



## MS20-1600SAAEHH01.0.

Industrial Networking:Industrial Ethernet:Open Rail System:Modular:Switches

Product description	
Description	MICE, modular, managed Industrial ETHERNET Switch, Layer 2 Switch with Software Enhanced. Ethernet (10 Mbit/s) and Fast-ETHERNET (100 Mbit/s)
Port type and quantity	up to 24 ports above media modules practicable, 4 slots integrated on backplane (16 ports), 2 additional slots via MB-2T expansion backplane (8 Ports)
Type	MS20-1600SAAEHH01.0.
Order No.	943 435-003
More Interfaces	
Power supply/signaling contact	2 plug-in terminal blocks, 4-pin
V.24 interface	1 x RJ11 socket
USB interface	1 USB interface to connect auto-configuration adapter (ACA21-USB)
Network size - cascading	
Line - / star topology	any
Ring structure (HIPER-Ring)	50 (reconfiguration time < 0.3 sec.)
Power requirements	
Operating voltage	24 V DC (-25% to +30%)
Current consumption at 24 V DC	500 mA (without media modules)
Power consumption	5 W (without media modules)
Service	
Diagnostics	serial interface, web interface, SNMP V1/V2/V3, HiVision, file transfer SW HTTP/TFTP LEDs (power, link status, data, 100 Mbit/s, auto-negotiation, full-duplex, error, redundancy management, ring-port, LED-test), 2 x signal contact (24V DC / 1 A), syslog, logfile, RMON, port mirroring, Topology Discovery IEEE 802.1AB (LLDP)
Configuration	comand line interface (CLI), TELNET, BootP, DHCP, DHCP Option 82, HiDiscovery, auto-configuration adapter (ACA21-USB)
Security	port-security (MAC- and IP-adresses), access control to agent (VLAN/IP)
Other services	QoS 4 classes, prioritisation (IEEE 802.1D/p), VLAN (IEEE 802.1Q), multicast (IGMP snooping/querier), broadcastlimiter, fast aging, flow control IEEE 802.3x, PTP client (Precision Time Protocol, IEEE 1588), SNTP (Simple Network Time Protocol)
Redundancy	
Redundancy functions	HIPER-Ring (ring structure), RSTP IEEE 802.1w (rapid spanning tree protocol), redundant network/ring coupling (master/receiver functionality), dual homing (master/receiver functionality), redundant 24 V power supply
Ambient conditions	
Operating temperature	0 °C to +60 °C
Storage/transport temperature	-25 °C to +70 °C
Relative humidity (non-condensing)	10% to 95%
MTBF	16.5 years; MIL-HDBK 217F: Gb 25 °C
Mechanical construction	
Dimensions (W x H x D)	201 mm x 134 mm x 99 mm
Mounting	DIN Rail
Weight	1,3 kg
Protection class	IP 20
Mechanical stability	
IEC 60068-2-27 shock	15 g, 11 ms duration, 18 shocks

IEC 60068-2-6 vibration	1 mm, 2 Hz - 13.2 Hz, 90 min.; 0.7 g, 13.2 Hz - 100 Hz, 90 min.; 3.5 mm, 3 Hz - 9 Hz, 10 cycles, 1 octave/min.; 1 g, 9 Hz - 150 Hz, 10 cycles, 1 octave/min
<b>EMC interference immunity</b>	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV contact discharge, 8 kV air discharge
EN 61000-4-3 electromagnetic field	10 V/m (80 - 1000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 1 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line
EN 61000-4-6 conducted immunity	3 V (10 kHz - 150 kHz), 10 V (150 kHz - 80 MHz)
<b>EMC emitted immunity</b>	
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A
EN 55022	EN 55022 Class A
<b>Approvals</b>	
Safety of industrial control equipment	cUL 508 (pending)
Hazardous locations	cUL 1604 Class 1 Div 2 (pending)
<b>Scope of delivery and accessories</b>	
Scope of delivery	device, 2 terminal blocks, operating manual
Accessories to order separately	rail power supply RPS 30, RPS 60 or RPS 120, terminal cable, HiVision network management, auto-configuration adapter (ACA21-USB), 19" installation frame, labels ML-MS2/MM, additional backplane MB-2T