HIMA
SMART SAFETY.

HIJunctionBox

Straightforward Safety

The HIJunctionBox expands the HIMA Smart Safety Platform to the field. This means that you require significantly fewer marshalling cabinets, cable trays, and master cables. A decentralized HIJunctionBox in the field reduces cabling efforts, initial investment, and operating costs. Thanks to the robust design, you can also use the system in harsh environments.

Technical Details

Housing material:	316L stainless steel, 2mm wall thickness
Dimensions (h/w/d):	1200x800x400mm
Protection rating:	IP 66/NEMA 4X in accordance with IEC 60 529
Weight:	120–150kg (depending on equipment, not including packaging)
Lock:	Lockable with key
Mounting type:	Wall mounting
Explosion protection:	Suitable for zone 2
Cable entry systems:	2 entries for power supply, 2 entries for communication connection, up to 96 entries for I/O cables, via a multi-cable transit system
Power supply:	100–240 VAC or 110–250 VDC
Communication:	Fiber-optic, single-mode, or copper-cable CAT 6. Ethernet 1000 BaseT

Highlights

- **Flexibility:**
  Depending on your requirements, you can use the HIJunctionBox with HIMax or HIMatrix safety controllers. Redundant structures and mono systems are both possible.
- **Explosion protection:**
  The HIJunctionBox is approved for use in Ex Zone 2.
- **Short FEED phase:**
  The effort required for front-end engineering and design is lower compared to conventional approaches.

The HIJunctionBox comes pre-configured and tested. The various assembly options for inputs and outputs deliver a high level of flexibility. Communication with the SIS occurs via fiber-optic cables. The HIJunctionBox can therefore be quickly and simply integrated into existing systems. The requirements of your plant determine whether you use HIMax or HIMatrix components.

Type	Description
HIMax Components	
X-CPU 31	Processor module with system bus connection, SIL 3 / category 4 / PL e / CENELEC SIL 4
X-SB 01	System bus module, SIL 3 / category 4 / PL e / CENELEC SIL 4
X-DI 32 01	Digital input module (32 channels, 24 VDC, SIL 3 / category 4 / PL e / CENELEC SIL 4)
X-AI 32 01	Analog input module (32 channels, 4–20 mA, line monitoring, SIL 3 / category 4 /PL e / CENELEC SIL 4
X-AI 16 51	Analog input and temperature module (16 channels, galvanically isolated, for thermocouples, Pt100, 4–20mA, +/- 280 mV SIL 1)
X-DO 32 01	Digital output module (32 channels, 24 VDC, 0.5 A, short-circuit monitoring LS, SIL 3, category 4 / PL e / CENELEC SIL 4)
X-DO 24 01	Digital output module (24 channels, 24 VDC, 0.5 A, line monitoring LS/LB, individual channel shut-off, SIL 3)
X-AO 16 01	Analog output module (16 channel, 4–20 mA, galvanically isolated in pairs, SIL 3)
X-HART 32 01	HART interface module (32 modems, SIL 3)
X-BLK 01	Empty module (1 slot, X I/O)
HIMatrix Components	
F35 034	HIMatrix device F35, 24 digital and 8 analog inputs, 2 counter inputs, 8 digital outputs, SIL 3 / category 4 / PL e / CENELEC SIL
F3 AIO 8/4 014	Remote I/O device, 8 analog inputs (0–10 V), 4 analog non-safety-related outputs, (0–20mA), SIL 3 / category 4 / PL
F3 DIO 20/8 024	Remote I/O device, 20 digital inputs with cross-wire monitoring, 8 digital outputs, SIL 3 / category 4 / PL e / CENELEC SIL 4
F1 DI 16 01	Remote I/O device, 16 digital inputs with cross-wire monitoring, SIL 3 / category 4 /PL e / CENELEC SIL 4
F2 DO 16 014	Remote I/O device, 16 digital outputs, 24 VDC with 1A output current, SIL 3 / category 4 / PL e / CENELEC SIL 4

Signal Exchange and Communication

Conventional signal boxes are connected to a marshalling cabinet, which in turn establishes the connection to the remotely installed safety controller. The HIJunctionBox is connected directly to the safety controller.

I/O   HIJunctionBox   SIS
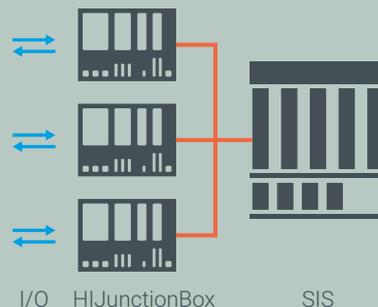
Smart Safety Platform

The HIJunctionBox is part of the Smart Safety Platform, the world's first safety platform that supports compact, non-redundant, and redundant applications. Customers can combine individual components as they wish and, therefore, implement their own custom safety strategy – flexibly and cost effectively. The other components of the Smart Safety Platform are the HIMax, HIMatrix, and HIQuad X controllers, the SILworX engineering tool, and the SafeEthernet protocol.
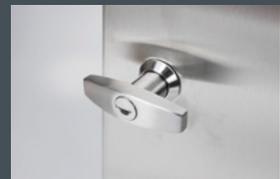
Key Benefits

- **Reduced hardware costs:** Marshalling cabinets and a significant amount of cables from the field to the SIS are not required.
- **Reduced infrastructure costs:** The spatial requirements in the control center are minimized, requiring fewer cable routes and less marshalling.
- **Shorter FAT:** Thanks to standardization and testing, the factory acceptance test is completed more quickly.
- **Simplified engineering:** The cabling effort is lower, changes to inputs and outputs can be implemented without rewiring.
- **Quicker testing and troubleshooting:** Testing during the operational phase is comparatively short due to its low complexity.

- **Easy mounting**

- **Safe locking**

- **Door stay and breather**