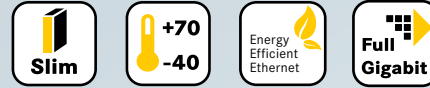


# Ha-VIS eCon 3000

## Full Gigabit Ethernet Basic



**2 to 16 Ethernet ports RJ45 and SC/LC (SFP)**  
 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 acc.to IEEE 802.3
- Support of jumbo frames
- 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
- Optimised DIN rail bracket

**Target markets**

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



### General description

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

variants with RJ45, fibre optic cables and SFP ports are available. 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**

<b>Enclosures width</b>	<b>25 mm</b>	<b>38 mm</b>
<b>Number of ports</b>	2, 5, 6, 7	16
<b>Switching technology</b>	Store and Forward	
<b>Supported standards</b>	IEEE 802.3	
<b>Frame Size</b>	10 kbytes	8 kBytes
<b>MAC table size</b>	8k entries	
<b>Packet buffer size</b>	1 Mbit	512 kBytes
<b>Non-blocking</b>	Yes	
<b>Quality of service</b>	Yes	
<b>Energy-Efficient Ethernet</b>	Yes	
<b>PROFINET compatible</b>	Yes	
<b>EthernetIP compatible</b>	Yes	

**Voltage supply**

<b>Nominal voltage</b>	24 VDC	48 VDC
<b>Permissible voltage range (see table techn. characteristics)</b>	9 VDC ... 60 VDC	... *
	18 VDC ... 60 VDC	... **
<b>Surge protection</b>	Yes	
<b>Reverse polarity proof</b>	Yes	
<b>Starting current</b>	1.60 A	3.20 A
<b>Overcurrent protection at input</b>	Yes (12 A for <=8 ports) / (2 A for >8 ports)	
<b>Max. power consumption @ 24 VDC</b>	2.21 W ... 9.17 W	
<b>Cross-section / Wire gauge</b>	0.08 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (28 AWG ... 12 AWG)	
<b>Connection type</b>	3-pole, pluggable screwed contact	
<b>Pinout</b>	+ / - / ⚡	
<b>Supply circuit (acc. to 60950)</b>	SELV (circuit breaker 10 A)	

**Ethernet Ports 10BASE-T<sub>e</sub> / 100BASE-TX EEE / 1000BASE-T EEE**

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

**Ethernet Ports 1000BASE-SX / 1000BASE-LX**

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

**SFP ports**

<b>Transfer standard</b>	Depending on used SFP
<b>Connection type</b>	Depending on used SFP, RJ45 or LC
<b>Transfer conditions</b>	Depending on used SFP, TP or FO
<b>Transfer speed</b>	Depending on used SFP, 100 or 1000 Mbit/s
<b>Transfer length</b>	Depending on used SFP



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## Enclosures

Enclosures width	25 mm	38 mm
Dimensions H x W x D (without pluggable screw contact and holding bracket)	142 mm x 25 mm x 107.5 mm	142 mm x 38 mm x 107.5 mm
Weight	428 g ... 490 g	700 g
Type of installation	35 mm DIN rail acc. to EN 60 715	
Material enclosures	Anodised aluminium / Powder-coated steel sheet	
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
Link speed („Spd“) lights up green	1000 Mbit/s

## 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)

## 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)

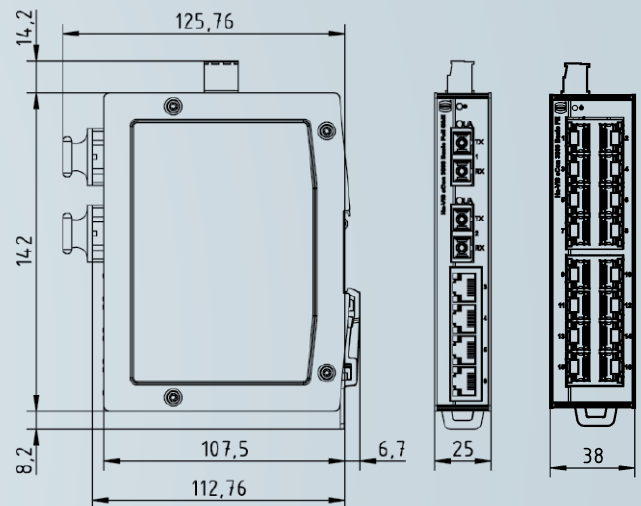
### Mechanical stability (EN 60721-3)

