

Ha-VIS eCon 2000

Full Gigabit Ethernet Basic



ClassNK



5 to 16 Ethernet ports RJ45 and SC

Unmanaged Plug & Play Ethernet switches for DIN rail assembly in control cabinets

Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

- Full gigabit Ethernet, non-blocking switch architecture according to IEEE 802.3
- Support of jumbo frames
- Variants with industrial temperature range of -40°C ... +70 °C
- Surge protection and reverse polarity protection
- Minimum energy consumption due to Energy-Efficient Ethernet

Target markets

Machinery & Robotics	Automation technology	Industrial network infrastructures
Wind Energy	Transportation	Shipbuilding

General description

The Ha-VIS eCon 2000 Full Gigabit family of unmanaged Ethernet switches is equipped with up to 16 gigabit Ethernet ports and allow for cost-efficient and quick expansion and/or reconstruction of network infrastructures with high bandwidth requirements. In this, all switches support extra-long Ethernet frames (jumbo frames). Owing to the extremely flat design, these switches can be accommodated in installations where space is restricted towards the cable connection at the front. The selection includes various

combinations of variants with RJ45 and fibre optic ports. Automatic detection of the transmission rate (auto-negotiation) and of the wiring of the twisted pair data cable (auto-polarity and auto-MDI(X)) allow for simple plug and play. All variants are available with the temperature ranges "Industrial" and "Commercial".

Technical characteristics

Switch Features

Enclosures width	60 mm	120 mm	120 mm
Number of ports	5	7	16
Switching technology	Store and Forward		
Supported standards	IEEE 802.3		
Frame Size	10 kbytes	10 kbytes	8 kBytes
MAC table size	8 k entries		
Packet buffer size	1 Mbit	1 Mbit	512 kbytes
Non-blocking	Yes		
Quality of service	Yes		
Energy-Efficient Ethernet	Yes		
PROFINET compatible	Yes		
Ethernet/IP compatible	Yes		

Voltage supply

Nominal voltage	24 VDC	48 VDC
Permissible voltage range	9 VDC ... 60 VDC	
Surge protection	Yes	
Reverse polarity proof	Yes	
Starting current	1.60 A	3.20 A
Overcurrent protection at input	Yes (2/4 A)	
Max. power consumption @ 24 VDC	3.22 W ... 9.17 W	
Cross-section / Wire gauge	0.08 mm ² ... 2.5 mm ² (28 AWG ... 12 AWG)	
Connection type	3-pole, pluggable screwed contact	
Pinout	+ / - /	
Supply circuit (acc. to 60950)	SELV (circuit breaker 10 A)	

Ethernet Ports 10BASE-T_e / 100BASE-TX EEE / 1000BASE-TX EEE

Connection type	RJ45
Auto-negotiation	Yes
Auto-polarity	Yes
Auto-MDI(X)	Yes
Transfer conditions	Twisted Pair
Transfer speed	10 / 100 / 1000 Mbit/s
Transfer length	100 m (twisted pair, Cat 5)

Ethernet Ports 1000BASE-SX / 1000BASE-LX

Type of fibre	Multimode (MM)	Singlemode (SM)
Connection type	SC Duplex	
Transfer conditions	FO	
Wavelength	850 nm	1310 nm
Transfer speed	1000 Mbit/s	
Transfer length	0.55 km	10 km
Output power	-9.5 dBm ... -4 dBm	-9.5 dBm ... -3 dBm
Input sensitivity	≤ -17 dBm	≤ -21 dBm

Ambient conditions

Commercial temperature range	0 °C ... +55 °C
Industrial temperature range	-40 °C ... +70 °C
Storage temperature range	-40 °C ... +85 °C
Relative humidity (operation)	0 % ... 95 % (not-condensing)
Relative humidity (storage and transport)	0 % ... 95 % (not-condensing)
Air pressure	2000 m (795 hPa)



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Enclosures

Enclosures width	60 mm	120 mm
Dimensions W x H x D (without pluggable screw contact)	113.5 mm x 60 mm x 27.3 mm	113.5 mm x 120 mm x 27.3 mm
Weight	205 g	378 g ... 455 g
Type of installation	35 mm DIN rail acc. to EN 60 715	
Material enclosures	Anodised aluminium	
Protection degree (with plugged screw contact)	IP30	
Protection class	III	

Status and diagnostic displays

Power („Pwr“) Φ lights up green	Supply voltage is applied
Link/Activity („L/A“) off	No link
Link/Activity („L/A“) lights up green	Link is active
Link/Activity („L/A“) flashes green	Link is active and data is transferred
Link speed („Spd“) off	10 Mbit/s
Link speed („Spd“) lights up yellow	100 Mbit/s
Link speed („Spd“) lights up green	1000 Mbit/s

