

# Welcome to the AC500-S Safety PLC

## Safety in perfection featuring a real-time dedicated analog current module on PROFINET with PROFIsafe

### ABB's pioneering safety PLC features a high-speed dedicated analog current module on PROFINET with PROFIsafe

The new AC500-S offers an advanced range of safety PLC solutions providing you with unrivalled power and performance combined in a state-of-the-art integrated package from ABB, the world's leading supplier of industrial automation solutions.

Our engineers designed this innovative system around a dedicated analog current module based on PROFINET with PROFIsafe, the real-time open industrial Ethernet standard for automation – offering you extraordinary performance and flexibility for even the most challenging of safety applications.

Analog input module AI581-S

Performance and flexibility combined thanks to analog input on industry-standard PROFINET and PROFIsafe network technologies



# PLC safety taken into the next dimension

ABB's brand new addition to the renowned AC500 PLC series comes with a dedicated analog current module covering 0 to 20 mA (4 to 20 mA in safety mode) on PROFINET with PROFIsafe, the state-of-the-art communications technology for industrial networking in automation.

## More flexibility and practicality

PROFINET offers virtually real-time measurement of your critical safety values, facilitating faster, safer, more economical and higher quality manufacturing. ABB now gives you the option of connecting analog inputs to your PROFINET network in addition to local connection to the PLC, bringing the flexibility and practicality of Ethernet to your industrial environment.

## The ultimate choice for safety measurement

The AC500-S analog input module makes it possible to measure safety pressures, positions, torques or temperatures on your machinery applications, making it the ideal choice for applications from braking systems in hoists and lifting equipment, to

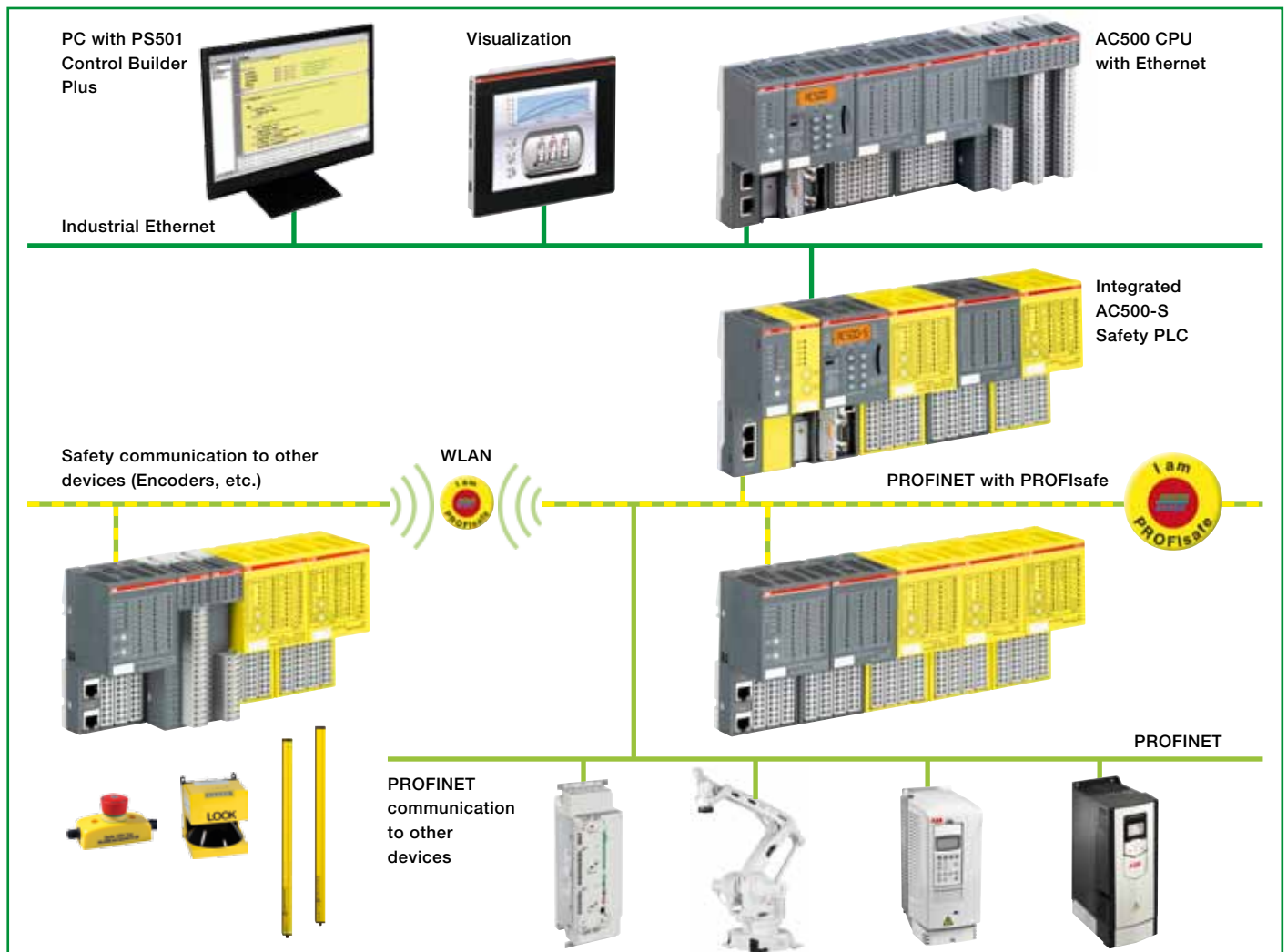
positioning systems and temperature control on cranes or even selective shutdown systems on wind power turbines. And that makes the need for using AD converters or proprietary electronics for safety applications a thing of the past.

