2 Hardware

The Industrial ETHERNET Rail Switch RS2-../.. family consists of 6 devices. These devices can be managed and have the same functionality. They are differentiated by their interfaces for connecting segments:

- RS2-TX/TX
- RS2-FX/FX
- RS2-FX/FX-ST
- RS2-FX-SM/FX-SM
- RS2-FX-SM/FX-LH
- RS2-FX-LH/FX-LH

For the sake of simplicity, these 6 devices have been designated as RS2-../.. in this manual.

The RS2-../.. operates in store-and-forward mode. When a data packet is being received, the RS2-../.. analyzes the source and destination addresses. It can store up to 4000 addresses with port allocations in its address table.

The LED's indicate data reception, connection status and processor status.

Device type	TP Ports 10/100	LWL Port multi-mode 100 Mbit/s	LWL Port single mode 1300 nm, 100 Mbit/s	LWL Port single mode 1550 nm, 100 Mbit/s
RS2-TX/TX	1-7	–	–	–
RS2-FX/FX	1-5	6 + 7, SC socket	–	–
RS2-FX/FX-ST	1-5	6 + 7, ST socket	–	–
RS2-FX-SM/FX-SM	1-5	–	6 + 7, SC socket	–
RS2-FX-SM/FX-LH	1-5	–	6, SC socket	7, SC socket
RS2-FX-LH/FX-LH	1-5	–	–	6 + 7, SC socket

Table 1: Device types

The RS2-../.. fulfills the testing requirements for electronic equipment in line with the Germanischer Lloyd Guidelines for the Performance of Type Tests Part 1.

Technical Data

RS2-../..

Dimensions W x H x D	110 x 131 x 111 mm 4.3 in x 5.2 in x 4.4 in
Weight	460 g, 1 lb
Top-hat rail fastener	in line with IEC 60715:1981 + A1:1995

Power supply

Operating voltage	24 V DC, -25% +33% safety extra-low voltage (SELV/PELV) redundant inputs uncoupled. Relevant for North America: Nec Class 2 power source 5 A max.
Power consumption / Power release	9 W maximum at 24 V DC 30.1 Btu (IT)/h (RS2-TX/TX: 7,5 W 25.6 Btu (IT)/h)
Overload current protection at input	non-changeable thermal fuse

Environment

Ambient temperature	Surrouding air: 0 °C to 55 °C (32 °F to 131 °F)
Storage temperature	Surrouding air: -25 °C to +70 °C (-4 °F to 176 °F)
Air humidity	10% to 95% (non-condensing)
Atmospheric pressure	for operation up to 2000 m (6561 ft), 795 hPa, higher altitude on demand
Pollution Degree	2

Protection classes

Laser protection	Class 1 conforming to EN 60825-1 (2001)
Protection class	IP 20

Network size F/O ports 100BASE-FX

System attenuation	
50/125 µm fiber, multimode	0-8 dB (RS2-FX/FX, RS2-FX/FX-ST)
62.5/125 µm fiber, multimode	0-11 dB (RS2-FX/FX, RS2-FX/FX-ST)
9/125 µm fiber, singlemode	0-16 dB (RS2-FX-SM/FX-SM)
Wave length	1300 nm
9/125 µm fiber, singlemode	7-29 dB (RS2-FX-LH/FX-LH)
Wave length	1550 nm

Example for F/O line length	
50/125 µm fiber, multimode	5 km/16,400 ft max. (RS2-FX/FX, RS2-FX/FX-ST) data of fiber: 1 dB/km, 800 MHz*km
62,5/125 fiber, multimode	4 km/13,120 ft max. (RS2-FX/FX, RS2-FX/FX-ST) 1 dB/km, 500 MHz*km
9/125 µm fiber, singlemode	30 km/98,420 ft max. (RS2-FX-SM/FX-SM) data of fiber at 1300 nm, 0,4 dB/km 3,5 ps/(nm*km)
9/125 µm fiber, singlemode	24-86.6 km/78,740-284,121 ft (RS2-FX-LH/FX-LH) data of fiber at 1550 nm, 0,3 dB/km 19 ps/(nm*km)

Software

Switch	
Latency	27 µs
MAC address table	up to 4000 entries
Static address filter	up to 280 entries (in RM mode: 0 unicast entries)
VLAN	
VLAN ID	1 to1024
Number of VLANs	max. 40 simultaneously per switch max. 40 simultaneously per port
Number of VLANs with GMRP	
in VLAN 1	max. 40 simultaneously per switch
in VLAN 1	max. 40 simultaneously per port

Scope of delivery

Rail Switch RS2-../.. incl.	terminal block for power supply RS2-../.. manual on CDROM Description and operating instructions

Order number

RS2-TX/TX	943 654-
RS2-FX/FX	943 653-
RS2-FX/FX-ST	943 716-
RS2-FX-SM/FX-SM	943 655-
RS2-FX-SM/FX-LH	943 747-
RS2-FX-LH/FX-LH	943 648-

Accessories

Manual: "Basics of Industrial ETHERNET and TCP/IP"	280720-834
AutoConfiguration Adapter ACA	943 751-001
Terminal cable	943 301-001
5-pin terminal block (50 pieces)	943 845-001
Rail Power Supply RPS 30	943 662-003
Rail Power Supply RPS 60	943 662-001
Rail Power Supply RPS 120	943 662-011
Network Management Software HiVision	943 471-100
OPC-Server Software HiOPC	943 055 - 001