

SystemFacts

HIMatrix® systems

- SIL 3, PL e, Cat. 4
- Fast, flexible, compact
- Extremely cost-effective
- Distributed applications
- Applications with just a few I/O points

Engineering tools

HIMatrix systems can be engineered using ELOP II Factory or SILworX®. Devices with enhanced performance are exclusively programmed with SILworX.

- Function block diagrams
- Sequential function charts
- Certified function blocks

List of certificates

- EN ISO 13849 (PL e)
- EN 954-1:1969 (Cat. 4)
- EN 62061 (SIL 3)
- IEC 61511:2004 (SIL 3)
- IEC 61508 Parts 1-7:2000 (SIL 3)
- EN 12067-2:2004, EN 198:203, EN 230:1990
- NFPA 85:2001
- DIN VDE 0116:1989, EN 50156-1:2004
- EMC Directive 89/336/EEC
- Ex Directive 94/9/EC, EN 1127-1
- EN 54-2:1997, NFPA 72:2002: F35, F60, F3 AIO 8/4 01
- Lloyd's Register, UL, FM Approvals: see handbook
- SIL 4 (CENELEC)



HIMatrix® systems

Uniquely fast, uniquely flexible

Developed for applications requiring a few I/O points to several hundred I/O points, HIMatrix features cost-effectiveness and big-system performance. Ideal for networked and time-critical applications, the HIMatrix series of safety-related controllers and remote I/O modules delivers excellent system performance, compactness and easy assembly. Devices with enhanced performance offer PROFINET, multitasking, SOE recording and reload capability.



SAFETY
NONSTOP

HIMatrix

List of modules

The extensive hardware range and safety-related networking of the systems via safe**ethernet** (redundant connection is also possible), guarantee high levels of flexibility and optimum adaptation to the application requirements.

HIMatrix systems	Inputs analog / digital	Outputs analog / digital	Ethernet-switchports	Line monitoring*	Special features
Compact PES					
F35 01/03	8 / 24	- / 8	4	-	Plus 2 counters 100 kHz, approved for use in Ex-Zone 2
F31 02/03	- / 20	- / 8	4	yes	Without fieldbus interface
F30 01/03	- / 20	- / 8	4	yes	-
F20 01	- / 8*	- / 8*	2	yes	8 channels which can be configured individually as I/Os
F10 PCI 03	- / -	- / -	4	-	Redundant power supply via PC plus external 24 V possible
Remote I/Os					
F1 DI 16 01	- / 16	- / -	2	yes	-
F2 DO 16 01	- / -	- / 16	2	-	8 outputs 2 A, 8 outputs 0.5 A
F2 DO 16 02	- / -	- / 16	2	-	Relay outputs up to a contact potential of 60 V
F2 DO 8 01	- / -	- / 8	2	-	Relay outputs up to a contact potential of 230 V
F2 DO 4 01	- / -	- / 4	2	-	Load of up to 5 A
F3 DIO 8/8 01	- / 8	- / 8	2	yes	Additional 2 L-switching outputs
F3 DIO 16/8 01	- / 16	- / 8	2	yes	2-pin outputs
F3 DIO 20/8 02	- / 20	- / 8	2	yes	-
F3 AIO 8/4 01	8 / -	4** / -	2	-	Supply for NAMUR proximity switches and 24 V
Modular PES					
F60 CPU 01/03	- / -	- / -	4	-	6 slots for any type of I/O module
I/O modules					
AI 8 01	8 / -	- / -	-	-	-
DI 32 01	- / 32	- / -	-	yes	Cross-circuiting in connection with DIO 24/16
DI 24 01	- / 24	- / -	-	-	110 V input voltage
MI 24 01	24 / 24	- / -	-	-	Current inputs 4-20 mA, alternatively NAMUR inputs
DIO 24/16 01	- / 24	- / 16	-	yes	-
CIO 2/4 01	- / -	- / 4	-	-	2 counters up to 1 MHz
AO 8 01	- / -	8 / -	-	yes	-
DO 8 01	- / -	- / 8	-	-	Relay outputs up to a contact potential of 230 V

Specifications are subject to change without notice.

* configurable ** non-safety-related

Operating conditions and CE mark

- IEC/EN 61131-2:2006 Programmable Controllers Part 2, Equipment Requirement and Tests
- IEC/EN 61000-6-2:2001 EMC, Generic Standards, Immunity for Industrial Environments
- IEC/EN 61000-6-4:2001 EMC, Generic Emission Standard, Residential, Commercial, and Light Industry
- EMC Directive
- Low Voltage Directive
- Machinery Directive
- ATEX Directive

Additional local certificates available

Operating principles

- De-energize to trip
- Energize to trip for F35, F60 and F3 AIO 8/4 01

Communication options

- SIL 3 via safe**ethernet**
- OPC DA (OPC A&E)
- Modbus TCP Master & Slave
- PROFINET and PROFIsafe
- Ethernet/IP
- Send & Receive TCP
- PROFIBUS DP Master & Slave
- Modbus RTU Master & Slave
- INTERBUS Master
- ComUserTask (CUT), user-programmable port
- SNTP
- Integrated Ethernet switch, 100 MB (with VLAN)

Typical applications

Process industry

- Pipelines
- Distributed pharmaceuticals applications
- BMS solutions for single and multiple burner systems
- Decentralised Fire & Gas systems
- Turbine monitoring
- Wellhead control
- Subsea applications

Rail sector

- Signalling
- Railway crossings
- Rolling stock
- Power supply

Logistics and machine safety

- Conveyor systems
- Cranes, crane networks and lifting equipment in production facilities or on docks
- AGV (Automated guided vehicle)
- Stamping and presses
- Painting plants
- Robot cells
- Elevators
- Locks and polders
- Lifters and elevating platforms
- Cable cars
- High-bay warehouses
- Complete solutions for airports



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