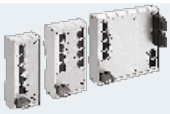
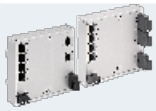
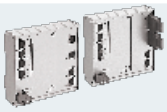
Directory

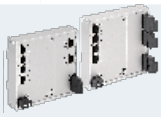
FUNCTION CLASS	INSTALLATION CLASS							
Ha-VIS eCon unmanaged Ethernet Switches Plug-and-Play Non-blocking Store and Forward Fast Ethernet Full Gigabit Jumbo-Frames Auto-negotiation Auto-polarity Auto-MDI(X) Quality of Service PoE / PoE+	· IP30 · DIN rail mounting · 24 / 48 / 54 VDC · 0 ... +55 °C · -40 ... +70 °C · Surge protection · Reverse voltage protection · Energy Efficient Ethernet	**Ha-VIS eCon 2000** · 3 to 16 ports Fast Ethernet · 5 to 7 ports Full Gigabit Ethernet · RJ45, SC Duplex · PoE+			**eCon 2000** **Fast Ethernet Basic**		**eCon 2000** **Full Gigabit** **Ethernet Basic**	
		Ha-VIS eCon 3000 · 3 to 10 ports Fast Ethernet · 2 to 7 ports Full Gigabit Ethernet · RJ45, SC Duplex, SFP · 24 V PoE+ Switches			**eCon 3000** **Fast Ethernet Basic**		**eCon 3000** **Full Gigabit** **Ethernet Basic**	
	Inside Degree of protection IP30 / IP40	**Ha-VIS eCon 4000** · 8 / 8 + 2 copper ports (M12 D-coding) · PoE · Robust metal housing · Extended temperature range **Ha-VIS eCon 9000** · 7 - 8 copper ports M12 D-coding · Robust metal housing · 19" assembly/· narrow design			**eCon 4080-B1** 8 M12 D-coding		**eCon 4080-B3** 8 M12 D-coding 110 V DC power supply	
	Outside Degree of protection IP65 / IP67	**Ha-VIS eCon 7000** · 5 / 10 copper ports (Han® 3 A RJ45 or M12 D-coding) · Robust die-cast zinc housing · EMC, temperature range and mechanical stability meet the highest requirements	5 PORT		**eCon 7050-A1** 5 Han® 3 A RJ45 wide power input range		**eCon 7050-B1** 5 M12 D-coding wide power input range	10 PORT
Ha-VIS sCon configurable Plug & Play, via USB interface configurable through a graphic user interface	**Inside** Degree of protection IP30	**Ha-VIS sCon 3000** · 6 / 8 / 10 copper ports (RJ45) and optionally 2 / 3 FO ports (SC) · Robust metal housing · Parallel- / ring-redundancy · DIN rail mounting · Potential-free alarm contact	WITHOUT FO		**sCon 3100-A** 10 RJ45		**sCon 3100-AA** 8 RJ45 2 RJ45 Gigabit	WITH FO SC
Ha-VIS **Fast Track** **Switching** Webinterface, SNMP (v1, v2c, v3) User Management, LLDP	**Inside** Degree of protection IP30	**Ha-VIS FTS 3000** · 6 / 8 / 10 copper ports (RJ45) and optionally 2 SFP modules · Robust metal housing · DIN rail mounting · Web-management · Fast Track Switching Technology	CONFIGURABLE		**FTS 3100s-A** 10 RJ45	MANAGED		**FTS 3060-A** 6 RJ45	
Ha-VIS mCon managed Quality of Service VLAN support Rapid Spanning Tree 802.1X RADIUS Client IP authorize manager Link Aggregation IGMP Snooping (v1, v2, v3) with querier DHCP Client DHCP Option 82 SNTP Alarms via Email SNMP Traps Port diagnostic	**Inside** Degree of protection IP30	**Ha-VIS mCon 3000** · Copper ports (RJ45); FO ports (SC / ST / SFP); Gigabit Uplink · Small, robust metal housing · Extended temperature range · DIN rail mounting · Fully managable via Web Interface and SNMP · Fanless Low-Power-Design			**mCon 3080-A** 8 RJ45 **mCon 3102-AASFP** 8 RJ45 2 RJ45 Gigabit 2 SFP Gigabit Combo	WITHOUT FO		**mCon 3100-AAV** 8 RJ45 2 RJ45 Gigabit **mCon 3100-AV** 10 RJ45	WITH FO SC
	Inside Degree of protection IP30 / IP40	**Ha-VIS mCon 4000** · 8 / 8 + 2 copper ports (M12 D-coding) · PoE · Robust metal housing · Extended temperature range **Ha-VIS eCon 9000** · 7 - 8 copper ports M12 D-coding · Robust metal housing · 19" assembly/· narrow design			**mCon 4080-B1V** 8 M12 D-coding		**mCon 4080-B3V** 8 M12 D-coding 110 V DC power supply	
	Outside Degree of protection IP65/IP67	**Ha-VIS mCon 7000** · 5 / 10 copper ports (Han® 3 A RJ45 or M12 D-coding) · Robust die-cast zinc housing · EMC, temperature range and mechanical stability meet the highest requirements · Web management	5 PORT		**mCon 7050-B1V** 5 M12 D-coding, wide power input range	10 PORT		**mCon 7100-B1V** 10 M12 D-coding	
Ha-VIS pCon Industrial DC / DC Converter 24 V / 48 V	**Inside** Degree of protection IP20 / IP65	**Ha-VIS pCon 7000** · DC / DC converter · Working temperature: -40 °C ... +70 °C			**pCon 7060-110 / 24** 110 V DC / 24 V DC, Degree of protection IP20			**pCon 7150-110 / 48** 110 V DC / 48 V DC Degree of protection IP65	

etwork Components

VITCHES | FIELDS OF APPLICATION



eCon 2000
Fast Ethernet Basic PoE



eCon 2000
Full Gigabit Ethernet
Basic PoE

Ethernet
IEEE 802.3

eCon 3000
Fast Ethernet
Basic PoE

eCon 3000
Full Gigabit
Ethernet Basic
PoE

eCon 3000
Fast Ethernet
Basic
PoE DC / DC (24 V)

eCon 3000
Full Gigabit
Ethernet Basic
PoE DC / DC (24 V)

Ethernet
IEEE 802.3

eCon 4080-BPoE1
8 M12 D-coding
PoE an 8 ports

eCon 4100-BB-L
8 M12 FE + 2 M12 GbE
optional with by-pass function

eCon 9080-B1
8 M12, D-coding

eCon 9070-B
7 M12 D-coding
Power supply
on the front

Ethernet
IEEE 802.3

eCon 7100-B1
10 M12 D-coding

eCon 7100-AA
8 Han® 3 A RJ45
2 Han® 3 A RJ45
Gigabit

Ethernet
IEEE 802.3

sCon 3082-AD
8 RJ45, 2 SC

sCon 3063-AD
6 RJ45, 3 SC

Ethernet
IEEE 802.3

FTS 3100-A
10 RJ45

FTS 3082-ASFP
8 RJ45
2 SFP module slot

Ethernet
IEEE 802.3

mCon 3082-ADV / AFV
8 RJ45, 2 SC
multi-mode (ADV)
single-mode (AFV)

mCon 3063-ADV
6 RJ45, 3 SC

ST

mCon 3082-AEV
8 RJ45, 2 ST

mCon 3063-AEV
6 RJ45, 3 ST

Ethernet
IEEE 802.3

mCon 4080-BPoE1V
8 M12 D-coding
PoE an 8 ports

mCon 4100-BB-L
8 M12 FE + 2 M12 GbE
external configuration memory
optional with by-pass function

mCon 9080-BV
8 M12 D-coding

mCon 9070-BV
7 M12 D-coding
power supply
on the front

Ethernet
IEEE 802.3

mCon 7100-AAV
8 Han® 3 A RJ45
2 Han® 3 A RJ45 Gigabit

Ethernet
IEEE 802.3

pCon 7150 DC-24 / 48
24 V DC / 48 V DC
Degree of protection IP65

5-year-service for Ethernet Switches and Network Components

HARTING's 5-year-service package provides you with additional protection beyond statutory warranty claims for HARTING Ethernet switches in the event of a product or workmanship defect.

HARTING Ethernet switches are optimally designed for scenarios in harsh industrial environments. High availability, network security and high reliability are the decisive technical characteristics necessary for the operation of an Ethernet network in industrial environments.

In order to provide even more protection beyond the time limits for statutory warranty claims, HARTING Ethernet switches can now also be purchased together with a 5-year-service package. Plainly put, this means that within the first 5 years there will be no cost to you for repairs or replacement equipment in the event of a product or workmanship defect.

Note:

The General conditions for service package "5-year-service" for HARTING Ethernet Switches shall take precedence and apply to every order, delivery and use of this product. These terms and conditions are applicable on **www.HARTING.com/en/service**. Please feel free to ask for providing you with print version by post.

Ha-VIS eCon 2000 Fast and Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C /
Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE)
with 4 Ports PoE+ (34.2 watts per port)

General description

Unmanaged Ethernet switches of the Ha-VIS eCon 2000 group enable cost-effective and quick extension or restructuring of network infrastructures. 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 RJ45s and fibre optic cables. These switches are available with two different speeds: Fast Ethernet (FE) with a bandwidth of 100 Mbit/s and full gigabit Ethernet (Full GbE) with 1000 Mbit/s for applications requiring a high data transfer rate. Thanks to the PoE+ standard, our switches enable end devices to be supplied with energy. There is a wide range of application areas for Ha-VIS eCon switches. Approvals for the industrial market, including the maritime sector and the transportation sector, enable the optimum selection of switches for any application.

Features

- Fast and full gigabit Ethernet, non-blocking switch architecture in accordance with IEEE 802.3
- Industrial temperature range from -40 °C up to +70 °C
- Support of auto-negotiation, auto-polarity, auto-MDI(X)
- Support of jumbo frames (10 kbytes)
- Variants with RJ45s, SC multi-mode fibres and single-mode fibres
- Energy supply of up to 4 end device via PoE+ (137 watts) in accordance with IEEE 802.3at
- Minimum energy consumption owing to energy-efficient Ethernet in accordance with IEEE 802.3az
- IP30 aluminium enclosures
- Wide range voltage supply, 24/48 V DC
- Surge protection and reverse voltage protection
- Extensive diagnostic options via LED displays at the front

Advantages

- Plug-and-Play switch, without time-consuming configuration and therefore easy and quick start-up
- Maximum data transfer rate without restrictions, even if all ports are in use
- Fault-tolerant owing to automatic recognition of data transfer rate and cable wiring
- High MTBF durations ensure secure and reliable operation
- Flat design with low installation depth
- Easy and quick connection of data transfer cables

Field of application

- Mechanical engineering & robotics
- Automation technology
- Industrial network infrastructures
- Solar energy
- Wind energy
- Transportation
- Shipbuilding

Technical characteristics

Switch Features

Switch type	Unmanaged Ethernet Switch
Supported standards	IEEE 802.3
Support of jumbo frames	Yes (Full Gigabit Ethernet Basic)
	No (Fast Ethernet Basic)
Non-blocking	Yes
PROFINET compatible	Yes
EthernetIP compatible	Yes
Frame Size	1552 bytes (Fast Ethernet Basic)
	10 kbytes (Full Gigabit Ethernet Basic)
Quality of Service	Yes
Energy Efficient Ethernet	Yes

Ethernet Ports Twisted Pair

Transfer standard	10BASE-Te / 100BASE-TX EEE; (Fast Ethernet Basic)
	10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE; (Full Gigabit Ethernet Basic)
Auto-Negotiation	Yes
Auto-Polarity	Yes
Auto-MDI(X)	Yes
Transfer length	100 m (Twisted Pair, Cat 5)

Ethernet ports, fibre optic cables

Transfer standard	100BASE-FX (Fast Ethernet Basic)
	1000BASE-LX (Full Gigabit Ethernet Basic)
Wavelength	1310 nm (MM / SM); (Fast Ethernet Basic)
	850 nm (MM) / 1310 nm (SM); (Full Gigabit Ethernet Basic)
Output capacity in dBm	-19 dBm ... -14 dBm (MM) / -15 dBm ... -8 dBm (SM); (Fast Ethernet Basic)
	-9.5 dBm ... -4 dBm (MM) / -9.5 dBm ... -3 dBm (SM); (Full Gigabit Ethernet Basic)
Receiver sensitivity	≤ -32 dBm (MM) / ≤ -34 dBm (SM); (Fast Ethernet Basic)
	≤ -17 dBm (MM) / ≤ -21 dBm (SM); (Full Gigabit Ethernet Basic)

Status and diagnostic displays (Switch and Ports)

Power ⏻ lit green	Supply voltage is applied
Link/Activity (“L/A”) off	No link
Link/Activity (“L/A”) lit 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”) lit yellow	100 Mbit/s
Link speed (“Spd”) lit green	1000 Mbit/s (Full Gigabit Ethernet Basic)
PoE off	PoE is inactive / low voltage
PoE lit green	Voltage in PoE range
PoE lit blue	Voltage in PoE+ range
PoE lit red	Fault (see manual)

Technical characteristics

Power supply

Surge protection	Yes
Overcurrent protection at input	Yes
Reverse polarity proof	Yes

Power over Ethernet PoE

Standard	IEEE 802.3af / IEEE 803.3at
Supported mode	Alternative A
Power supply PSE (PoE/PoE+)	48 / 54 VDC ⎓
Supported cabling	See 802.3at, section 33.1.4
PoE Pinout	Alternative A, MDI-X (1/2 = V-, 3/6 = V+)

Enclosures

Type of installation	35 mm DIN rail acc. to EN 60 715
Material enclosures	Anodised aluminium
Protection degree	III
Protection degree acc. to DIN EN 60 529 (with plugged screw type terminal block)	IP30

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/transport)	0 % ... 95 % (not-condensing)
Air pressure	2000 m (795 hPa)

EMC and environmental conditions

EMC interference immunity (EN 61 000-6-1, 61 000-6-2, 55204)	Electrostatic discharge (ESD) EN 61 000-4-2 Electromagnetiic field EN 61000-4-3 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 61 000-6-4, EN 55 022, 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 power supply	Yes
Operating manual	Yes

Ha-VIS eCon 2000 Fast Ethernet Basic

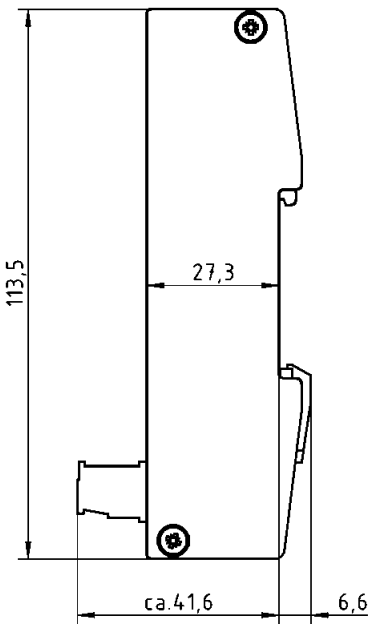
Unmanaged Plug-and-Play Ethernet Switches

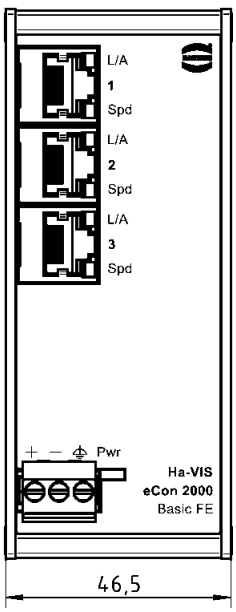
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	3 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	32 mA / 17 mA
Dimensions (W x H x D)	46.5 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	162 g
MTBF in million hours	3.13
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2030B-A 0 °C ... +55 °C	24 02 003 0010		
Ha-VIS eCon 2030BT-A -40 °C ... +70 °C	24 02 003 0000		





Ha-VIS eCon 2000 Fast Ethernet Basic

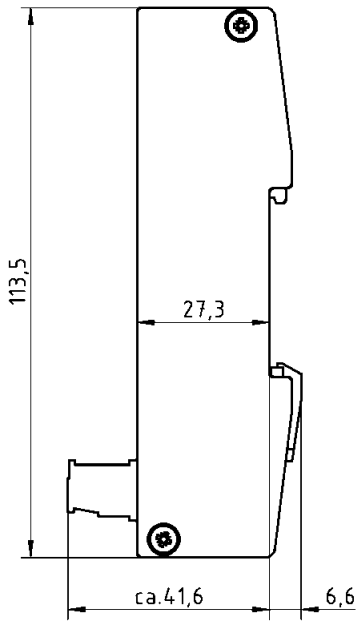
Unmanaged Plug-and-Play Ethernet Switches

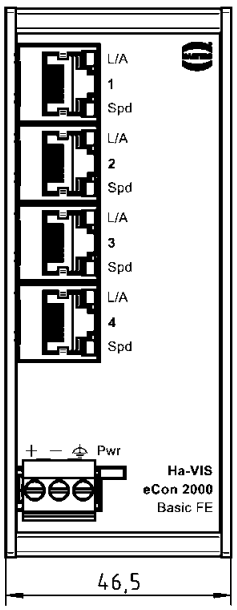
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	37 mA / 20 mA
Dimensions (W x H x D)	46.5 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	166 g
MTBF in million hours	2.99
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2040B-A 0 °C ... +55 °C	24 02 004 0010		
Ha-VIS eCon 2040BT-A -40 °C ... +70 °C	24 02 004 0000		





Ha-VIS eCon 2000 Fast Ethernet Basic

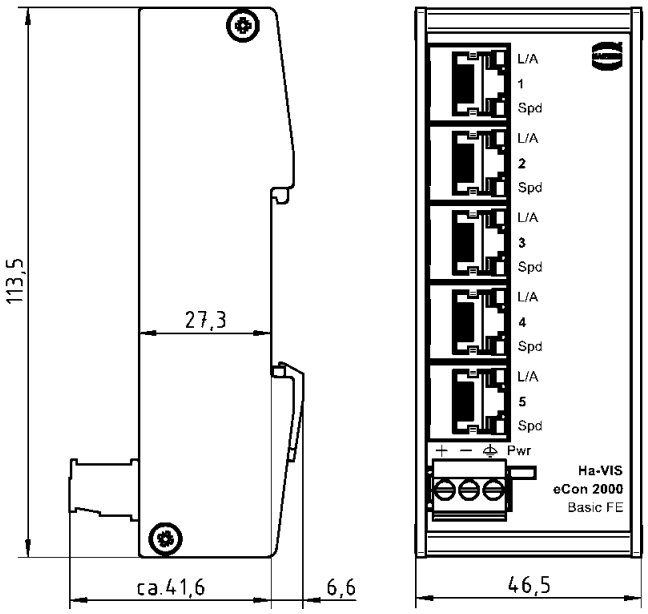
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	42 mA / 23 mA
Dimensions (W x H x D)	46.5 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	170 g
MTBF in million hours	2.86
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2050B-A 0 °C ... +55 °C	24 02 005 0010		
Ha-VIS eCon 2050BT-A -40 °C ... +70 °C	24 02 005 0000		



Ha-VIS eCon 2000 Fast Ethernet Basic

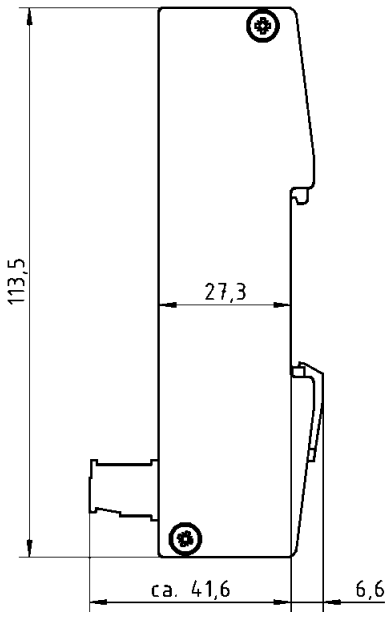
Unmanaged Plug-and-Play Ethernet Switches

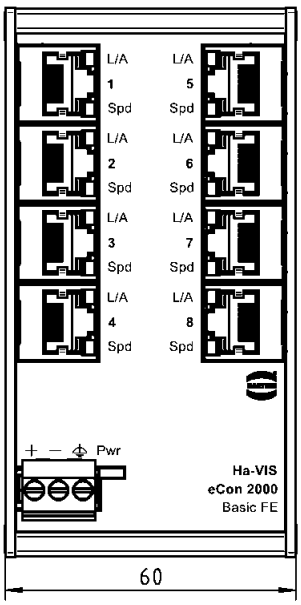
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	58 mA / 31 mA
Dimensions (W x H x D)	60.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	217 g
MTBF in million hours	2.53
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2080B-A 0 °C ... +55 °C	24 02 008 0010		
Ha-VIS eCon 2080BT-A -40 °C ... +70 °C	24 02 008 0000		





Ha-VIS eCon 2000 Fast Ethernet Basic

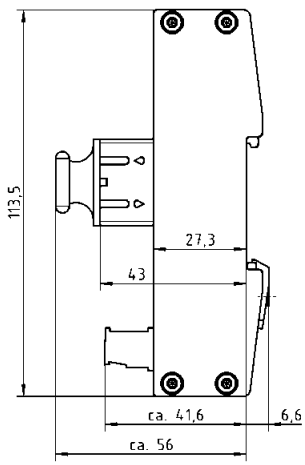
Unmanaged Plug-and-Play Ethernet Switches

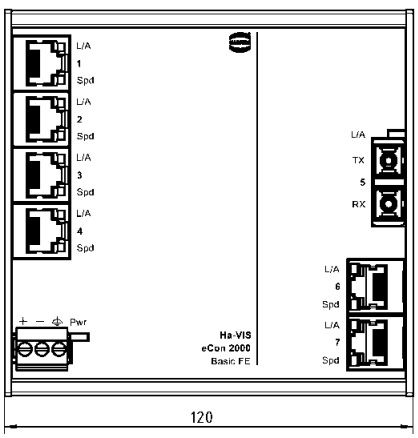
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	81 mA - 94 mA / 45 mA - 51 mA
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	372 g - 378 g
MTBF in million hours	1.24 - 1.26
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2061B-AD 0 °C ... +55 °C 1 x MM (2 km)	24 02 006 1110		
Ha-VIS eCon 2061B-AF 0 °C ... +55 °C 1 x SM (15 km)	24 02 006 1210		
Ha-VIS eCon 2061BT-AD -40 °C ... +70 °C 1 x MM (2 km)	24 02 006 1100		
Ha-VIS eCon 2061BT-AF -40 °C ... +70 °C 1 x SM (15 km)	24 02 006 1200		





Ha-VIS eCon 2000 Fast Ethernet Basic

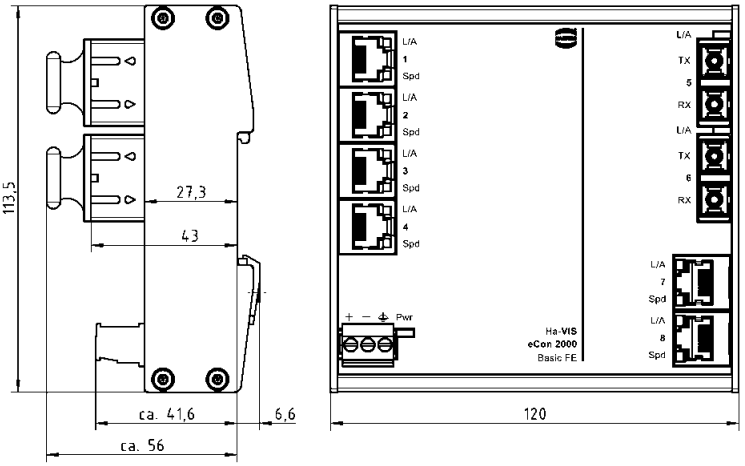
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	113 mA - 119 mA / 60 mA - 69 mA
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	380 g - 386 g
MTBF in million hours	1.20 - 1.23
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2062B-AD 0 °C ... +55 °C 2 x MM (2 km)	24 02 006 2110		
Ha-VIS eCon 2062B-AF 0 °C ... +55 °C 2 x SM (15 km)	24 02 006 2210		
Ha-VIS eCon 2062BT-AD -40 °C ... +70 °C 2 x MM (2 km)	24 02 006 2100		
Ha-VIS eCon 2062BT-AF -40 °C ... +70 °C 2 x SM (15 km)	24 02 006 2200		



Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

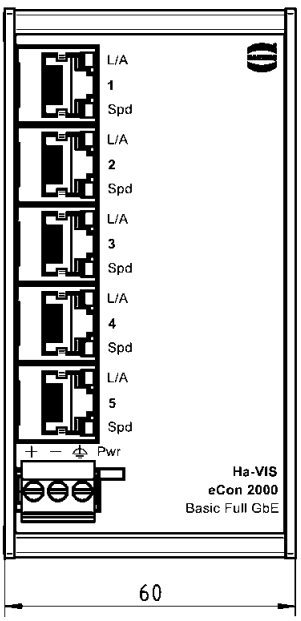
Unmanaged Plug-and-Play Ethernet Switches

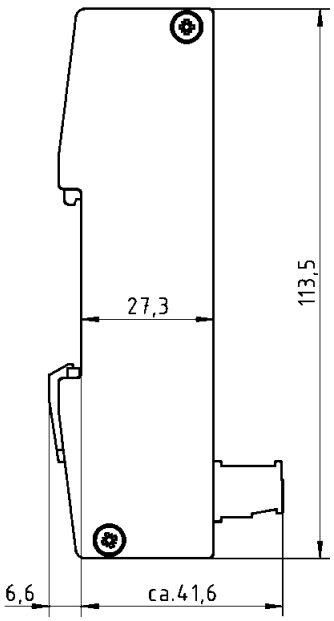
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	134 mA / 69 mA
Dimensions (W x H x D)	60.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	205 g
MTBF in million hours	3.06
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2050GB-A 0 °C ... +55 °C	24 02 405 0010		
Ha-VIS eCon 2050GBT-A -40 °C ... +70 °C	24 02 405 0000		





Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

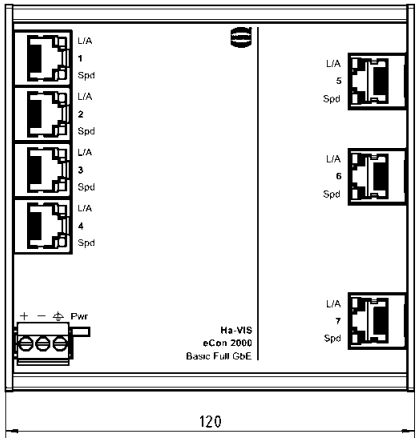
Unmanaged Plug-and-Play Ethernet Switches

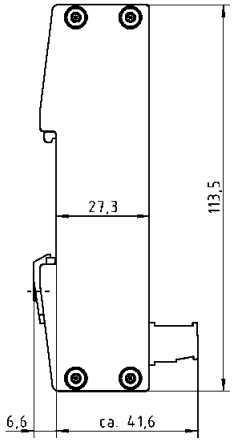
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	7 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	182 mA / 96 mA
Dimensions (W x H x D)	120.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	378 g
MTBF in million hours	1.70
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2070GB-A 0 °C ... +55 °C	24 02 407 0010		
Ha-VIS eCon 2070GBT-A -40 °C ... +70 °C	24 02 407 0000		





Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

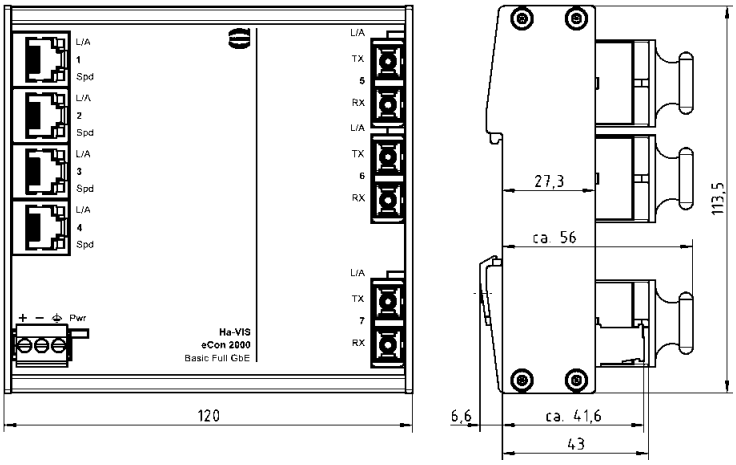
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	3 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	185 mA - 199 mA / 96 mA - 103 mA
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	386 g - 393 g
MTBF in million hours	1.69
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2043GB-AD 0 °C ... +55 °C 3 x MM (550 m)	24 02 404 3110		
Ha-VIS eCon 2043GB-AF 0 °C ... +55 °C 3 x SM (10 km)	24 02 404 3210		
Ha-VIS eCon 2043GBT-AD -40 °C ... +70 °C 3 x MM (550 m)	24 02 404 3100		
Ha-VIS eCon 2043GBT-AF -40 °C ... +70 °C 3 x SM (10 km)	24 02 404 3200		



Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

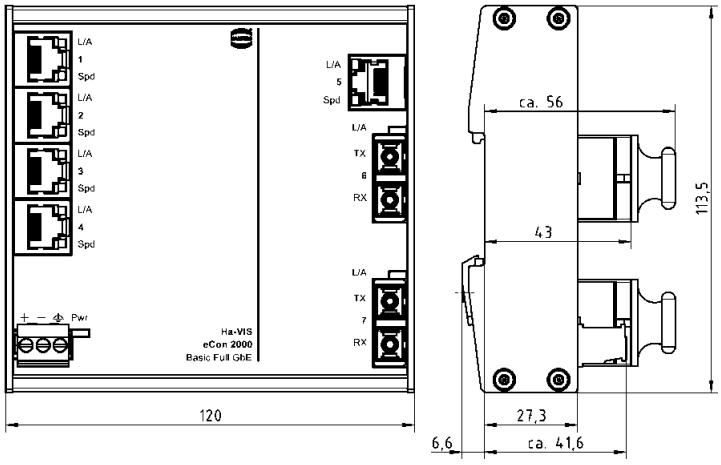
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	184 mA - 194 mA / 96 mA - 101 mA
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	384 g - 391 g
MTBF in million hours	1.69
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2052GB-AD 0 °C ... +55 °C 2 x MM (550 m)	24 02 405 2110		
Ha-VIS eCon 2052GB-AF 0 °C ... +55 °C 2 x SM (10 km)	24 02 405 2210		
Ha-VIS eCon 2052GBT-AD -40 °C ... +70 °C 2 x MM (550 m)	24 02 405 2100		
Ha-VIS eCon 2052GBT-AF -40 °C ... +70 °C 2 x SM (10 km)	24 02 405 2200		



Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

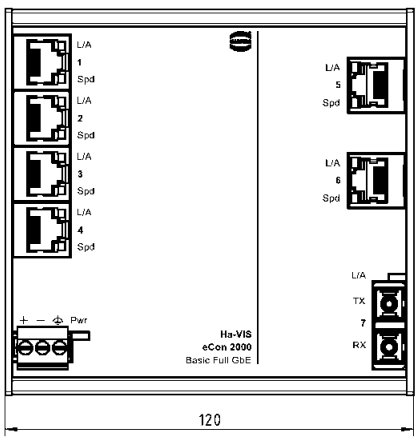
Unmanaged Plug-and-Play Ethernet Switches

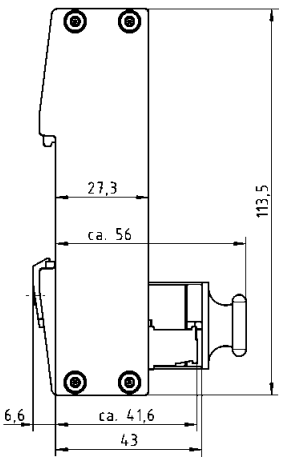
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	183 mA - 190 mA / 95 mA - 98 mA
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	382 g - 389 g
MTBF in million hours	1.69
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2061GB-AD 0 °C ... +55 °C 1 x MM (550 m)	24 02 406 1110		
Ha-VIS eCon 2061GB-AF 0 °C ... +55 °C 1 x SM (10 km)	24 02 406 1210		
Ha-VIS eCon 2061GBT-AD -40 °C ... +70 °C 1 x MM (550 m)	24 02 406 1100		
Ha-VIS eCon 2061GBT-AF -40 °C ... +70 °C 1 x SM (10 km)	24 02 406 1200		





Ha-VIS eCon 2000 Fast Ethernet Basic PoE

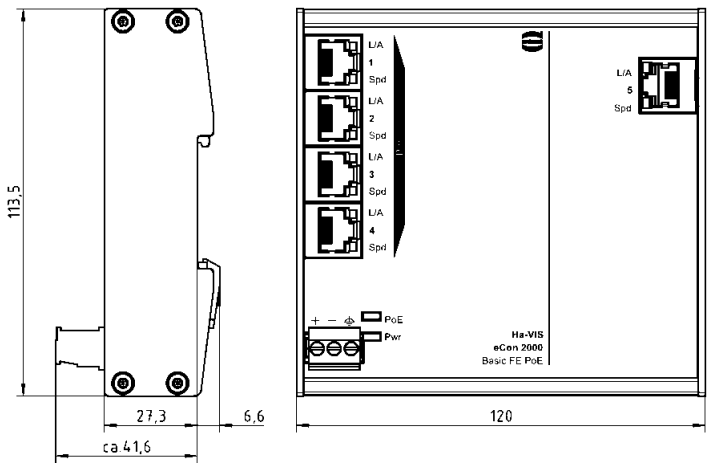
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	5 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.05 A / 1.40 A / 2.39 A
Dimensions (W x H x D)	120.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	364 g
MTBF in million hours	0.84
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2050B-A-P 0 °C ... +55 °C	24 02 005 0030		
Ha-VIS eCon 2050BT-A-P -40 °C ... +70 °C	24 02 005 0020		



Ha-VIS eCon 2000 Fast Ethernet Basic PoE

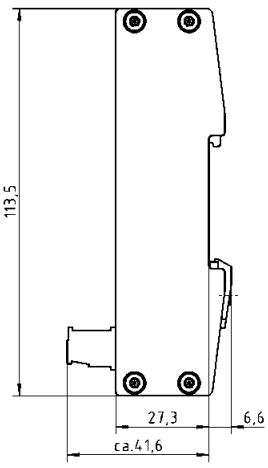
Unmanaged Plug-and-Play Ethernet Switches

