or floating contacts in IP67 ■ Ideal complement to the Safety Monitors and AS-i 3.0 Safety Gateways ■ Integrated reset output ■ Supports applications up to SIL3/Cat4/PLe



BWU2270 BWU2369 BWU2631 BWU2689
BWU2284 BWU2370



AS-i Safety Input Module, 4 / 2 safe inputs (2 channels) in IP20, for floating contacts (BWU2707)

Enhances the line of AS-i Safety Input Modules for optoelectronic protective devices or floating contacts in IP20 ■ Space-saving, cost-effective solution: 4 / 2 safe inputs (2 channels) for floating contacts (2x BWU1939) in one module ■ 4 conventional semiconductor outputs: short circuit, overload and inverse-polarity protected for controlling up to 2 indicator lights; powered by galvanically separated 24 V ■ Supports applications up to SIL3/Cat4/PLe

Component macros for engineering software EPLAN for downloading

EPLAN macro library for free downloading from our homepage ■ Minimizes time and effort in integrating Bihl+Wiedemann products into the electrical plan

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Potentials for savings in safety technology

Safety Basic Monitor
with switchable AS-i
Master - the new cost
brake for 3 safe
signals or more

SafeLink over Ethernet

PROFIBUS
PROFINET
PROFIsafe
sercos
EtherNet/IP
Modbus
EtherCAT

- SafeLink over Ethernet: The simplest way of coupling many safe signals
- Optimal PLC connection via fieldbus, all diagnostic data in the controller, safety and standard signals mixed
- Universally expandable with Safety I/O Modules + Standard I/O Modules in IP20 or IP67, Speed Monitors for up to 40 axis, Safety Relay Output Modules



More information on your application safety at:
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