



HIMatrix®

Uniquely Fast, Uniquely Flexible

Developed for applications requiring a few I/O points through to several hundred I/O points, HIMatrix features cost effectiveness and high-level 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. HIMatrix optionally offers features like multitasking, SOE recording and reload capability.

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 SILworX.

- Function block diagrams
- Sequential function charts
- Certified function blocks
- ST (Structured Text)
- C-Code (Optional)

List of Certificates

- IEC 61508 1-7:2010 (SIL 3)
- IEC 61511:2004 (SIL 3)
- EN ISO 13849-1:2008 (PL e)
- IEC 62061:2005 (SIL CL 3)
- EN 50156-1:2004 (SIL 3)
- EN 12067-2:2004
- EN 298:2003
- EN 230:2005
- NFPA 85:2011
- NFPA 86:2011
- EN 50126:1999 (SIL 4 CENELEC)
- EN 50128:2001 (SIL 4 CENELEC)
- EN 50129:2003 (SIL 4 CENELEC)
- EN 54-2 [... 2007]/NFPA 72:2010
- EN 50130-4 [... 2003]

List of Modules

The extensive hardware range and safety-related networking of the systems via SafeEthernet (redundant communication 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 03	8/24	-/8	4	-	Plus 2 counters 100 kHz, approved for use in Ex-Zone 2
F31 03	-/20	-/8	4	yes	-
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					6 slots for I/O modules
F60 CPU 03	-/-	-/-	4	-	-
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

Operating conditions and CE mark

- IEC/EN 61131-2:2006 Programmable Controllers
- IEC/EN 61000-6-2:2005 EMC, Generic Standards, Immunity for Industrial Environments
- IEC/EN 61000-6-4:2007 EMC, Generic Emission Standard, Residential, Commercial, and Light Industry
- EMC Directive
- Low Voltage Directive
- Machinery Directive
- ATEX Directive

Operating principles

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

Communication options

- CPU and COM offer
- SIL 3 via SafeEthernet
- OPC DA (OPC A&E)
- Integrated Ethernet switch, 100 MB (with VLAN)

Additionally each COM can simultaneously operate up to 6 protocols from the following list:

- Modbus TCP Master & Slave
- Send & Receive TCP
- PROFIBUS DP Master & Slave
- Modbus RS485 Master & Slave
- ComUserTask (CUT), user-programmable port RS422, RS485, UDP, TCP
- SNTP

Typical applications

Process industry:

- Pipelines
- Pharmaceutical application
- BMS solutions for single and multiple burner systems
- Fire & Gas systems
- Turbine monitoring
- Wellhead control
- Subsea applications version

Rail sector:

- Signaling
- 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
- Lifters and elevating platforms
- Cable cars
- High-bay warehouses
- Complete solutions for airports