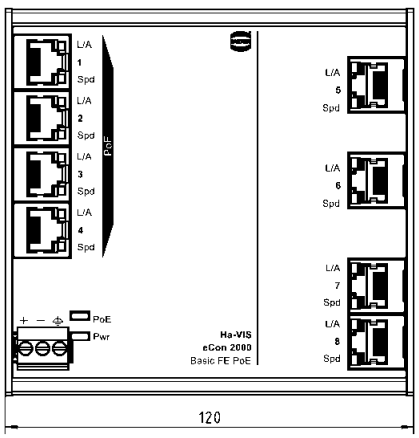
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination, including PoE+ ports	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.07 A / 1.40 A / 2.39 A
Dimensions (W x H x D)	120.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	374 g
MTBF in million hours	0.73
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2080B-A-P 0 °C ... +55 °C	24 02 008 0030		
Ha-VIS eCon 2080BT-A-P -40 °C ... +70 °C	24 02 008 0020		





Ha-VIS eCon 2000 Fast Ethernet Basic PoE

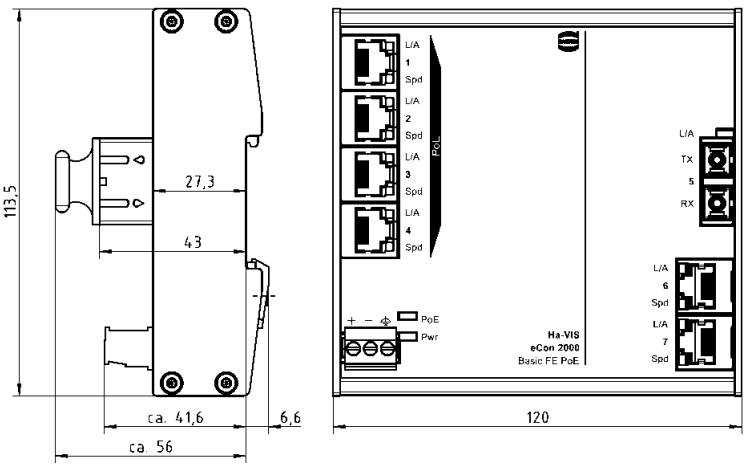
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.09 - 0.10 A / 1.41 - 1.42 A / 2.41 - 2.42 A
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	406 g - 412 g
MTBF in million hours	0.78 - 0.79
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2061B-AD-P 0 °C ... +55 °C 1 x MM (2 km)	24 02 006 1130		
Ha-VIS eCon 2061B-AF-P 0 °C ... +55 °C 1 x SM (15 km)	24 02 006 1230		
Ha-VIS eCon 2061BT-AD-P -40 °C ... +70 °C 1 x MM (2 km)	24 02 006 1120		
Ha-VIS eCon 2061BT-AF-P -40 °C ... +70 °C 1 x SM (15 km)	24 02 006 1220		



Ha-VIS eCon 2000 Fast Ethernet Basic PoE

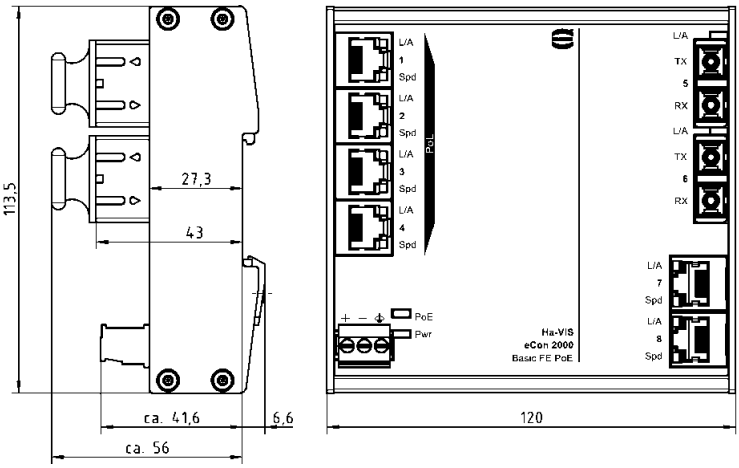
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination, including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.12 - 0.14 A / 1.44 A / 2.42 - 2.43 A
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	414 g - 420 g
MTBF in million hours	0.76 - 0.78
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2062B-AD-P 0 °C ... +55 °C 2 x MM (2 km)	24 02 006 2130		
Ha-VIS eCon 2062B-AF-P 0 °C ... +55 °C 2 x SM (15 km)	24 02 006 2230		
Ha-VIS eCon 2062BT-AD-P -40 °C ... +70 °C 2 x MM (2 km)	24 02 006 2120		
Ha-VIS eCon 2062BT-AF-P -40 °C ... +70 °C 2 x SM (15 km)	24 02 006 2220		



Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

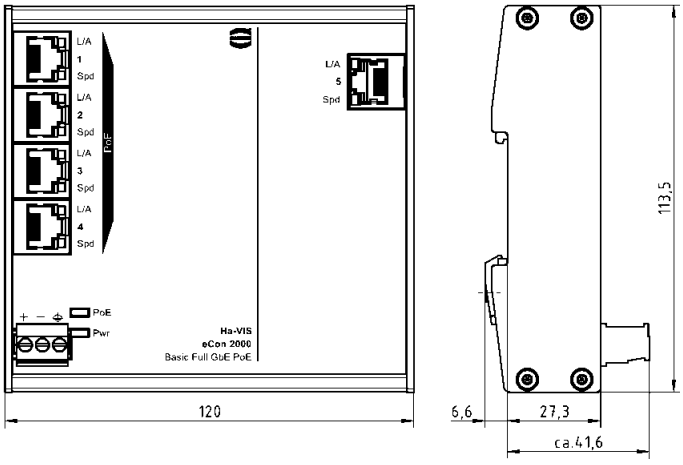
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.15 A / 1.45 A / 2.43 A
Dimensions (W x H x D)	120.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	410 g
MTBF in million hours	1.01
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2050GB-A-P 0 °C ... +55 °C	24 02 405 0030		
Ha-VIS eCon 2050GBT-A-P -40 °C ... +70 °C	24 02 405 0020		



Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

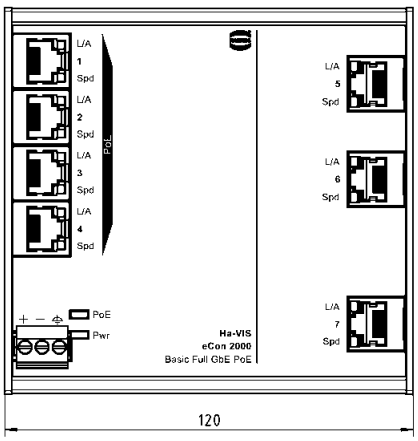
Unmanaged Plug-and-Play Ethernet Switches

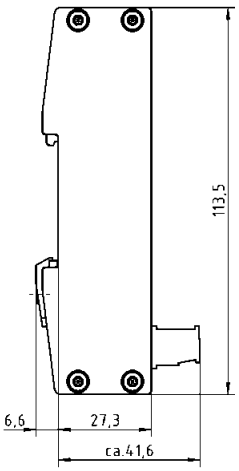
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination,	7 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 A / 1.47 A / 2.45 A
Dimensions (W x H x D)	120.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	427 g
MTBF in million hours	0.98
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2070GB-A-P 0 °C ... +55 °C	24 02 407 0030		
Ha-VIS eCon 2070GBT-A-P -40 °C ... +70 °C	24 02 407 0020		





Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

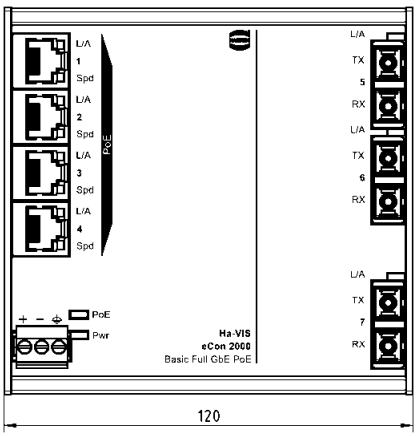
Unmanaged Plug-and-Play Ethernet Switches

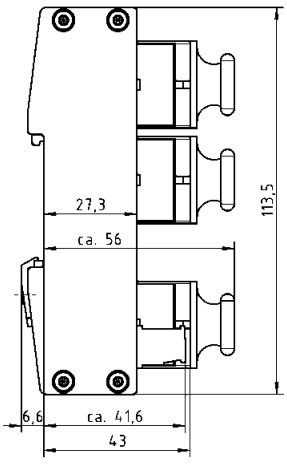
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	3 x 1000BASE-SX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 - 0.20 A / 1.46 A / 2.45 A
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	435 g - 442 g
MTBF in million hours	0.98
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2043GB-AD-P 0 °C ... +55 °C 3 x MM (550 m)	24 02 404 3130		
Ha-VIS eCon 2043GB-AF-P 0 °C ... +55 °C 3 x SM (10 km)	24 02 404 3230		
Ha-VIS eCon 2043GBT-AD-P -40 °C ... +70 °C 3 x MM (550 m)	24 02 404 3120		
Ha-VIS eCon 2043GBT-AF-P -40 °C ... +70 °C 3 x SM (10 km)	24 02 404 3220		





Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

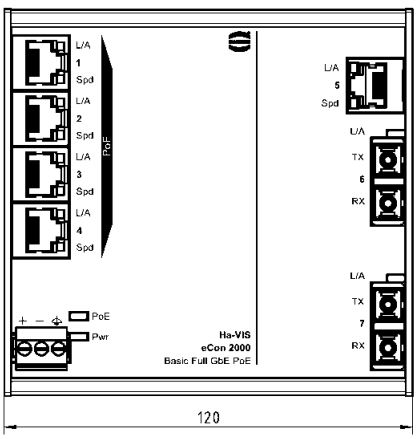
Unmanaged Plug-and-Play Ethernet Switches

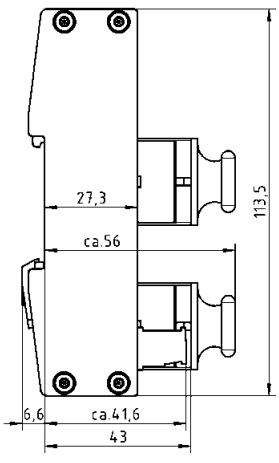
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 1000BASE-SX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 - 0.20 A / 1.46 A / 2.45 A
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	435 g - 442 g
MTBF in million hours	0.98
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2052GB-AD-P 0 °C ... +55 °C 2 x MM (550 m)	24 02 405 2130		
Ha-VIS eCon 2052GB-AF-P 0 °C ... +55 °C 2 x SM (10 km)	24 02 405 2230		
Ha-VIS eCon 2052GBT-AD-P -40 °C ... +70 °C 2 x MM (550 m)	24 02 405 2120		
Ha-VIS eCon 2052GBT-AF-P -40 °C ... +70 °C 2 x SM (10 km)	24 02 405 2220		





Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

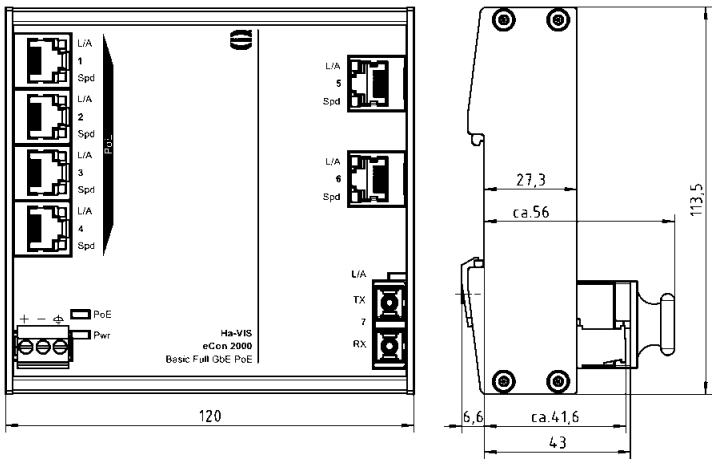
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 - 0.20 A / 1.46 A / 2.45 A
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	431 g - 438 g
MTBF in million hours	0.98
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2061GB-AD-P 0 °C ... +55 °C 1 x MM (550 m)	24 02 406 1130		
Ha-VIS eCon 2061GB-AF-P 0 °C ... +55 °C 1 x SM (10 km)	24 02 406 1230		
Ha-VIS eCon 2061GBT-AD-P -40 °C ... +70 °C 1 x MM (550 m)	24 02 406 1120		
Ha-VIS eCon 2061GBT-AF-P -40 °C ... +70 °C 1 x SM (10 km)	24 02 406 1220		

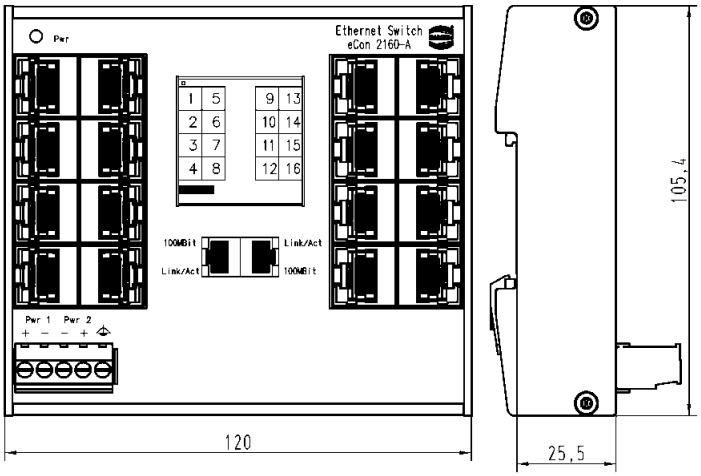


Ethernet Switch
Ha-VIS eCon 2160-A

16-port Ethernet Switch for flat mounting
onto top-hat mounting rail in control cabinets

Specification

Number of ports, Copper / Termination	16x 10/100Base-T(X) / RJ45 (Twisted Pair)
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, redundant (PWR1 + / PWR1 - / PWR2 + / PWR2 - / FE)
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 220 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	120 x 105 x 25.5 mm (without connectors)
Weight	approx. 0.4 kg
Working temperature	-10 °C ... +70 °C
MTBF	1.150.000 h
Approvals	cUL US 508 listed

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 2160-A Ethernet Switch with 16 RJ45 ports	20 76 116 3000		

Ha-VIS eCon 3000 Fast and Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C /
Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE)
with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

General description

Unmanaged Ethernet switches of the Ha-VIS eCon 3000 group enable cost-effective and quick extension or restructuring 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 RJ45s and fibre optic cables. These switches are available with two different speeds: Fast Ethernet (FE) with a bandwidth of 100 Mbit/s and full gigabit Ethernet (Full GbE) with 1000 Mbit/s for applications requiring a high data transfer rate. Thanks to the PoE+ standard, our switches enable end devices to be supplied with energy. Likewise, variants with an integrated DC/DC transformer enable the use of 24 V as supply voltage and hence help to keep cabling expenses to a minimum, saving time and money. There is a wide range of application areas for Ha-VIS eCon switches. Approvals for the industrial market, including the maritime sector and the transportation sector, enable the optimum selection of switches for any application.

Features

- Fast and full gigabit Ethernet, non-blocking switch architecture in accordance with IEEE 802.3
- Industrial temperature range from -40 °C up to +70 °C
- Support of auto-negotiation, auto-polarity, auto-MDI(X)
- Support of jumbo frames (10 kbytes)
- Variants with RJ45s, SC multi-mode fibres, single-mode fibres and SFP
- Energy supply of up to 4 end device via PoE+ (137 watts) in accordance with IEEE 802.3at
- Minimum energy consumption owing to energy-efficient Ethernet, IEEE 802.3az
- IP30 aluminium/steel sheet enclosure
- Wide range voltage supply, 24/48 V DC
- Surge protection and reverse voltage protection
- Extensive diagnostic options via LED displays at the front
- Optimised DIN rail bracket

Advantages

- Plug-and-Play switch, without time-consuming configuration and therefore easy and quick start-up
- Maximum data transfer rate without restrictions, even if all ports are in use
- Fault-tolerant owing to automatic recognition of data transfer rate and cable wiring
- High MTBF durations ensure secure and reliable operation
- Slender design for high packing density
- Use of PoE+ with 24 V DC supply (isolated)
- Easy and quick connection of data transfer cables

Field of application

- Mechanical engineering & robotics
- Automation technology
- Industrial network infrastructures
- Solar energy
- Wind energy
- Transportation
- Shipbuilding

Technical characteristics

Switch Features

Switch type	Unmanaged Ethernet Switch
Supported standards	IEEE 802.3
Support of jumbo frames	No (Fast Ethernet Basic)
	Yes (Full Gigabit Ethernet Basic)
Non-blocking	Yes
PROFINET compatible	Yes
EthernetIP compatible	Yes
Frame Size	1522 bytes (Fast Ethernet Basic)
	10 kbytes (Full Gigabit Ethernet Basic)
Quality of Service	Yes
Energy Efficient Ethernet	Yes

Ethernet Ports Twisted Pair

Transfer standard	10BASE-Te / 100BASE-TX EEE; (Fast Ethernet Basic)
	10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE; (Full Gigabit Ethernet Basic)
Auto-Negotiation	Yes
Auto-Polarity	Yes
Auto-MDI(X)	Yes
Transfer length	100 m (twisted pair, Cat 5)

Ethernet ports, fibre optic cables

Transfer standard	100BASE-FX (Fast Ethernet Basic)
	1000BASE-SX (MM) / 1000BASE-LX (SM); (Full Gigabit Ethernet Basic)
Wavelength	1310 nm (Fast Ethernet Basic)
	850 nm (MM) / 1310 nm (SM); (Full Gigabit Ethernet Basic)
Output capacity in dBm	-20 dBm ... -14 dBm (MM) / -15 dBm ... -8 dBm (SM); (Fast Ethernet Basic)
	-9.5 dBm ... -4 dBm (MM) / -9.5 dBm ... -3 dBm (SM); (Full Gigabit Ethernet Basic)
Receiver sensitivity	≤ -30 dBm (MM) / ≤ -32 dBm (SM); (Fast Ethernet Basic)
	≤ -17 dBm (MM) / ≤ -21 dBm (SM); (Full Gigabit Ethernet Basic)

Ethernet ports, SFP

Transfer standard	Depending on used SFP
Termination	Depending on used SFP, RJ45 or LC
Transfer conditions	Depending on used SFP, twisted pair or optical fibre cable
Transfer speed	Depending on used SFP, 100 or 1000 Mbit/s
Transfer length	Depending on used SFP

Status and diagnostics displays (Switch and Ports)

Power ⏻ lit green	Supply voltage is applied
Link/Activity (“L/A”) off	No link
Link/Activity (“L/A”) lit 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”) lit yellow	100 Mbit/s
Link speed (“Spd”) lit green	1000 Mbit/s (Full Gigabit Ethernet Basic)
PoE 🔌 off	PoE is inactive / low voltage
PoE 🔌 lit green	Voltage in PoE range
PoE 🔌 lit blue	Voltage in PoE+ range
PoE 🔌 lit red	Fault (see manual)

Technical characteristics

Power supply

Surge protection	Yes
Overcurrent protection at input	Yes
Reverse polarity proof	Yes

Power over Ethernet PoE

Standard	IEEE 802.3af / IEEE 803.3at
Supported mode	Alternative A
Power supply PSE (PoE/PoE+)	48 / 54 VDC ⎓
	24 VDC with integrated Voltage Transformer
Supported cabling	See 802.3at, section 33.1.4
PoE Pinout	Alternative A, MDI-X (1/2 = V-, 3/6 = V+)

Enclosures

Type of installation	35 mm DIN rail acc. to EN 60 715
Material enclosures	Anodised aluminium / Powder-coated steel sheet
Protection degree	III
Protection degree acc. to DIN EN 60 529 (with plugged screw type terminal block)	IP30

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/transport)	0 % ... 95 % (not-condensing)
Air pressure	2000 m (795 hPa)

EMC and environmental conditions

EMC interference immunity (EN 61 000-6-1, 61 000-6-2, 55204)	Electrostatic discharge (ESD) EN 61 000-4-2
	Electromagnetiic field EN 61000-4-3
	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 61 000-6-4, EN 55 022, 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 type terminal block for power supply	Yes
Operating manual	Yes

Ha-VIS eCon 3000 Fast Ethernet Basic

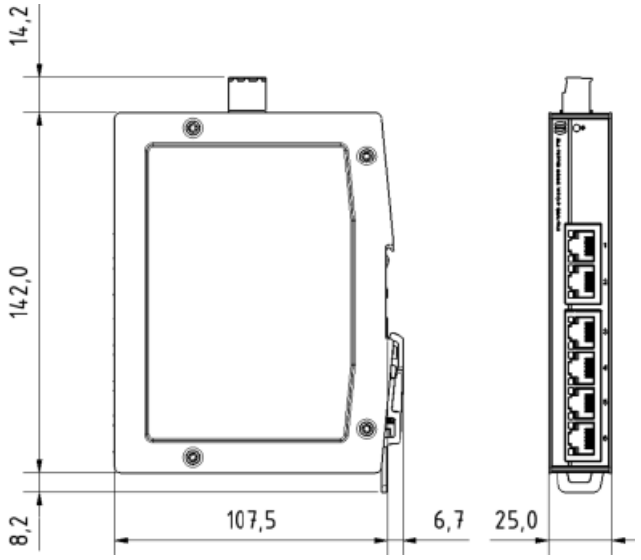
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	75 mA / 40 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	430 g
MTBF in million hours	2.29
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3060B-A 0 °C ... +55 °C	24 03 006 0010		
Ha-VIS eCon 3060BT-A -40 °C ... +70 °C	24 03 006 0000		



Ha-VIS eCon 3000 Fast Ethernet Basic

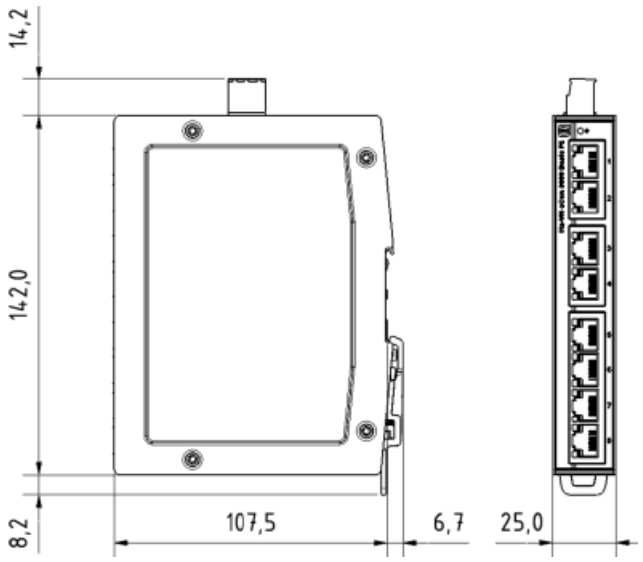
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	85 mA / 46 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	442 g
MTBF in million hours	2.16
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3080B-A 0 °C ... +55 °C	24 03 008 0010		
Ha-VIS eCon 3080BT-A -40 °C ... +70 °C	24 03 008 0000		



Ha-VIS eCon 3000 Fast Ethernet Basic

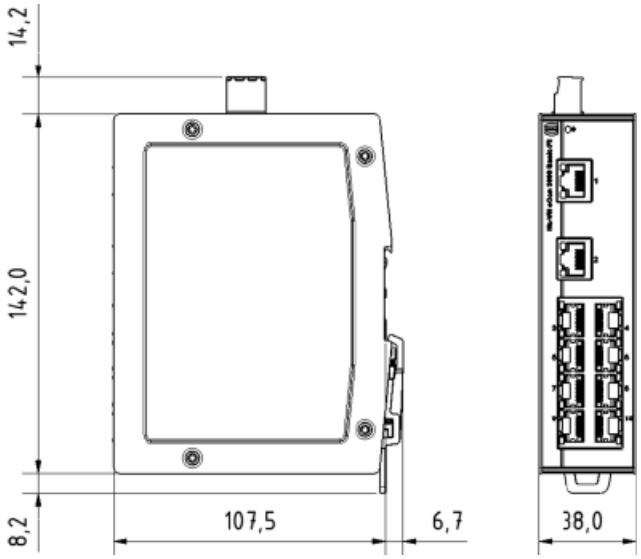
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	10 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	220 mA / 114 mA
Dimensions (W x H x D)	38.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	512 g
MTBF in million hours	0.91
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3100B-A 0 °C ... +55 °C	24 03 010 0010		
Ha-VIS eCon 3100BT-A -40 °C ... +70 °C	24 03 010 0000		



Ha-VIS eCon 3000 Fast Ethernet Basic

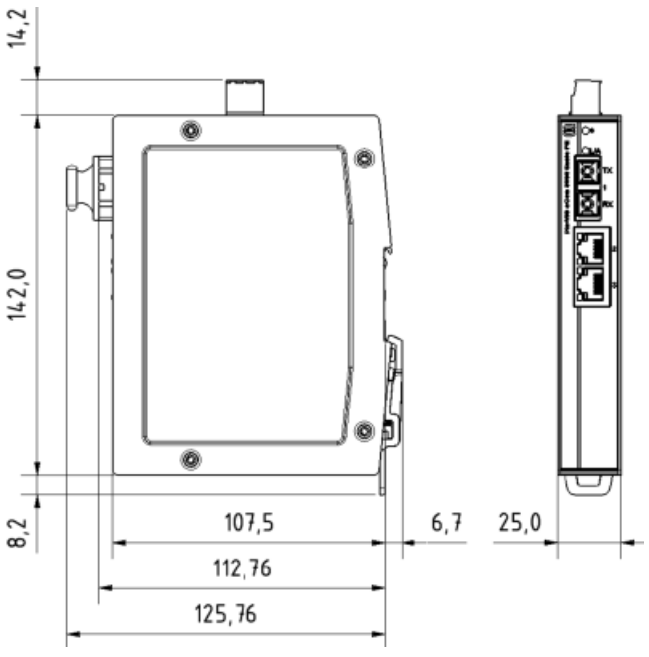
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	2 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	97 mA / 53 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	425 g - 431 g
MTBF in million hours	2.51
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3021B-AD 0 °C ... +55 °C 1 x MM (2 km)	24 03 002 1110		
Ha-VIS eCon 3021B-AF 0 °C ... +55 °C 1 x SM (15 km)	24 03 002 1210		
Ha-VIS eCon 3021BT-AD -40 °C ... +70 °C 1 x MM (2 km)	24 03 002 1100		
Ha-VIS eCon 3021BT-AF -40 °C ... +70 °C 1 x SM (15 km)	24 03 002 1200		



Ha-VIS eCon 3000 Fast Ethernet Basic

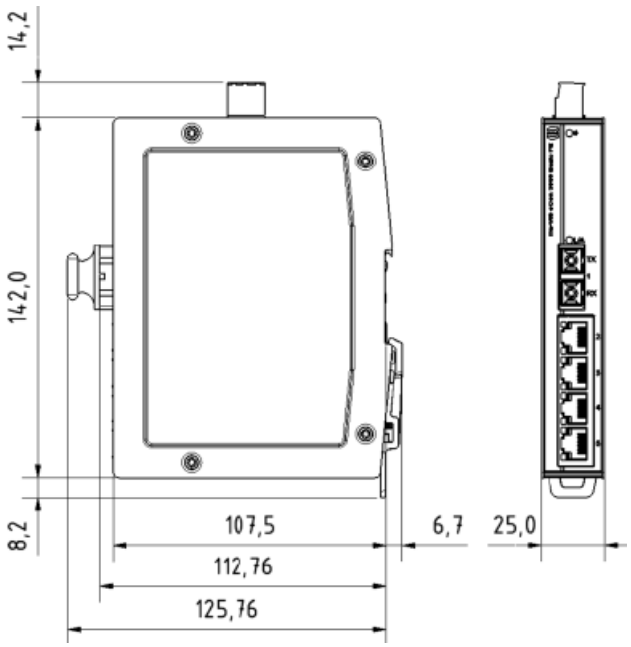
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	111 mA / 59 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	430 g - 436 g
MTBF in million hours	2.35
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3041B-AD 0 °C ... +55 °C 1 x MM (2 km)	24 03 004 1110		
Ha-VIS eCon 3041B-AF 0 °C ... +55 °C 1 x SM (15 km)	24 03 004 1210		
Ha-VIS eCon 3041BT-AD -40 °C ... +70 °C 1 x MM (2 km)	24 03 004 1100		
Ha-VIS eCon 3041BT-AF -40 °C ... +70 °C 1 x SM (15 km)	24 03 004 1200		



Ha-VIS eCon 3000 Fast Ethernet Basic

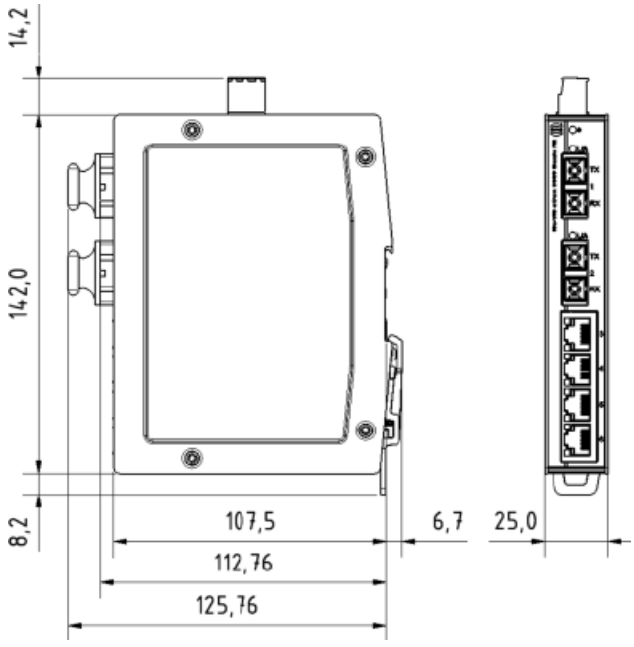
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	142 mA / 77 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	446 g - 458 g
MTBF in million hours	2.27
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3042B-AD 0 °C ... +55 °C 2 x MM (2 km)	24 03 004 2110		
Ha-VIS eCon 3042B-AF 0 °C ... +55 °C 2 x SM (15 km)	24 03 004 2210		
Ha-VIS eCon 3042BT-AD -40 °C ... +70 °C 2 x MM (2 km)	24 03 004 2100		
Ha-VIS eCon 3042BT-AF -40 °C ... +70 °C 2 x SM (15 km)	24 03 004 2200		



Ha-VIS eCon 3000 Fast Ethernet Basic

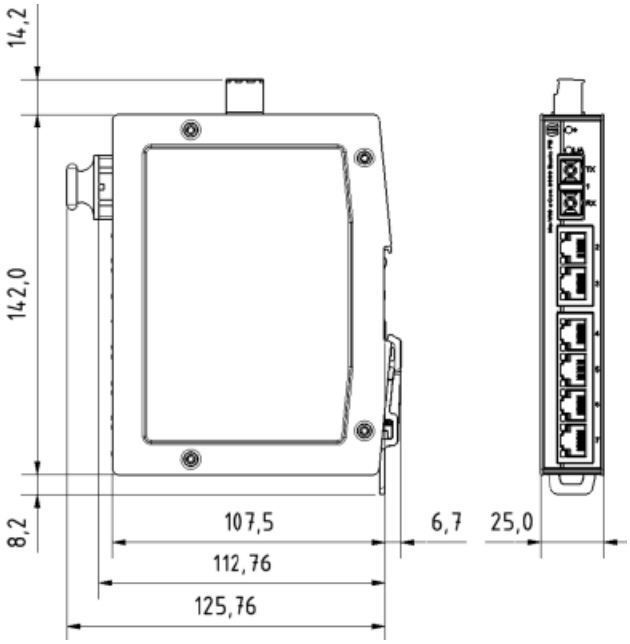
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	121 mA / 65 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	443 g - 449 g
MTBF in million hours	2.21
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3061B-AD 0 °C ... +55 °C 1 x MM (2 km)	24 03 006 1110		
Ha-VIS eCon 3061B-AF 0 °C ... +55 °C 1 x SM (15 km)	24 03 006 1210		
Ha-VIS eCon 3061BT-AD -40 °C ... +70 °C 1 x MM (2 km)	24 03 006 1100		
Ha-VIS eCon 3061BT-AF -40 °C ... +70 °C 1 x SM (15 km)	24 03 006 1200		



Ha-VIS eCon 3000 Fast Ethernet Basic

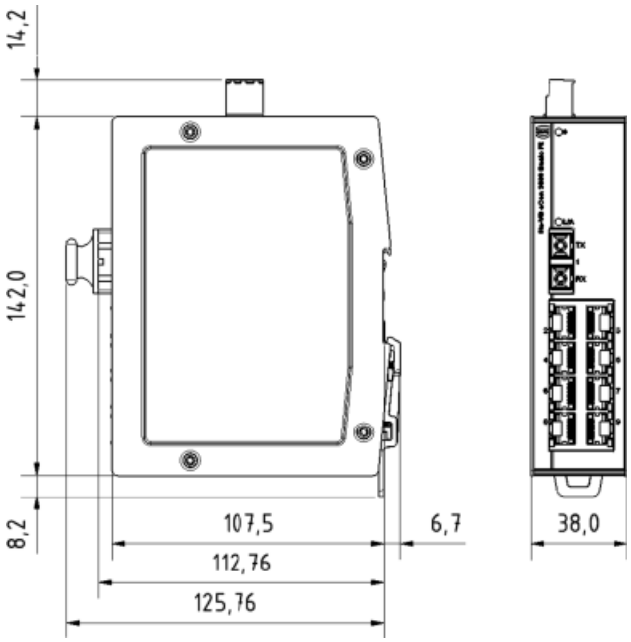
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	227 mA / 117 mA
Dimensions (W x H x D)	38.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	514 g
MTBF in million hours	0.94
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3081B-AD 0 °C ... +55 °C 1 x MM (2 km)	24 03 008 1110		
Ha-VIS eCon 3081B-AF 0 °C ... +55 °C 1 x SM (15 km)	24 03 008 1210		
Ha-VIS eCon 3081BT-AD -40 °C ... +70 °C 1 x MM (2 km)	24 03 008 1100		
Ha-VIS eCon 3081BT-AF -40 °C ... +70 °C 1 x SM (15 km)	24 03 008 1200		



