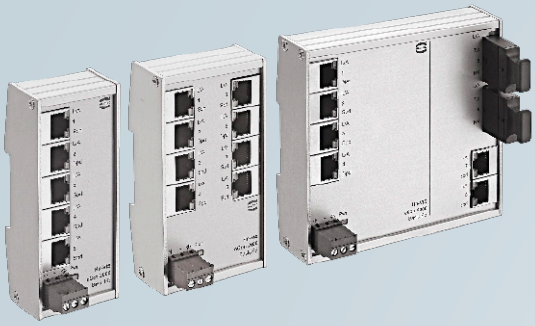
Ha-VIS eCon 2000
Fast Ethernet Basic



3 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

Flat | +70 -40 | Energy Efficient Ethernet

- Fast Ethernet Non-Blocking Switch architecture according to IEEE 802.3
- Variants with industrial temperature range of -40°C ... +70 °C
- Wide range voltage supply 24/48 VDC
- Surge protection and reverse polarity protection
- Minimum energy consumption due to Energy-Efficient Ethernet

Target markets

Machinery & Robotics	Automation technology	Industrial Network Infrastructure
Windenergy, Solar Energy	Transportation	Shipbuilding

General description

The Ha-VIS eCon 2000 Fast Ethernet family of unmanaged Ethernet switches is equipped with up to 16 Fast Ethernet ports and allow for cost-efficient and quick expansion and/or reconstruction of network infrastructures. Due 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 (autopolarity and auto-MDI(X)) allow for simple plug & play. All variants are available with the temperature ranges „Industrial“ and „Commercial“.

Technical characteristics

Switch Features

Enclosure width	**46.5 mm**	**60 mm**	**120 mm**	**120 mm**
Number of ports	3, 4, 5	8	7, 8	16
Switching technology	Store and Forward			
Supported standards	IEEE 802.3			
Frame Size	1552 bytes			2 kbytes
MAC table size	1k entries			8 k entries
Packet buffer size	448 kbit			2 Mbit
Non-blocking	Yes			
Quality of service	Yes			
Energy-Efficient Ethernet	Yes			
PROFINET compatible	Yes			
EthernetIP compatible	Yes			

Current supply

Nominal voltage	24 VDC ⎓	48 VDC ⎓
Permissible voltage range	9 VDC ... 60 VDC ⎓	
Surge protection	Yes	
Reverse polarity proof	Yes	
Starting current	2.80 A	5.60 A
Overcurrent protection at input	Yes (2/4 A)	
Max. power consumption @ 24 VDC	0.77 W ... 3.1 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 (according to 60950)	SELV (circuit breaker 10 A)	

Ethernet Ports 10BASE-Te / 100BASE-TX EEE

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

Ethernet Ports 100BASE-FX

Type of fibre	**Multimode (MM)**	**Singlemode (SM)**
Connection type	SC Duplex	
Transfer conditions	FO	
Wavelength	1310 nm	
Transfer speed	100 Mbit/s	
Transfer length	2 km	15 km
Output power	-19 dBm ... -14 dBm	-15 dBm ... -8 dBm
Input sensitivity	≤ -32 dBm	≤ -34 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	46.5 mm	60 mm	120 mm
Dimensions H x W x D (without pluggable screw contact)	113.5 mm x 46.5 mm x 27.3 mm	113.5 mm x 60 mm x 27.3 mm	113.5 mm x 120 mm x 27.3 mm
Weight	162 g ... 170 g	217 g	372 g ... 390 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“) ⏻ 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

Approvals
CE, FCC CFR 47 Part 15, cUL US 508 listed, DNV GL, LR, NK, ABB IIT
ECE - Approval mark (E1): see table technical characteristics

