

*The development
of press automation
is complete.*



hima/factory_automation/presses

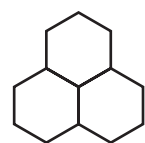


HIMA Paul Hildebrandt GmbH + Co KG
P.O. Box 1261 · 68777 Brühl · Germany
Telephone: (+49 62 02) 7 09-0 · Telefax: (+49 62 02) 7 09-1 07
E-mail: info@hima.com · Internet: www.hima.com

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The safe decision.



Although the technical performance and safety requirements to be met by your presses are constantly increasing, potential for increasing productivity and efficiency seems to be running out. Methods that have been used for many years are reaching their natural conclusions.

Sometimes a new perspective is what is needed to find intelligent and innovative new solutions.

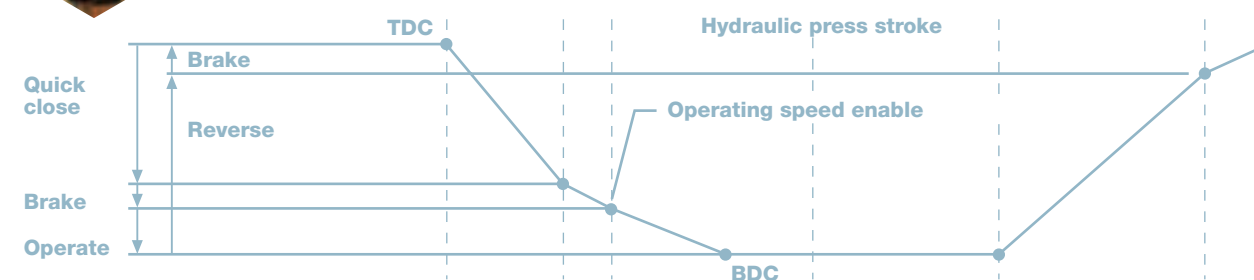
HIMA – the European market leader in safety-related process automation – is also offering intelligent solutions for Factory Automation which are breaking new ground in terms of performance, productivity, flexibility and cost-effectiveness.

Let HIMA help you to increase your output and reduce overtravel as well as safety clearances. You will also be able to cut the time and money spent on wiring and reduce the number of different fieldbuses. Combined with minimising the size of the control cabinet, this will significantly reduce overall costs for your safety system.

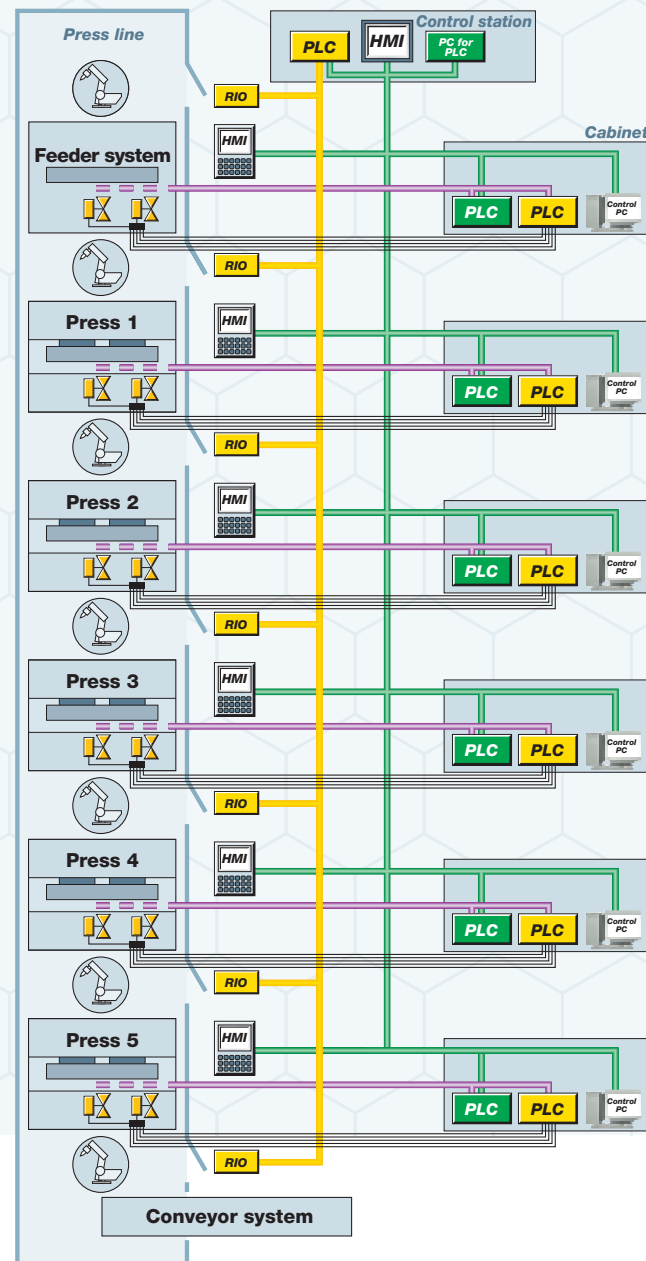
restart: Come with HIMA into a new era of safety-related press automation and make the most of our truly intelligent solutions.



