



3 to 16 Ethernet ports RJ45 and SC

Unmanaged plug and play Ethernet switches for DIN rail assembly in control cabinets
Commercial temp.: 0 °C ... +55 °C / Industrial temp.: -40 °C ... +70 °C



- Fast Ethernet Non-Blocking switch architecture in accordance with IEEE 802.3
- 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
- Optimised DIN rail bracket

Target markets

Machinery & Robotics	Automation	Industrial network infrastructures
Wind Energy, Solar Energy	Transportation	Shipbuilding



General description

The Ha-VIS eCon 3000 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. The slender design of the switches enables an extremely high packing density on the DIN rail. 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

Enclosure width	25 mm	38 mm	38 mm
Number of ports	3, 5, 6, 7, 8	9, 10	16
Switching technology	Store and Forward		
Supported standards	IEEE 802.3		
Frame size	1522 bytes	1632 bytes	2000 bytes
MAC table size	1k entries	2k entries	8k entries
Packet buffer size	448 kbit	1 Mbit	2 Mbit
Non-blocking	Yes		
Quality of Service	Yes		
Energy Efficient Ethernet	Yes		
PROFINET compatible	Yes		
EthernetIP compatible	Yes		

Power supply

Nominal voltage	24 VDC \equiv	48 VDC \equiv
Permissible voltage range	9 VDC ... 60 VDC \equiv	
Surge protection	Yes	
Reverse polarity proof	Yes	
Starting current	1.6 A	3.2 A
Overcurrent protection at input	Yes (12 A for \leq 8 ports) / (2 A for $>$ 8 ports)	
Max. power consumption @ 24 VDC	1.80 W ... 6.72 W	
Conductor cross-section	0.08 mm ² ... 2.5 mm ² (28 AWG ... 12 AWG)	
Type of connection	3-pole, pluggable screw type terminal block	
Pinout	+ / - / \oplus	
Supply circuit (according to 60950)	SELV (circuit breaker 10 A)	

Ethernet ports 10BASE-T_e / 100BASE-TX EEE

Type of connection	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	Multi-mode (MM)	Single-mode (SM)
Type of connection	SC Duplex	
Transfer conditions	FOC	
Wavelength	1310 nm	
Transfer speed	100 Mbit/s	
Transfer length	2 km	15 km
Output power	-20 dBm ... -14 dBm	-15 dBm ... -8 dBm
Input sensitivity	\leq -30 dBm	\leq -32 dBm

Environmental 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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Enclosures

Enclosure width	25 mm	38 mm
Dimensions H x W x D (without pluggable screw type terminal block and holding bracket)	142 mm x 25 mm x 107.5 mm	142 mm x 38 mm x 107.5 mm
Weight	425 g ... 531 g	
Type of installation	35 mm DIN rail acc. to EN 60 715	
Material enclosures	Anodised aluminium / powder coated steel sheet	
Protection class (with pluggable screw type terminal block)	IP30	
Protection class	III	

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	

Approvals

CE, FCC CFR 47 Part 15, cUL US 508 listed, DNV, GL, ABS, 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 55 022, FCC CFR 47 Part 15)

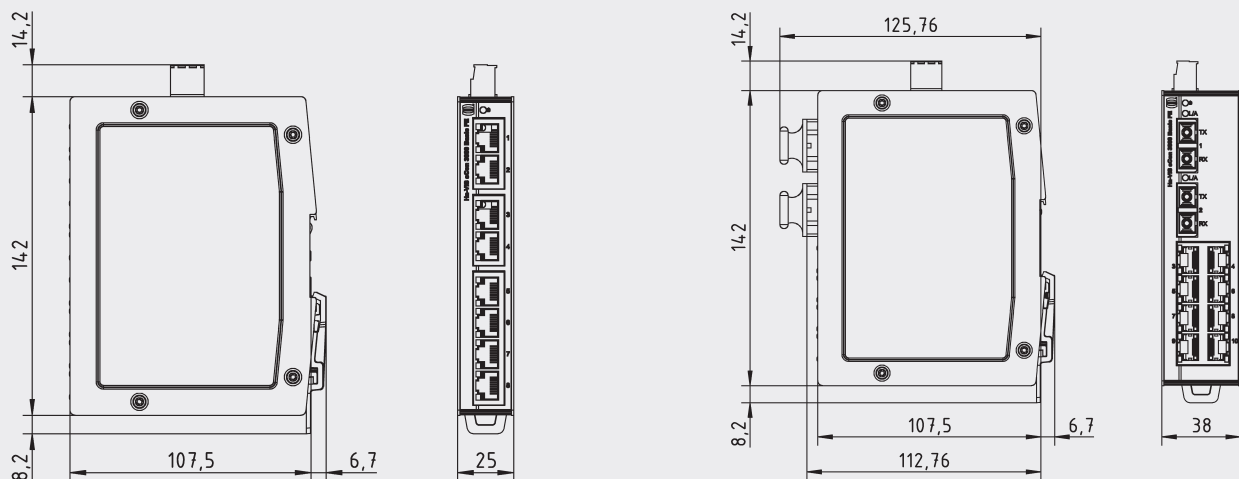
Mechanical stability (EN 60721-3)