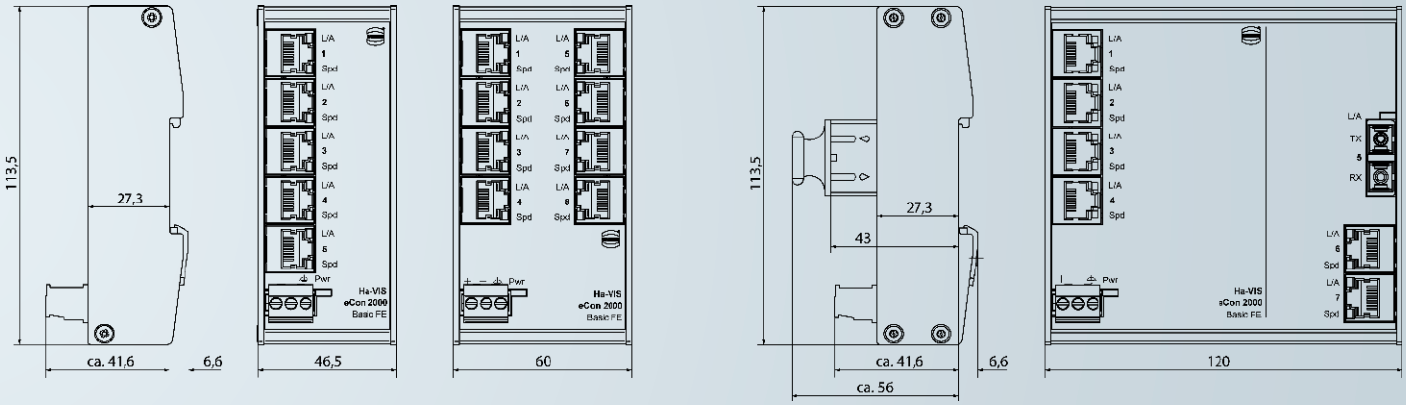
EMC and environmental conditions
EMC Interference immunity (EN 61000-6-1, 61 000-6-2 55024)
Electrostatic discharge (ESD) EN 61 000-4-2
Electromagnetic field EN 61 000-4-3
Rapid transients (burst) EN 61 000-4-4
Surge voltages EN 61 000-4-5
Conducted interference voltages EN 61 000-4-6

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.
3	-	-	46.5 mm	32 mA	3.13	Ha-VIS eCon 2030B-A	24 02 003 0010[1]	Ha-VIS eCon 2030BT-A	24 02 003 0000[1]
4	-	-	46.5 mm	37 mA	2.99	Ha-VIS eCon 2040B-A	24 02 004 0010[1]	Ha-VIS eCon 2040BT-A	24 02 004 0000[1]
5	-	-	46.5 mm	42 mA	2.86	Ha-VIS eCon 2050B-A	24 02 005 0010[1]	Ha-VIS eCon 2050BT-A	24 02 005 0000[1]
6	-	1x MM (2 km)	120 mm	94 mA	1.24	Ha-VIS eCon 2061B-AD	24 02 006 1110	Ha-VIS eCon 2061BT-AD	24 02 006 1100
6	-	1x SM (15 km)	120 mm	81 mA	1.26	Ha-VIS eCon 2061B-AF	24 02 006 1210	Ha-VIS eCon 2061BT-AF	24 02 006 1200
6	-	2x MM (2 km)	120 mm	129 mA	1.20	Ha-VIS eCon 2062B-AD	24 02 006 2110	Ha-VIS eCon 2062BT-AD	24 02 006 2100
6	-	2x SM (15 km)	120 mm	113 mA	1.23	Ha-VIS eCon 2062B-AF	24 02 006 2210	Ha-VIS eCon 2062BT-AF	24 02 006 2200
8	-	-	60 mm	58 mA	2.53	Ha-VIS eCon 2080B-A	24 02 008 0010[1]	Ha-VIS eCon 2080BT-A	24 02 008 0000[1]
16	-	-	120 mm	93 mA	1.75	Ha-VIS eCon 2160B-A	24 02 016 0010	Ha-VIS eCon 2160BT-A	24 02 016 0000

[1] E1 Approval

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