Approvals

CE, FCC CFR 47 Part 15, cUL US 508 listed, DNV GL, LR, NK, ABB IIT

EMC and environmental conditions

EMC Interference immunity (EN 61000-6-1, 61 000-6-2 55024)

Electrostatic discharge (ESD) EN 61 000-4-2

Electromagnetic field EN 61 000-4-3

Rapid transients (burst) EN 61 000-4-4

Surge voltages EN 61 000-4-5

Conducted interference voltages EN 61 000-4-6

EMC Interference emission (EN 61000-6-4, EN 55 032, FCC CFR 47 Part 15)

Mechanical stability (EN 60721-3)

IEC 60068-2-6 Vibration

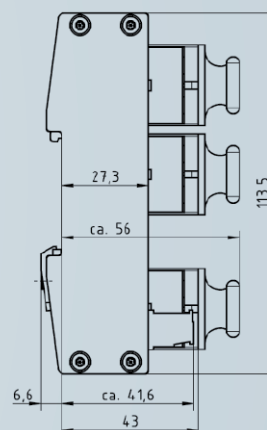
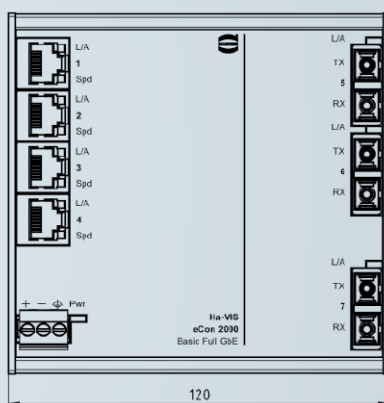
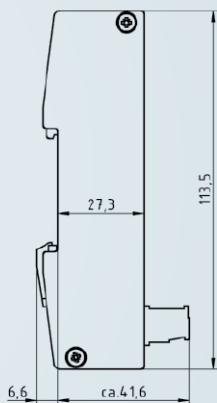
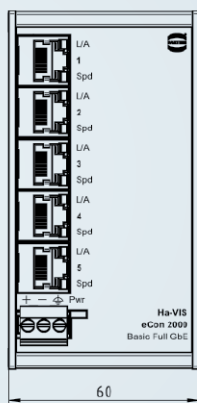
IEC 60068-2-6 Vibration resonance search

IEC 60068-2-27 Shock test

Included in delivery

- Pluggable screw contact for voltage supply
- Assembly instruction

Drawings



Technical characteristics / order information

Ports / order information

RJ45	SFP	SC	Enclosures width	Current consumption @ 24 VDC	MTBF in Mio. h	Commercial Temp.: 0 °C ... +55 °C		Industrial Temp.: -40 °C ... +70 °C	
						Switch	Part no.	Switch	Part no.
4	-	3x MM (0.55 km)	120 mm	185 mA	1.69	Ha-VIS eCon 2043GB-AD	24 02 404 3110	Ha-VIS eCon 2043GBT-AD	24 02 404 3100
4	-	3x SM (10 km)	120 mm	199 mA	1.69	Ha-VIS eCon 2043GB-AF	24 02 404 3210	Ha-VIS eCon 2043GBT-AF	24 02 404 3200
5	-	-	60 mm	134 mA	3.06	Ha-VIS eCon 2050GB-A	24 02 405 0010	Ha-VIS eCon 2050GBT-A	24 02 405 0000
5	-	2x MM (2 km)	120 mm	184 mA	1.69	Ha-VIS eCon 2052GB-AD	24 02 405 2110	Ha-VIS eCon 2052GBT-AD	24 02 405 2100
5	-	2x SM (15 km)	120 mm	194 mA	1.69	Ha-VIS eCon 2052GB-AF	24 02 405 2210	Ha-VIS eCon 2052GBT-AF	24 02 405 2200
6	-	1x MM (2 km)	120 mm	183 mA	1.69	Ha-VIS eCon 2061GB-AD	24 02 406 1110	Ha-VIS eCon 2061GBT-AD	24 02 406 1100
6	-	1x SM (15 km)	120 mm	190 mA	1.69	Ha-VIS eCon 2061GB-AF	24 02 406 1210	Ha-VIS eCon 2061GBT-AF	24 02 406 1200
7	-	-	120 mm	182 mA	1.70	Ha-VIS eCon 2070GB-A	24 02 407 0010	Ha-VIS eCon 2070GBT-A	24 02 407 0000
16*	-	-	120 mm	382 mA	1.36	Ha-VIS eCon 2160GB-A	24 02 416 0010	Ha-VIS eCon 2160GBT-A	24 02 416 0000

* Maritime Approvals on request