Ha-VIS eCon 3000 Fast Ethernet Basic

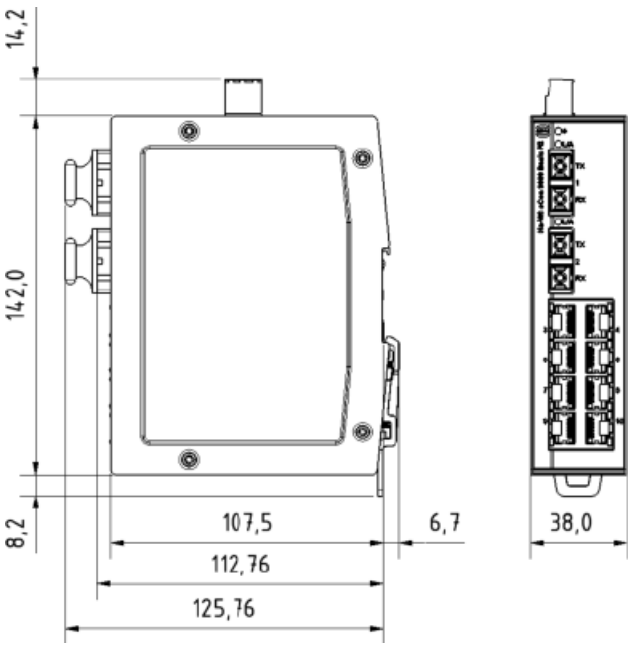
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	275 mA / 139 mA
Dimensions (W x H x D)	38.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	531 g
MTBF in million hours	0.93
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3082B-AD 0 °C ... +55 °C 2 x MM (2 km)	24 03 008 2110		
Ha-VIS eCon 3082B-AF 0 °C ... +55 °C 2 x SM (15 km)	24 03 008 2210		
Ha-VIS eCon 3082BT-AD -40 °C ... +70 °C 2 x MM (2 km)	24 03 008 2100		
Ha-VIS eCon 3082BT-AF -40 °C ... +70 °C 2 x SM (15 km)	24 03 008 2200		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

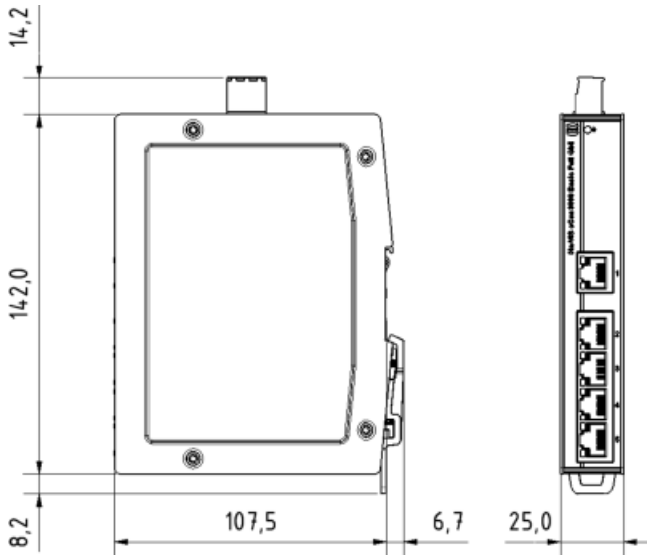
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	149 mA / 77 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	457 g
MTBF in million hours	1.97
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3050GB-A 0 °C ... +55 °C	24 03 405 0010		
Ha-VIS eCon 3050GBT-A -40 °C ... +70 °C	24 03 405 0000		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

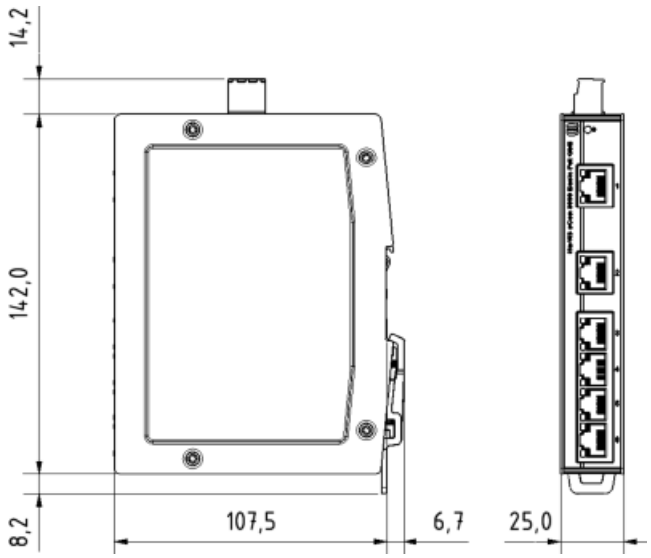
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	172 mA / 89 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	464 g
MTBF in million hours	1.76
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3060GB-A 0 °C ... +55 °C	24 03 406 0010		
Ha-VIS eCon 3060GBT-A -40 °C ... +70 °C	24 03 406 0000		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

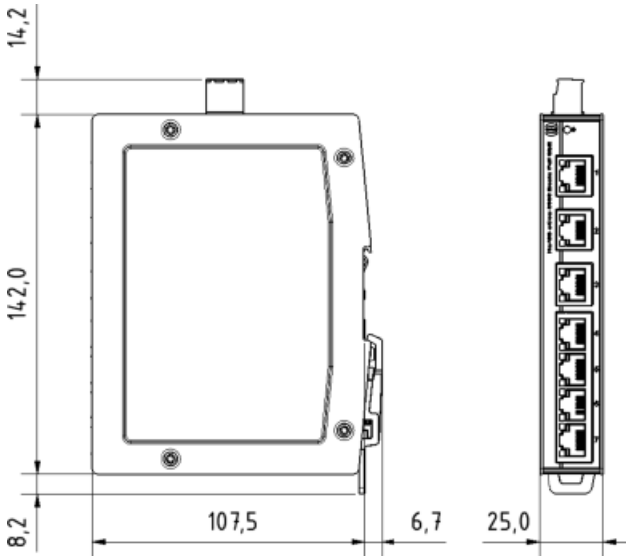
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	7 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	182 mA / 93 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	490 g
MTBF in million hours	0.85
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3070GB-A 0 °C ... +55 °C	24 03 407 0010		
Ha-VIS eCon 3070GBT-A -40 °C ... +70 °C	24 03 407 0000		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

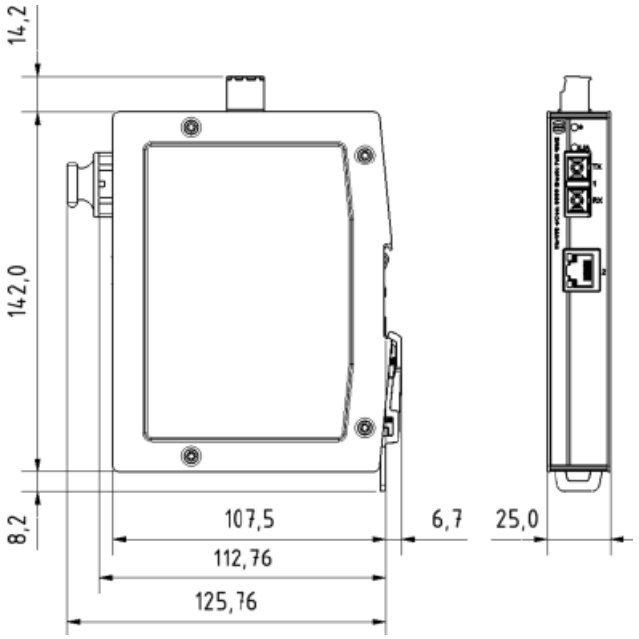
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	1 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	92 mA / 50 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	428 g - 434 g
MTBF in million hours	2.13
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3011GB-AD 0 °C ... +55 °C 1 x MM (550 m)	24 03 401 1110		
Ha-VIS eCon 3011GB-AF 0 °C ... +55 °C 1 x SM (10 km)	24 03 401 1210		
Ha-VIS eCon 3011GBT-AD -40 °C ... +70 °C 1 x MM (550 m)	24 03 401 1100		
Ha-VIS eCon 3011GBT-AF -40 °C ... +70 °C 1 x SM (10 km)	24 03 401 1200		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

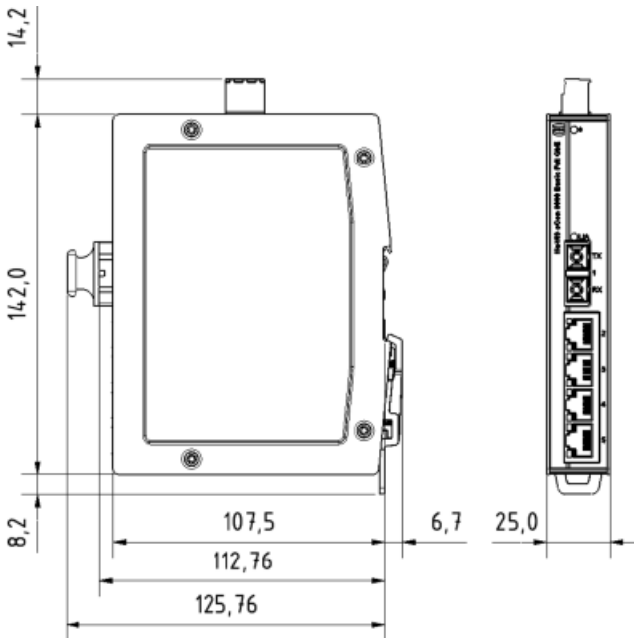
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	155 mA / 81 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	468 g - 474 g
MTBF in million hours	2.15
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3041GB-AD 0 °C ... +55 °C 1 x MM (550 m)	24 03 404 1110		
Ha-VIS eCon 3041GB-AF 0 °C ... +55 °C 1 x SM (10 km)	24 03 404 1210		
Ha-VIS eCon 3041GBT-AD -40 °C ... +70 °C 1 x MM (550 m)	24 03 404 1100		
Ha-VIS eCon 3041GBT-AF -40 °C ... +70 °C 1 x SM (10 km)	24 03 404 1200		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

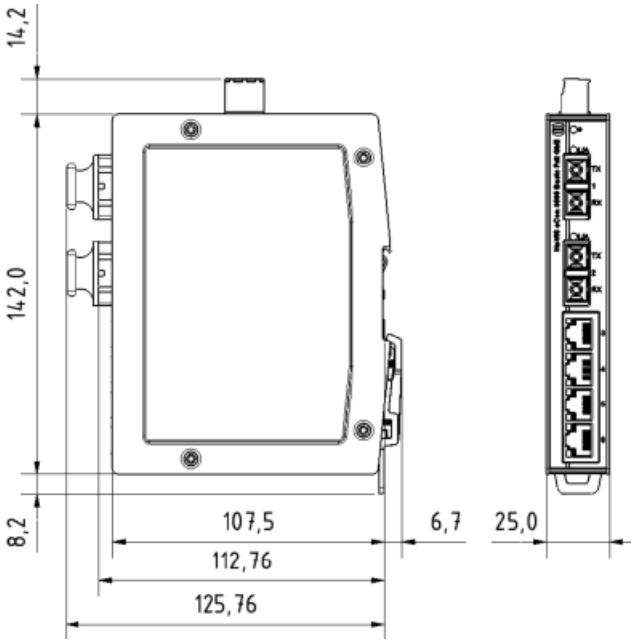
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	182 mA / 95 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	476 g - 488 g
MTBF in million hours	2.08
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3042GB-AD 0 °C ... +55 °C 2 x MM (550 m)	24 03 404 2110		
Ha-VIS eCon 3042GB-AF 0 °C ... +55 °C 2 x SM (10 km)	24 03 404 2210		
Ha-VIS eCon 3042GBT-AD -40 °C ... +70 °C 2 x MM (550 m)	24 03 404 2100		
Ha-VIS eCon 3042GBT-AF -40 °C ... +70 °C 2 x SM (10 km)	24 03 404 2200		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

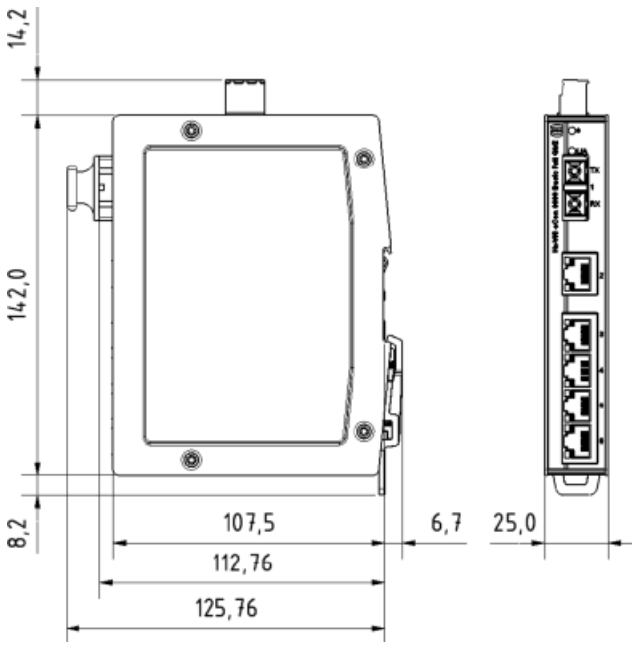
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	177 mA / 92 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	474 g - 480 g
MTBF in million hours	1.91
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3051GB-AD 0 °C ... +55 °C 1 x MM (550 m)	24 03 405 1110		
Ha-VIS eCon 3051GB-AF 0 °C ... +55 °C 1 x SM (10 km)	24 03 405 1210		
Ha-VIS eCon 3051GBT-AD -40 °C ... +70 °C 1 x MM (550 m)	24 03 405 1100		
Ha-VIS eCon 3051GBT-AF -40 °C ... +70 °C 1 x SM (10 km)	24 03 405 1200		



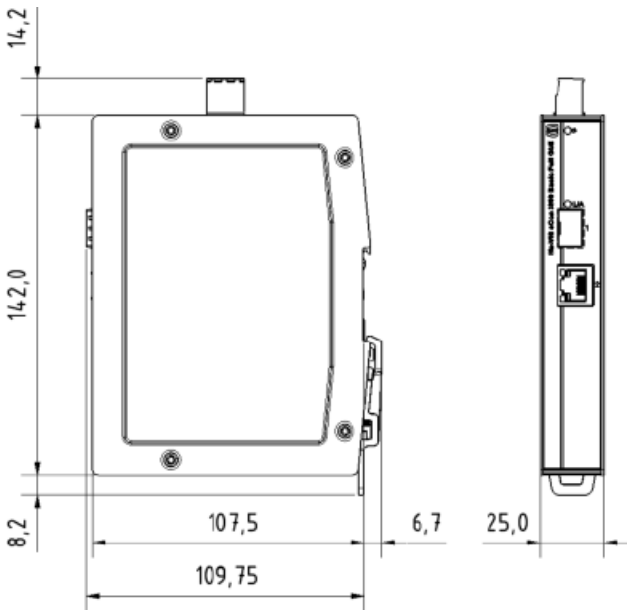
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	1 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100/1000 SFP
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	90 mA / 50 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	437 g
MTBF in million hours	0.95
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3011GB-AC 0 °C ... +55 °C 1 x SFP	24 03 401 1310		
Ha-VIS eCon 3011GBT-AC -40 °C ... +70 °C 1 x SFP	24 03 401 1300		

Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

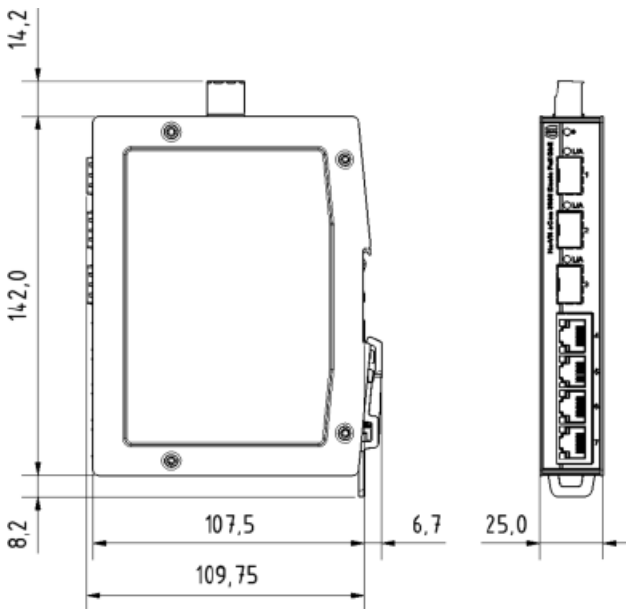
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	3 x 100/1000 SFP
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	172 mA / 89 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	486 g
MTBF in million hours	0.99
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3043GB-AC 0 °C ... +55 °C 3 x SFP	24 03 404 3310		
Ha-VIS eCon 3043GBT-AC -40 °C ... +70 °C 3 x SFP	24 03 404 3300		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

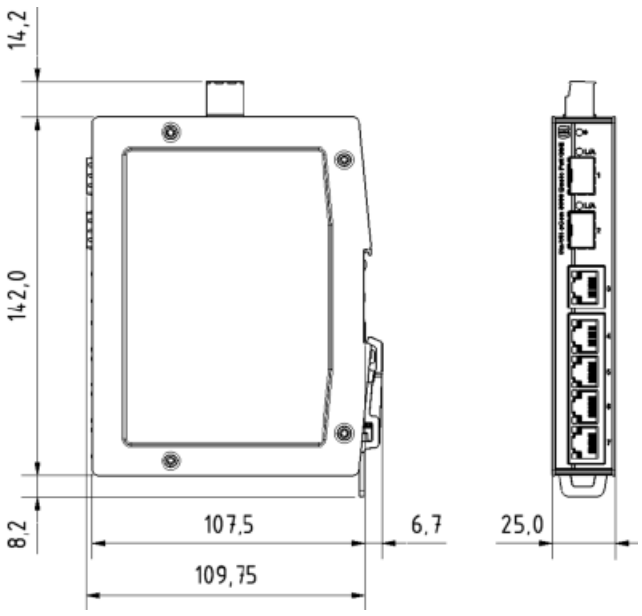
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 100/1000 SFP
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	175 mA / 90 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	488 g
MTBF in million hours	0.94
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3052GB-AC 0 °C ... +55 °C 2 x SFP	24 03 405 2310		
Ha-VIS eCon 3052GBT-AC -40 °C ... +70 °C 2 x SFP	24 03 405 2300		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

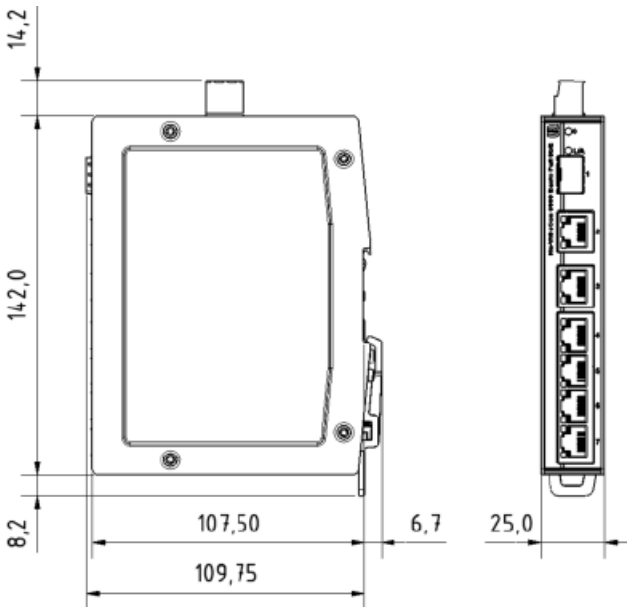
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100/1000 SFP
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	178 mA / 92 mA
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	490 g
MTBF in million hours	0.89
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3061GB-AC 0 °C ... +55 °C 1 x SFP	24 03 406 1310		
Ha-VIS eCon 3061GBT-AC -40 °C ... +70 °C 1 x SFP	24 03 406 1300		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE

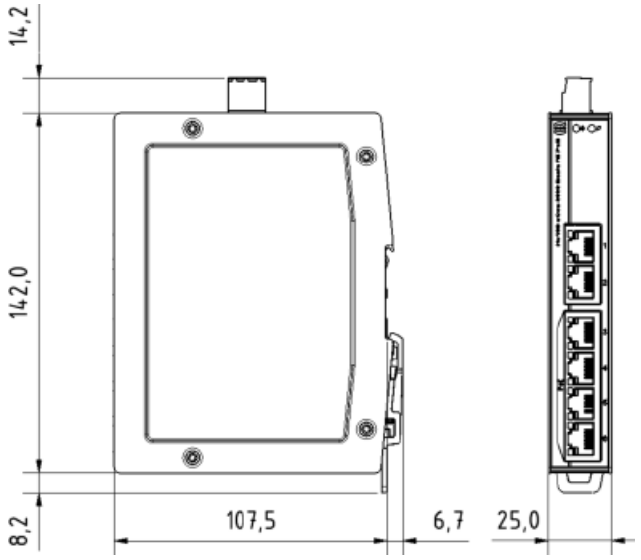
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.08 A / 1.40 A / 2.40 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	480 g
MTBF in million hours	1.18
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3060B-A-P 0 °C ... +55 °C	24 03 006 0030		
Ha-VIS eCon 3060BT-A-P -40 °C ... +70 °C	24 03 006 0020		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE

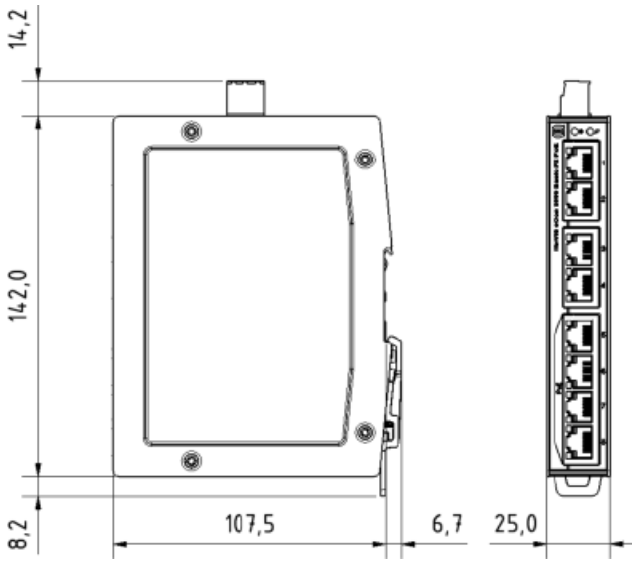
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.09 A / 1.41 A / 2.40 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	492 g
MTBF in million hours	1.14
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3080B-A-P 0 °C ... +55 °C	24 03 008 0030		
Ha-VIS eCon 3080BT-A-P -40 °C ... +70 °C	24 03 008 0020		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE

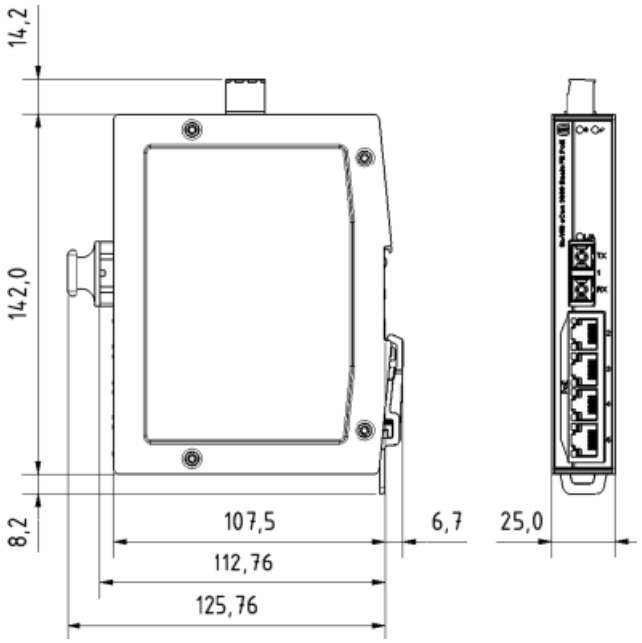
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination, including PoE+ ports	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.12 A /1.42 A / 2.41 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	480 g - 486 g
MTBF in million hours	1.19
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3041B-AD-P 0 °C ... +55 °C 1 x MM (2 km)	24 03 004 1130		
Ha-VIS eCon 3041B-AF-P 0 °C ... +55 °C 1 x SM (15 km)	24 03 004 1230		
Ha-VIS eCon 3041BT-AD-P -40 °C ... +70 °C 1 x MM (2 km)	24 03 004 1120		
Ha-VIS eCon 3041BT-AF-P -40 °C ... +70 °C 1 x SM (15 km)	24 03 004 1220		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE

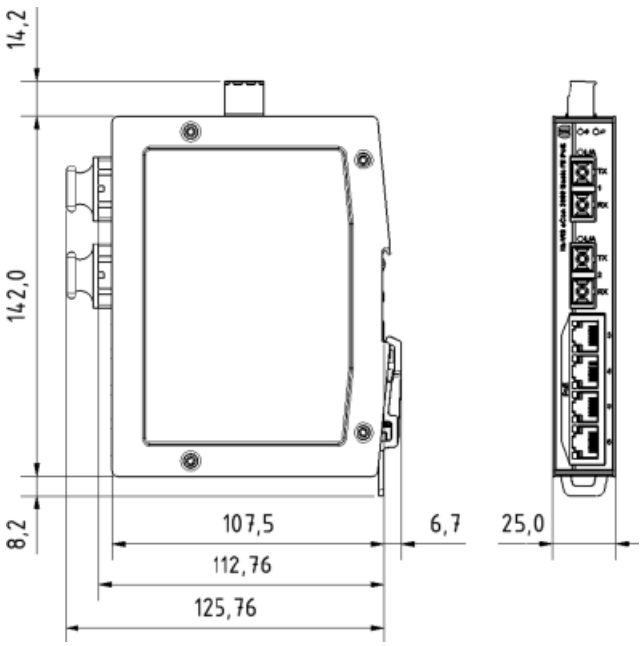
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.15 A / 1.44 A / 2.43 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	496 g - 508 g
MTBF in million hours	1.17
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3042B-AD-P 0 °C ... +55 °C 2 x MM (2 km)	24 03 004 2130		
Ha-VIS eCon 3042B-AF-P 0 °C ... +55 °C 2 x SM (15 km)	24 03 004 2230		
Ha-VIS eCon 3042BT-AD-P -40 °C ... +70 °C 2 x MM (2 km)	24 03 004 2120		
Ha-VIS eCon 3042BT-AF-P -40 °C ... +70 °C 2 x SM (15 km)	24 03 004 2220		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE

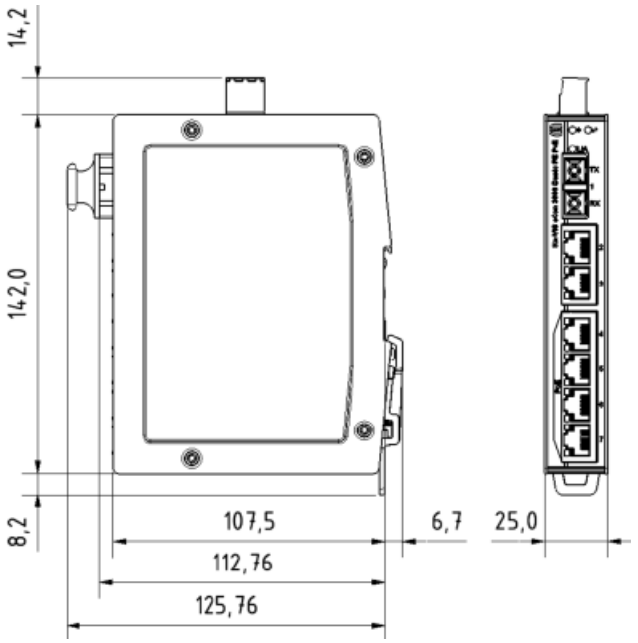
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.13 A / 1.43 A / 2.42 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	493 g - 499 g
MTBF in million hours	1.15
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3061B-AD-P 0 °C ... +55 °C 1 x MM (2 km)	24 03 006 1130		
Ha-VIS eCon 3061B-AF-P 0 °C ... +55 °C 1 x SM (15 km)	24 03 006 1230		
Ha-VIS eCon 3061BT-AD-P -40 °C ... +70 °C 1 x MM (2 km)	24 03 006 1120		
Ha-VIS eCon 3061BT-AF-P -40 °C ... +70 °C 1 x SM (15 km)	24 03 006 1220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

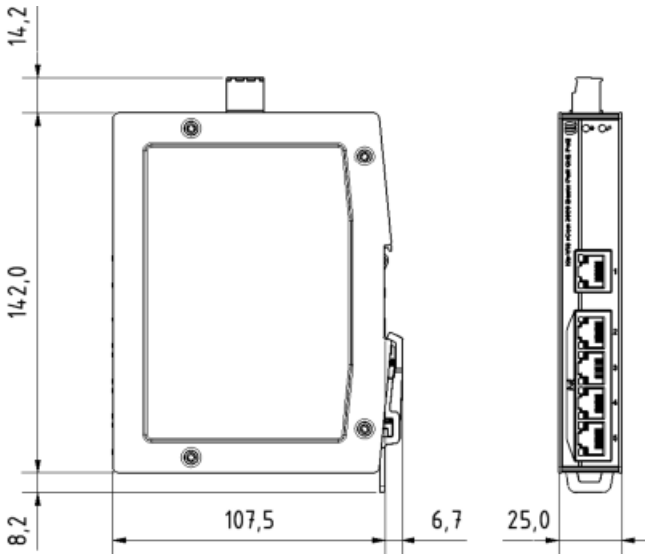
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination,	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.16 A / 1.43 A / 2.42 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	498 g
MTBF in million hours	1.08
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3050GB-A-P 0 °C ... +55 °C	24 03 405 0030		
Ha-VIS eCon 3050GBT-A-P -40 °C ... +70 °C	24 03 405 0020		



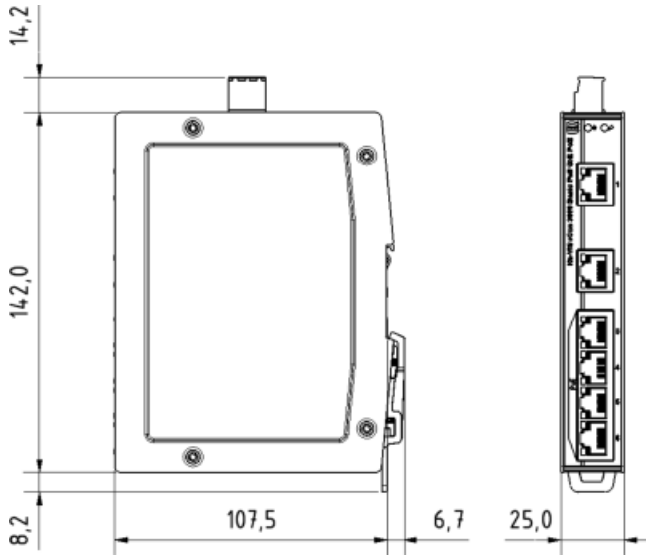
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.18 A / 1.44 A / 2.43 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	505 g
MTBF in million hours	1.01
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3060GB-A-P 0 °C ... +55 °C	24 03 406 0030		
Ha-VIS eCon 3060GBT-A-P -40 °C ... +70 °C	24 03 406 0020		

Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

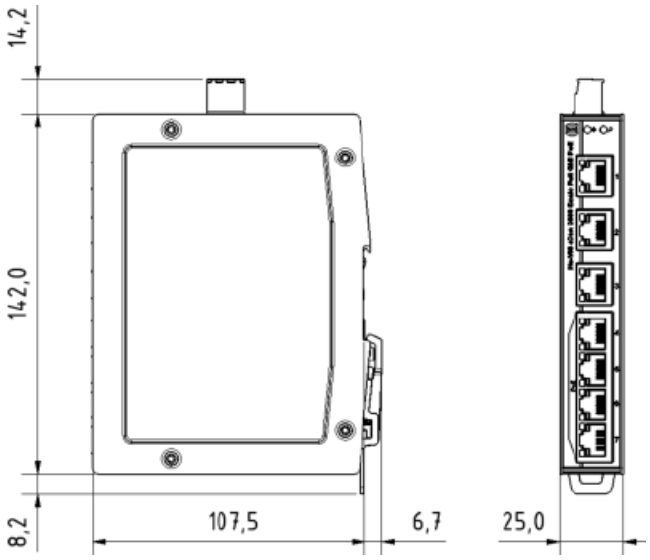
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	7 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 A / 1.48 A / 2.45 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	531 g
MTBF in million hours	0.63
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3070GB-A-P 0 °C ... +55 °C	24 03 407 0030		
Ha-VIS eCon 3070GBT-A-P -40 °C ... +70 °C	24 03 407 0020		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

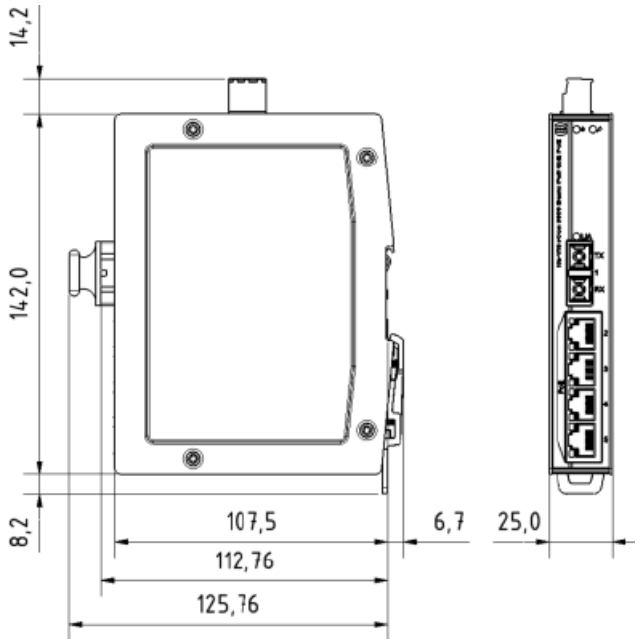
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.17 A / 1.44 A / 2.42 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	509 g - 515 g
MTBF in million hours	1.13
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3041GB-AD-P 0 °C ... +55 °C 1 x MM (550 m)	24 03 404 1130		
Ha-VIS eCon 3041GB-AF-P 0 °C ... +55 °C 1 x SM (10 km)	24 03 404 1230		
Ha-VIS eCon 3041GBT-AD-P -40 °C ... +70 °C 1 x MM (550 m)	24 03 404 1120		
Ha-VIS eCon 3041GBT-AF-P -40 °C ... +70 °C 1 x SM (10 km)	24 03 404 1220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