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.
1	-	1x MM (0.55 km)	25 mm	92 mA*	2.13	Ha-VIS eCon 3011GB-AD	24 03 401 1110	Ha-VIS eCon 3011GBT-AD	24 03 401 1100
1	-	1x SM (10 km)	25 mm	92 mA*	2.13	Ha-VIS eCon 3011GB-AF	24 03 401 1210	Ha-VIS eCon 3011GBT-AF	24 03 401 1200
1	1	-	25 mm	90 mA**	0.95	Ha-VIS eCon 3011GB-AC	24 03 401 1310	Ha-VIS eCon 3011GBT-AC	24 03 401 1300
4	-	1x MM (0.55 km)	25 mm	155 mA*	2.15	Ha-VIS eCon 3041GB-AD	24 03 404 1110	Ha-VIS eCon 3041GBT-AD	24 03 404 1100
4	-	1x SM (10 km)	25 mm	155 mA*	2.15	Ha-VIS eCon 3041GB-AF	24 03 404 1210	Ha-VIS eCon 3041GBT-AF	24 03 404 1200
4	-	2x MM (0.55 km)	25 mm	182 mA*	2.08	Ha-VIS eCon 3042GB-AD	24 03 404 2110	Ha-VIS eCon 3042GBT-AD	24 03 404 2100
4	-	2x SM (10 km)	25 mm	182 mA*	2.08	Ha-VIS eCon 3042GB-AF	24 03 404 2210	Ha-VIS eCon 3042GBT-AF	24 03 404 2200
4	3	-	25 mm	172 mA**	0.99	Ha-VIS eCon 3043GB-AC	24 03 404 3310	Ha-VIS eCon 3043GBT-AC	24 03 404 3300
5	-	-	25 mm	149 mA*	1.97	Ha-VIS eCon 3050GB-A	24 03 405 0010	Ha-VIS eCon 3050GBT-A	24 03 405 0000
5	-	1x MM (0.55 km)	25 mm	177 mA*	1.91	Ha-VIS eCon 3051GB-AD	24 03 405 1110	Ha-VIS eCon 3051GBT-AD	24 03 405 1100
5	-	1x SM (10 km)	25 mm	177 mA*	1.91	Ha-VIS eCon 3051GB-AF	24 03 405 1210	Ha-VIS eCon 3051GBT-AF	24 03 405 1200
5	2	-	25 mm	175 mA**	0.94	Ha-VIS eCon 3052GB-AC	24 03 405 2310	Ha-VIS eCon 3052GBT-AC	24 03 405 2300
6	-	-	25 mm	172 mA*	1.76	Ha-VIS eCon 3060GB-A	24 03 006 0010	Ha-VIS eCon 3060GBT-A	24 03 006 0000
6	1	-	25 mm	178 mA**	0.89	Ha-VIS eCon 3061GB-AC	24 03 406 1310	Ha-VIS eCon 3061GBT-AC	24 03 406 1300
7	-	-	25 mm	182 mA**	0.85	Ha-VIS eCon 3070GB-A	24 03 407 0010	Ha-VIS eCon 3070GBT-A	24 03 407 0000
16***	-	-	38 mm	382 mA*	1.36	Ha-VIS eCon 3160GB-A	24 03 416 0010	Ha-VIS eCon 3160GBT-A	24 03 416 0000

\* Permissible voltage range 9 VDC ... 60 VDC =

\*\* Permissible voltage range 18 VDC ... 60 VDC =

\*\*\* Maritime Approvals on request

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