Productivity
Performance
Cost-effectiveness
Flexibility



Typical conventional solution



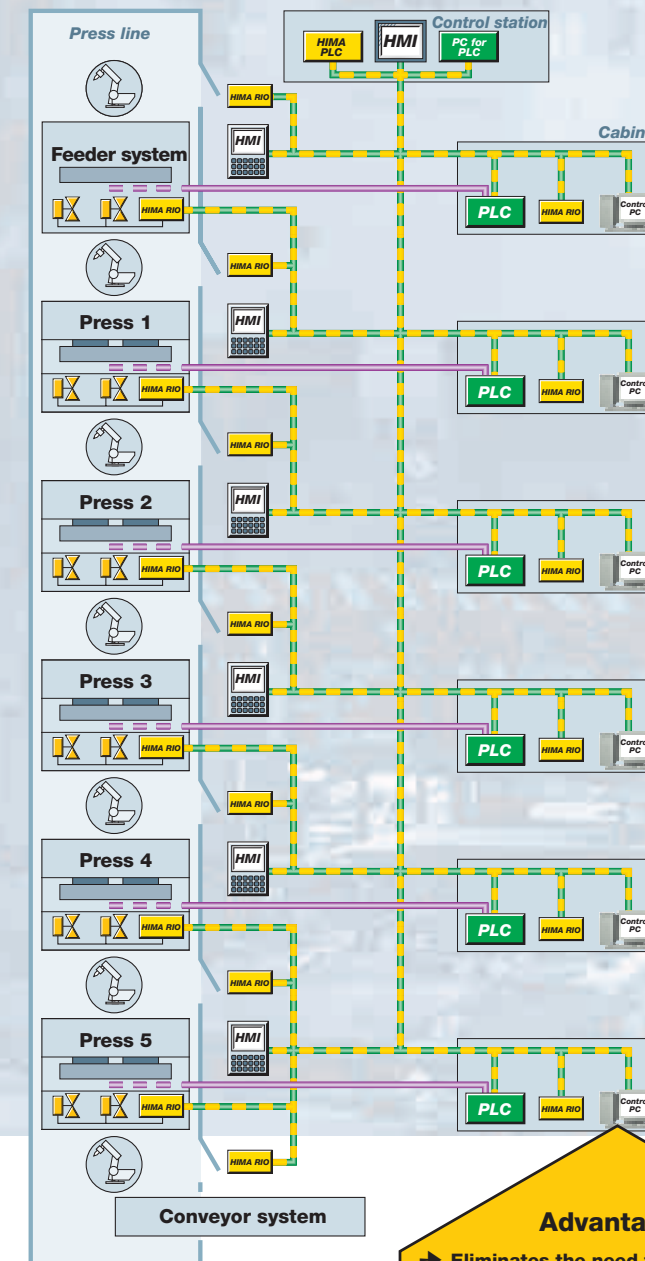
Separate bus systems are required for safe and non-safe signals.

Time-critical signals must be connected directly to a safety controller.