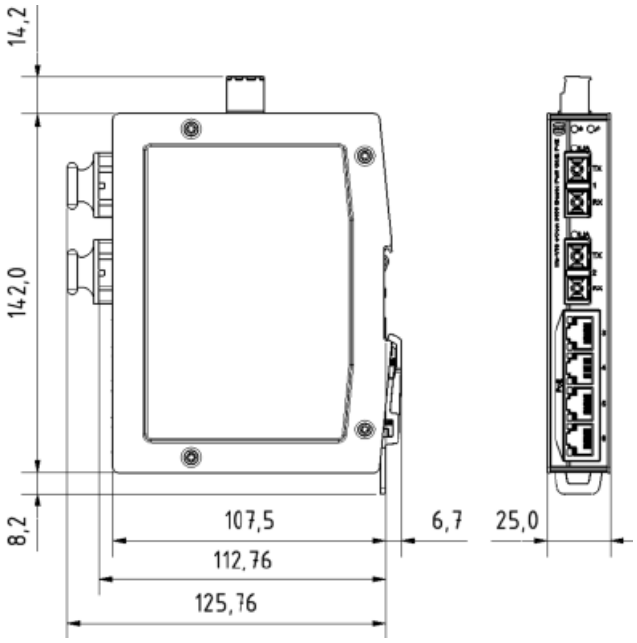
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 1000BASE-SX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 A / 1.45 A / 2.44 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	517 g - 529 g
MTBF in million hours	1.11
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3042GB-AD-P 0 °C ... +55 °C 2 x MM (550 m)	24 03 404 2130		
Ha-VIS eCon 3042GB-AF-P 0 °C ... +55 °C 2 x SM (10 km)	24 03 404 2230		
Ha-VIS eCon 3042GBT-AD-P -40 °C ... +70 °C 2 x MM (550 m)	24 03 404 2120		
Ha-VIS eCon 3042GBT-AF-P -40 °C ... +70 °C 2 x SM (10 km)	24 03 404 2220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

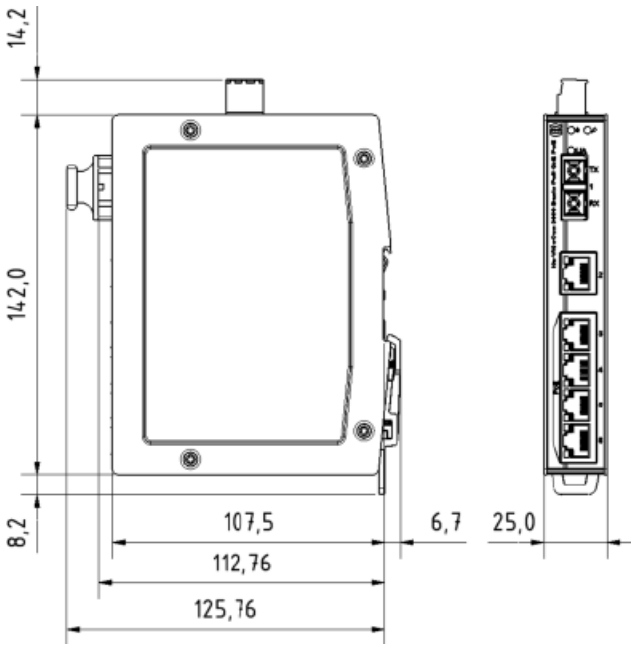
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 A / 1.45 A / 2.44 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	515 g - 521 g
MTBF in million hours	1.06
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3051GB-AD-P 0 °C ... +55 °C 1 x MM (550 m)	24 03 405 1130		
Ha-VIS eCon 3051GB-AF-P 0 °C ... +55 °C 1 x SM (10 km)	24 03 405 1230		
Ha-VIS eCon 3051GBT-AD-P -40 °C ... +70 °C 1 x MM (550 m)	24 03 405 1120		
Ha-VIS eCon 3051GBT-AF-P -40 °C ... +70 °C 1 x SM (10 km)	24 03 405 1220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

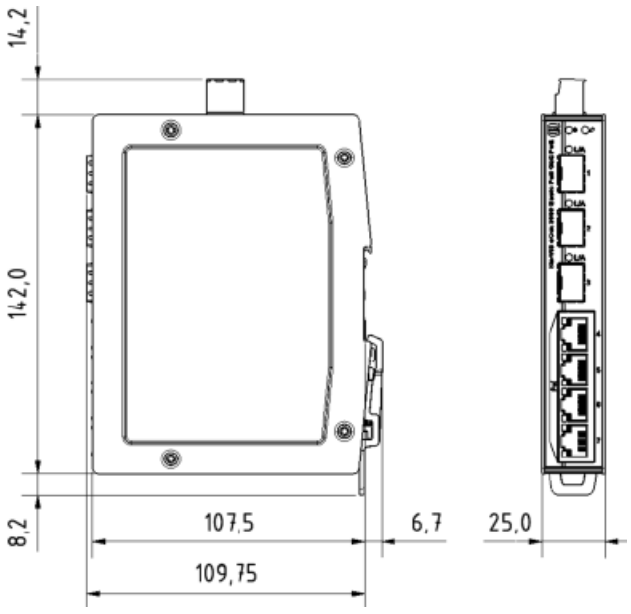
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 PoE+ ports (34.2 watts per port)

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	3 x 100/1000 SFP
Nominal voltage	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.18 A / 1.46 A / 2.44 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	526 g
MTBF in million hours	0.70
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3043GB-AC-P 0 °C ... +55 °C 3 x SFP	24 03 404 3330		
Ha-VIS eCon 3043GBT-AC-P -40 °C ... +70 °C 3 x SFP	24 03 404 3320		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

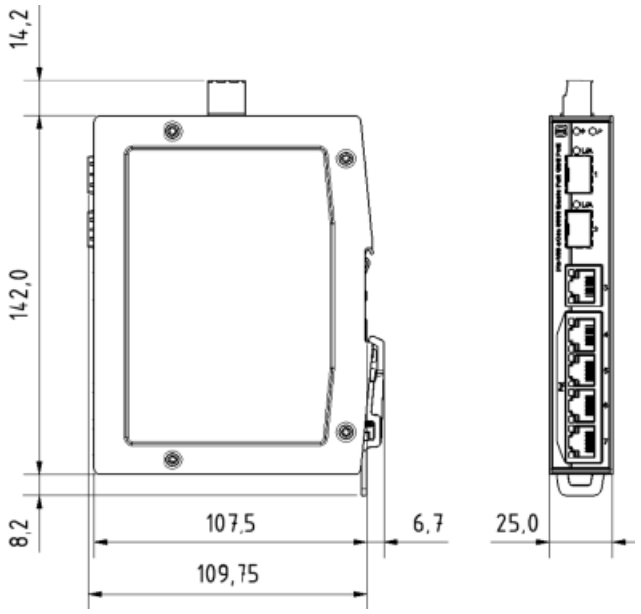
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100/1000 SFP
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 A / 1.47 A / 2.45 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	529 g
MTBF in million hours	0.68
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3052GB-AC-P 0 °C ... +55 °C 2 x SFP	24 03 405 2330		
Ha-VIS eCon 3052GBT-AC-P -40 °C ... +70 °C 2 x SFP	24 03 405 2320		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

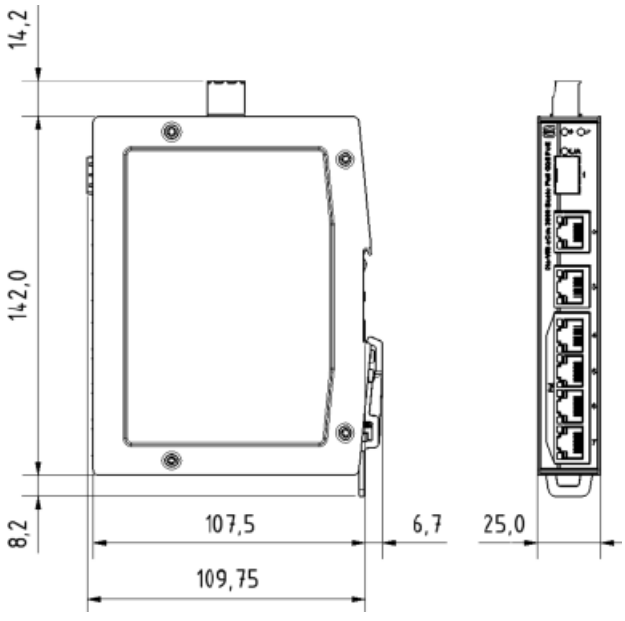
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100/1000 SFP
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V / 54 V	0.19 A / 1.48 A / 2.45 A
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	527 g
MTBF in million hours	0.66
Approvals	CE FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3061GB-AC-P 0 °C ... +55 °C 1 x SFP	24 03 406 1330		
Ha-VIS eCon 3061GBT-AC-P -40 °C ... +70 °C 1 x SFP	24 03 406 1320		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

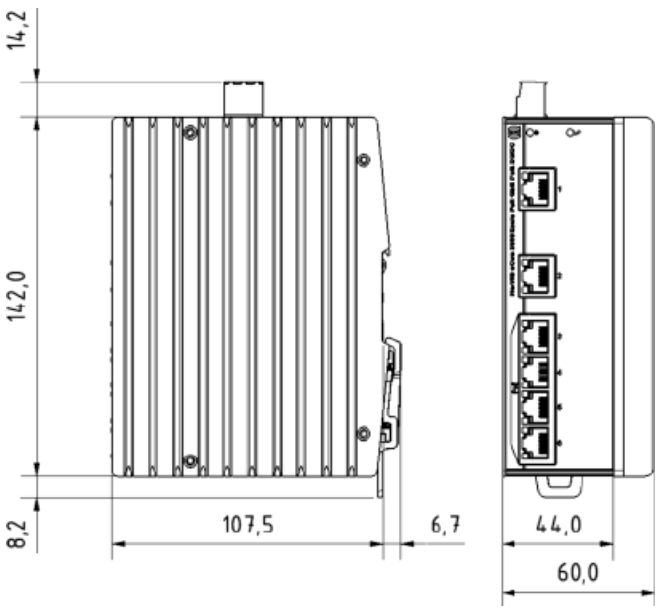
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3060B-A-PP 0 °C ... +55 °C	24 03 106 0030		
Ha-VIS eCon 3060BT-A-PP -40 °C ... +70 °C	24 03 106 0020		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

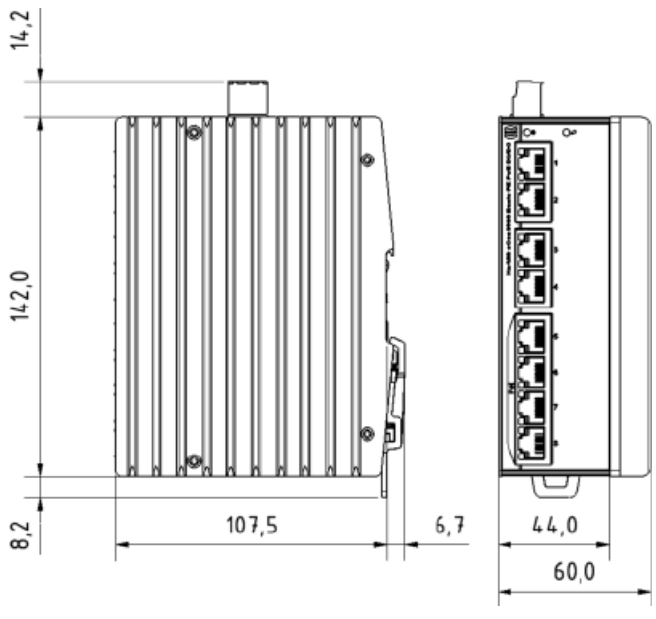
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination including PoE+ ports	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3080B-A-PP 0 °C ... +55 °C	24 03 108 0030		
Ha-VIS eCon 3080BT-A-PP -40 °C ... +70 °C	24 03 108 0020		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

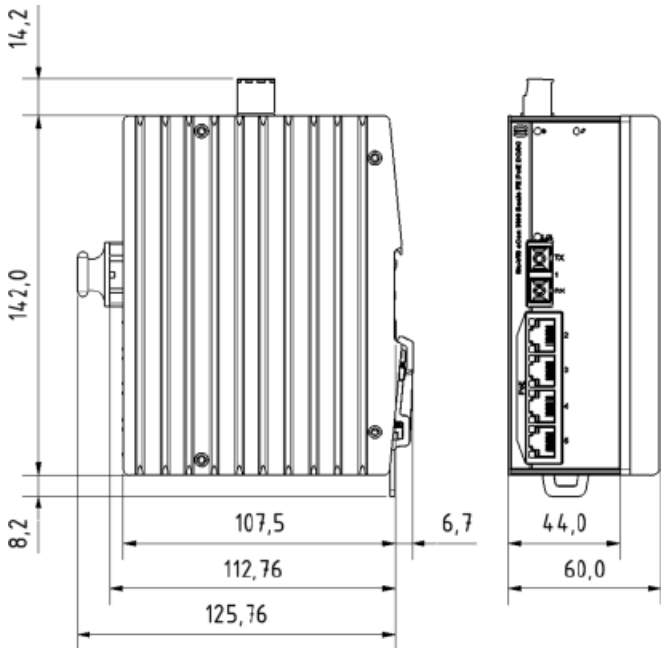
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination including PoE+ ports	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	430 g
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3041B-AD-PP 0 °C ... +55 °C 1 x MM (2 km)	24 03 104 1130		
Ha-VIS eCon 3041B-AF-PP 0 °C ... +55 °C 1 x SM (15 km)	24 03 104 1230		
Ha-VIS eCon 3041BT-AD-PP -40 °C ... +70 °C 1 x MM (2 km)	24 03 104 1120		
Ha-VIS eCon 3041BT-AF-PP -40 °C ... +70 °C 1 x SM (15 km)	24 03 104 1220		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

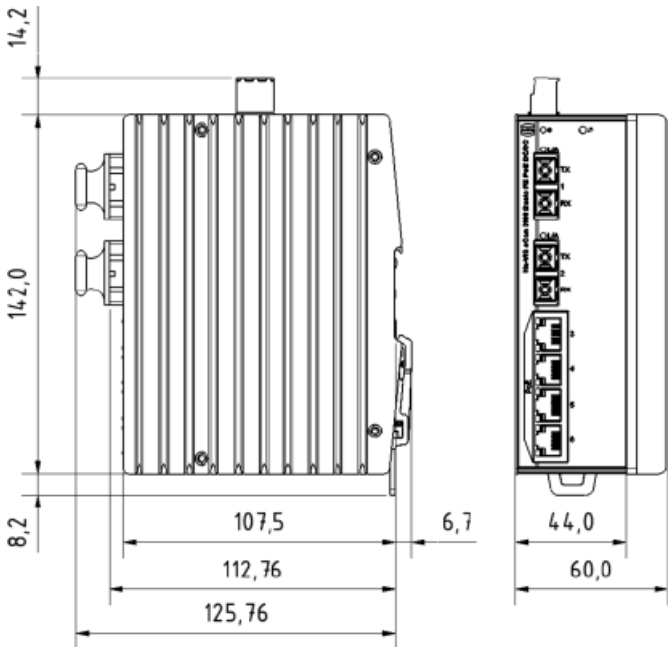
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination including PoE+ ports	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3042B-AD-PP 0 °C ... +55 °C 2 x MM (2 km)	24 03 104 2130		
Ha-VIS eCon 3042B-AF-PP 0 °C ... +55 °C 2 x SM (15 km)	24 03 104 2230		
Ha-VIS eCon 3042BT-AD-PP -40 °C ... +70 °C 2 x MM (2 km)	24 03 104 2120		
Ha-VIS eCon 3042BT-AF-PP -40 °C ... +70 °C 2 x SM (15 km)	24 03 104 2220		



Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

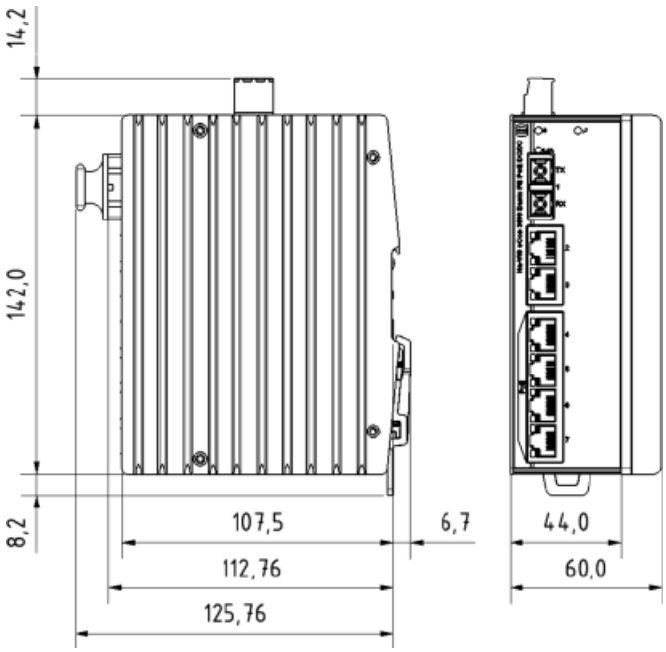
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3061B-AD-PP 0 °C ... +55 °C 1 x MM (2 km)	24 03 106 1130		
Ha-VIS eCon 3061B-AF-PP 0 °C ... +55 °C 1 x SM (15 km)	24 03 106 1230		
Ha-VIS eCon 3061BT-AD-PP -40 °C ... +70 °C 1 x MM (2 km)	24 03 106 1120		
Ha-VIS eCon 3061BT-AF-PP -40 °C ... +70 °C 1 x SM (15 km)	24 03 106 1220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

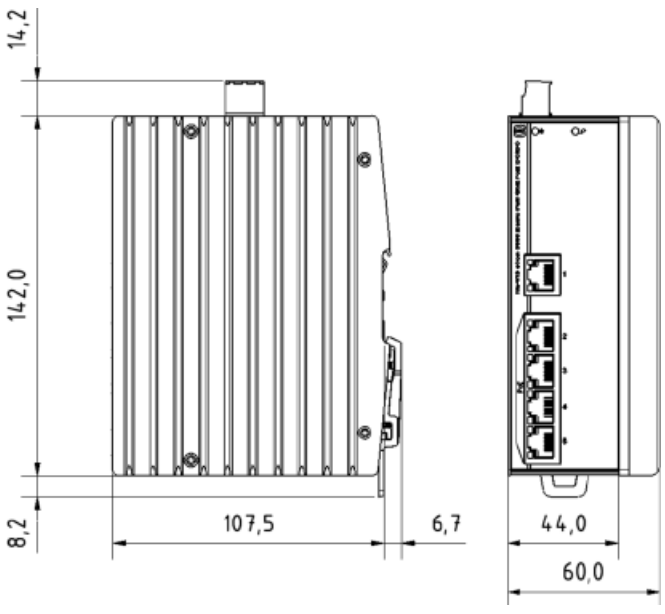
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3050GB-A-PP 0 °C ... +55 °C	24 03 505 0030		
Ha-VIS eCon 3050GBT-A-PP -40 °C ... +70 °C	24 03 505 0020		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

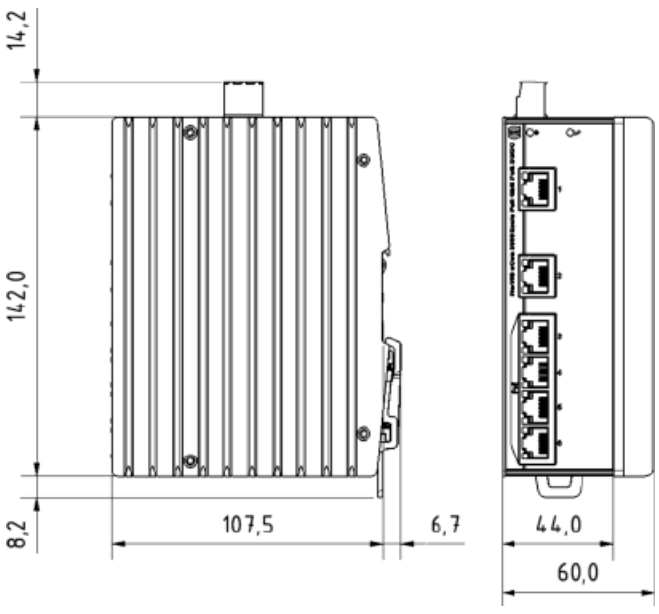
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3060GB-A-PP 0 °C ... +55 °C	24 03 506 0030		
Ha-VIS eCon 3060GBT-A-PP -40 °C ... +70 °C	24 03 506 0020		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

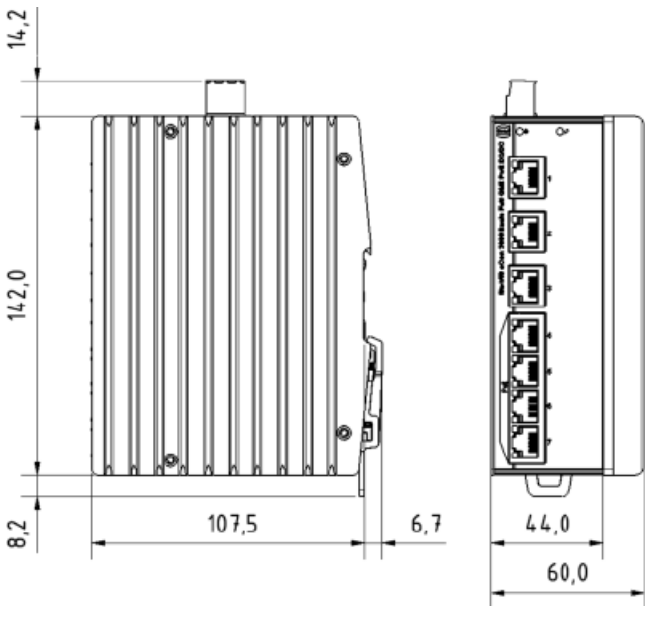
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	7 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3070GB-A-PP 0 °C ... +55 °C	24 03 507 0030		
Ha-VIS eCon 3070GBT-A-PP -40 °C ... +70 °C	24 03 507 0020		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

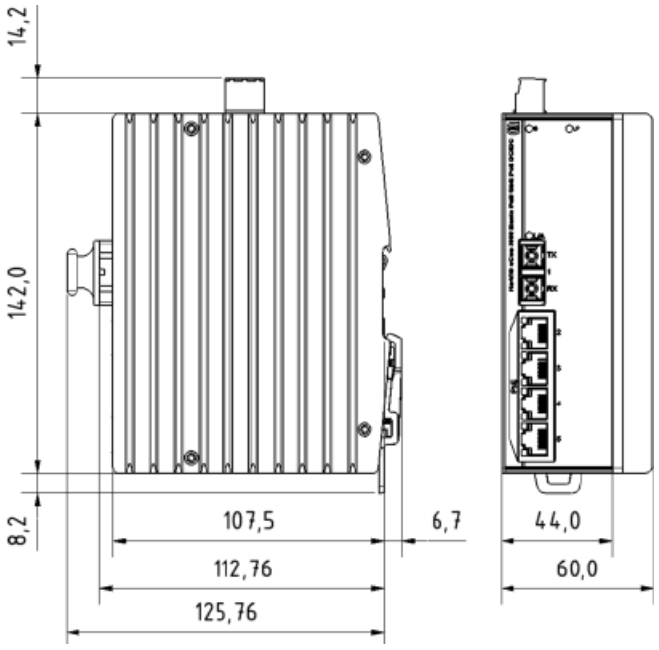
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination,	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3041GB-AD-PP 0 °C ... +55 °C 1 x MM (550 m)	24 03 504 1130		
Ha-VIS eCon 3041GB-AF-PP 0 °C ... +55 °C 1 x SM (10 km)	24 03 504 1230		
Ha-VIS eCon 3041GBT-AD-PP -40 °C ... +70 °C 1 x MM (550 m)	24 03 504 1120		
Ha-VIS eCon 3041GBT-AF-PP -40 °C ... +70 °C 1 x SM (10 km)	24 03 504 1220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

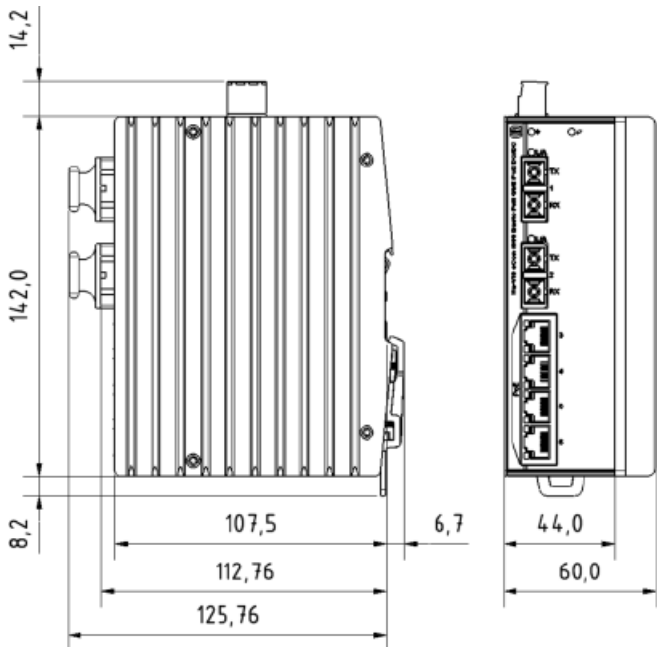
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3042GB-AD-PP 0 °C ... +55 °C 2 x MM (550 m)	24 03 504 2130		
Ha-VIS eCon 3042GB-AF-PP 0 °C ... +55 °C 2 x SM (10 km)	24 03 504 2230		
Ha-VIS eCon 3042GBT-AD-PP -40 °C ... +70 °C 2 x MM (550 m)	24 03 504 2120		
Ha-VIS eCon 3042GBT-AF-PP -40 °C ... +70 °C 2 x SM (10 km)	24 03 504 2220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

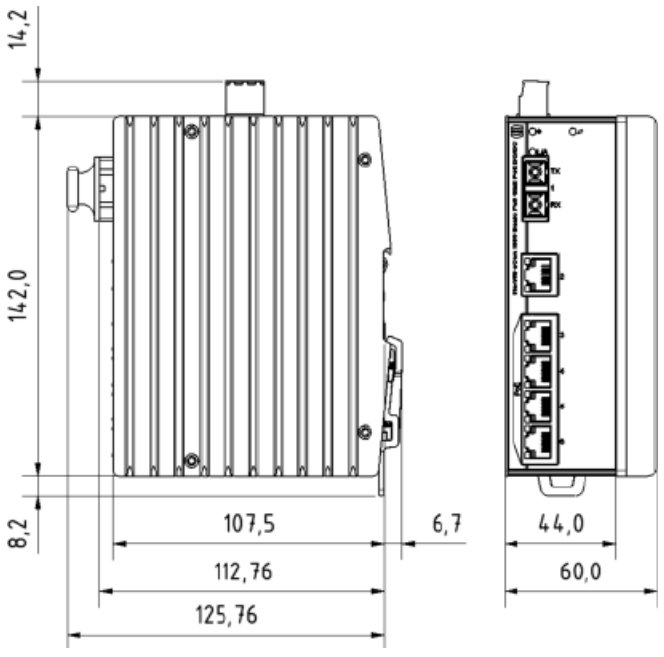
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 1000BASE-SX / SC duplex socket
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3051GB-AD-PP 0 °C ... +55 °C 1 x MM (550 m)	24 03 505 1130		
Ha-VIS eCon 3051GB-AF-PP 0 °C ... +55 °C 1 x SM (10 km)	24 03 505 1230		
Ha-VIS eCon 3051GBT-AD-PP -40 °C ... +70 °C 1 x MM (550 m)	24 03 505 1120		
Ha-VIS eCon 3051GBT-AF-PP -40 °C ... +70 °C 1 x SM (10 km)	24 03 505 1220		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

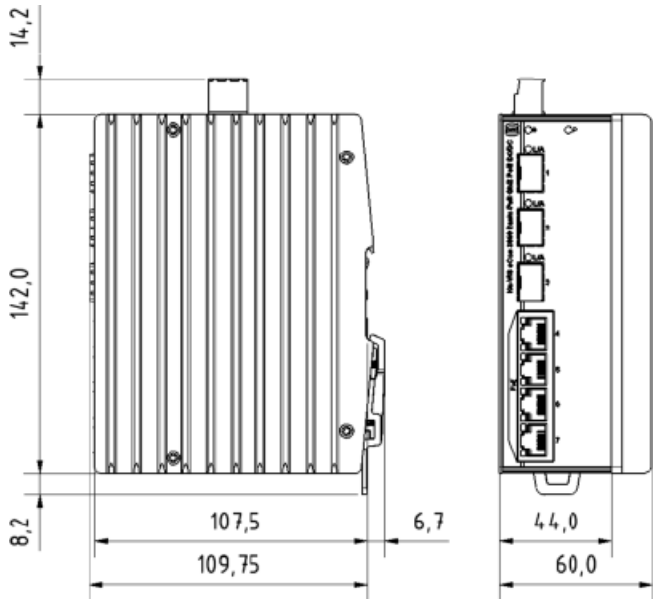
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	3 x 100/1000 SFP
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3043GB-AC-PP 0 °C ... +55 °C 3 x SFP	24 03 504 3330		
Ha-VIS eCon 3043GBT-AC-PP -40 °C ... +70 °C 3 x SFP	24 03 504 3320		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

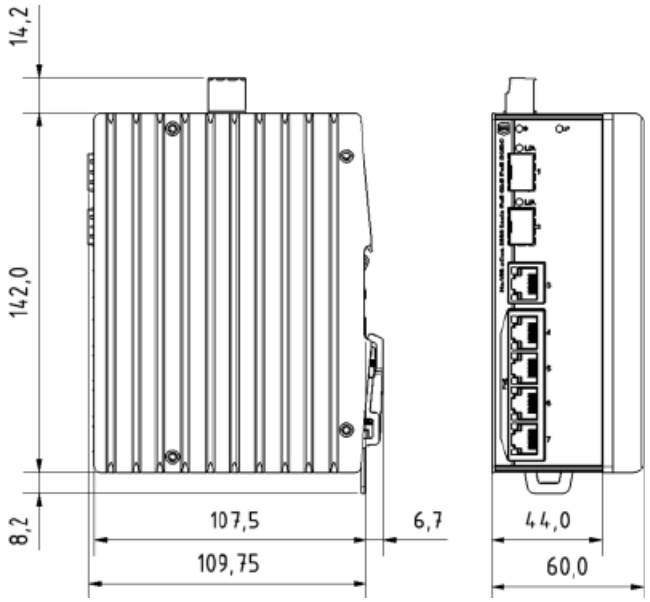
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100/1000 SFP
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3052GB-AC-PP 0 °C ... +55 °C 2 x SFP	24 03 505 2330		
Ha-VIS eCon 3052GBT-AC-PP -40 °C ... +70 °C 2 x SFP	24 03 505 2320		



Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

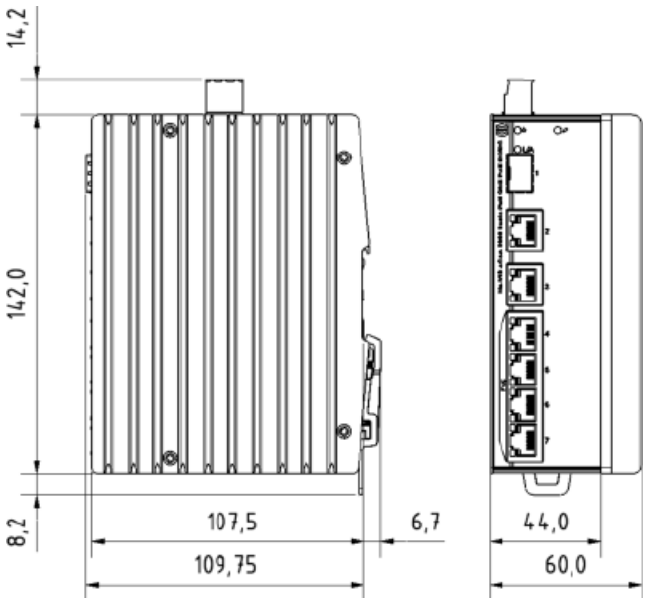
Unmanaged Plug-and-Play Ethernet Switches

for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)
Integrated 24 / 54 V DC Voltage Transformer

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE RJ45 (twisted pair)
including PoE+ ports	4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100/1000 SFP
Nominal voltage	24 VDC ⎓
Permissible voltage range	18 V … 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V / 48 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF in million hours	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3061GB-AC-PP 0 °C ... +55 °C 1 x SFP	24 03 506 1330		
Ha-VIS eCon 3061GBT-AC-PP -40 °C ... +70 °C 1 x SFP	24 03 506 1320		



Ethernet Media converter
Ha-VIS eCon 3000

Ethernet Media converter for vertical installation in control cabinets, including 1 F.O. port

General description

The Fast Ethernet Media converter Ha-VIS eCon 3011 of the product family Ha-VIS eCon 3000 is suitable for industrial applications and support both Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s). The Mediaconverter enables the conversion from Twisted Pair cables to fiber-optic cables (Multimode and Singlemode).

The Ha-VIS eCon 3011 Media converter is configurable via Dip switch and offers a variety of control functions.

The Media converter has two operating modes:

In the switch mode, it operates as an unmanaged Ethernet Switch with Store and Forward Switching which supports asynchronous data communication, Auto-crossing and Auto-negotiation.

In the converter mode, it works with a data rate of 100 Mbit/s (Full duplex). The latency is very low in this operation mode.

Features

- Auto-crossing
- Auto-negotiation
- Auto-polarity
- Store and Forward Switching Mode

Advantages

- Power over Ethernet (IEEE 802.3af)
- Configuration via Dip switch
- Small housing
- Robust metal housing
- Adapted for mounting onto top-hat mounting rail 35 mm according to EN 60 715

Application fields

- Industrial automation
- Automotive industry
- Wind power
- Power distribution systems

Technical characteristics Media converter

Ethernet interface – RJ45

Number of ports	1x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (RJ45)
Repeater class	Class II (latency: 860 ns in converter mode)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	RJ45 (Twisted Pair)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: OFF • Duplex - Full duplex: Yellow Half duplex: OFF • PoE (Power Source Equipment) (PSE) - Green
Topology	• Line • Star • mixed

Power supply

Input voltage	24 V DC (12 V ... 30 V DC) - redundant
Input voltage, mode PoE	48 V DC (46 V ... 57 V DC) - redundant
Termination	5-pole, pluggable screw contact, redundant (PWR1 + / PWR1 - / PWR2 + / PWR2 - / FE)
Diagnostics (LED)	Power supply - LED Green

Configuration	Configuration via Dip switch: Mode, Auto-negotiation, Data rate, Duplex TP, Duplex FX, Link monitoring, PoE (PSE)

Design features

Housing material	metal
Dimensions (W x H x D)	23 x 130 x 100 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP30
Assembly	35 mm top-hat rail acc. to EN 60 715
Weight	approx. 0.6 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics Media converter F.O. termination

Ethernet interface – F.O.

