

## R127 Rail Fire Safety I/O Module 8ch

### Key Features

- DIN-Rail mounting
- IP44 - Passive cooling
- Integrated I/O controller for 8 Channels (SIL2/SIL0)
- Control aerosol and water mist firefighting systems and interface with sensors
- Communication via Ethernet to Rail Fire Safety MASTER
- SIL2 compliant unit (CENELEC EN50126/128/129)
- Extended temperature range -40° and +70°C
- EN 50155 certified
- EN 45545 HL3
- High availability



The R127 Rail Fire Safety I/O Module is a compact, decentralized control unit for processing I/O signals. Communication with the Rail Fire Safety Controller is realized via Ethernet.

The R120 series has been developed and certified for use in railway applications (SIL2 according to CENELEC).

The DIN rail module R127 has two Ethernet network interfaces in M12 (100Mbit) design.

The power supply supports 24-110VDC wide range voltage input.

The R125 Rail Fire Safety Loop Module can be mounted on a DIN rail as well as using mounting brackets.

The module provides 8 input and output channels (8 I/O) which can be used to control firefighting equipment, interface with sensors or other applications.

Due to the design of the I/Os as safe contacts (SIL2), line break (LB) and line short circuit (LS) can be detected.

The contacts can be used as inputs or outputs via software configuration. Contacts configured as inputs can be used for current, voltage and resistance measurements.

The R127 Rail Fire Safety I/O Module itself and all components of the R120 series can be configured and monitored via a central interface of the Rail Fire Safety MASTER.

## Base system

## Module options

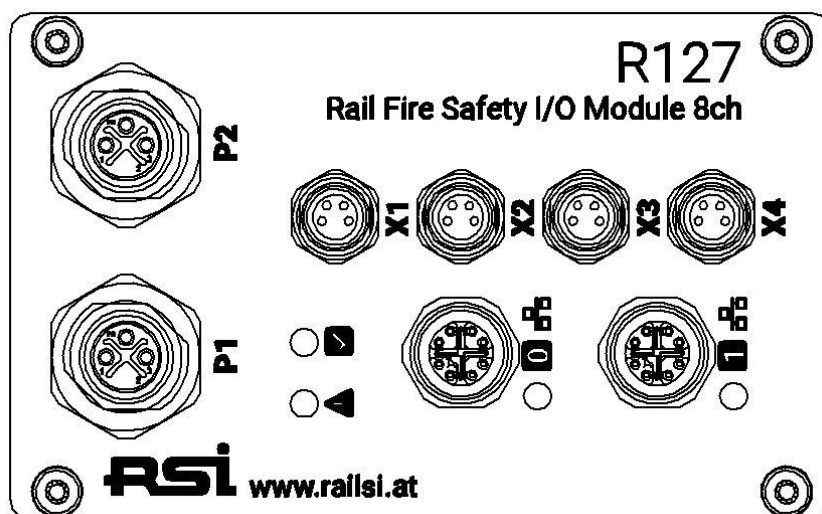
R127

R127 Rail Fire Safety I/O Module

- DIN-RAIL mounting
- 8x I/Os (4x M8 A-coded)
- 2x Ethernet interfaces 10/100Base-T
- P1: Supply Voltage 24 – 110VDC wide range power supply acc. EN 50155:2017
- P2: Output Voltage 20 – 30 VDC

## Plugs:

P1	Supply Voltage	M12 S-coded	M	3 pole
P2	Output Voltage	M12 S-coded	M	3 pole
X1	I/O 1 / I/O 2	M8 A-coded	F	4 pole
X2	I/O 3 / I/O 4	M8 A-coded	F	4 pole
X3	I/O 5 / I/O 6	M8 A-coded	F	4 pole
X4	I/O 7 / I/O 8	M8 A-coded	F	4 pole
0	Ethernet 0	M12 X-coded	F	8 pole
1	Ethernet 1	M12 X-coded	F	8 pole



## Applicable standards

### Electromagnetic compatibility

EN 50121-3-2:2016	Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock
IEC 61000-4-2:2008	Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
IEC 61000-4-3:2006/A1:2007/A2:2010	Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4:2012	Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test
IEC 61000-4-5:2014/A1:2017	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test
IEC 61000-4-6:2013	Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields
IEC 61000-4-11:2004/A1:2017	Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests
IEC 61000-4-12:2017	Electromagnetic compatibility (EMC) – Part 4-12: Testing and measurement techniques – Ring wave immunity test
IEC 61000-6-2:2016	Electromagnetic compatibility (EMC). Part 6-2: Generic standards – Immunity for industrial environments
IEC 61000-6-4:2018	Electromagnetic compatibility (EMC) – Part 6-4: Generic standards - Emission standard for industrial environments

### Safety standards

EN 50126:2017	Railway applications – The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) Part 1: Basic requirements and generic process - as far as applicable
EN 50128:2011	Railway applications – Communication, signaling and processing systems - Software for railway control and protection systems – as far as applicable
EN50129:2018/AC:2019	Railway applications – Communications, signaling and processing systems - Safety related electronic systems for signaling

EN 50657:2017	Railways Applications. Rolling stock applications. Software on Board Rolling Stock
EN 50159:2010	Railway application - Safety-related communication in transmission systems
IEC 61375-2-3:2015/ COR1:2015/ COR2:2016	Electronic railway equipment - Train communication network (TCN) - Part 2-3: TCN communication profile
IEC 60529:1989/A1:1999 /A2:2013	Degrees of protection provided by enclosures (IP Code)

### Environmental conditions standards

EN 50155:2017	Railway applications - Rolling stock - Electronic equipment
EN 50124-1:2017	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
EN 45545-2:2020	Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behavior of materials and components
EN 61373:2011	Railway applications - Rolling stock equipment - Shock and vibration tests

## Technical specification

### Mechanical data

Housing	DIN-RAIL mounting
Dimensions	Width: 64.40 mm Height: 105.0 mm Depth: 126.0 mm (without Plugs and DIN Rail Clip)
Material	Anodized aluminum
IP protection class	IP44 acc. to EN 60529
Weight	0,87 kg

### Environmental conditions

Operating Temperature	-40 °C to +70 °C class OT4 acc. to EN 50155 and IEEE 1613
Storage Temperature	-40 °C to +85 °C
Operating Altitude	max 5,000 m class AX acc. to EN 50125-1
Relative humidity	5 to 95 % (non-condensing) at 40 °C



### System requirements

Web browser	Google Chrome (Version > 89), Microsoft Edge (Version > 89), Mozilla Firefox (Version > 87), Opera (Version > 75), Brave (Version > 1.23)
Browser technology support	HTML5, CSS3, JavaScript enabled, ECMAScript 2016, Local Storage (min. 1MB)

## Network standards and protocols

### General standards and protocols

- IEEE 802.3 Type 10/100BASE-T
- RFC 768 User Datagram Protocol (UDP)
- RFC 791 Internet Protocol, Version 4 (IPv4)
- RFC 792 Internet Control Message Protocol (ICMPv4)
- RFC 793 Transmission Control Protocol (TCP)
- RFC 826 Address Resolution Protocol (ARP)
- RFC 1035 Domain Names (client)
- RFC 1918 Address Allocation for Private Internet
- RFC 4443 Internet Control Message Protocol (ICMPv6)
- RFC 2131 Dynamic Host Configuration Protocol (DHCPv4)

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