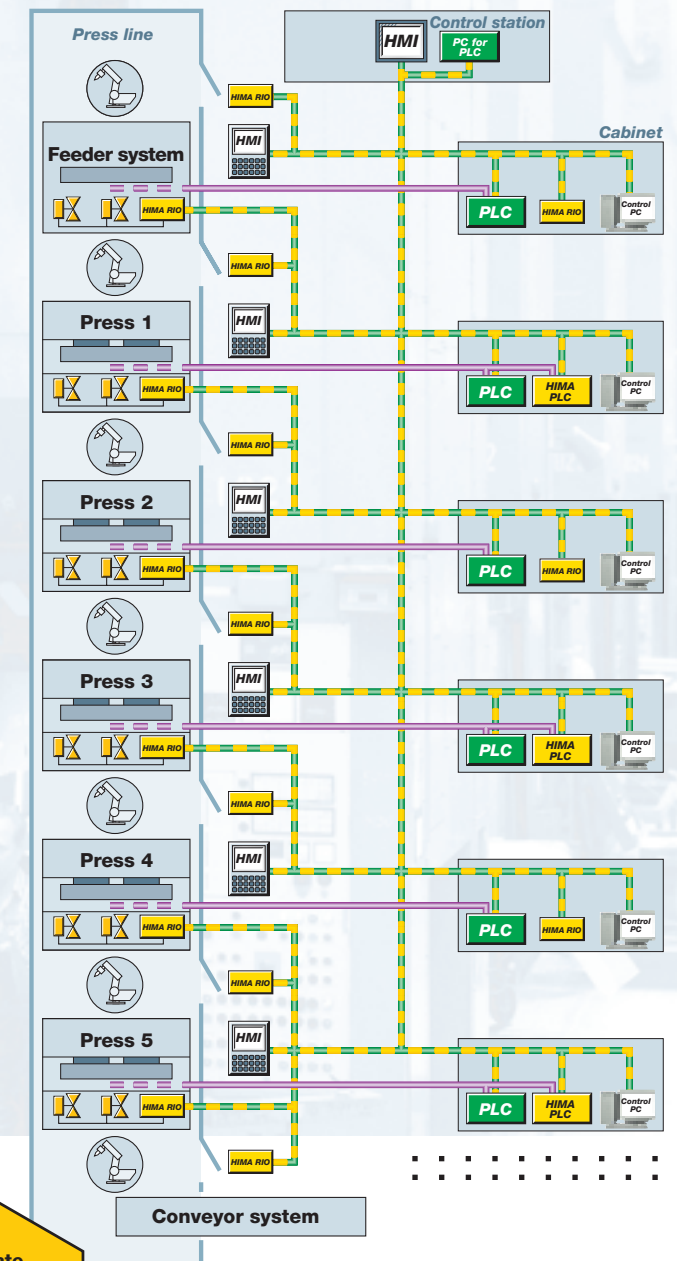
An additional central safety controller is always required for high-level control functions.

- **PLC** Standard PLC
- **PLC** Safety PLC
- **RIO** Safe remote I/O
- **Profibus**
- **Ethernet**
- **Separate safety bus**
- **Ethernet/safethernet for the common transmission of safe and non-safe signals**
- **Conventional wiring**
- **Time-critical, safety-related signal, e.g. valve**
- HMI **Human machine interface**

HIMA is revolutionising Factory Automation.