Number of ports	1x 100Base-FX
Cable types according to IEEE 802.3	Multimodefibre, 1300 nm; 50 µm / 125 µm or 62.5 µm / 125 µm
Data rate	100 Mbit/s
Maximum cable length	2000 m (Multimode)
Termination	SC-D female
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Duplex - Full duplex: Yellow Half duplex: OFF
Wavelength	1300 nm
Transceive power T(X) max. (dynamic)	• -14 dBm (50 µm / 125 µm) • -14 dBm (62.5 µm / 125 µm)
Transceive power T(X) min.	• -23.5 dBm (50 µm / 125 µm) • -20 dBm (62.5 µm / 125 µm)
Receive power RX typical (dynamic)	• -33.9 dBm (window) • -35.2 dBm (centre)
Receive power RX max. (dynamic)	-14 dBm
Signal detection (dynamic)	-33 dBm
Topology	• Line • Star • mixed

Ethernet Media converter
Ha-VIS eCon 3011-AD

2-port Ethernet Media converter for vertical installation in control cabinets, including 1 F.O. port (SC, MM)

Unmanaged	IP30	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	1x 10/100Base-T(X) / RJ45 (Twisted Pair) PoE support
Number of ports, F.O. / Termination	1x 100Base-FX / SC-D female

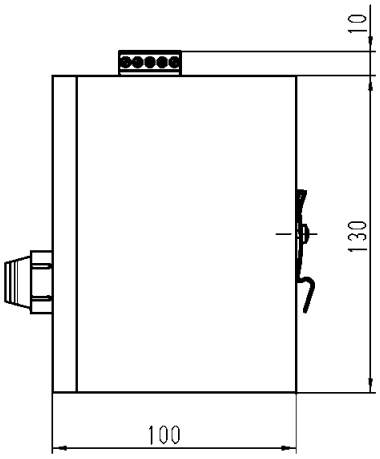
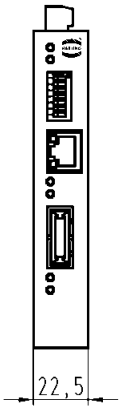
mode PoE

Input voltage / Termination	48 V DC
Permissible range (min./max.)	46 V ... 57 V DC
Input current	approx. 100 mA ... 400 mA at 48 V DC with PoE

mode Non-PoE

Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, redundant (PWR1 + / PWR1 - / PWR2 + / PWR2 - / FE)
Permissible range (min./max.)	12 V ... 30 V DC
Input current	approx. 100 mA (at 24 V DC)

Housing material	metal, powder-coated
Dimensions (W x H x D)	23 x 130 x 100 mm (without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	cUL (in preparation)
MTBF	2.055.000 h

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3011-AD Ethernet Switch with 1 RJ45 port 1 F.O. port	20 76 102 3100		

Ethernet Media converter
Ha-VIS eCon 3011-ASFP

2-port Ethernet Media converter for vertical installation in control cabinets, including 1 F.O. port (SFP)

Unmanaged	IP30	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	1x 10/100Base-T(X) / RJ45 (Twisted Pair) PoE support
Number of ports, F.O. / Termination	1x 100Base-FX / SFP module slot

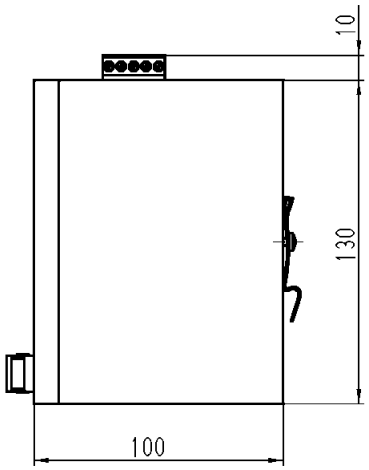
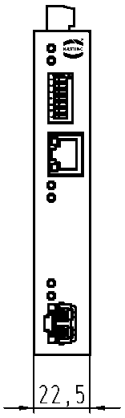
mode PoE

Input voltage / Termination	48 V DC
Permissible range (min./max.)	46 V ... 57 V DC
Input current	approx. 100 mA ... 400 mA at 48 V DC with PoE

mode Non-PoE

Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, redundant (PWR1 + / PWR1 - / PWR2 + / PWR2 - / FE)
Permissible range (min./max.)	12 V ... 30 V DC
Input current	approx. 100 mA (at 24 V DC)

Housing material	metal, powder-coated
Dimensions (W x H x D)	23 x 130 x 100 mm (without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	cUL (in preparation)
MTBF	2.090.000 h

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 3011-ASFP Ethernet Switch with 1 RJ45 port 1 F.O. port	20 76 102 3101		

Ha-VIS MK3000 Cover

Features

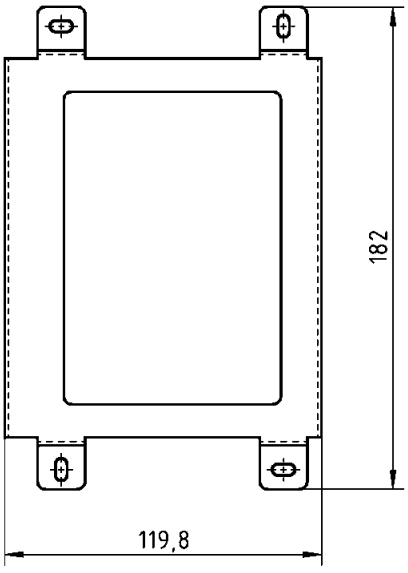
- Mounting cover for use with HARTING mounting adapter
- Fixing of Ha-VIS eCon 3000 Ethernet switches on the mounting adapter
- Mounting adapter must be ordered separately for the right housing width:
  - Ha-VIS MK3000 Wall
  - Ha-VIS MK3000 DINV
  - Ha-VIS MK3000 DINH

Technical characteristics

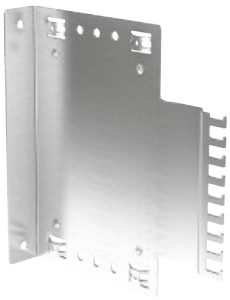
- Material: Steel (1.5 mm)
- Surface: Galvanized

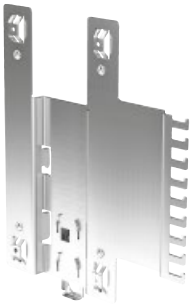
Identification	Part number
Ha-VIS MK3000 Cover25 For switches with 25 mm width	24 98 100 0000
Ha-VIS MK3000 Cover38 For switches with 38 mm width	24 98 100 0001
Ha-VIS MK3000 Cover60 For switches with 60 mm width	24 98 100 0002

Drawing — Dimensions in mm



Ha-VIS MK3000 Wall
Ha-VIS MK3000 DINV
Ha-VIS MK3000 DINH



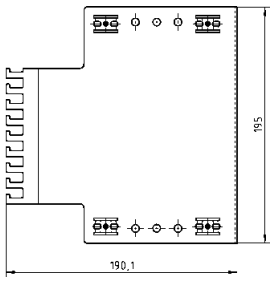
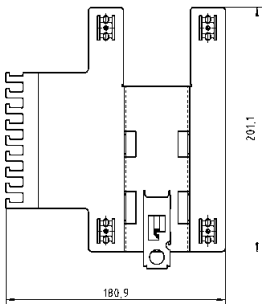
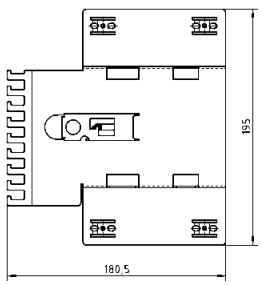


Features

- Mounting adapter for use with Ha-VIS eCon 3000 Ethernet Switches
- Easy mounting of DIN rail switches on walls
- Flat mounting on DIN rail with port orientation to the side (vertical)
- Flat mounting on DIN rail with port orientation downwards (horizontal)
- Integrated cable manager, for direct fixing the data cable close to the switch, improves the stability and the shock and vibration performance

Technical characteristics

- Material: Steel (1.5 mm)
- Surface: Galvanized

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS MK3000 Wall Flat wall mounting	24 98 100 0003		
Ha-VIS MK3000 DINV Flat DIN rail mounting, vertical	24 98 100 0004		
Ha-VIS MK3000 DINH Flat DIN rail mounting, horizontal	24 98 100 0005		

Ha-VIS MK3000 S7
S7 profile rail

Features

- Mounting of Ha-VIS eCon / mCon Ethernet switches on a S7-300 rail
- Mounting adapter can be used for all DIN rail mountable devices
- Adapter will be mounted on the S7-300 mounting rail and secured with screws
- The adapter is available in different widths

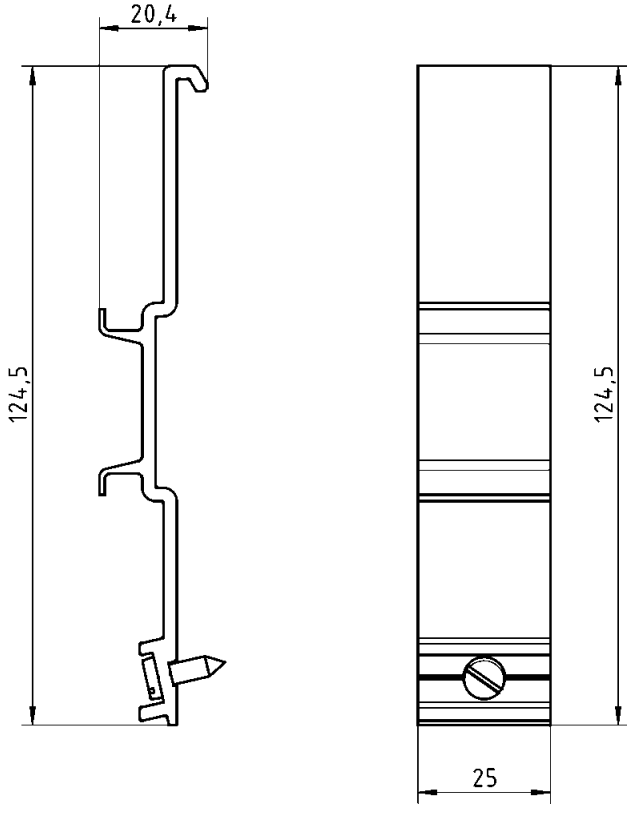
Technical characteristics

- Material Aluminium

Identification	Part number
Ha-VIS MK3000 S725 S7 profile rail 25 mm	24 98 100 0010
Ha-VIS MK3000 S738 S7 profile rail 38 mm	24 98 100 0011
Ha-VIS MK3000 S760 S7 profile rail 60 mm	24 98 100 0012
Ha-VIS MK3000 S790 S7 profile rail 90 mm	24 98 100 0013
Ha-VIS MK3000 S7120 S7 profile rail 120 mm	24 98 100 0014

Drawing

Dimensions in mm



Notes

Ethernet Switch
Ha-VIS eCon 4000
Ethernet Switches, unmanaged, for flat wall mounting

General description

The Fast Ethernet Switches of the product family Ha-VIS eCon 4000 are recommended for use in the widest range of industrial applications and support both Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s). The product family enables the connection of up to 8 network devices over Twisted Pair cables.

The robust M12 interface shows its adantages especially in applications at risk of vibrations.

The Ha-VIS eCon 4000 Ethernet Switch product family, with its integrated LEDs, supports fast and easy network diagnosis. The Ha-VIS eCon Ethernet Switch operates as an unmanaged Switch in Store and Forward Switching Mode and supports Auto-crossing, Auto-negotiation and Auto-polarity.

Features

- Ethernet Switch according to IEEE 802.3
- Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s)
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link Status, Data, Power)
- Store and Forward Switching Mode
- Mounting onto wall, optionally onto top-hat mounting rail

For Ethernet Switch Ha-VIS eCon 4080-BPoE1 only:

- PoE support

Advantages

- Robust metal housing and flat housing style
- EMC, temperature range and mechanical stability meet the toughest demands
- Wide range for power supply input
- Additonal type test according to EN 50 155 and EN 50 121-3-2

Application fields

- Railway applications
- Industrial automation
- Automotive industry
- Wind power

Technical characteristics

Ethernet interface – M12

Number of ports	8x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	M12 D-coding
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: Green
Topology	• Line • Star • mixed

Power supply

Input voltage	24 / 48 V DC (12 V ... 60 V DC) - redundant
Termination	M12 A-coding, male, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Design features

Housing material	metal
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP40
Assembly	Wall mounting, flat assembly
Weight	approx. 0.85 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics Ha-VIS eCon 4080-BPoE1

Ethernet interface – M12

Number of ports	8x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	M12 D-coding
Diagnostics (LED)	
Link	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: Green
PoE	• no PoE device - OFF • PoE device with failure - Red • PoE device connected - Green
Topology	• Line • Star • mixed

Power supply

Input voltage	
mode PoE	48 V DC (46 V ... 55 V DC)
mode Non-PoE	24 / 48 V DC (12 V ... 55 V DC)
Termination	M12 A-coding, male, for redundant power supply
Diagnostics (LED)	Pwr X9 (switch) voltage – LED Green Pwr PoE (mode PoE) > 46 V DC – LED Green State < 46 V DC – LED Red

Design features

Housing material	metal
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP30
Assembly	Wall mounting, flat assembly
Weight	approx. 0.85 kg

Environmental conditions

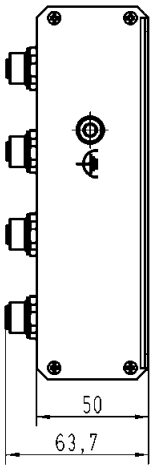
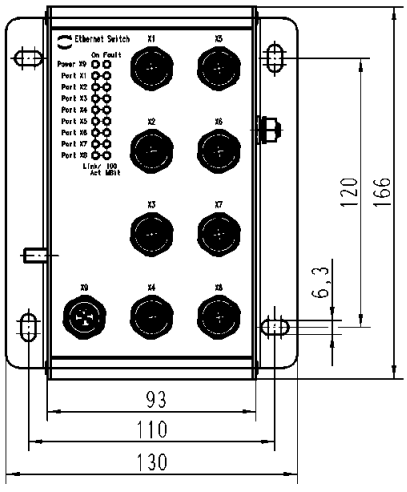
Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Ethernet Switch
Ha-VIS eCon 4080-B1

8-port Ethernet Switch for flat wall mounting

Unmanaged	IP40	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 150 mA (at 24 V DC)
Housing material	metal, powder-coated
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Weight	approx. 0.85 kg
Working temperature	-40 °C ... +70 °C
Approvals	e1
MTBF	1.544.000 h

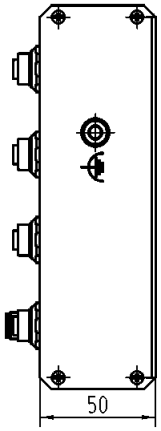
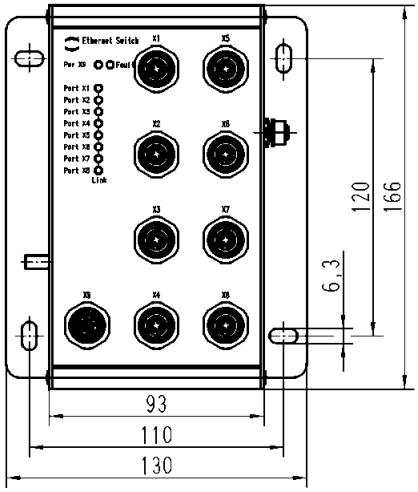
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 4080-B1 Ethernet Switch with 8 ports M12 D-coding for wall mounting	20 77 208 3001		

Ethernet Switch
Ha-VIS eCon 4080-B3

8-port Ethernet Switch (110 V DC) for flat wall mounting

Unmanaged	IP40	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding
Input voltage / Termination	72 / 110 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	50.4 V ... 137.5 V DC
Input current	approx. 40 mA (at 110 V DC)
Housing material	metal, powder-coated
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Weight	approx. 0.85 kg
Working temperature	-40 °C ... +70 °C
MTBF	1.183.000 h

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 4080-B3 Ethernet Switch with 8 ports M12 D-coding	20 77 208 3003		
for wall mounting			

Ha-VIS eCon 4000

Ethernet Switch
Ha-VIS eCon 4080-BPoE1

8-port Ethernet Switch for flat wall mounting, with Power over Ethernet

Unmanaged	IP30	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding PoE supports 8 ports

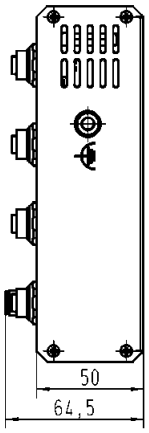
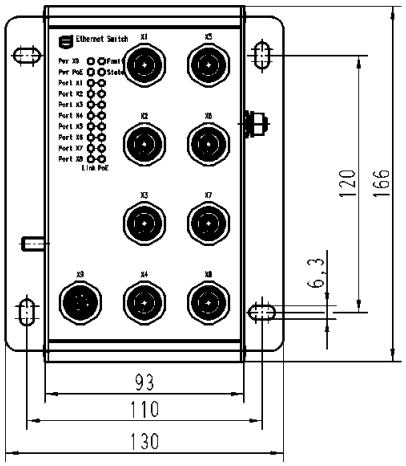
mode PoE

Input voltage / Termination	48 V DC / M12 A-coding, male
Permissible range (min./max.)	46 V ... 55 V DC
Input current	max. 3 A at 46 V DC, load 350 mA per port

mode Non-PoE

Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 55 V DC
Input current	approx. 150 mA (at 24 V DC)

Housing material	metal, powder-coated
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Weight	approx. 0.85 kg
Working temperature	-40 °C ... +70 °C
MTBF	505.000 h

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 4080-BPoE1 Ethernet Switch with 8 ports M12 D-coding for wall mounting	20 77 208 3009		

Ethernet Switch
Ha-VIS eCon 7000

Ethernet Switches, unmanaged, for use in harsh industrial environments

General description

The Ethernet Switches of the product family Ha-VIS eCon 7000 allow, according to type, the connection of up to 10 end units in industrial networks.

Protection class, temperature range and mechanical stability meet the highest demands. These Ethernet Switches can therefore be used directly in industrial environments.

Through their use, a reduction of cabling costs in the construction of industrial networks will be achieved. The Ethernet Switches facilitate any kind of network configuration. All connections are plugged, which ensures that assembly and disassembly is fast and reliable.

Features

- Ethernet Switch acc. to IEEE 802.3
- Ethernet (10 Mbit/s), Fast Ethernet (100 Mbit/s) and Gigabit Ethernet (1000 Mbit/s)
- 5 / 10 ports unmanaged
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link status, Data, Power, Error)
- Store and Forward Switching Mode, non-blocking

Advantages

- High degree of protection IP65 / IP67
- Robust metal housing
- Can be used directly in industrial environments
- EMC, temperature range and mechanical stability meet the toughest demands
- PROFINET compatible

Application fields

- Industrial automation
- Railway applications
- Automotive industry
- Wind power

Technical characteristics Ha-VIS eCon 7050-A1, eCon 7100-AA

Ethernet interface – RJ45

Number of ports	5x / 8x 10/100Base-T(X) 2x 10/100/1000-Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s, 100 Mbit/s or 1000 Mbit/s (for Ha-VIS eCon 7100-AA only) (Han® 3 A RJ45)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination, device-side	Han® 3 A RJ45 (female)
Diagnostics (LED)	• Status Link (Link/Act) - terminal device is connected: Green data transmission in process: Green flashing • Data transfer rate (Speed) - 1000 Mbit/s: Green 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Star • mixed

Power supply

Input voltage	24 / 48 V DC (12 V ... 60 V DC) - redundant
Termination, device-side	Han® 4 A, male, for redundant power supply including fixing screw 09 20 000 9918 to maintain IP67
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact (for Ha-VIS eCon 7100-AA only)

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination, device-side	Han® 3 A, male
Diagnostics (LED)	Error - Red

Design features

	Ha-VIS eCon 7050	Ha-VIS eCon 7100
Housing material	zinc die-cast	zinc die-cast
Dimensions (W x H x D)	45 x 120 x 87 mm (without connectors)	90 x 120 x 87 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP65 / IP67	IP65 / IP67
Assembly	• Wall mounting, vertical assembly • Wall mounting, flat assembly • 35 mm top-hat rail acc. to EN 60 715	• Wall mounting, vertical assembly • 35 mm top-hat rail acc. to EN 60 715
Weight	approx. 0.8 kg	approx. 1.4 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics Ha-VIS eCon 7050-B1, eCon 7100-B1

Ethernet interface – M12

Number of ports	5x / 10x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination, device-side	M12 D-coding (female)
Diagnostics (LED)	• Status Link (Link/Act) - terminal device is connected: Green data transmission in process: Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Star • mixed

Power supply

Input voltage	24 / 48 V DC (12 V ... 60 V DC) - redundant
Termination, device-side	M12 A-coding, male, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact (for Ha-VIS eCon 7100 only)

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination, device-side	M12 D-coding, male
Diagnostics (LED)	Error - Red

Design features

	Ha-VIS eCon 7050	Ha-VIS eCon 7100
Housing material	zinc die-cast	zinc die-cast
Dimensions (W x H x D)	45 x 120 x 87 mm (without connectors)	90 x 120 x 87 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP65 / IP67	IP65 / IP67
Assembly	• Wall mounting, vertical assembly • Wall mounting, flat assembly • 35 mm top-hat rail acc. to EN 60 715	• Wall mounting, vertical assembly • 35 mm top-hat rail acc. to EN 60 715
Weight	approx. 0.8 kg	approx. 1.4 kg

Environmental conditions

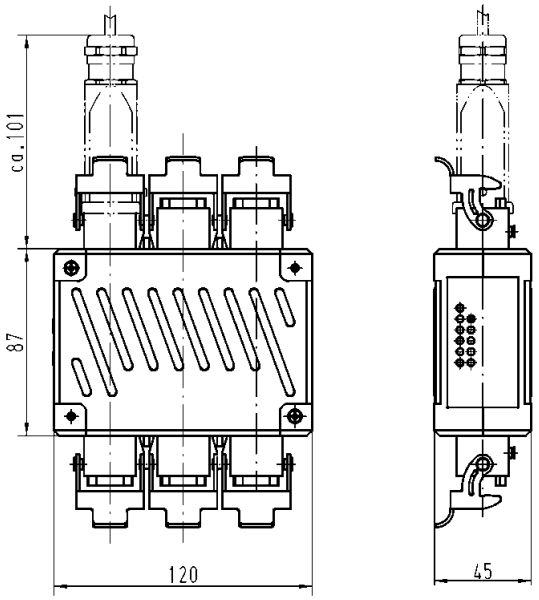
Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Ethernet Switch
Ha-VIS eCon 7050-A1

5-port Ethernet Switch with extended input voltage range
for use in harsh industrial environments

Unmanaged	IP65 / IP67	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	5x 10/100Base-T(X) / Han® 3 A RJ45 (female)
Input voltage / Termination	24 / 48 V DC / Han® 4 A, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 110 mA (at 24 V DC)
Housing material	zinc die-cast
Dimensions (W x H x D)	45 x 120 x 87 mm
Weight	approx. 0.8 kg
Working temperature	-40 °C ... +70 °C
MTBF	1.150.000 h

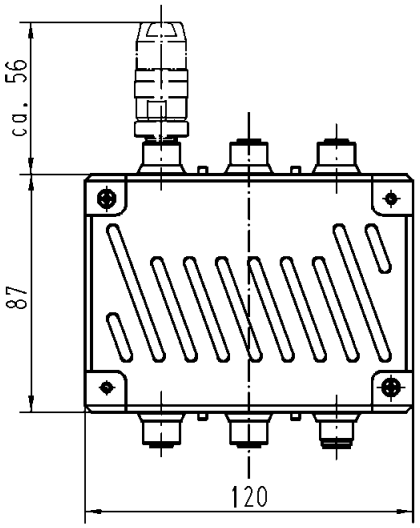
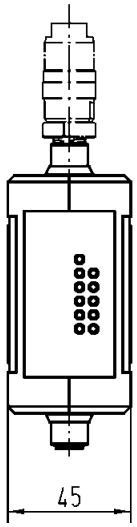
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 7050-A1 Ethernet Switch with 5 RJ45 ports	20 70 305 3923		

Ethernet Switch
Ha-VIS eCon 7050-B1

5-port Ethernet Switch for industrial Ethernet networks
with extended input voltage range, with M12 system cabling

Unmanaged	IP65 / IP67	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	5x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 110 mA (at 24 V DC)
Housing material	zinc die-cast
Dimensions (W x H x D)	45 x 120 x 87 mm
Weight	approx. 0.8 kg
Working temperature	-40 °C ... +70 °C
Approvals	e1
MTBF	1.140.000 h

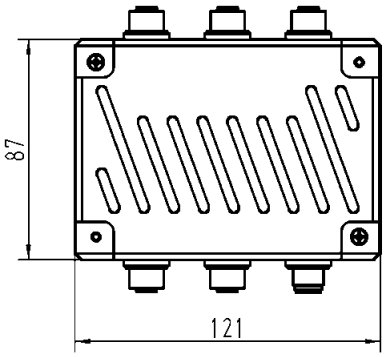
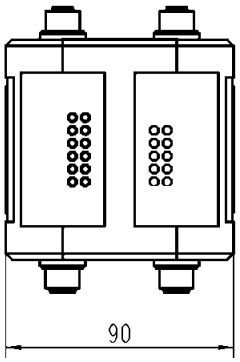
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 7050-B1 Ethernet Switch with 5 ports M12 D-coding	20 70 305 3943		

Ethernet Switch
Ha-VIS eCon 7100-B1

10-port Ethernet Switch for industrial Ethernet networks,
with M12 system cabling

Unmanaged	IP65 / IP67	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	10x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 150 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A M12 D-coding, male
Housing material	zinc die-cast
Dimensions (W x H x D)	90 x 120 x 87 mm
Weight	approx. 1.4 kg
Working temperature	-40 °C ... +70 °C
MTBF	740.000 h

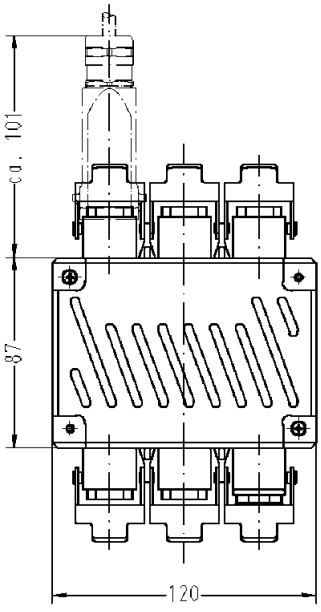
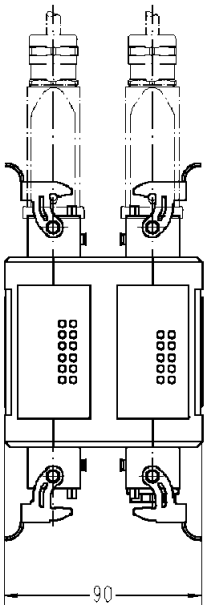
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 7100-B1 Ethernet Switch with 10 ports M12 D-coding	20 70 310 3942		

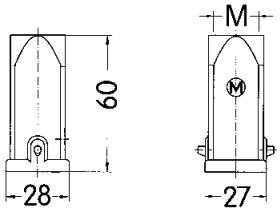
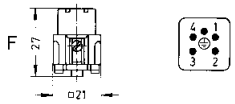
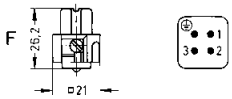
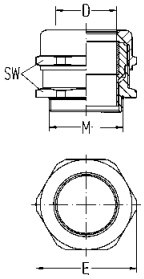
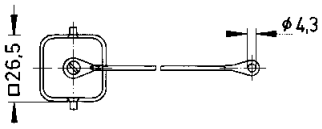
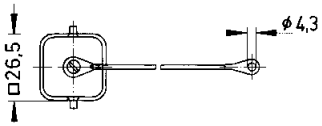
Ethernet Switch
Ha-VIS eCon 7100-AA

10-port Ethernet Switch for use in harsh industrial environments,
with 2 Gigabit ports

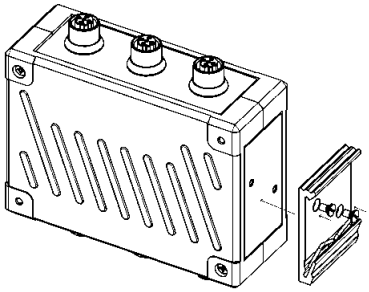
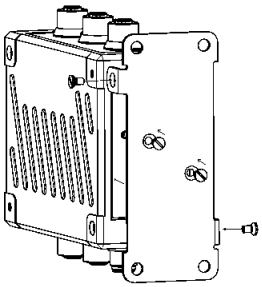
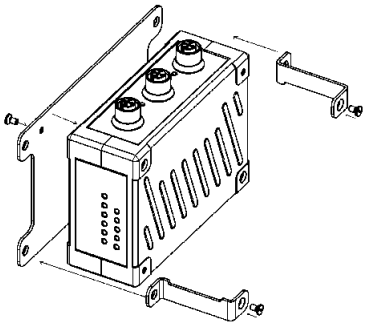
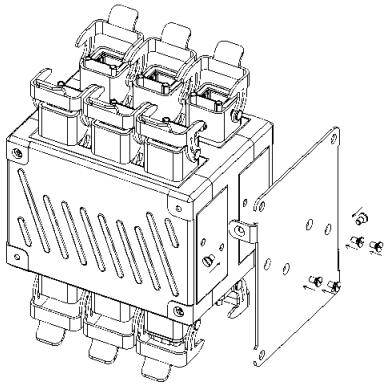
Unmanaged	IP65 / IP67	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	8x 10/100Base-T(X) / Han® 3 A RJ45 (female) 2x 10/100/1000-Base-T(X) / Han® 3 A RJ45 (female)
Input voltage / Termination	24 / 48 V DC / Han® 4 A, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 230 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A Han® 3 A, male
Housing material	zinc die-cast
Dimensions (W x H x D)	90 x 120 x 87 mm
Weight	approx. 1.4 kg
Working temperature	-40 °C ... +70 °C

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 7100-AA Ethernet Switch with 10 ports RJ45	20 70 310 3924		

Identification	Part number	Drawing	Dimensions in mm
Han A® Connectors and Protection covers			
Hood Metal, straight, metric	19 20 003 1440[1)]		
Female insert Han® 4 A for power supply	09 20 004 2711		
Female insert Han® 3 A for Alarm signalling contact (Ha-VIS eCon 7100-AA only)	09 20 003 2711		
Cable gland Metal, IP65, metric, M20, cable Ø: 5 mm ... 9 mm	19 00 000 5080		
Protection cover Han® 3 A, female insert	09 20 003 5426		
Protection cover Han® 3 A, male insert for RJ45 interface	09 20 003 5425		
HARAX® Connectors and Protection covers			
HARAX® M12-L Circular Connectors A-coding	21 03 212 2305		
Protection cover M12 for Ethernet	21 01 000 0003		

1) ... Order insert fixing screw 09 20 000 9918 separately

Identification	Part number	Drawing	Dimensions in mm
Assembly			
Set for assembly on standard rail according to DIN EN 60 715	20 80 000 0003		
Set for panel mounting vertical assembly	20 80 010 0001		
Set for panel mounting flat assembly	20 80 024 0002		
Set for panel mounting Ha-VIS eCon 7100 vertical assembly	20 80 010 0002		

Ethernet Switch
Ha-VIS eCon 9000

19” Ethernet Switches, unmangaged, for installation in a 19” rack

General description

The Ethernet Switches of the product family Ha-VIS eCon 9000 are recommended for use in the widest range of industrial applications and support Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s). The product family enables the connection of up to 8 network devices over Twisted Pair cables.

The Ha-VIS eCon 9000 Ethernet Switch family, with its integrated LEDs on each port, supports fast and easy network diagnosis. The Ha-VIS eCon Ethernet Switch operates as an unmanaged Switch in Store and Forward Switching mode and supports Auto-crossing, Auto-negotiation and Auto-polarity.

Features

- Ethernet Switch acc. to IEEE 802.3
- Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s)
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link status, Data, Power)
- Store and Forward Switching Mode, non blocking
- Pluggable in 19” racks

For Ethernet Switch Ha-VIS eCon eCon 9070-B only:

- Power input on the front – no backplane necessary

Advantages

- Robust metal housing
- EMC, temperature range and mechanical stability meet the toughest demands

Application fields

- Railway applications
- Industrial automation
- Automotive industry
- Wind power
- Power distribution systems

Technical characteristics

Ethernet interface – M12

Number of ports	7x / 8x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	M12 D-coding
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Star • mixed

Power supply

Input voltage	24 / 48 V DC (8 V ... 60 V DC) - redundant
Termination	• M12 A-coding, male or • DIN frame connector, type F
Diagnostics (LED)	Power supply - LED Green

Design features

Housing material	aluminium
Degree of protection acc. to DIN EN 60 529	IP20
Assembly	19” rack, 3 U
Weight	approx. 0.6 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

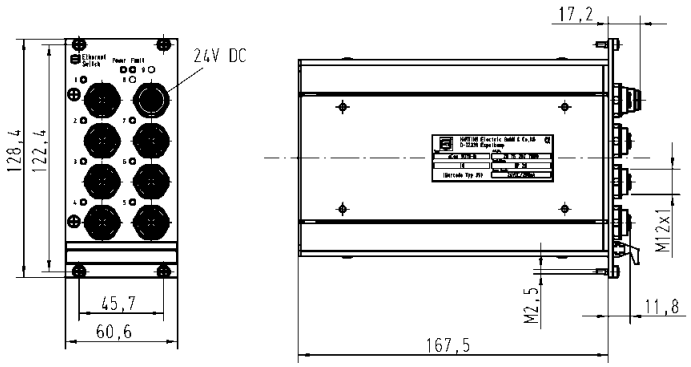
Ha-VIS eCon 9000

Ethernet Switch
Ha-VIS eCon 9070-B

7-port Ethernet Switch for installation in a 19” rack

Unmanaged	IP20	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	7x 10/100Base-T(X) / M12 D-coding
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male
Permissible range (min./max.)	8 V ... 60 V DC
Input current	approx. 150 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	60.6 mm (3 U) x 128.4 mm (12 HP) x 167.5 mm
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
MTBF	1.411.000 h

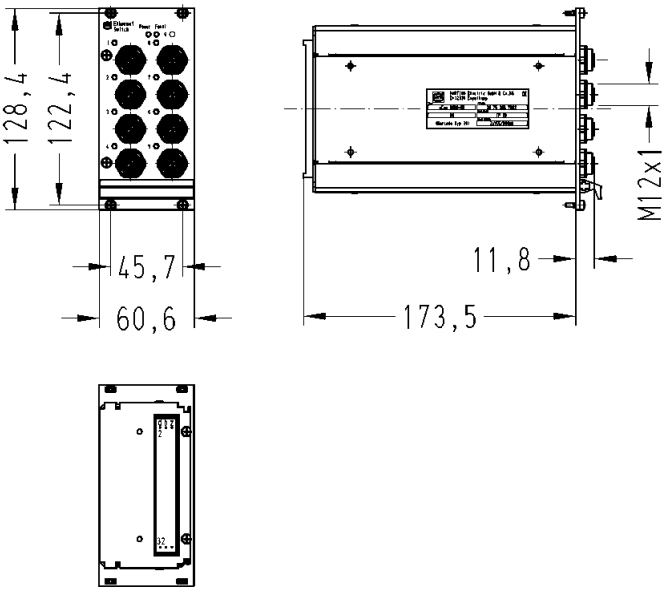
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 9070-B Ethernet Switch with 7 ports M12 D-coding	20 76 207 7000		

Ethernet Switch
Ha-VIS eCon 9080-B1

8-port Ethernet Switch for installation in a 19” rack

Unmanaged	IP20	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding
Input voltage / Termination	24 / 48 V DC / DIN frame connector, Type F
Permissible range (min./max.)	8 V ... 60 V DC
Input current	approx. 110 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	60.6 mm (3 U) x 128.4 mm (12 HP) x 173.5 mm
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	E1
MTBF	1.260.000 h

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS eCon 9080-B1 Ethernet Switch with 8 ports M12 D-coding	20 76 208 7003		

Introduction

For the user, HARTING's novel and innovative solutions open up new, more convenient and extensive options for configuring Unmanaged Ethernet Switches. The solutions available to date offered only very limited or basic options for making alterations to different settings on an Ethernet Switch.