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

Included in delivery

- Pluggable screw type terminal block for power supply
- Installation instructions

Drawings



Technical characteristics / order information

Ports / order information

RJ45	SFP	SC	Enclosure width	Power consumption @ 24 VDC	MTBF in million h	Commercial temp.: 0 °C ... +55 °C		Industrial temp.: -40 °C ... +70 °C	
						Switch	Part no.	Switch	Part no.
2	-	1x MM (2 km)	25 mm	97 mA	2.51	Ha-VIS eCon 3021B-AD	24 03 002 1110	Ha-VIS eCon 3021BT-AD	24 03 002 1100
2	-	1x SM (15 km)	25 mm	97 mA	2.51	Ha-VIS eCon 3021B-AF	24 03 002 1210	Ha-VIS eCon 3021BT-AF	24 03 002 1200
4	-	1x MM (2 km)	25 mm	111 mA	2.35	Ha-VIS eCon 3041B-AD	24 03 004 1110	Ha-VIS eCon 3041BT-AD	24 03 004 1100
4	-	1x SM (15 km)	25 mm	111 mA	2.35	Ha-VIS eCon 3041B-AF	24 03 004 1210	Ha-VIS eCon 3041BT-AF	24 03 004 1200
4	-	2x MM (2 km)	25 mm	142 mA	2.27	Ha-VIS eCon 3042B-AD	24 03 004 2110	Ha-VIS eCon 3042BT-AD	24 03 004 2100
4	-	2x SM (15 km)	25 mm	142 mA	2.27	Ha-VIS eCon 3042B-AF	24 03 004 2210	Ha-VIS eCon 3042BT-AF	24 03 004 2200
6	-	-	25 mm	75 mA	2.29	Ha-VIS eCon 3060B-A	24 03 006 0010	Ha-VIS eCon 3060BT-A	24 03 006 0000
6	-	1x MM (2 km)	25 mm	121 mA	2.21	Ha-VIS eCon 3061B-AD	24 03 006 1110	Ha-VIS eCon 3061BT-AD	24 03 006 1100
6	-	1x SM (15 km)	25 mm	121 mA	2.21	Ha-VIS eCon 3061B-AF	24 03 006 1210	Ha-VIS eCon 3061BT-AF	24 03 006 1200
8	-	-	25 mm	85 mA	2.16	Ha-VIS eCon 3080B-A	24 03 008 0010	Ha-VIS eCon 3080BT-A	24 03 008 0000
8	-	1x MM (2 km)	38 mm	227 mA	0.94	Ha-VIS eCon 3081B-AD	24 03 008 1110	Ha-VIS eCon 3081BT-AD	24 03 008 1100
8	-	1x SM (15 km)	38 mm	227 mA	0.94	Ha-VIS eCon 3081B-AF	24 03 008 1210	Ha-VIS eCon 3081BT-AF	24 03 008 1200
8	-	2x MM (2 km)	38 mm	273 mA	0.93	Ha-VIS eCon 3082B-AD	24 03 008 2110	Ha-VIS eCon 3082BT-AD	24 03 008 2100
8	-	2x SM (15 km)	38 mm	273 mA	0.93	Ha-VIS eCon 3082B-AF	24 03 008 2210	Ha-VIS eCon 3082BT-AF	24 03 008 2200
10	-	-	38 mm	220 mA	0.91	Ha-VIS eCon 3100B-A	24 03 010 0010	Ha-VIS eCon 3100BT-A	24 03 010 0000
16	-	-	38 mm	93 mA	1.75	Ha-VIS eCon 3160 B-A	24 03 016 0010	Ha-VIS eCon 3160BT-A	24 03 016 0000