HIMA solution with central safety controller

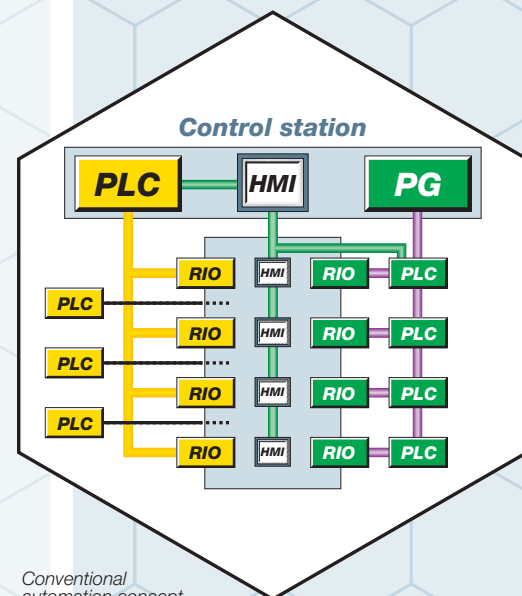


HIMA solution with distributed safety controllers

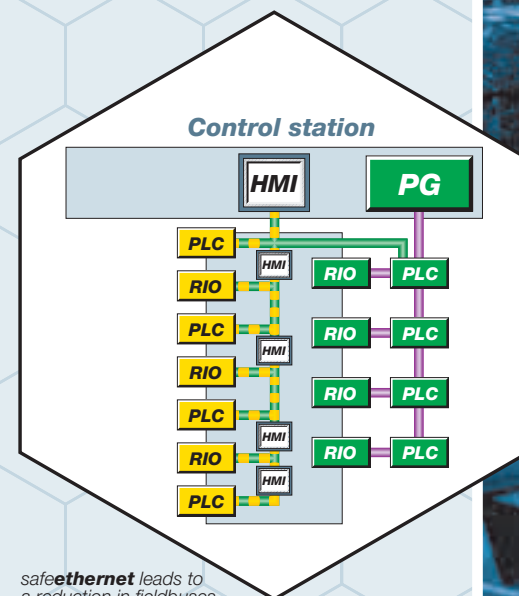
Advantages:

- Eliminates the need for a separate safety bus
- Eliminates the need for a central controller or local controllers
- Minimises the size of the control cabinet
- Reduces time and money spent on wiring and installation
- Minimum downtimes due to system-wide diagnostics
- Programming, diagnostics and visualisation via Ethernet

One model is here to stay.



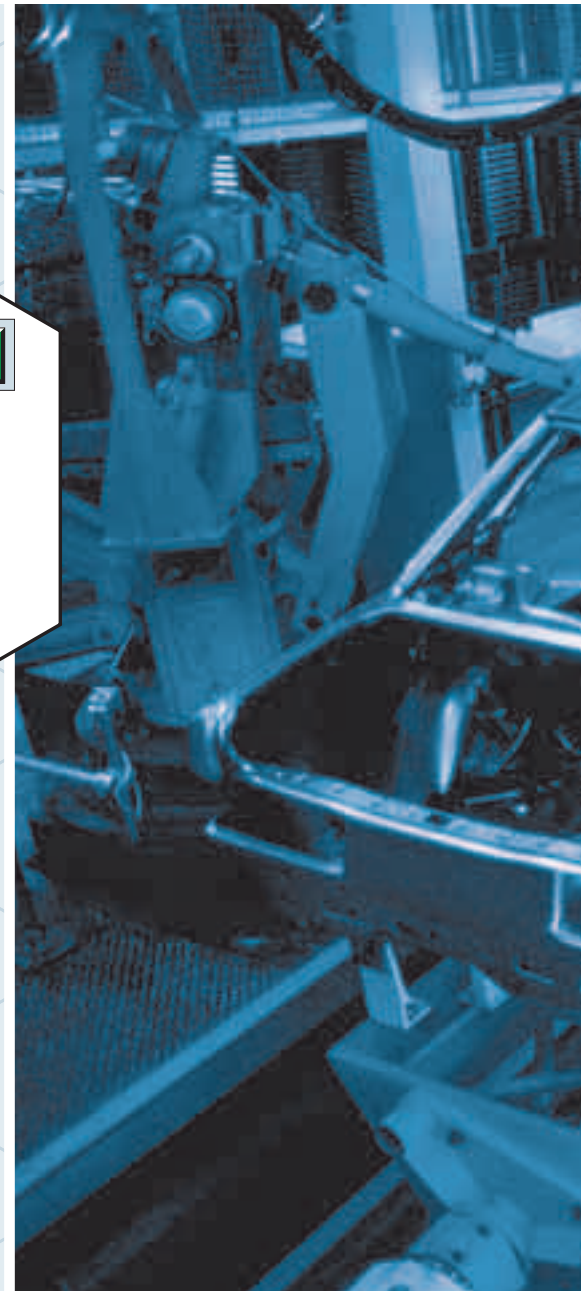
Conventional automation concept



safeEthernet leads to a reduction in fieldbuses

The HIMA solutions presented on the previous double-page are based on a combination of the fastest safety controllers available on the market and the fastest safety bus, „safeEthernet“.

Regardless of response times, the number of bus devices, spatial conditions and data volume, all safety-related signals - both time-critical and non-time-critical - are processed in a single plant-wide network. safeEthernet enables the exchange of safety-related signals to be integrated into the existing Ethernet network.