The user made changes to the settings or the configuration via the DIP switches on the Ethernet Switch. The extensive possibilities for applications were physically restricted by the enormous space requirements of the mechanical solution.

Now for the first time, HARTING's Ha-VIS sCon solution makes it possible for the user to realise more configurations than have been possible to date.

Ease of handling and simple operation have been designed in to meet real-life application requirements. Simple and fast configuration is what this solution aims to achieve.

All Ha-VIS sCon Ethernet Switches can be configured via a USB connection cable.

At first sight, Ha-VIS sCon Ethernet Switches do not differ from the Ethernet Switches available to date. However, the possibilities that Ha-VIS sCon has to offer become more than apparent to the user when he connects the Ethernet Switch via the front-side USB socket to a PC, laptop or hand-held PC.

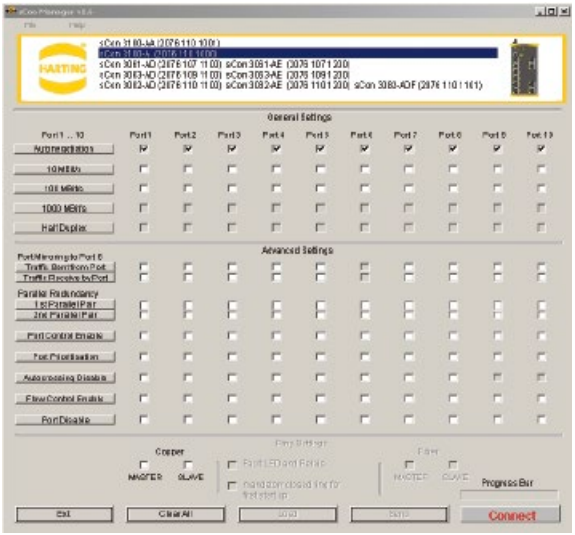


Figure 1 The Start-up menu

Once the Ha-VIS sCon Ethernet Switch has been connected to a PC, it can be accessed on-screen in much the same manner as a commercially available USB stick (Figure 1: The Start-up menu).

The user only has to copy the Ha-VIS sCon software in advance onto the PC. No administrator rights are required. The Ethernet Switch does not have to be connected to a power supply for configuration purposes. That means that the configuration procedure can take place at the user's location of choice: in the office, workshop or production facility. The Ha-VIS sCon Ethernet Switch automatically detects which power supply is connected: mains supply or power supply via the USB port. Please note that it is not possible to operate the Ethernet Switch purely via the USB port. For normal industrial operations, the power must be supplied via one of the redundant inputs.

Introduction

Making configuration settings by means of DIP switches may appear to be uncomplicated. However, accidentally making an alteration to the configuration can happen more quickly than one would think possible, and in so doing make considerable changes to the previously set procedures. The Ha-VIS sCon family prevents these inadvertent alterations to the configuration. No alteration can be made to the configuration without an USB connection and the software.

Each configuration can be archived on the PC and the back-ups retrieved for future projects. By making back-ups of the configuration, all settings can be conveniently stored in case servicing is necessary.

Archived configurations can be imported and printed out when convenient. These extensive options in Ha-VIS sCon ensure that data security enjoys the significance it deserves.

The switch configuration is transmitted only when a new configuration is uploaded via the corresponding 'Send' button. This means that until the data has actually been uploaded, it is still possible to read-in the 'old' data from the Ha-VIS sCon Ethernet Switch via the Refresh option. This means it is easily possible to reverse any inadvertent activation in the corresponding menu.

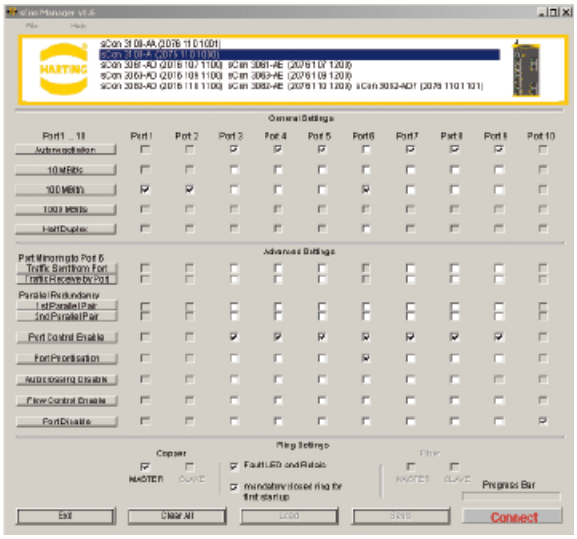


Figure 2 Example of a configuration

Once configured, the Ethernet Switch can be utilised immediately. The configuration remains stored in the Ethernet Switch after the USB cable is removed.

Meeting international standards, the USB port described is recognised as state-of-the-art technology. The standardised possibility for world-wide utilisation with all notebooks, PCs and Palmtops (revisions 1.0, 1.1 and 2.0) mean that this technology is suitable for universal usage.

The intuitive, but extensive options setting via the relevant buttons and the various options offered by Ha-VIS sCon extend the range of applications for unmanaged Ethernet Switches. With Ha-VIS sCon, the gap between unmanaged and manageable switches is getting smaller.

It is true that sCon is a solution for Unmanaged Ethernet Switches; however, it comes very close to Managed Ethernet Switch functionality.

Ethernet Switch
Ha-VIS sCon 3000

Ethernet Switches, unmanaged, for mounting onto top-hat mounting rail in control cabinets, including sCon functions

General description

The Fast Ethernet Switches of the product family Ha-VIS sCon 3000 can be configured via a USB port for special or more performance-oriented industrial usages. There are almost no limits to the different possibilities.

Activation of parallel and / or ring redundancy or port prioritisation will clearly increase the availability and reliability of data communications through the Ha-VIS sCon 3000.

Features

- Ethernet Switch acc. to IEEE 802.3
- Store and Forward Switching Mode, non blocking, unmanaged
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link status, Act, Power, Data transmission rate, Error)
- Following settings are available via USB port:
  - Parameterisation via USB port:
  - Alarm signalling contact (Link alignment, low voltage, ring error)
  - Auto-negotiation
  - Data transmission rate
  - Full/Half Duplex
  - Ring and/or parallel redundancy
  - ports enable / disable
  - Port priority
  - Port Mirroring
  - Pause Frame

Advantages

- Individually configurable via USB port
- Robust metal housing
- EMC, temperature range and mechanical stability meet the toughest demands
- Ring redundancy and/or parallel redundancy

Application fields

- Industrial automation
- Power distribution systems
- Automotive industry
- Mechanical engineering
- Railway applications

Technical characteristics

Ethernet interface – RJ45

Number of ports	6x / 8x / 10x 10/100Base-T(X) 2x 10/100/1000-Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (RJ45)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	RJ45 (Twisted Pair)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: Green
Topology	• Line • Star

Power supply

Input voltage	24 / V DC (9.6 V ... 60 V DC)
Termination	5-pole, pluggable screw contact, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination	3-pole pluggable screw contact
Diagnostics (LED)	Error - Red

Design features

Housing material	metal
Dimensions (W x H x D)	60 x 132 x 104 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP30
Assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, vertical assembly
weight	approx. 0.6 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics F.O. termination

Ethernet interface – F.O.

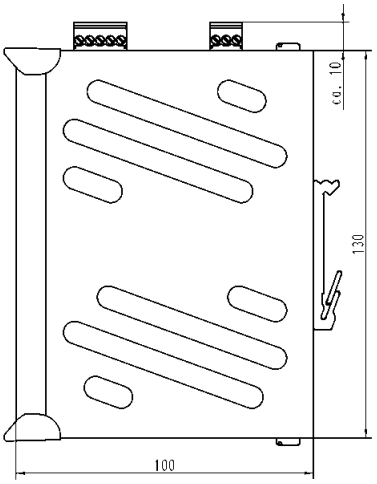
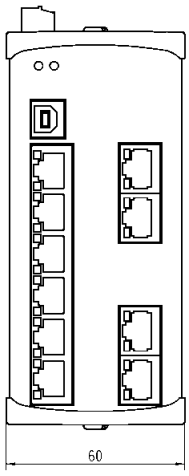
Number of ports	3x / 2x 100Base-FX
Cable types according to IEEE 802.3	• Multimodefibre, 1300 nm; 50 µm / 125 µm or 62.5 µm / 125 µm
Data rate	100 Mbit/s
Maximum cable length	• 2000 m (Multimode) • 15 km (Singlemode)
Termination	SC-D female
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing
Wavelength	1300 nm
Transceive power T(X) max. (dynamic)	• -14 dBm (50 µm / 125 µm) • -14 dBm (62.5 µm / 125 µm)
Transceive power T(X) min.	• -23.5 dBm (50 µm / 125 µm) • -20 dBm (62.5 µm / 125 µm)
Receive power RX typical (dynamic)	• -33.9 dBm (window) • -35.2 dBm (centre)
Receive power RX max. (dynamic)	-14 dBm
Signal detection (dynamic)	-33 dBm
Topology	• Line • Star

Ethernet Switch
Ha-VIS sCon 3100-A

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including sCon functions

Unmanaged	IP30	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	10x 10/100Base-T(X) / RJ45 (Twisted Pair)
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 170 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1
MTBF	745.000 h

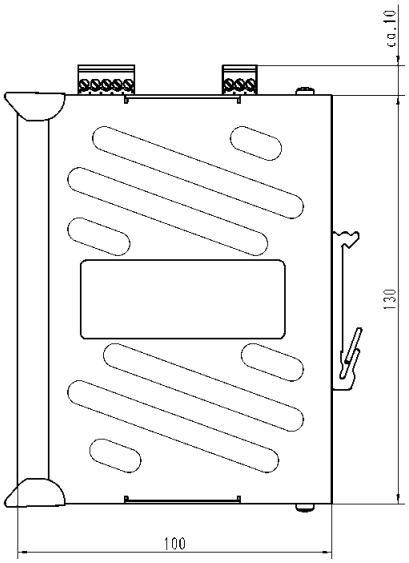
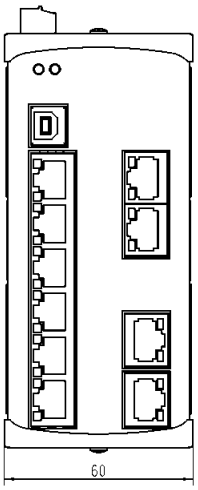
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS sCon 3100-A Ethernet Switch with 10 RJ45 ports	20 76 110 1000		

Ethernet Switch
Ha-VIS sCon 3100-AA

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 2 Gigabit ports and sCon functions, extended temperature range

Unmanaged	IP30	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair) 2x 10/100/1000-Base-T(X) / RJ45 (Twisted Pair)
Input voltage / Termination	24 / 48 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 240 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV
MTBF	670.000 h

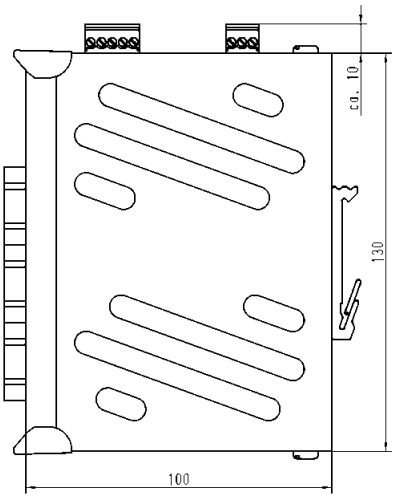
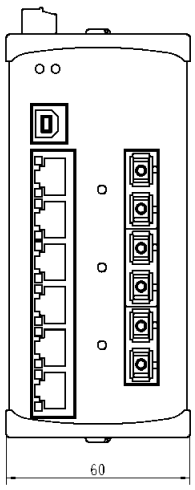
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS sCon 3100-AA Ethernet Switch with 10 RJ45 ports	20 76 110 1001		

Ethernet Switch
Ha-VIS sCon 3063-AD

9-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 3 F.O. ports (SC, MM) and sCon functions

Unmanaged	IP30	PROFINET compatible ☒	EtherNet/IP compatible ☒

Number of ports, Copper / Termination	6x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	3x 100Base-FX / SC-D female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 290 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1
MTBF	660.000 h

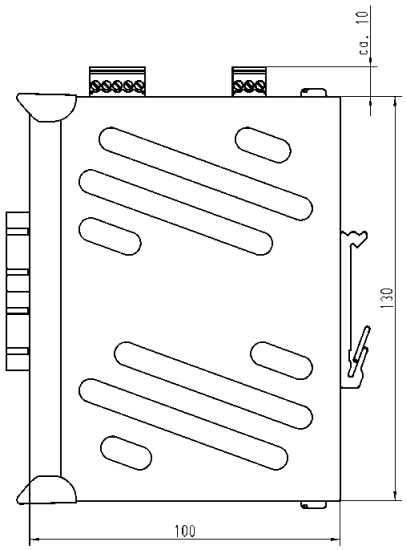
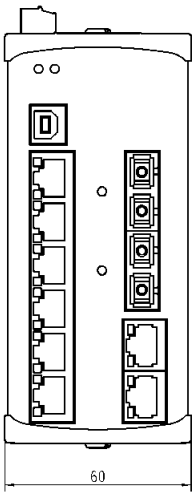
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS sCon 3063-AD Ethernet Switch with 6 RJ45 ports 3 F.O. ports	20 76 109 1100		

Ethernet Switch
Ha-VIS sCon 3082-AD

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 2 F.O. ports (SC, MM) and sCon functions

Unmanaged	IP30	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	2x 100Base-FX / SC-D female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 260 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1
MTBF	585.000 h

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS sCon 3082-AD Ethernet Switch with 8 RJ45 ports 2 F.O. ports	20 76 110 1100		

Notes

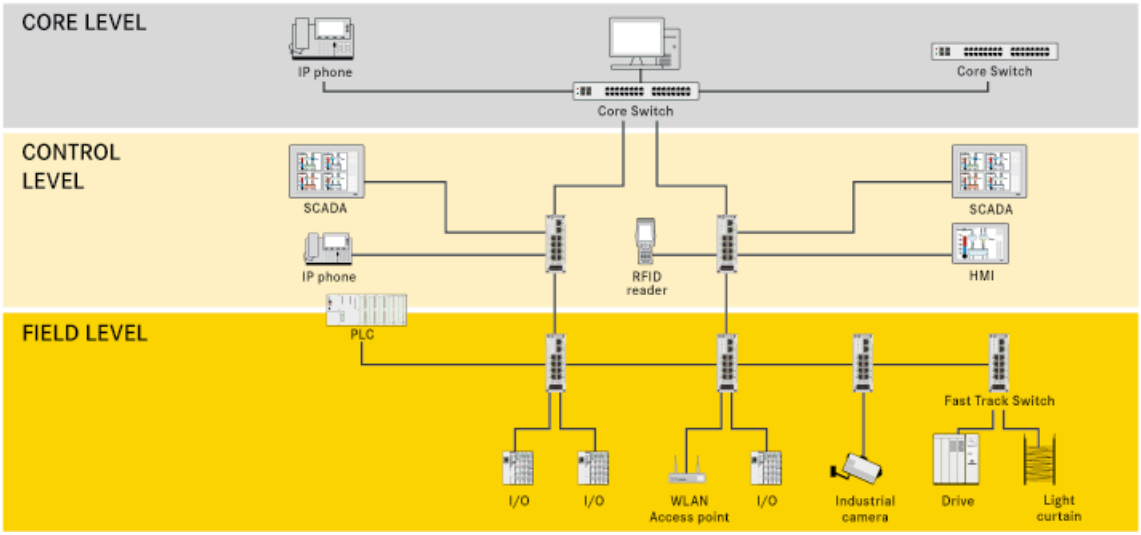
Fast Track Switching Introduction

Fast Track Switching

Automation IT is a communication platform that serves all applications within an industrial manufacturing firm. By connecting all applications, the uniform platform network increases the efficiency of company workflows.

Automation IT supports Standard Ethernet at all levels – including the office, management and control levels, and also in the field.

Automation IT – the platform for all applications



The currently available switching technology used in IEEE 802.3 Ethernet, however, does not offer the level of determinism required for automation applications. That is why automation solutions that only implement standard (unchanged) Ethernet require a restricted network design in order to match automation performance levels. Thus there are limited options for the network topology or segmentation – to the extent that IT communications are not allowed within the automation environment.

Automation requires for Industrial Ethernet:

- top performance
- safety
- flexible topology
- and above all determinism

Standard Ethernet switching is based on store-and-forward switching and this introduces long latency times for the frames. But even more serious is the tight dependency on the degree of network traffic: if only automation frames are present in the network, then these frames can be transmitted with no problems. But additional data traffic on the network will compete with the automation frames for forwarding and can thus delay these frames.

Standard switching uses the QoS (Quality of Service) option to influence this. If multiple frames are located in the switch queue, then the frames with the highest priority are forwarded first. But it is still possible for other data frames with priorities equal to or greater than the automation frames to be present. And even when the automation frame has the highest priority, if a data frame is in the process of being sent, the next automation frame must wait until 1522 bytes have been completely sent. Only then is the path open for the automation frame. The same delay could then happen on the next network switch once more. So these wait delays can quickly add up to times which are critical for automation applications. This behaviour can be seen as stochastically random. Most of the time the transfer times will be sufficient. But it only takes one delayed frame to trigger a problem.

Fast Track Switching Introduction

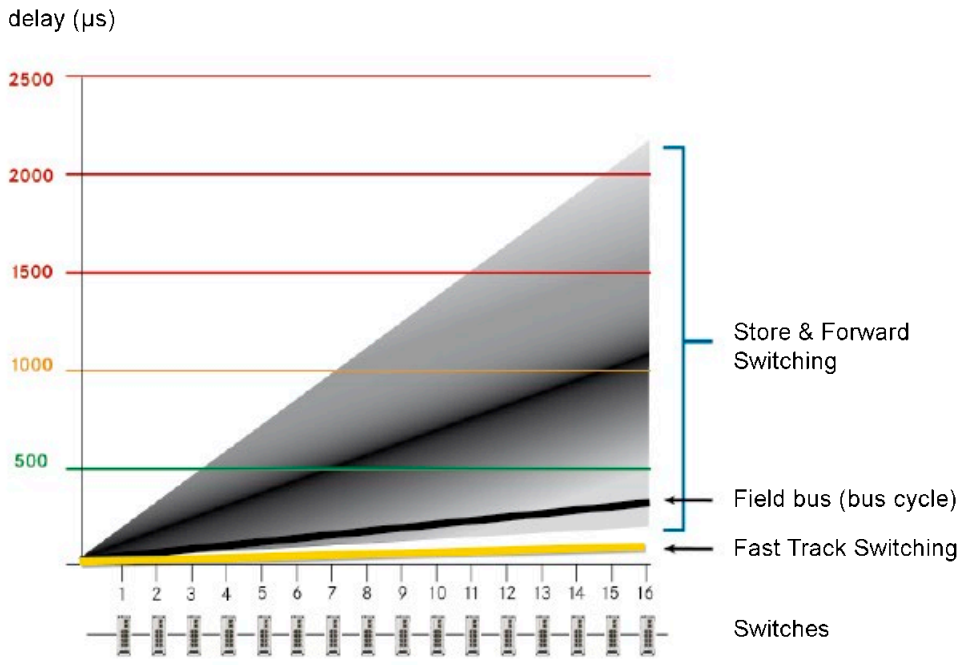
Several Ethernet-based methods have identified this problem and eliminated it. However such methods require each network node to implement specialized hardware for communication.

With the development of Fast Track Switching (FTS), HARTING has found a new path. FTS switches solve the performance and deterministic problems while all other nodes require only the standard Ethernet interfaces.

Fast Track Switching uses three key features to achieve this:

1. Preferred frames (such as automation frames) are detected first. The switch can focus on any specific part of the Ethernet header for special properties. For example, PROFINET frames are Ethertype 8892. This type is then monitored and evaluated if the application needs to accelerate their transmission.
2. These key frames get fast-track forwarding – a cut-through process instead of store-and-forwarding. As a result, the switch latency time is minimized.
3. If the switch port needed for the forwarding is busy at that moment sending a data frame, then the data frame is buffered and the forwarding is aborted so that the automation frame can be forwarded immediately. Only after the automation frame is sent is a second attempt made to send the data frame.

A simple example serves to illustrate the superior performance of this Fast Track Switching:



An automation frame must travel on a path through 16 switches. The transmission time for the Ethernet frames under standard switching rules is tightly dependent on the network load. Thus the transmission time for the frames can vary widely according to the network load: a few arrive quite quickly, the majority have an average time, and a few frames travel quite slowly.

As a reference point, a comparable cycle for one of the Field bus protocols used widely in automation applications is shown in black. This protocol has state-of-the-art levels of determinism and transfer speeds. Sometimes the data arrives just as fast at its destination when standard switching is used – but only sometimes.
Fast Track Switching, on the contrary, exhibits excellent results and is deterministic.

Fast Track Switching Introduction

Now it has finally become possible to setup a universal Automation IT communications platform that reaches into the field level. And finally automation protocols which rely on standard unchanged Ethernet (such as PROFINET RT or EtherNet/IP) can deliver the high performance needed for automation applications.

HARTING has also integrated this groundbreaking technology into production models available for the user:

The configurable Ha-VIS FTS 3100 model offers an easy-to-configure FTS solution for users. Many switch options can be customized to fit your application – even by those who are not trained network administrators.

And with the fully managed switches from the Ha-VIS FTS 3000 line, HARTING combines FTS technology with all of the well-known functions of modern managed industrial Ethernet Switches.

Ethernet Switch
Ha-VIS FTS 3000s
Ethernet Switche, unmanaged, with Fast Track Switching Technology, configurable via USB

General description

The Fast Ethernet Switches of the product family Ha-VIS FTS 3000 can identifiy automation protocols (e.g PROFINET, EtherNet/IP, Modbus TCP and customized profiles), accelerate their data transmission and prefer them. They are suitable for industrial applications.

The product family enables the connection of up to 10 network devices over shielded Twisted Pair. It supports Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s).

The Ethernet Switch works as an unmanaged switch and can work in Cut Through mode and in Store and Forward mode. It supports Auto-crossing, Auto-negotiation and Auto-polarity.

Features

- Ethernet Switch according to IEEE 802.3
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link Status, Act, Data transmission rate, Power, Error)
- Store and Forward Switching Mode, non blocking, unmanaged
- Identification, acceleration and preference for automation frames
- Deterministic data transfer for selected profiles

Advantages

- Individually configurable via USB port
- Robust metal housing
- EMC, temperature range and mechanical stability meet the toughest demands

Application fields

- Industrial automation
- Mechanical engineering
- Automotive industry

Technical characteristics

Ethernet interface – RJ45

Number of ports	10x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (RJ45)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	RJ45 (Twisted Pair)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: Green
Topology	• Line • Star • mixed
Parameterisation via USB	• Auto-negotiation • 10/100 Mbit/s • Full/Half Duplex • Port enable/disable • Port mirroring • Flow Control • FTS Port enable/disable • Industrial Profile (PROFINET, EtherNet/IP, Modbus TCP, customized) • NRT Bandwidth Control

Power supply

Input voltage	24 V ⎓ (9.6 V ... 60 V ⎓)
Termination	5-pole, pluggable screw contact, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Design features

Housing material	aluminium
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP30
Assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, vertical assembly
weight	approx. 0.5 kg

Environmental conditions

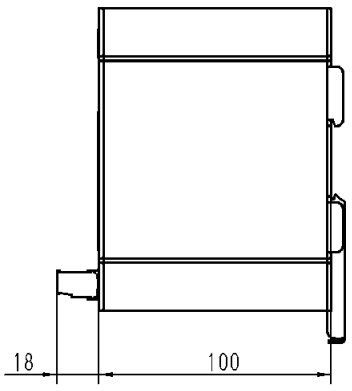
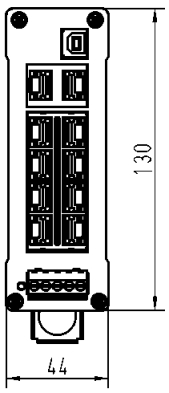
Stock temperature	-40 °C ... +85 °C
Relative humidity	30 % ... +95 % (non-condensing)

Ethernet Switch
Ha-VIS FTS 3100s-A

10-port Ethernet Switch with Fast Track Switching Technology, configurable via USB

Unmanaged	IP30	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	10x 10/100Base-T(X) / RJ45 (Twisted Pair)
Input voltage / Termination	24 V ⎓ / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V ⎓
Input current	approx. 270 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
weight	approx. 0.5 kg
Working temperature	0 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS FTS 3100s-A Ethernet Switch with 10 RJ45 ports	20 76 110 1000		

Ethernet Switch
Ha-VIS FTS 3000
Ethernet Switches, with Fast Track Switching Technology, managed

General description

The Fast Ethernet Switches of the product family Ha-VIS FTS 3000 can identifiy automation profiles (e.g PROFINET, EtherNet/IP, Modbus TCP and customized profiles), accelerate their data transmission and prefer them. They are suitable for industrial applications.

The product family enables the connection of up to 10 network devices over shielded Twisted Pair or F.O. interfaces, according to type. It supports Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s).

The Ethernet Switch works as an managed switch and can work in Fast Track Switching mode and in Store and Forward mode. It supports Auto-crossing, Auto-negotiation and Auto-polarity.

Features

- Managed Ethernet Switch according to IEEE 802.3
- Fast Track Switching Mode, Store and Forward Switching Mode
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link Status, Data, Power)
- Identification, acceleration and preference for automation frames
- Deterministic data transfer for selected profiles
- Robust metal housing, RoHS compliant
- PROFINET IO Device

Advantages

- Robust metal housing
- EMC, temperature range and mechanical stability meet the toughest demands

Application fields

- Industrial automation
- Automotive industry
- Mechanical engineering

Technical characteristics

Ethernet interface – RJ45

Number of ports	6x / 8x / 10x 10/100Base-TX
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (RJ45)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	RJ45 (Twisted Pair)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: Green
Topology	• Line • Star • Ring • mixed

Power supply

Input voltage	24 V ⎓ (9.6 V ... 60 V ⎓)
Termination	5-pole, pluggable screw contact, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Diagnosis device

Diagnostics (LED)	• Device acts error free - Green • Diagnosis error - Red • PROFINET error display - Red / Green flashing • Low voltage error - Red

Design features

Housing material	aluminium
Degree of protection acc. to DIN EN 60 529	IP30
Assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, vertical assembly
weight	approx. 0.35 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	30 % ... +95 % (non-condensing)

Technical characteristics F.O. termination

Ethernet interface – F.O.

Number of ports	2x 100Base-FX
Cable types according to IEEE 802.3	Multimodefibre, 1300 nm; 50 µm / 125 µm or 62.5 µm / 125 µm
Data rate	100 Mbit/s
Maximum cable length	2000 m (Multimode)
Termination	SFP module slot
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Duplex - Full duplex: Yellow Half duplex: OFF
Wavelength	1300 nm
Transceive power T(X) max. (dynamic)	• -14 dBm (50 µm / 125 µm) • -14 dBm (62.5 µm / 125 µm)
Transceive power T(X) min.	• -23.5 dBm (50 µm / 125 µm) • -20 dBm (62.5 µm / 125 µm)
Receive power RX typical (dynamic)	• -33.9 dBm (window) • -35.2 dBm (centre)
Receive power RX max. (dynamic)	-14 dBm
Signal detection (dynamic)	-33 dBm
Topology	• Line • Ring • Star • mixed

Management functions

Basic Functions		
	Store and Forward Switching Mode	IEEE 802.3
	Manual and Dynamic IP Address Assignment	
Port-Settings	Auto-negotiation on / off	
	Port Speed 10 Mbit/s / 100 Mbit/s	
	Half / Full duplex	
	Port disable / enable	
	Link Up/Down Trap disable / enable	
	Port mirroring disable / enable	
	Flow Control disable / enable	
	Industrial profiles (PROFINET, EtherNet/IP, Modbus TCP, customer spezific)	
	NRT Bandwidth Control	
Network Discovery	Link Layer Discovery Protocol (LLDP)	802.1AB, 2005
Protocols	IPv4	RFC 791, 903, 951, 1293, 1519
	TCP	RFC 793, 896
	UDP	RFC 768
	Ethernet ARP	RFC 826
	ICMP	RFC 2521, 1191, 1788, 792
File Transfer	Firmware import and export via TFTP	
	Configuration import and export via TFTP	
Time Settings	Manual time setting	
	Simple Network Time Protocol (SNTP)	RFC 1305, RFC 4330
	Precision Time Protocol (PTP) in hardware	IEEE 1588v2
User Management	Admin, Guest and Service Level	
Service	Service Mode via port 10 or 6	
QoS		
	Quality of Service (QoS)	IEEE 802.1p
VLAN		
	Port protocol based VLANs	IEEE 802.1Q Rev D5.0, 2005
Redundancy		
	Spanning Tree (STP)	IEEE 802.1D (2004)
	Rapid Spanning Tree (RSTP)	IEEE 802.1D (2004)
Security		
	Port-Based Network Access Control Port Based Authentication with EAP	802.1x (2004)
	RADIUS Client	RFC 2138
	IP authorized manager	
Multicast		
	IGMP Snooping (v1, v2, v3) with support for querier	RFC 1112, 2236, 3376
DHCP		
	DHCP Client	RFC 2131
	DHCP relay agent	RFC 2131
	DHCP Option 82	RFC 3046

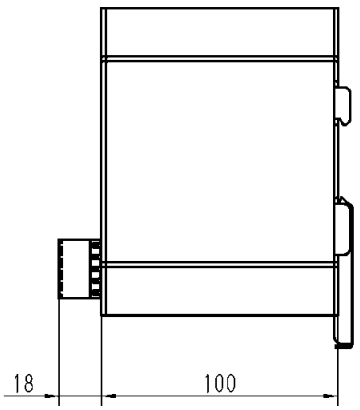
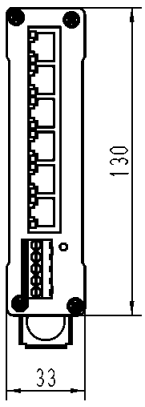
Management functions

Alarm		
	Alarms via E-mail (SMTP) and SNMP Traps	
Diagnostic		
	PROFINET diagnostic	
	Port Mirroring	
	Switch History	
	MAC Address Table	
Management		
	Password protected Web-Management interface	
	SNMP (v1, v2c, v3) agent & MIB support	RFC 1155, 1157, 1212, 1213, 1215, 2089, 2578, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3584
	Pluggable memory card	
MIB Support		
	Enterprise (HARTING MIB)	
	MIB II	
	MIB II for SNMPv1, SNMPv2, SNMPv3	
	Interface group MIB	
	Bridge MIB	
	MIB for Ethernet-like interfaces (requires support in hardware)	
	VLAN MIB	
	Spanning Tree Protocol MIB	
	Rapid STP MIB	
	Port-based Network Authentication Control MIB	
	Definitions of managed objects for LLDP	
	802.1/LLDP extension MIB	
	802.3/LLDP extension MIB	
	Radius Client MIB	
	IPv4 MIB	
	IGMP MIB	
	DHCP	

Ethernet Switch
Ha-VIS FTS 3060-A
6-port Ethernet Switch with Fast Track Switching Technology, managed

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

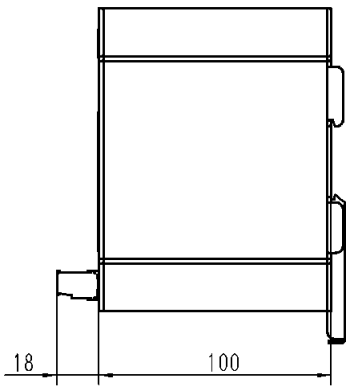
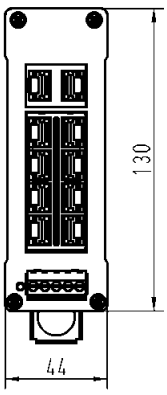
Number of ports, Copper / Termination	6x 10/100Base-TX / RJ45 (Twisted Pair)
Input voltage / Termination	24 V ⎓ / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V ⎓
Input current	approx. 220 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	33 x 130 x 100 mm (without connectors)
weight	approx. 0.35 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS FTS 3060-A Ethernet Switch with 6 RJ45 ports	20 78 106 4000		

Ethernet Switch
Ha-VIS FTS 3100-A
10-port Ethernet Switch with Fast Track Switching Technology, managed

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	10x 10/100Base-TX / RJ45 (Twisted Pair)
Input voltage / Termination	24 V ⎓ / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V ⎓
Input current	approx. 300 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
weight	approx. 0.5 kg
Working temperature	0 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV

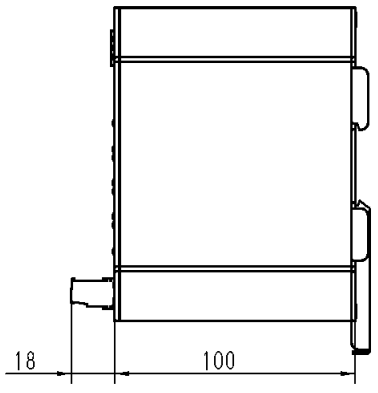
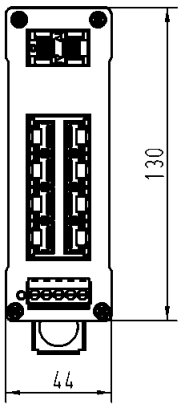
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS FTS 3100-A Ethernet Switch with 10 RJ45 ports	20 78 110 4000		

Ethernet Switch
Ha-VIS FTS 3082-ASFP

10-port Ethernet Switch with Fast Track Switching Technology,
with 2 slots for SFP modules, managed

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-TX / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	2x 100Base-FX / SFP module slot
Input voltage / Termination	24 V ⎓ / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V ⎓
Input current	approx. 340 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
weight	approx. 0.5 kg
Working temperature	0 °C ... +60 °C
Approvals	UL 508; UL 60 950-1

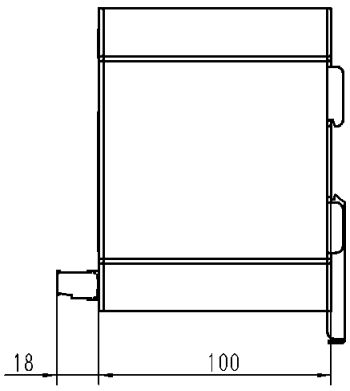
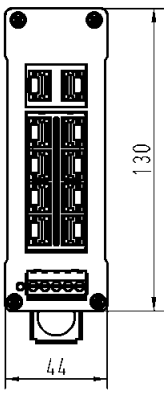
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS FTS 3082-ASFP Ethernet Switch with 8 RJ45 ports 2 F.O. ports	20 78 110 4300		

Ha-VIS FTS 3000-PTP

Ethernet Switch
Ha-VIS FTS 3100-A-PTP
10-port Ethernet Switch with Fast Track Switching Technology, managed

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	10x 10/100Base-TX / RJ45 (Twisted Pair)
Input voltage / Termination	24 V ⎓ / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V ⎓
Input current	approx. 300 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
weight	approx. 0.5 kg
Working temperature	0 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV
Time synchronization	Precision Time Protocol (PTP) hardware based

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS FTS 3100-A-PTP Ethernet Switch with 10 RJ45 ports	20 78 110 4001		

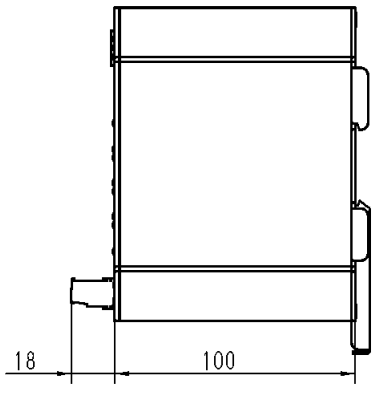
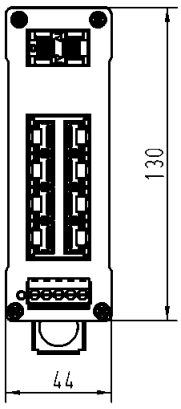
Ha-VIS FTS 3000-PTP

Ethernet Switch
Ha-VIS FTS 3082-ASFP-PTP

10-port Ethernet Switch with Fast Track Switching Technology,
with 2 slots for SFP modules, managed

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-TX / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	2x 100Base-FX / SFP module slot
Input voltage / Termination	24 V ⎓ / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V ⎓
Input current	approx. 340 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
weight	approx. 0.5 kg
Working temperature	0 °C ... +60 °C
Approvals	UL 508; UL 60 950-1
Time synchronization	Precision Time Protocol (PTP) hardware based

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS FTS 3082-ASFP-PTP Ethernet Switch with 8 RJ45 ports 2 F.O. ports	20 78 110 4301		

Notes

Management Software Overview

Network Management

With the Ha-VIS mCon families, HARTING has expanded its range of Ethernet switches. The series offers a broad spectrum of possibilities: in addition to the standard functions already present in the sCon and eCon Series, the Ha-VIS mCon switches offers management functions which set up a convergent and manageable network.

