



4 to 7 Ethernet ports RJ45, FOC, 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) in accordance with IEEE 802.3at
- Full Gigabit Ethernet non-blocking switch architecture according to IEEE 802.3
- Support of jumbo frames (10 kB)
- Variants with industrial temperature range of -40°C ... +70°C
- Wide range power supply 24/48 VDC
- Surge protection and reverse polarity protection
- Minimum energy consumption due to energy-efficient Ethernet

Target markets

Machinery & Robotics	Automation	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 variants 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. 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 (auto-polarity and auto-MDI(X)) allow for simple plug & play. All variants are available with the temperature ranges "Industrial" and "Commercial".

Specification

Switch Features

Housing 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

Power supply

Nominal voltage	24 VDC	48 VDC	54 VDC
Permissible voltage range	9 VDC ... 60 VDC		
Surge protection	Yes		
Reverse polarity proof	Yes		
Starting current	3.2 A	6.40 A	7.20 A
Overcurrent protection at input	Yes (4 A)		
Max. power consumption @ 24 VDC	3.60 W ... 5.28 W		
Conductor cross-section	0.08 mm ² ... 2.5 mm ² (28 AWG ... 12 AWG)		
Type of connection	3-pole, pluggable screwed contact		
Pinout	+ / - /		
Supply circuit (according to 60950)	SELV (circuit breaker 10 A)		

Ethernet ports 10BASE-T / 100BASE-TX EEE / 1000BASE-TX EEE

Type of connection	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	Multi-mode (MM)	Single-mode (SM)
Type of connection	SC Duplex	
Transfer conditions	FOC	
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% (non-condensing)
Relative humidity (storage and transport)	0% ... 95% (non-condensing)
Air pressure	2000 m (795 hPa)



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PoE

Number of PoE ports	4	
Standard	IEEE 802.3af / IEEE 802.3at	
PoE type	PSE	
Supported mode	Alternative A	
Power supply PSE	48 VDC $\overline{\text{---}}$	54 VDC $\overline{\text{---}}$
Maximum Power consumption	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") \odot illuminated green	Supply voltage is applied
Link/Activity ("L/A") off	No link
Link/Activity ("L/A") illuminated 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") illuminated yellow	100 Mbit/s
Link speed ("Spd") illuminated green	1000 Mbit/s
PoE status off	PoE is inactive / low voltage
PoE status illuminated green	Voltage in PoE range
PoE status illuminated blue	Voltage in PoE+ range
PoE status illuminated red	Fault

Housing

Housing width	120 mm
Dimensions H x W x D (without pluggable screwed 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 hoods/housings	Anodised aluminium
Protection class (with plugged screwed contact)	IP30
Protection class	III

Approvals (in preparation)

CE (FCC CFR 47 Part 15, cUL US 508 listed, DNV, GL, ABS, NK)

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 55 022, FCC CFR 47 Part 15)

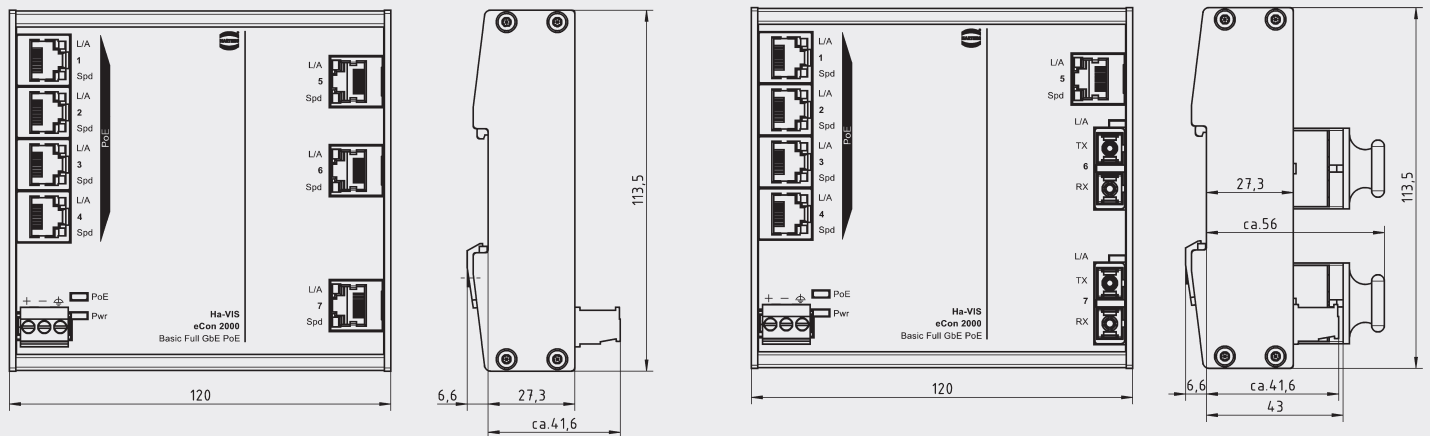
Mechanical stability (EN 60721-3)

IEC 60068-2-6 Vibration
 IEC 60068-2-6 Resonance search
 IEC 60068-2-27 Shock test

Scope of delivery

- Pluggable screwed contact for power supply
- Installation instructions

Drawings



Specifications / order information

Ports / order information

RJ45	SFP	SC	Housing width	Power consumption @ 24 VDC without PoE	MTBF in million h	Commercial temp.: 0°C ... +55°C		Industrial temp.: -40°C ... +70°C	
						Switch	Order no.	Switch	Order no.
4	-	3x MM (0.55 km)	120 mm	190 mA	S. eCatalogue	Ha-VIS eCon 2043GB-AD-P	24024043130	Ha-VIS eCon 2043GBT-AD-P	24024043120
4	-	3x SM (10 km)	120 mm	220 mA	S. eCatalogue	Ha-VIS eCon 2043GB-AF-P	24024043230	Ha-VIS eCon 2043GBT-AF-P	24024043220
5	-	-	120 mm	150 mA	S. eCatalogue	Ha-VIS eCon 2050GB-A-P	24024050030	Ha-VIS eCon 2050GBT-A-P	24024050020
5	-	2x MM (0.55 km)	120 mm	220 mA	S. eCatalogue	Ha-VIS eCon 2052GB-AD-P	24024052130	Ha-VIS eCon 2052GBT-AD-P	24024052120
5	-	2x SM (10 km)	120 mm	220 mA	S. eCatalogue	Ha-VIS eCon 2052GB-AF-P	24024052230	Ha-VIS eCon 2052GBT-AF-P	24024052220
6	-	1x MM (0.55 km)	120 mm	200 mA	S. eCatalogue	Ha-VIS eCon 2061GB-AD-P	24024061130	Ha-VIS eCon 2061GBT-AD-P	24024061120
6	-	1x SM (10 km)	120 mm	200 mA	S. eCatalogue	Ha-VIS eCon 2061GB-AF-P	24024061230	Ha-VIS eCon 2061GBT-AF-P	24024061220
7	-	-	120 mm	190 mA	S. eCatalogue	Ha-VIS eCon 2070GB-A-P	24024070030	Ha-VIS eCon 2070GBT-A-P	24024070020