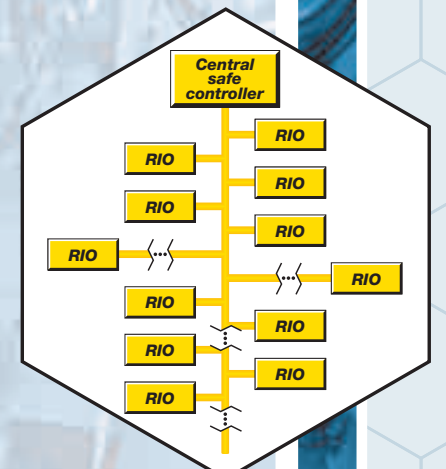
Use just one central controller to implement distributed automation concepts – all signals can be connected locally using remote I/O modules. Or use networked, distributed safety controllers to implement distributed automation concepts. All signals are processed by the safety controllers distributed on the network. Higher-level control functions can be provided by any of the controllers on the network.

In both cases, you can minimise time and money spent on the conventional wiring of time-critical safety-related signals. Appropriate sensors and actuators are connected directly to distributed remote I/O.

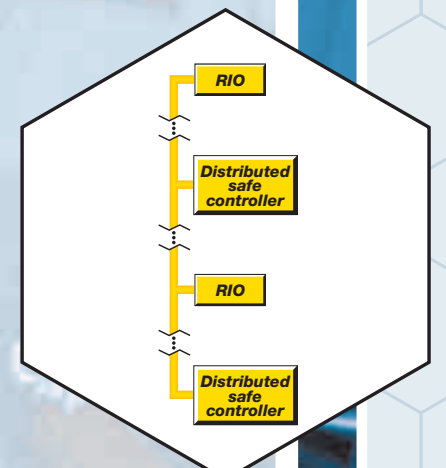
Both automation concepts can be combined and extended flexibly at any time. The use of safeEthernet enables safe and non-safe data to be integrated into a single standard Ethernet network – without restricting safety. The number of buses to be installed is reduced and there is no need to spend time and money installing a separate safety bus.

The performance of the HiMatrix systems and safeEthernet communication can be used to increase the productivity of your press, cut overtravel and reduce safety clearances.

As maximum safety and minimum response times are assured at all times, your safety-related application can be configured solely on the basis of cost-effectiveness and availability.

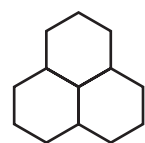


Distributed automation concept with central PLC



Distributed automation concept with distributed PLC's

	Programming unit		Profibus
	Standard PLC		Ethernet
	Standard remote I/O		Safety bus
	Safety PLC		Ethernet/safeEthernet
	Safe remote I/O		Conventional wiring
	Human machine interface		



High-performance products provide the basis for intelligent solutions

HIMatrix compact and modular safety-related controllers have been designed based on proven HIMA safety technology specifically for time-critical requirements in Factory Automation.

The safety-related networking of the HIMatrix systems takes place via **safeethernet** – which is based on standard Ethernet technology and has TÜV/BG certification. **safeethernet** accelerates the transmission of safety-related data to 100 Mbps and now even supports the use of the entire range of Ethernet functions for setting up safety-related networks.

HIMatrix systems and **safeethernet** – a combination of high-speed safety controllers and high-speed safety bus – offer hitherto unknown levels of flexibility for automation process solutions.

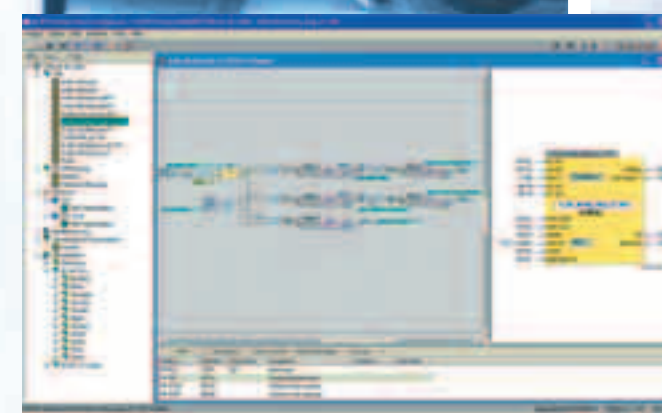
The HIMatrix range, which has been certified to IEC 61508, EN 954-1 and DIN V 19250, even supports the integration of relay functions into the safety PLC, increasing levels of flexibility still further.

The current system limits of safety-related automation concepts disappear, paving the way for truly application-based safety solutions.