With the introduction of the new management software V2.0 for the HARTING Ha-VIS mCon switch families, the strong competitive capability will achieve a new level. A lot of improvements and additional features have been added to the software and the future development is assured. This new management software has been designed for industrial use and provides professional network solutions.

The configuration and management of the Ha-VIS mCon switches is made simply: either via SNMP tools, network management software or very easily via a web interface.

Overview – Intuitive web management interface

The Ha-VIS mCon switches can be accessed and configured via a normal internet browser, without the need of any additional tools or browser plugins (Java etc.)The web management is password protected and provides a range of access levels. An easy and intuitive tree menu allows the Ha-VIS mCon switches to be customized and adapted to a specific network.

A huge variety of management functionalities and features are integrated in the HARTING Ha-VIS mCon switches, to provide the best possibilities for the customer.

Support of VLANs allow the Ha-VIS mCon switches to segment a network, which results in better control of the communication flow and the avoidance of unnecessary network loads. The IGMP functionality ensures, that multicast traffic like video/audio streams and automation packets are only forwarded through ports, which are involved in this application. With RSTP it is possible to build up redundant networks, to assure the availability of the network even in the case of failure or incorrect configuration. To improve and assure the security and integrity of the network, HARTING has integrated a lot of security functionalities, like the port based access control via 802.1x and Radius and the IP Authorized manager. All Ha-VIS mCon switches support a fast and easy network diagnosis and a wide scale of alerting mechanisms.

Ha-VIS mCon switches can be used in all applications, offer professional solutions for the operation of Ethernet networks and are simple to install and use. The Ha-VIS mCon families will always be used in high level applications to provide a fully managed and adaptable Ethernet network for automation solutions. The customer has the possibility to configure and develop all applications on the basis of his requirements.

Web-Interface via HTTP

- HTML based web interface
- No additional software needed
- Rapid access to the switch
- Intuitive configuration

SNMP (v1, v2, v3)

- Accessible via standard MIBs
- Professional configuration
- Using of professional management tools

Management Software Overview

Diagnostic and alert functions

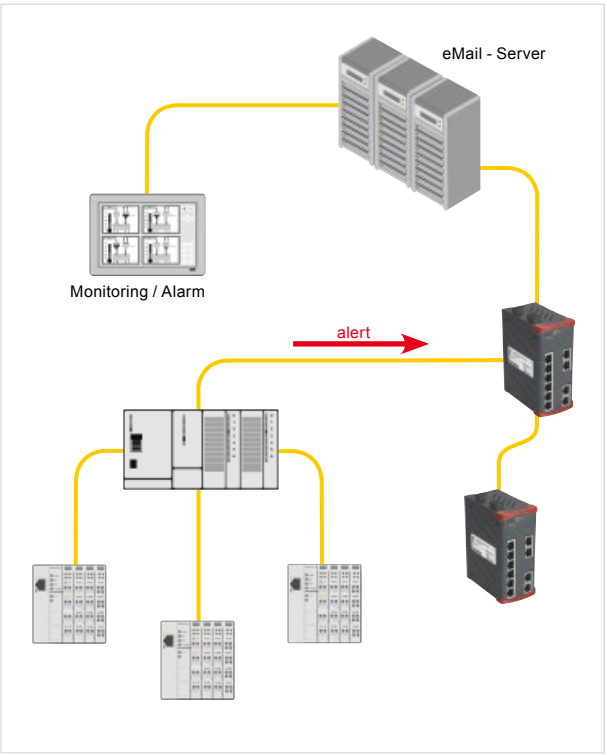
The reliability and operational availability of industrial Ethernet networks are highly associated with the possibility of management and diagnosis functionalities. For most applications it is mandatory to have an overview of what is happening in the network anytime. To assure a trouble free data flow, it is necessary that all failures in the network are propagate to a maintenance station.

The Port Mirroring feature allows the capturing of the incoming and outgoing data traffic of the switch. By connecting a network analyzer to a configured mirror-to port, the network traffic going through the entire switch can be easily monitored, without changing the network topology.

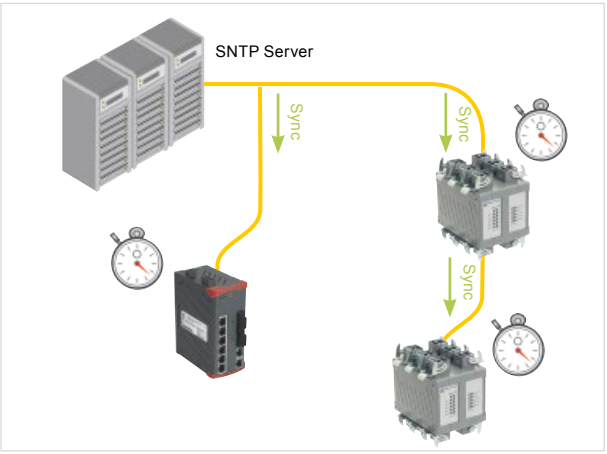
Certain network or Ethernet switch events may require the attention of service personnel. It is possible to select several events according to the requirements, which will cause a notification to a remote monitoring station if they occur. This notification can be done by sending an eMail or a SNMP trap.

In addition to notification per e-mail and SNMP trap, the alarm signal can be relayed via a connected relay to an external signaling device (depending on the type).

Examples for an event within the system are alterations to the configuration, a port event, interruption or creation of a link between a port and a connected device. Additional features like a locally saved switch history and a MAC address table are also helpful utilities to keep track of the network. All events are time synchronized with support of the SNTP protocol.



eMail and SNMP alert mechanismus



Time synchronization with SNTP

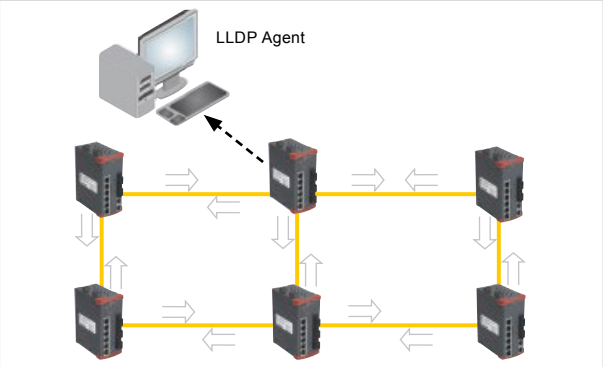
Management Software Overview

Network Discovery via Link Layer Discovery Protocol (LLDP)

The Link Layer Discovery Protocol allow systems on an Ethernet LAN to advertise their key capabilities to neighbor nodes and also to learn about the key capabilities of other systems on the same Ethernet LAN.

This, in turn, promotes a unified network management view of the LAN topology and connectivity to aid network administration and trouble-shooting.

In general a network administration station can be connected to one single switch and from there it is able to access the connectivity information in the complete network within the application.



LLDP – Neighbor information exchange

Port-Based Access Control with 802.1x

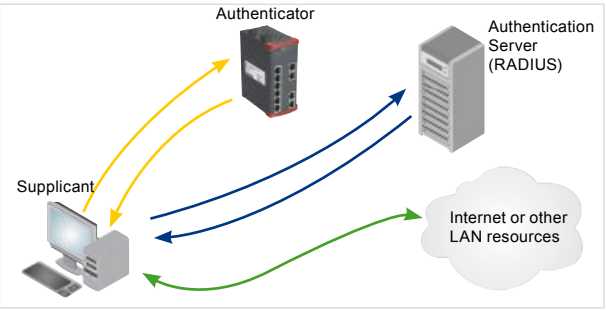
With the affiliation of the common office communication with the industrial networks, security and flexibility become more and more important for industrial Ethernet networks and applications. The demand of security and reliability is increasing rapidly. Therefore, industrial Ethernet networks need an end device authentication method that is highly secure but not tied to a ports physical location. For this reason, the HARTING Ha-VIS mCon Switches supports the 802.1x authentication functionality conform to the IEEE standard 802.1X REV 2004. This authentication method prevents access to a switch port in cases, if the authentication and authorization fails. The HARTING management software supports dynamic enabling or disabling of the Network Access Control feature in the switch through management configuration. The authorization of an attached supplicant can be proceed on two different ways: either remote or local.

With the local authorization, the data which is needed is stored directly on the switch, so no external instance is needed. The other way is the remote authorization via a RADIUS server and the EAPoL protocol. The database, containing all information of the network devices which are allowed to get access to the network are stored at the server side and can be managed from a single point. 802.1x user authentication is rapidly becoming an expected component of any Ethernet infrastructure.

- Prevention of unauthorized network access based on access data, not the physical address
- User authentication in the complete network without bindings to a special port
- Attaching an move devices

IP authorized manager

The IP authorized manager feature enables the switch to enhance security on the network by using IP addresses to authorize which stations (PCs or workstations) can access the switch. Thus, having the correct passwords (when logging through TELNET/WEB) is not sufficient for accessing the switch through the network, unless the station attempting access is also included in the switch's Authorized IP Managers configuration.

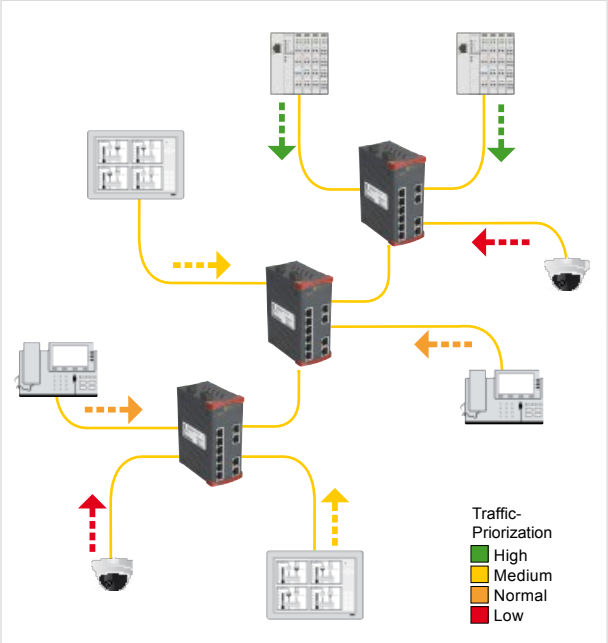


802.1X based user authentication procedure

Management Software Overview

Quality of Service (802.1p, DiffServ)

Quality of Service (QoS) is a technology for managing network traffic in a cost effective manner to enhance network performance and reliability of the application. QoS allows the priorization of the network traffic to assure quality and performance at any time. For example, QoS technologies can be applied to prioritize traffic for latency-sensitive applications (such as automation protocols and voice or video) and to control the impact of latency-insensitive traffic. The IEEE 802.1p standard provides up to eight traffic classes which can be configured via the management software. The queuing scheme and the way the traffic will be handled inside the switch can adapted to the requirements of the application.

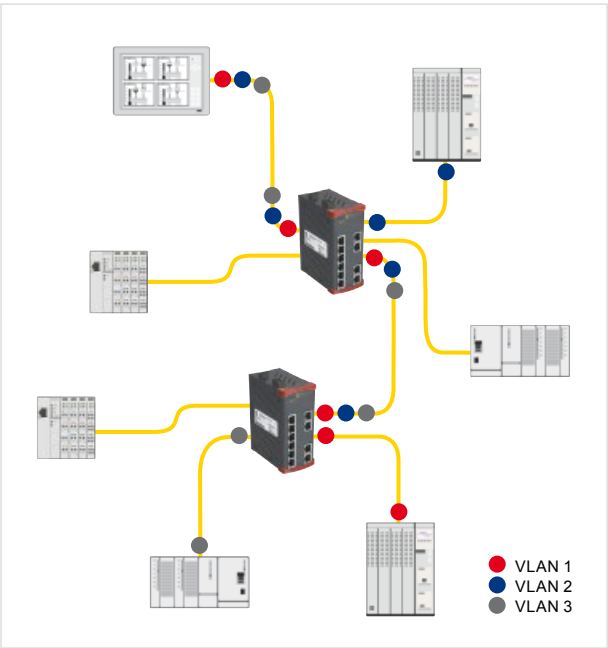


Traffic priorization for time critical applications

Virtual LAN (VLAN)

As networks have grown in size and complexity, the claim to segment these networks increased rapidly. To avoid the rise of costs and complexity of the devices, the segmentation and separation of different network groups should be established by virtual local area networks (VLANs). This functionality provides a way of structuring and organize the network. Basically, a VLAN is a collection of nodes that are grouped together in a single broadcast domain that is not based on physical location of the devices. VLANs logically segment the shared media LAN and forming virtual workgroups. The different VLANs will send and receive data only to devices which are members of this special LAN. HARTING Ha-VIS mCon switches support up to 4094 VLAN tags and conforms with IEEE standard 802.1Q. The use of VLANs will have the following benefits:

- Security – Separating systems that have sensitive data from the rest of the network
- Performance/Bandbreite – Limitation and administrativ control of the network
- Broadcasts/Traffic-flows – VLANs does not pass broadcast traffic to nodes that are not part of the VLAN, it automatically reduces broadcasts



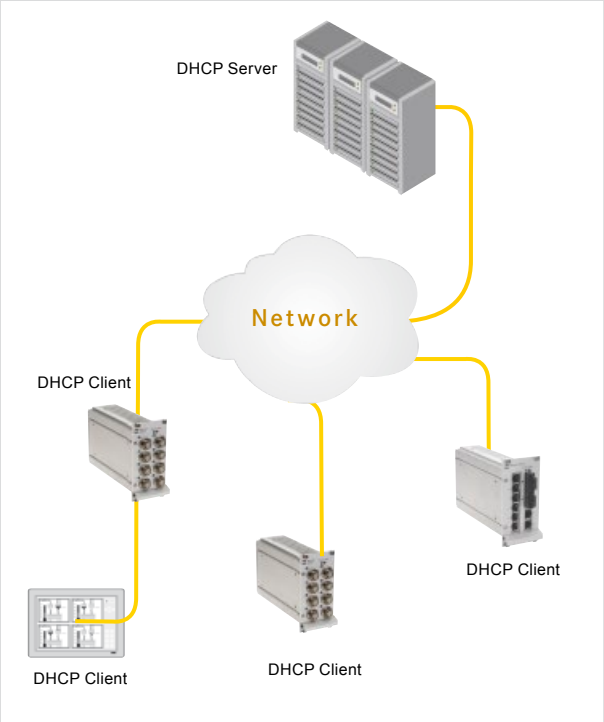
Traffic management with VLANs

Management Software Overview

DHCP Option 82

Upgrading and changing the structure of Ethernet networks causes usually a lot of administrative effort. Configuration of security and addressing procedures has to be redone every time a device will be changed. Replacing or moving of network devices causes a lot of trouble, because some network mechanisms such as dynamic IP address assignment are MAC based. The Industrial market searches for a method to simplify the addition and replacement of Ethernet devices to reduce the maintenance effort. DHCP Option 82 provides a mechanism for generating IP addresses based on the location where the client device is attached in the network. By using DHCP option 82, the Ha-VIS mCon switches are able to include additional information about itself, when forwarding DHCP packets. Information about its location can be sent along with the request to the server.

The DHCP server makes a decision on what IP should be assigned to the end device based on this location information.

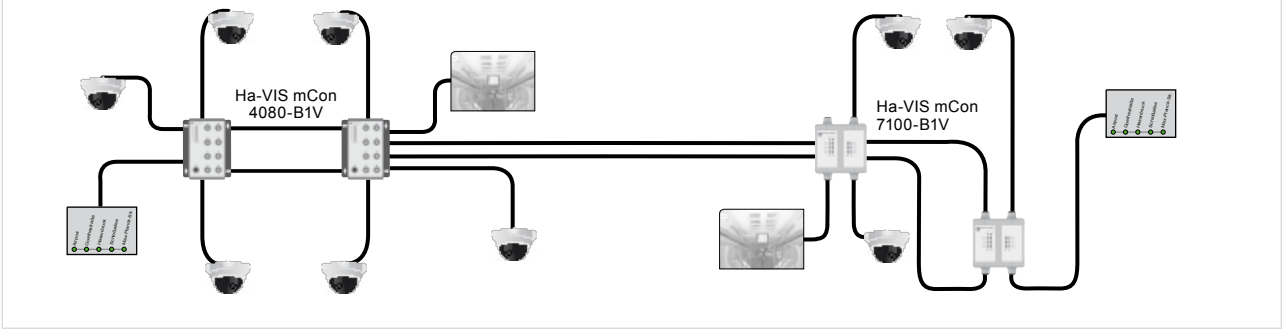


Location-dependent IP address assignment

IGMP Snooping

A Layer 2 switch by default, floods multicast traffic within the broadcast domain. This can consume a lot of bandwidth if many multicast servers are sending streams of data. IGMP Snooping are meant to dynamically discover the presence of multicast receivers and use the learnt information to control the multicast traffic flow, restricting it only to the desired ports on which receivers are present. HARTING provides support for dynamic multicast registration support through IGMP snooping (for IPv4 multicast traffic). IGMP snooping can be used for Layer 2/3 traffic and provides a much greater degree of granularity in selecting multicast traffic.

IGMP learns the multicast forwarding information through the IGMP report messages from hosts and updates the forwarding database. It is possible to edit and add information to the forwarding database manually, so there is no limitation and restriction for the network topology and the application. The IGMP forwarding database based on multicast group MAC address (MAC based). All Ha-VIS mCon switches support IGMP version 1,2 and 3 and also the Querier functionality.



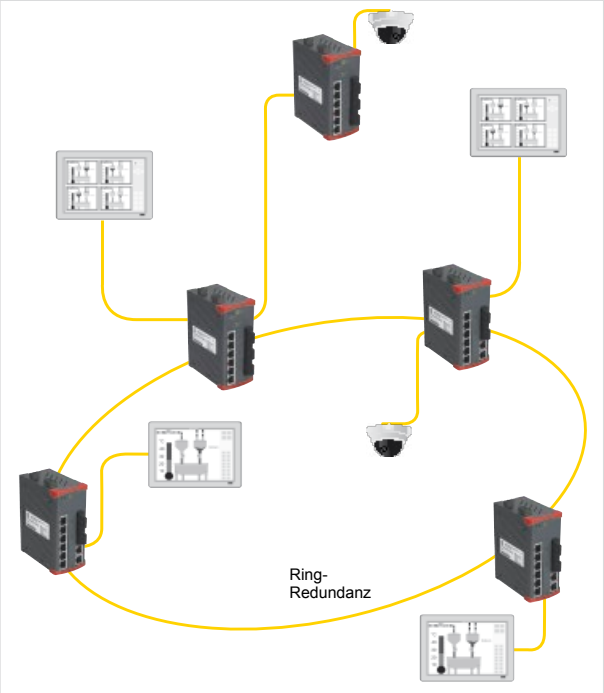
Multicast application with multiple sources and receivers

Management Software Overview

Rapid Spanning Tree

A continuous and failure tolerant network is an essen-tial claim for industrial applications and their network components. The high availability is a mandatory demand to guarantee the failure free operation of these networks. Network redundancy is the ability to handle and endure a link failure without a permanent communication break down. Network redundancy is important in applications, where a single failure can result in significant consequences which can not be tolerated. The Ha-VIS Management Software supports the Rapid Spanning Tree protocol to form loop free topology in a network. RSTP detects topology changes and reconfigures the topology and intimates the topology change to all the switches in the LAN. RSTP avoids this delay by calculating an alternate root port, and immediately switching over to this port if the root port becomes unavailable. Thus, using RSTP, the switch immediately brings the alternate port to forwarding state, without any delay.

- High availability via redundancy
- Loop free and failure tolerant network
- Fast convergent and recovery time



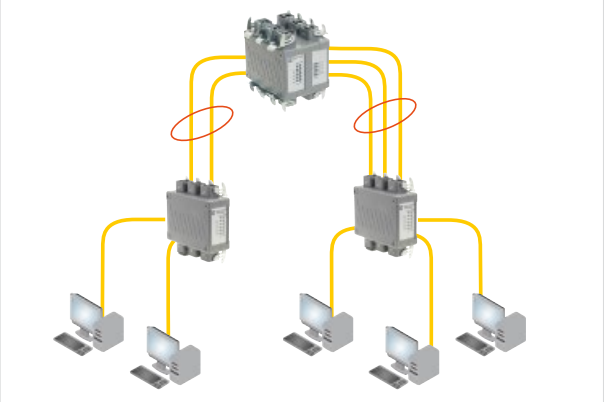
High availability with RSTP

Link Aggregation (LA)

Link Aggregation or trunking is a feature, which allows the combining of several physical network links into a single logical link. This combination brings a lot of advantages to the existing network topology. With Link Aggregation it is clearly possible to increase the bandwidth between to switches to handle heavy network loads at specific points. Furthermore LA offers the possibility to use load balancing on these links. One of the most important benefits is the increased availability between to network devices. Because of the physical redundant link with more than one cable, the connection is still available in case of a link failure. Aggregation groups are formed dynamically using LACP or statically using manual aggregation.

Link Aggregation bietet die folgenden Vorteile:

- Increased bandwidth
- Link redundancy
- High availability
- Load sharing on the individual links
- Aggregating replaces Upgrading



Link Aggregation – Load Balancing, Redundancy, increased bandwidth

Management Functions

Basic Functions		
	Store and Forward Switching Mode	IEEE 802.3
	Manual and Dynamic IP Address Assignment	
Port-Settings	Auto-negotiation on / off	
	Port Speed 10 Mbit/s / 100 Mbit/s	
	Half / Full duplex	
	Port disable / enable	
	Link Up/Down Trap disable / enable	
	Flow Control disable / enable	
Network Discovery	Link Layer Discovery Protocol (LLDP)	802.1AB, 2005
Rate Control	Rate Control per port (Broadcast, Multicast, Unicast)	
File Transfer	Firmware import and export via TFTP and HTTP	
	Configuration import and export via TFTP and HTTP	
Time Settings	Manual time setting	
	Simple Network Time Protocol (SNTP)	RFC 1305, RFC 4330
User Management	Admin, Guest and Service Level	
Service	Service Mode via port 1	
PROFINET		
	PROFINET IO Device Stack[1)]	
Time synchronization		
	Precision Time Protocol[1)]	IEEE 1588, 2008
QoS		
	Quality of Service (QoS)	IEEE 802.1p
	Differentiated services (DiffServ)	RFC 2474, 2475
VLAN		
	Port protocol based VLANs VLAN ID Range: 1 – 4094 Max. number of configured VLANs: 256	IEEE 802.1Q Rev D5.0, 2005
Redundancy		
	Spanning Tree (STP)	IEEE 802.1D (2004)
	Rapid Spanning Tree (RSTP)	IEEE 802.1D (2004)
	Media redundancy protocol[1)2)]	DIN EN 62 439-2
Security		
	Port-Based Network Access Control Port Based Authentication with EAP	802.1X (2004)
	RADIUS Client	RFC 2138
	IP authorized manager	
Link Aggregation		
	Link Aggregation (LACP)	IEEE 802.3ad (2005)
Multicast		
	IGMP Snooping (v1, v2, v3) with support for querier	RFC 1112, 2236, 3376

[1)] … Available for Ha-VIS mCon 3000 Next Generation
[2)] … Licensing via separately available SD card

Management Functions

DHCP		
	DHCP Client	RFC 2131
	DHCP relay agent	RFC 2131
	DHCP Option 82	RFC 3046
Alarm		
	Alarms via E-mail (SMTP) and SNMP Traps	
	Signalling contact for low voltage detection or link break	
Diagnostic		
	Port diagnostic	
	Port Mirroring	
	Switch History	
	MAC Address Table	
	RMON (1,2,3 & 9 groups)	RFC 2819
Management		
	Password protected Web-Management interface	
	SNMP (v1, v2c, v3) agent & MIB support	RFC 1155, 1157, 1212, 1213, 1215, 2089, 2578, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3584
	Command Line Interface (CLI)	
	Pluggable SD card for saving of configuration[1)]	
	Multifunction button[1)]	

[1)] … Available for Ha-VIS mCon 3000 Next Generation

Ethernet Switch
Ha-VIS mCon 3000 Next Generation

Ethernet Switches, managed, for mounting onto top-hat mounting rail in control cabinets

General Description

The fully Managed Ethernet Switches of the product family Ha-VIS mCon 3000 enable the connection of up to 10 network devices (according to type) over RJ45 ports or SFP modules on lowest area.

Degree of protection, mechanical stability and the comprehensive management software provide for high operation safety and meet highest demands.

The Ha-VIS mCon 3000 Ethernet Switches are designed for an effective, industrial and individual use.

The configuraton via SD card or via the Multifunction button enables an easy and fast commisioning in the field.

Comprehensive possibilities of configuration and diagnostic are provided easy via web interface or standardized via SNMP.

The Ethernet Switches of the Ha-VIS mCon 3000 Next Generation family can be used as PROFINET IO devices.

Features

- Full managed Ethernet Switch acc. to IEEE 802.3
- Up to 10 ports, managed, non-blocking
- Store and Forward Switching Mode
- Gigabit Uplink ports, RJ45 and SFP modules
- Auto-crossing, Auto-negotiation, Auto-polarity
- Temperature range -40 °C ... +70 °C
- PROFINET IO device
- Time synchronization via IEEE 1588v2
- Multifunction button for fast commsioning
- SD card slot for storage of the configuration
- Management functions see pages 01.141 and 01.142

Advantages

- Small, robust metal housing
- External SD card for storage of the configuration
- Individual pre-configuration via Multifunction button
- Fast removable Ethernet data links via SFP “Hot-Swap”
- Optimised DIN rail fitting
- EMC, temperature range and mechanical stability meet the highest demands
- Universally applicable: PROFINET, Ethernet/IP or profile neutral

Application fields

- Mechanical engineering
- Robotics
- Industrial automation
- Industrial Network Infrastructure
- Wind power, Solar power
- Maritime

Technical characteristics

Ethernet interface RJ45

Number of ports	
Ha-VIS mCon 3080-A	8x 10/100Base-T(X)
Ha-VIS mCon 3102-AASFP	8x 10/100Base-T(X) 2x 10/100/1000Base-T(X) (Combo ports with SFP slot)
Cable types acc, to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s, 100 Mbit/s or 1000 Mbit/s (RJ45)
Maximum cable length	100 m (Twisted Pair; with Category 5 cable acc. to DIN EN 50 173-1)
Termination	RJ45 (Twisted Pair)
Diagnostics (via LED)	• Status Link – Green • Data transfer (Act) – Green flashing • Data transfer rate (Speed) – 1000 Mbit/s: Green 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	Ring, Line, Star or mixed

Ethernet Interface SFP (mini-GBIC) Fibre Optic and copper

Number of ports	
Ha-VIS mCon 3102-AASFP	2x 100/1000Base (Combo ports with SFP slot)
Data rate	100 Mbit/s, 1000 Mbit/s
Termination	SFP modules according to MSA (Multi Source Agreement)
Diagnostics (via LED)	• Status Link – Green • Data transfer (Act) – Green flashing

Power supply

Nominal input voltage	24 V ⎓
Termination	5-pole screw terminal, pluggable for redundant power supply

Switch

Diagnostics (via LED)	• Devive operates without failures – Green • Power supply in the admissible range – Green • Low voltage – Red • Diagnostics failure – Red • PROFINET failure / diagnosis – Red/Green flashing

Configuration

Slot for SD cards (back side)	• Saving and loading of configuration files • Licence management for MRP
Multifunction button	Individual pre-configuration of software functions

Technical characteristics

Design features

Housing material	Aluminium, anodized
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
Degree of protection acc. to DIN 60 529	IP30
Mounting	• 35 mm top-hat rail acc. to EN 60 715 • Panel mounting, vertical assembly

Environmental conditions

Operating temperature	–40 °C … +70 °C
Storage temperature	–40 °C … +85 °C
Relative humidity	10 % … 95 % (non-condensing)

Mechanical solidness

Shock	IEC 60 068-2-27 • 15 g • 11 ms duration • Shock form: Half sine-wave
Vibration	EN 60 068-2-6
Rail-standard	EN 50 155, Class 1

EMC Interference immunity (EN 61 000-6-2, EN 50 121-3-2)

		Industrial	*Railway*	*Maritime*
Electrostatic discharge (ESD)	EN 61 000-4-2	Criterion B	Criterion B	Criterion B
Electromagnetic field	EN 61 000-4-3	Criterion A	Criterion A	Criterion A
Fast transients (Burst)	EN 61 000-4-4	Criterion B	Criterion A	Criterion B
Impulse voltages (Surge)	EN 61 000-4-5	Criterion B	Criterion B	Criterion B
Conducted emissions	EN 61 000-4-6	Criterion A	Criterion A	Criterion A
Rail applications	EN 50 121-3-2			

EMC interference (EN 61 000-6-4, EN 55 022, EN 50 121-3-2)

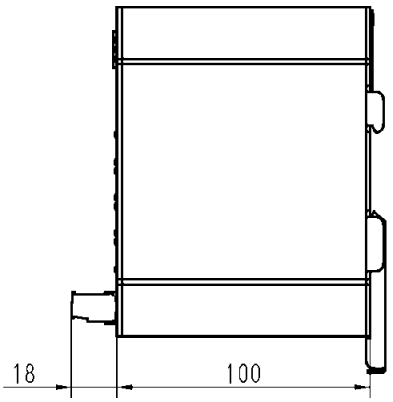
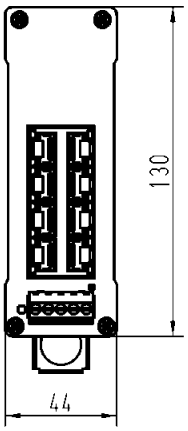
Management software	Full managed via web interface, SNMP and CLI

Ethernet Switch
Ha-VIS mCon 3080-A

8-port Ethernet Switch, full managed
for mounting onto top-hat mounting rail in control cabinets

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair)
Nominal input voltage range	24 V / 48 V ⎓
Permissible range (min/max)	12 V … 60 V ⎓
Termination	5-pole screw terminal, pluggable redundant power supply
Input current	approx. 170 mA (at 24 V ⎓) approx. 90 mA (at 48 V ⎓)
Housing material	Aluminium, anodized
Dimensions (W x H x D)	44 x 130 x 100 mm (without connectors)
Weight	approx. 0.450 kg
Operating temperature	–40 °C … +70 °C
MTBF	678.372 h
Approvals	UL 508, DNV
Management	fully Managed via Web interface, SNMP and CLI Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3080-A Ethernet Switch, full managed 8 RJ45 ports including Set for assembly on standard rail	20 76 108 4000		

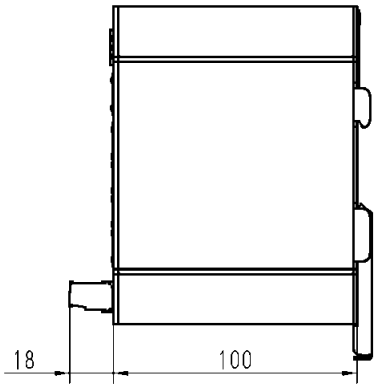
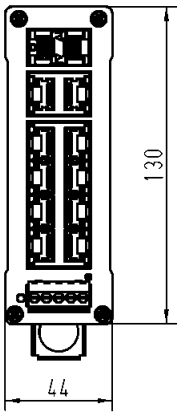
Ha-VIS mCon 3102-AASFP

Ethernet Switch
Ha-VIS mCon 3102-AASFP

10-port Ethernet Switch with 2 ports Gigabit Ethernet, full managed
for mounting onto top-hat mounting rail in control cabinets

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair) 2x 10/100/1000Base-T(X) / RJ45 (Twisted Pair)
Number of slots SFP / Termination	2x 100/1000Base / Combo ports
Nominal input voltage range	24 V / 48 V ⎓
Permissible range (min/max)	12 V … 60 V ⎓
Termination	5-pole screw terminal, pluggable redundant power supply
Input current	approx. 280 mA (at 24 V ⎓) approx. 140 mA (at 48 V ⎓)
Housing material	Aluminium, eloxiert
Dimensions (W x H x D)	44 x 130 x 100 mm (incl. cap, without connectors)
Weight	approx. 0.485 kg
Operating temperature	–40 °C … +70 °C
MTBF	597.974 h
Approvals	UL 508, DNV
Management	fully Managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3102-AASFP Ethernet Switch, full managed 8 ports Fast Ethernet RJ45 2 ports Gigabit Ethernet (combo SFP) including Set for assembly on standard rail	20 76 112 4300		

Ethernet Switch
Ha-VIS mCon 3000
Ethernet Switches, managed,
for mounting onto top-hat mounting rail in control cabinets

General description

The fully managed Ethernet Switches of the product family Ha-VIS mCon 3000 enable the connection of up to 10 network devices (according to type) over Twisted Pair cables and fibre-optic cables (Multi- and Singlemode). The Ha-VIS mCon 3000 Ethernet Switch family, with its integrated LEDs on each port, supports fast and easy network diagnosis.