## Multiple connection options

ABB's innovative AC500-S PLC supports various network configurations to give you broader flexibility in the design of your application. Our system makes it possible to connect safety sensors and actuators either centrally or as part of a decentralized configuration via PROFINET with PROFIsafe.

Moreover, we put the power in your hands to set up flexible connections for customized solutions in accordance with your specific requirements. And because the AC500-S is seamlessly integrated into the AC500 PLC family, it's a snap to combine it with our non-safety modules. For varied environments that include safety-oriented applications such as robots, cranes, stagecraft machinery and much more, it's the obvious choice.

Example of communication on PROFINET with PROFIsafe network



# The AC500 PLC family

**ABB's AC500 series is a PLC-based modular automation solution that makes it easier than ever before to mix and match standard and safety I/O modules to expertly meet your exact requirements.**

## **More integration and easier programming**

Featuring a consistent look and feel across the entire range, the AC500 is the PLC of choice for applications where uncompromising flexibility, integration and communication are a must. Our PS501 Control Builder Plus is based on CoDeSys and conforms to IEC 61131-3, letting you get up and running in no time at all. And not only that: Clear configuration of the overall system with one single tool ensures optimal transparency.

With the new AC500-S safety PLC, the latest addition to the AC500 family, ABB takes the stress out of managing even the most complex safety applications. Support for safety-relevant arithmetic operations such as COS, SIN, TAN, ASIN, ACOS and LOG makes the AC500-S ideal for applications in fields like crane engineering, wind power generation, robotics and hoist technology. Plus it gives you greater flexibility and simplicity thanks to safety programming under Structured Text (ST) as well as full support for Function Block Diagram (FBD) and Ladder Diagram (LD).

## **1 Standard communication module**

ABB's AC500 family is packed with advanced communications technologies to bring you to the next level in communication. Combinable to form optimally scaled network nodes, we put the power to cover everything from small-scale applications to comprehensive large-scale industrial systems right in your hands. We've got all common communications standards covered, such as Ethernet, EtherCAT, PROFINET, PROFIBUS DP,

CANopen, DeviceNet, Modbus TCP, Modbus serial, Serial, ABB CS31 and PROFI-safe via PROFINET.

## **2 Safety PLC**

Just as you've come to expect from ABB, our safety PLC is SIL3 (IEC 62061, IEC 61508) and PL e (ISO 13849) certified. And an array of features such as system diagnostics provided via LEDs and onboard display of standard CPUs gives you the added diagnostic concept your applications demand.

## **3 Standard PLC**

ABB's complete AC500 range of CPUs, from the PM572 to the PM592, can be used with our AC500-S CPU to create truly customized solutions – even for your most challenging requirements. We keep it simple by offering programming of safety and non-safety applications via a standard PLC interface.

## **4 Standard I/O module**

With ABB's standard I/O module, the complete S500 and S500-eCo I/O module range can be connected to the standard PLC, providing you with the ultimate in flexibility and simplicity. And a wealth of functions in our configurable I/O modules allows you to get the customized and low-priced solutions you need to sustainably optimize your applications.

## **5 Safety I/O module**

Our safety I/O modules are certified up to SIL3 (IEC 62061, IEC 61508) and PL e (ISO 13849), giving you the reliable security you need to be able to focus on what really matters – your applications. Features such as channel-wise error diagnostics and the flexibility to choose between channel-wise or module switch-off in case of channel error make working safely that much easier.



# Contact us

## **ABB Automation Products GmbH**

Wallstadter Str. 59

68526 Ladenburg, Germany

Phone: +49 (0) 6221 701-1444

Fax: +49 (0) 6221 701-1382

Email: [plc.sales@de.abb.com](mailto:plc.sales@de.abb.com)

**[www.abb.com/plc](http://www.abb.com/plc)**

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