ELOPII Factory – The efficient engineering tool

- Straightforward planning, programming, diagnostics and system and communication documentation
- IEC 61131-3-compliant
- Easy to program with Function Block Diagram (FBD) and Sequential Function Chart (SFC)
- Windows-NT/2000-compliant
- Full graphic programming with drag&drop functionality
- Can be operated safely without any need for special hardware or safety expertise
- Automatic network configuration (plug&play)
- System based, central programming via **safeethernet**
- Function blocks with TÜV/BG certification
- Use of all IEC 61131-3 functions and variable types for safety-related programs
- Offline simulation of all functions
- **NEW:** Online logic test



HIMatrix-controllers

- Certified to SIL 3, Cat. 4 and AK 6
- Response time ≤ 20 ms
- Cycle time for 1 K program approx. 0.02 ms
- Communication via **safeethernet, Profibus, OPC, MODBUS**

HIMatrix-products		Analogue/digital inputs	Analogue/digital outputs	Ethernet switch ports	Line monitoring*	Special features
Compact PES	F35	8 / 24	- / 8	4	-	incl. 2 x 100 kHz counters, approved for use in Ex Zone 2
	F31	- / 20	- / 8	2	yes	no fieldbus interfaces
	F30	- / 20	- / 8	4	yes	-
	F20	- / 8	- / 8	2	-	8 individual channels, parameterised as input or output
Remote-I/O	F3 DIO 20/8 01	- / 20	- / 8	2	yes	multi-master-compatible, approved for use in Ex Zone 2
	F3 DIO 20/8 02	- / 20	- / 8	2	yes	single-master
	F1 DI 16	- / 16	- / -	2	yes	single-master
	F2 DO 16	- / -	- / 16	2	-	single-master, 8 x 2 A outputs, 8 x 0.5 A outputs
	F2 DO 8	- / -	- / 8	2	-	single-master, relay outputs up to 230 V contact voltage
	F2 DO 4	- / -	- / 4	2	-	single-master, up to 5 A load
	F3 AIO 8/4	8 / -	4** / -	2	-	single-master, supply for NAMUR initiators and 24 V
Modular PES I/O-modules	F60	- / -	- / -	4	-	6 slots for any type of I/O module
	AI 8	8 / -	- / -	-	-	-
	DI 32	- / 32	- / -	-	yes ¹	¹ cross-circuit in connection with DIO 24/16
	DI 24	- / 24	- / -	-	yes	110 V input voltage
	MI 24	24 / 24	- / -	-	-	current inputs 4-20 mA, alternative NAMUR inputs
	DIO 24/16	- / 24	- / 16	-	yes	-
	CIO 2/4	- / -	- / 4	-	-	2 counters up to 1 MHz
	AO 8	- / -	8 / -	-	yes	-
	DO 8	- / -	- / 8	-	-	relay outputs up to 230 V contact voltage

** Not safe * Configurable



HIMatrix



One small step for us, one giant leap for Factory Automation

The largest number of installed systems in the world and more than 35 years' experience in developing methods for monitoring and controlling potentially hazardous processes have led to HIMA being acknowledged by almost all major companies in the process industry as a reputable manufacturer and supplier.

Now that HIMA has entered the Factory Automation market, the proven „Safety Element“ model is also available for your applications. HIMA's philosophy of implementing safety comprehensively, intelligently and therefore cost-effectively finds expression in this model. All products and services have been perfectly matched and combined in a package which is unique to the market.

In addition to superior hardware and software solutions, high-performance communication options and an extensive range of services provide the basis for automation concepts optimised in terms of cost-effectiveness. These services include preparatory safety consulting, time-based and cost-based project management, flexible training and competent service.

Intelligent solutions are here to stay.

*Aventis · Agip · BASF · Bayer · BAYERNOIL · Borealis · Clariant
Celanese · Degussa · Elf Atochem · ExxonMobil · Hoffmann-La Roche
MERCK · RUHR OEL · SCHERING · Shell & DEA Oil*

- **1970**
The world's first TÜV approved safety system
- **1986**
The world's first TÜV approved PLC
- **1991**
The world's first TÜV approved reverse compiler
- **1997**
The world's first TÜV approved redundant 2oo4/QMR system
- **1997**
The world's first TÜV approved safety-related Ethernet communication
- **2002**
The world's first TÜV/BG approved safety PLC with safe communication via Ethernet for Factory Automation
- **2003**
The world's first TÜV confirmed SIL tool

