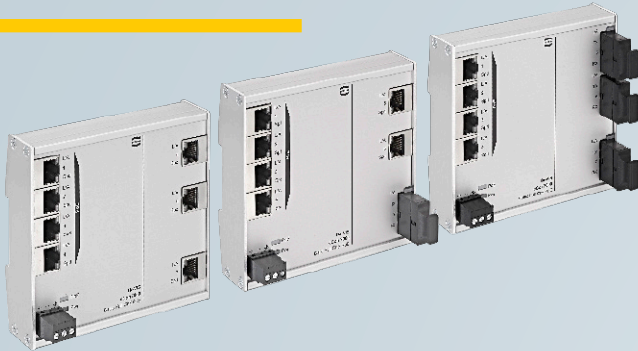


Ha-VIS eCon 2000

Full Gigabit Ethernet Basic

PoE / PoE+



5 to 7 Ethernet ports RJ45, SC and PoE / PoE+
 Unmanaged Plug & Play Ethernet switches for DIN rail assembly in control cabinets
 Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C



- Energy supply of up to 4 terminal devices via PoE+ (137 watts) acc. to IEEE 802.3at
- Full gigabit Ethernet, non-blocking switch architecture acc. 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 Solar Energy	Transportation	Shipbuilding



General description

The Ha-VIS eCon 2000 Full Gigabit family of unmanaged Ethernet switches is equipped with up to 7 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). The switches work as power sourcing equipment (PSE) and are capable of simultaneously providing the full PoE output of 34.2 watts on up to four ports. 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	120 mm
Number of interfaces	5, 7
Switching technology	Store and Forward
Supported standards	IEEE 802.3
Frame Size	10 kbytes
MAC table size	8k entries
Packet buffer size	1 Mbit
Non-blocking	Yes
Quality of service	Yes
Energy-Efficient Ethernet	Yes
PROFINET compatible	Yes
EthernetIP compatible	Yes

Voltage supply

Nominal voltage	48 VDC \equiv	54 VDC \equiv
Permissible voltage range	44 VDC ... 57 VDC \equiv	50 VDC ... 57 VDC \equiv
Surge protection	Yes	
Reverse polarity proof	Yes	
Starting current	6.40 A	7.20 A
Overcurrent protection at input	Yes (4 A)	
Max. power consumption without PoE	3.60 W ... 4.80 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	+ / - / \oplus	
Supply circuit (acc. to 60950)	SELV (circuit breaker 10 A)	

Ethernet Ports 10BASE-T / 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 (operation)	2000 m (795 hPa)



HARTING Technology Group
 P.O.Box 1473, D-32325 Espelkamp
 Wilhelm-Harting-Straße 1, D-32325 Espelkamp, Germany

ICPN-Service@harting.com | Service hotline: +49 5772 47-9479
 Fax: +49 5772 47-495 | www.HARTING.com/de/ethernet-switches

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PoE	PoE	PoE+
Number of PoE ports	4	
Standard	IEEE 802.3af / IEEE 802.3at	
PoE type	PSE	
Supported mode	Alternative A	
Supply voltage PSE	48 VDC $\overline{---}$	54 VDC $\overline{---}$
Max. current consumption PSE	1380 mA	2380 mA
Max. current	375 mA	638 mA
Maximum output power PSE	15.4 W per port 61.6 W total	34.2 W per port 136.8 W total
Supported cabling	See 802.3at, section 33.1.4	
PoE pinout	Alternative A, MDI-X (1/2 = V-, 3/6 = V+)	

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
Link speed („Spd“) lights up green	1000 Mbit/s
PoE status off	PoE is inactive / low voltage
PoE status lights up green	Voltage in PoE range
PoE status lights up blue	Voltage in PoE+ range
PoE status lights up red	Error

Enclosures

Enclosures width	120 mm
Dimensions H x W x D (without pluggable screw contact and holding bracket)	113.5 mm x 120 mm x 27.3 mm
Weight	410 g ... 442 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

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)

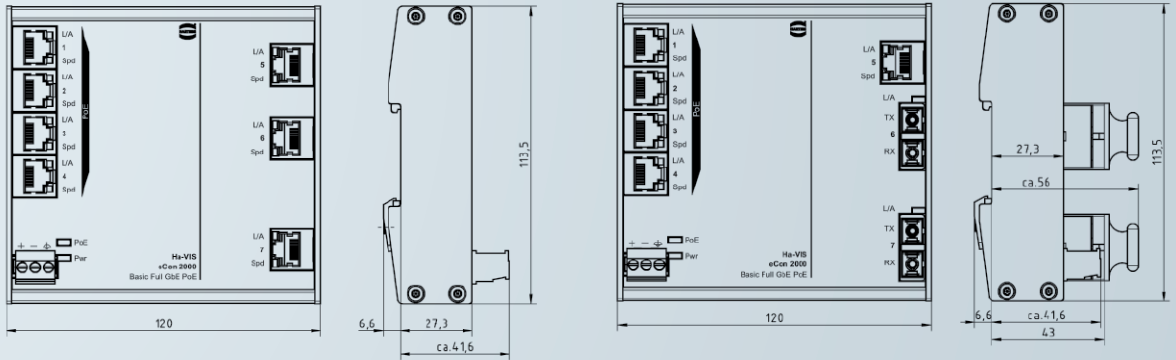
Mechanical stability (EN 60721-3)

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 @ 54 VDC with PoE	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	2.45 A	0.98	Ha-VIS eCon 2043GB-AD-P	24 02 404 3130	Ha-VIS eCon 2043GBT-AD-P	24 02 404 3120
4	-	3x SM (10 km)	120 mm	2.45 A	0.98	Ha-VIS eCon 2043GB-AF-P	24 02 404 3230	Ha-VIS eCon 2043GBT-AF-P	24 02 404 3220
5	-	-	120 mm	2.43 A	1.01	Ha-VIS eCon 2050GB-A-P	24 02 405 0030	Ha-VIS eCon 2050GBT-A-P	24 02 405 0020
5	-	2x MM (0.55 km)	120 mm	2.45 A	0.98	Ha-VIS eCon 2052GB-AD-P	24 02 405 2130	Ha-VIS eCon 2052GBT-AD-P	24 02 405 2120
5	-	2x SM (10 km)	120 mm	2.45 A	0.98	Ha-VIS eCon 2052GB-AF-P	24 02 405 2230	Ha-VIS eCon 2052GBT-AF-P	24 02 405 2220
6	-	1x MM (0.55 km)	120 mm	2.45 A	0.98	Ha-VIS eCon 2061GB-AD-P	24 02 406 1130	Ha-VIS eCon 2061GBT-AD-P	24 02 406 1120
6	-	1x SM (10 km)	120 mm	2.45 A	0.98	Ha-VIS eCon 2061GB-AF-P	24 02 406 1230	Ha-VIS eCon 2061GBT-AF-P	24 02 406 1220
7	-	-	120 mm	2.45 A	0.98	Ha-VIS eCon 2070GB-A-P	24 02 407 0030	Ha-VIS eCon 2070GBT-A-P	24 02 407 0020