The Ha-VIS mCon 3000 Ethernet Switches are designed for an effective, industrial and individual use. They support both SNMP and an easy Web interface for management functions.

Features

- Ethernet Switch acc. to IEEE 802.3
- Store and Forward Switching Mode
- Up to 10 ports, managed, non-blocking
- Auto-crossing, Auto-negotiation, Auto-polarity
- Temperature range -40 °C ... +70 °C

Advantages

- Robust metal housing
- EMC, temperature range and mechanical stability meet the toughest demands
- Integrated management functions

Application fields

- Industrial automation
- Automotive industry
- Wind power
- Power distribution systems

Technical characteristics

Ethernet interface – RJ45

Number of ports	6x / 8x / 10x 10/100Base-T(X) 2x 10/100/1000-Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s, 100 Mbit/s or 1000 Mbit/s (RJ45)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	RJ45 (Twisted Pair)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 1000 Mbit/s: Green 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Ring • Star • mixed

Power supply

Input voltage	24 V DC (9.6 V ... 60 V DC)
Termination	5-pole, pluggable screw contact, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination	3-pole pluggable screw contact
Diagnostics (LED)	Error - Red

Design features

Housing material	metal
Dimensions (W x H x D)	60 x 132 x 104 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP30
for Ha-VIS mCon xxxx-AEx only	IP20
Assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, vertical assembly
Weight	approx. 0.6 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics F.O. termination

Ethernet interface – F.O.

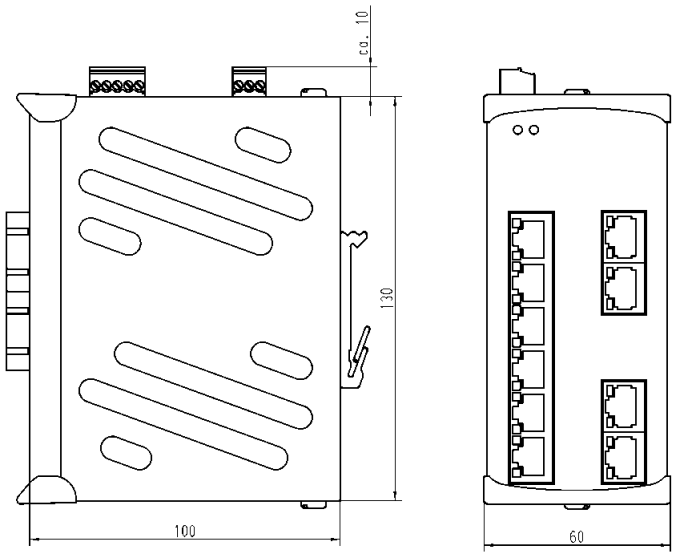
Number of ports	2x / 3x 100Base-FX
Cable types according to IEEE 802.3	• Multimode fibre, 1300 nm; 50 µm / 125 µm or 62.5 µm / 125 µm • Singlemode fibre, 1300 nm; 9 µm (for AF versions only)
Data rate	100 Mbit/s
Maximum cable length	• 2000 m (Multimode) • 15 km (Singlemode)
Termination	SC-D female / ST female
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing
Wavelength	1300 nm
Transceive power T(X) max. (dynamic)	• -14 dBm (50 µm / 125 µm) • -14 dBm (62.5 µm / 125 µm)
Transceive power T(X) min.	• -23.5 dBm (50 µm / 125 µm) • -20 dBm (62.5 µm / 125 µm)
Receive power RX typical (dynamic)	• -33.9 dBm (window) • -35.2 dBm (centre)
Receive power RX max. (dynamic)	-14 dBm
Signal detection (dynamic)	-33 dBm
Topology	• Line • Ring • Star • mixed

Ethernet Switch
Ha-VIS mCon 3100-AV

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	10x 10/100Base-T(X) / RJ45 (Twisted Pair)
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 190 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV
MTBF	625.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

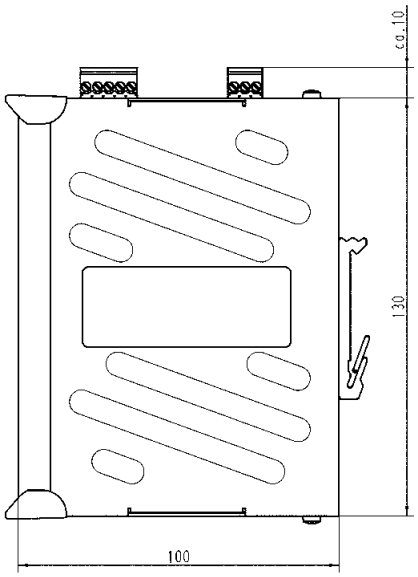
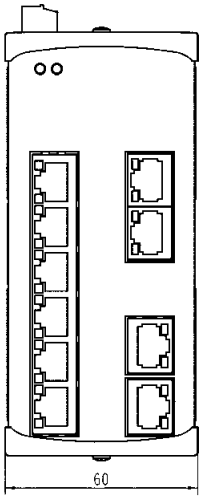
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3100-AV Ethernet Switch with 10 RJ45 ports	20 76 110 4002		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 3100-AAV

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 2 Gigabit ports, with extended temperature range

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair) 2x 10/100/1000-Base-T(X) / RJ45 (Twisted Pair)
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 260 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 60 950-1; DNV
MTBF	720.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

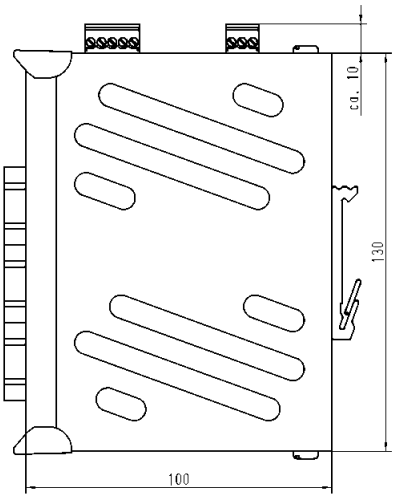
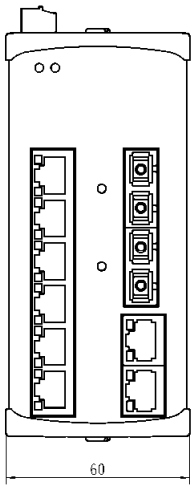
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3100-AAV Ethernet Switch with 10 RJ45 ports	20 76 110 4003		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 3063-ADV

9-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 3 F.O. ports (SC, MM)

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	6x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	3x 100Base-FX / SC-D female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 320 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1
MTBF	710.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

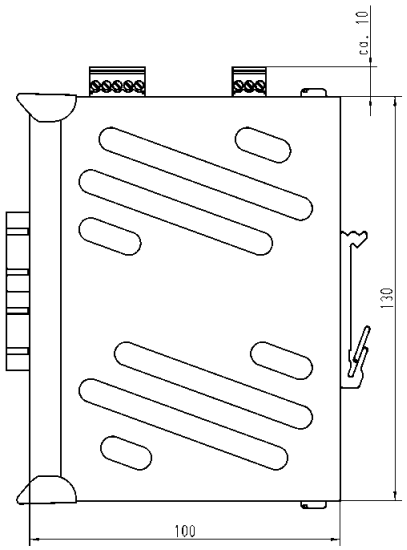
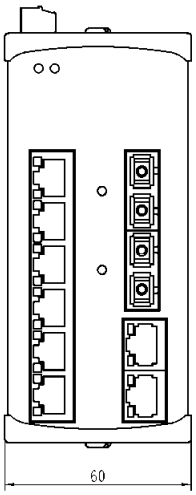
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3063-ADV Ethernet Switch with 6 RJ45 ports 3 F.O. ports	20 76 109 4101		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 3082-ADV

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 2 F.O. ports (SC, MM)

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	2x 100Base-FX / SC-D female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 290 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV
MTBF	560.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

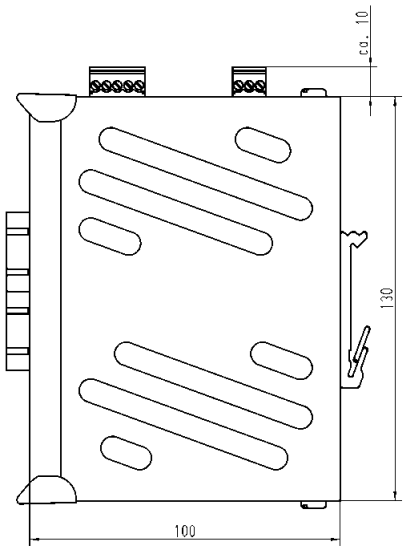
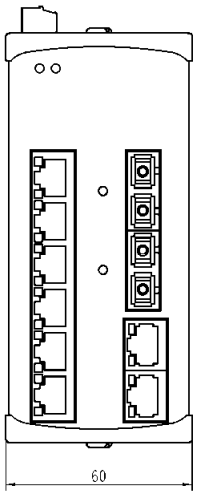
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3082-ADV Ethernet Switch with 8 RJ45 ports 2 F.O. ports	20 76 110 4101		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 3082-AFV

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 2 F.O. ports (SC, SM)

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	2x 100Base-FX / SC-D female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 270 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	cUL (in preparation)
MTBF	560.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

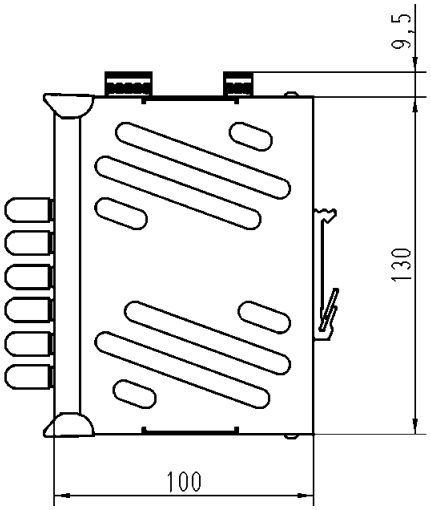
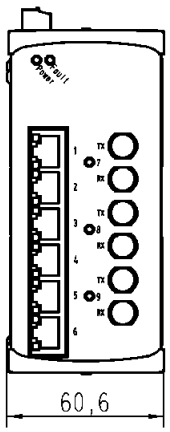
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3082-AFV Ethernet Switch with 8 RJ45 ports 2 F.O. ports	20 76 110 4102		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 3063-AEV

9-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 3 F.O. ports (ST, MM)

Managed	IP20	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	6x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	3x 100Base-FX / ST female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 320 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1
MTBF	710.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

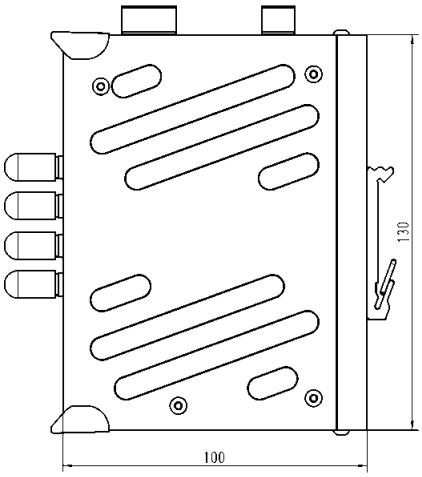
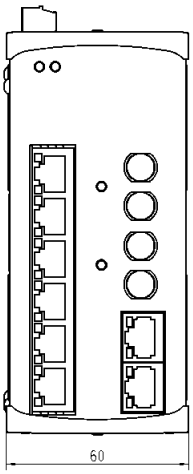
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3063-AEV Ethernet Switch with 6 RJ45 ports 3 F.O. ports	20 76 109 4201		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 3082-AEV

10-port Ethernet Switch for mounting onto top-hat mounting rail in control cabinets, including 2 F.O. ports (ST, MM)

Managed	IP20	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / RJ45 (Twisted Pair)
Number of ports, F.O. / Termination	2x 100Base-FX / ST female
Input voltage / Termination	24 V DC / 5-pole, pluggable screw contact, for redundant power supply
Permissible range (min./max.)	9.6 V ... 60 V DC
Input current	approx. 290 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A 3-pole pluggable screw contact
Housing material	metal, powder-coated
Dimensions (W x H x D)	60 x 132 x 104 mm (including cap, without connectors)
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
Approvals	UL 508; UL 60 950-1; DNV
MTBF	560.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 3082-AEV Ethernet Switch with 8 RJ45 ports 2 F.O. ports	20 76 110 4201		
including set for assembly on standard rail			

Ethernet Switch
Ha-VIS mCon 4000
Ethernet Switches, managed, for flat wall mounting

General description

The Fast Ethernet Switches of the product family Ha-VIS mCon 4000 are recommended for use in the widest range of industrial applications and support Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s). The product family enables the connection of up to 8 network devices over Twisted Pair cables.

Mechanical stability and temperature range meet the highest demands. The robust M12 interface shows its adantages especially in applications at risk of vibrations.

The Ethernet Switches support both SNMP and an easy Web interface for management functions.

Features

- Ethernet Switch according to IEEE 802.3
- Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s)
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link status, Data, Power)
- Store and Forward Switching Mode, non blocking
- Mounting onto wall, optionally onto top-hat mounting rail

For Ethernet Switch Ha-VIS eCon 4080-BPoE1 only:

- PoE support

Advantages

- Robust metal housing and flat housing style
- EMC, temperature range and mechanical stability meet the toughest demands
- Wide range for power supply input
- Additonal type test according to EN 50 155 and EN 50 121-3-2

Application fields

- Railway applications
- Industrial automation
- Automotive industry
- Wind power

Technical characteristics

Ethernet interface – M12

Number of ports	8x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	M12 D-coding (female)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow, 10 Mbit/s: Green • Error - Red
Topology	• Line • Ring • Star • mixed

Power supply

Input voltage	24 / 48 V DC (12 V ... 60 V DC) - redundant
for Ha-VIS mCon 4080-B3V only	72 / 110 V DC (50.4 V ... 137.5 V DC) - redundant
Termination	M12 A-coding, male, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Design features

Housing material	metal
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP40
Assembly	Wall mounting, flat assembly
Weight	approx. 0.85 kg

Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics Ha-VIS mCon 4080-BPoE1V

Ethernet interface – M12

Number of ports	8x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	M12 D-coding
Diagnostics (LED)	
Link	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: Green
PoE	• no PoE device - OFF • PoE device with failure - Red • PoE device connected - Green
Topology	• Line • Star • mixed

Power supply

Input voltage	
mode PoE	48 V DC (46 V ... 55 V DC)
mode Non-PoE	24 / 48 V DC (12 V ... 55 V DC)
Termination	M12 A-coding, male, for redundant power supply
Diagnostics (LED)	Pwr X9 (switch) voltage – LED Green Pwr PoE (mode PoE) > 46 V DC – LED Green State < 46 V DC – LED Red

Design features

Housing material	metal
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP30
Assembly	Wall mounting, flat assembly
Weight	approx. 0.85 kg

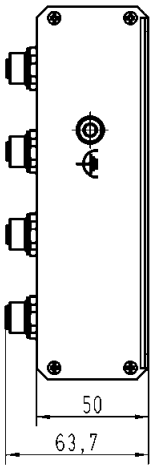
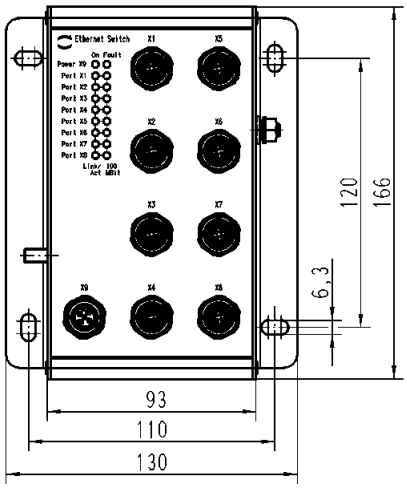
Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Ethernet Switch
Ha-VIS mCon 4080-B1V
8-port Ethernet Switch for flat installation

Managed	IP40	PROFINET compatible	EtherNet/IP compatible
		X	X

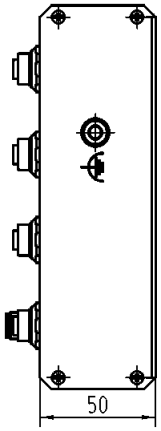
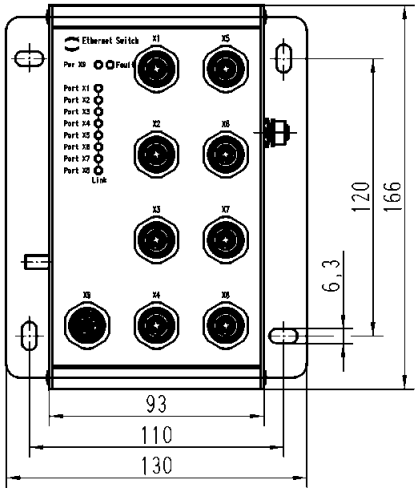
Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 165 mA (at 24 V DC)
Housing material	metal, powder-coated
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Weight	approx. 0.85 kg
Working temperature	-40 °C ... +70 °C
Approvals	e1
MTBF	489.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 4080-B1V Ethernet Switch with 8 ports M12 D-coding	20 77 208 4001		
for wall mounting			

Ethernet Switch
Ha-VIS mCon 4080-B3V
8-port Ethernet Switch (110 V DC) for flat installation

Managed	IP40	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	72 / 110 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	50.4 V ... 137.5 V DC
Input current	approx. 48 mA (at 110 V DC)
Housing material	metal, powder-coated
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Weight	approx. 0.85 kg
Working temperature	-40 °C ... +70 °C
MTBF	446.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 4080-B3V Ethernet Switch with 8 ports M12 D-coding	20 77 208 4003		
for wall mounting			

Ethernet Switch
Ha-VIS mCon 4080-BPoE1V
8-port Ethernet Switch for flat installation

Managed	IP30	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding (female)

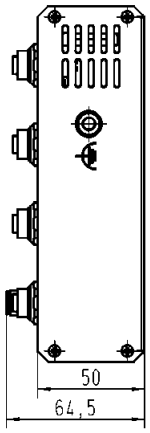
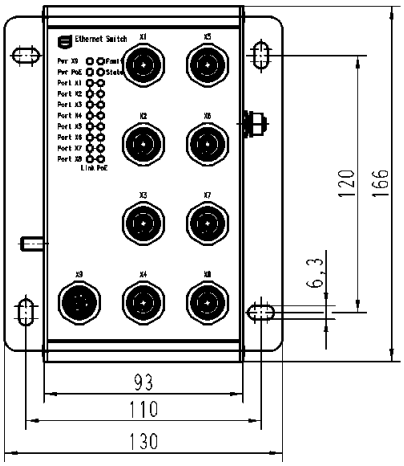
mode PoE

Input voltage / Termination	48 V DC
Permissible range (min./max.)	46 V ... 55 V DC
Input current	max. 3.0 A at 48 V DC with PoE; load 350 mA each port

mode Non-PoE

Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 55 V DC
Input current	approx. 350 mA (at 24 V DC)

Housing material	metal, powder-coated
Dimensions (W x H x D)	130 x 166 x 50 mm (without connectors)
Weight	approx. 0.85 kg
Working temperature	-40 °C ... +70 °C
MTBF	296.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 4080-BPoE1V Ethernet Switch with 8 ports M12 D-coding	20 77 208 4009		
for wall mounting			

Ethernet Switch
Ha-VIS mCon 7000
Ethernet Switches, managed, for harsh industrial environments

General description

If additional services for networks in harsh industrial environments (filtering, prioritisation, topology), or individual network configurations are required, then the Ethernet Switches of the product family Ha-VIS mCon 7000 come into play.

These managed switches allow the connection of up to 10 end-units, according to switch type, over IEC 802.3 Twisted-Pair cabling. Protection class, temperature range and mechanical stability satisfy the highest requirements. These Ethernet Switches can therefore be directly used in industrial environments.

They support both SNMP and an easy Web interface for management functions.

Features

- Ethernet Switch acc. to IEEE 802.3
- Store and Forward Switching Mode
- 5 or 10 ports, managed, non-blocking
- Auto-crossing, Auto-negotiation, Auto-polarity
- Ethernet (10 Mbit/s), Fast Ethernet (100 Mbit/s) and Gigabit Ethernet (1000 Mbit/s)
- Diagnostic LEDs (Link status, Data, Power, Error)

Advantages

- High degree of protection IP65 / IP67
- Robust metal housing, zinc die-cast
- Can be used directly in industrial environments
- EMC, temperature range and mechanical stability meet the toughest demands
- Integrated management functions

Application fields

- Industrial automation
- Railway applications
- Automotive industry
- Wind power

Technical characteristics

Ethernet interface – RJ45

Number of ports	8x 10/100Base-T(X) 2x 10/100/1000-Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s, 100 Mbit/s or 1000 Mbit/s (for Ha-VIS mCon 7100-AAV only) (Han® 3 A RJ45)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	Han® 3 A RJ45 (female)
Diagnostics (LED)	• Status Link (Link/Act) - terminal device is connected: Green data transmission in process: Green flashing • Data transfer rate (Speed) - 1000 Mbit/s: Green 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Ring • Star • mixed

Power supply

Input voltage	24 / 48 V DC (12 V ... 60 V DC) - redundant
Termination	Han® 4 A, male, for redundant power supply (including fixing screw 09 20 000 9918 to maintain IP67)
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination, device-side	Han® 3 A, male
Diagnostics (LED)	Error - Red

Design features

Housing material	zinc die-cast
Dimensions (W x H x D)	90 x 120 x 87 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP65 / IP67
Assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, vertical assembly
Weight	approx. 1.4 kg

Environmental conditions

Working temperature	-40 °C ... +70 °C
Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Technical characteristics Ha-VIS mCon 7050-B1V, mCon 7100-B1V

Ethernet interface – M12

Number of ports	5x / 10x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination, device-side	M12 D-coding (female)
Diagnostics (LED)	• Status Link (Link/Act) - terminal device is connected: Green data transmission in process: Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Ring • Star • mixed

Power supply

Input voltage	24 / 48 V DC (12 V ... 60 V DC) - redundant
Termination, device-side	M12 A-coding, male, for redundant power supply
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination, device-side	M12 D-coding, male
Diagnostics (LED)	Error - Red

Design features

	Ha-VIS mCon 7050	Ha-VIS mCon 7100
Housing material	zinc die-cast	zinc die-cast
Dimensions (W x H x D)	45 x 120 x 87 mm (without connectors)	90 x 120 x 87 mm (without connectors)
Degree of protection acc. to DIN EN 60 529	IP65 / IP67	IP65 / IP67
Assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, flat assembly • Wall mounting, vertical assembly	• 35 mm top-hat rail acc. to EN 60 715 • Wall mounting, vertical assembly
Weight	approx. 0.8 kg	approx. 1.4 kg

Environmental conditions

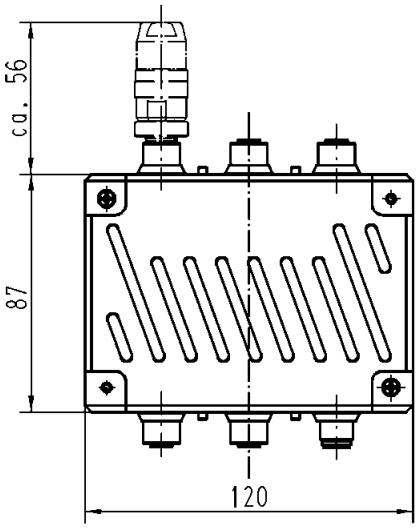
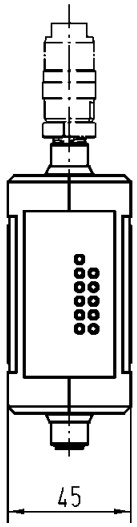
Working temperature	-40 °C ... +70 °C
Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Ethernet Switch
Ha-VIS mCon 7050-B1V

5-port Ethernet Switch with extended input voltage range for industrial Ethernet networks, with M12 system cabling

Managed	IP65 / IP67	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	5x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 160 mA (at 24 V DC)
Housing material	zinc die-cast
Dimensions (W x H x D)	45 x 120 x 87 mm
Weight	approx. 0.8 kg
Working temperature	-40 °C ... +70 °C
Approvals	e1
MTBF	462.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

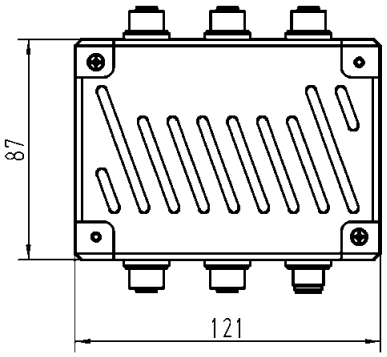
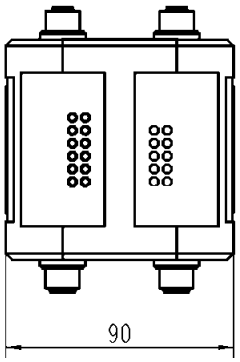
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 7050-B1V Ethernet Switch with 5 ports M12 D-coding	20 70 305 4943		

Ethernet Switch
Ha-VIS mCon 7100-B1V

10-port Ethernet Switch for industrial Ethernet networks,
with M12 system cabling

Managed	IP65 / IP67	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	10x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 180 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A M12 D-coding, male
Housing material	zinc die-cast
Dimensions (W x H x D)	90 x 120 x 87 mm
Weight	approx. 1.4 kg
Working temperature	-40 °C ... +70 °C
MTBF	378.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

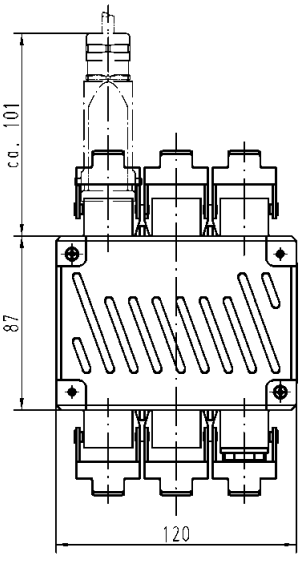
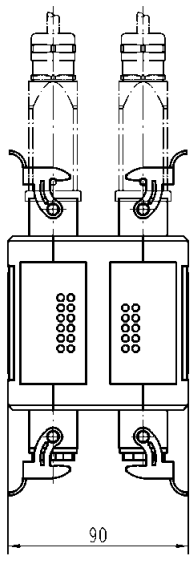
Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 7100-B1V Ethernet Switch with 10 ports M12 D-coding	20 70 310 4945		

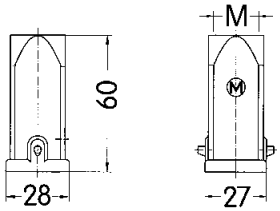
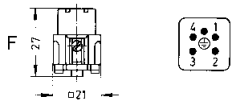
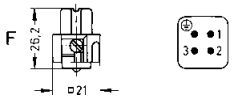
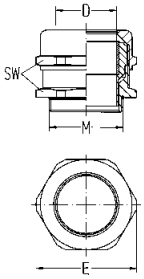
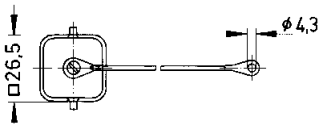
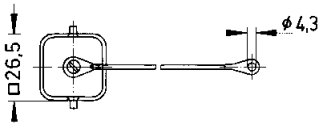
Ethernet Switch
Ha-VIS mCon 7100-AAV

10-port Ethernet Switch for use in harsh industrial environments,
with 2 Gigabit ports

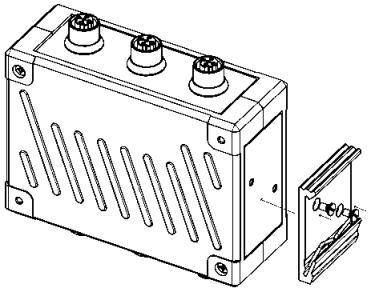
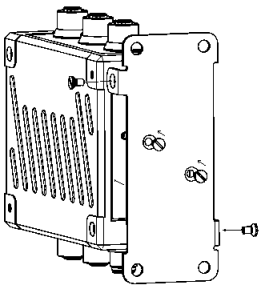
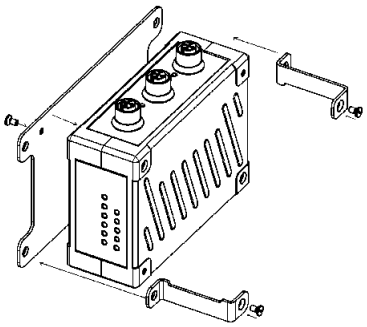
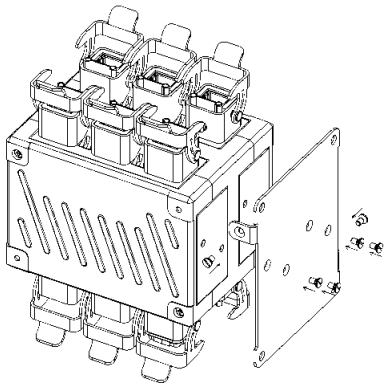
Managed	IP65 / IP67	PROFINET compatible X	EtherNet/IP compatible X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / Han® 3 A RJ45 (female) 2x 10/100/1000-Base-T(X) / Han® 3 A RJ45 (female)
Input voltage / Termination	24 / 48 V DC / Han® 4 A, male, for redundant power supply
Permissible range (min./max.)	12 V ... 60 V DC
Input current	approx. 260 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A Han® 3 A, male
Housing material	zinc die-cast
Dimensions (W x H x D)	90 x 120 x 87 mm
Weight	approx. 1.4 kg
Working temperature	-40 °C ... +70 °C
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 7100-AAV Ethernet Switch with 10 RJ45 ports	20 70 310 4924		

Identification	Part number	Drawing	Dimensions in mm
Han A® Connectors and Protection covers			
Hood Metal, straight, metric	19 20 003 1440[1)]		
Female insert Han® 4 A for power supply	09 20 004 2711		
Female insert Han® 3 A for Alarm signalling contact (Ha-VIS eCon 7100-AA only)	09 20 003 2711		
Cable gland Metal, IP65, metric, M20, cable Ø: 5 mm ... 9 mm	19 00 000 5080		
Protection cover Han® 3 A, female insert	09 20 003 5426		
Protection cover Han® 3 A, male insert for RJ45 interface	09 20 003 5425		
HARAX® Connectors and Protection covers			
HARAX® M12-L Circular Connectors A-coding	21 03 212 2305		
HARAX® M12-L Circular Connectors D-coding, female (Ha-VIS mCon 7100-B1V only)	21 03 281 2405		
Protection cover M12 for Ethernet	21 01 000 0003		

1) ... Order insert fixing screw 09 20 000 9918 separately

Identification	Part number	Drawing	Dimensions in mm
Assembly			
Set for assembly on standard rail according to DIN EN 60 715	20 80 000 0003		
Set for panel mounting vertical assembly	20 80 010 0001		
Set for panel mounting flat assembly	20 80 024 0002		
Set for panel mounting Ha-VIS mCon 7100 vertical assembly	20 80 010 0002		

Ethernet Switch
Ha-VIS mCon 9000
Ethernet Switches, managed, for installation in a 19’’ rack

General description

The Ethernet Switches of the product family Ha-VIS mCon 9000 are recommended for use in the widest range of industrial applications and support Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s) . The product family enables the connection of up to 8 network devices over Twisted Pair cables.

The Ha-VIS mCon 9000 Ethernet Switch family, with its integrated LEDs on each port, supports fast and easy network diagnosis. The Ha-VIS mCon Ethernet Switch operates in Store and Forward Switching mode and supports Auto-crossing, Auto-negotiation and Auto-polarity.

Features

- Ethernet Switch acc. to IEEE 802.3
- Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s)
- Auto-crossing, Auto-negotiation, Auto-polarity
- Diagnostic LEDs (Link status, Data, Power)
- Store and Forward Switching Mode, non-blocking
- Pluggable in 19” racks
- Power input on the front, no backplane necessary

Advantages

- Robust metal housing
- Integrated management functions
- EMC, temperature range and mechanical stability meet the toughest demands

Application fields

- Railway applications
- Industrial automation
- Automotive industry
- Wind power
- Power distribution systems

Technical characteristics

Ethernet interface – M12

Number of ports	7x / 8x 10/100Base-T(X)
Cable types according to IEEE 802.3	Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP), Category 5
Data rate	10 Mbit/s or 100 Mbit/s (M12 D-coding)
Maximum cable length	100 m (Twisted Pair, with cable Category 5 acc. to DIN EN 50 173-1)
Termination	M12 D-coding (female)
Diagnostics (LED)	• Status Link - Green • Data transfer (Act) - Green flashing • Data transfer rate (Speed) - 100 Mbit/s: Yellow 10 Mbit/s: OFF
Topology	• Line • Ring • Star • mixed

Power supply

Input voltage	24 / 48 V DC (8 V ... 60 V DC) - redundant
Termination	• M12 A-coding, male or • DIN frame connector, type F
Diagnostics (LED)	Power supply - LED Green

Alarm signalling contact (for Ha-VIS mCon 9080-B1V only)

Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A
Termination, device-side	DIN frame connector, Type F
Diagnostics (LED)	Error - Red

Design features

Housing material	aluminium
Degree of protection acc. to DIN EN 60 529	IP20 (front side IP40, when mounted)
Assembly	19” rack, 3 U
Weight	approx. 0.6 kg

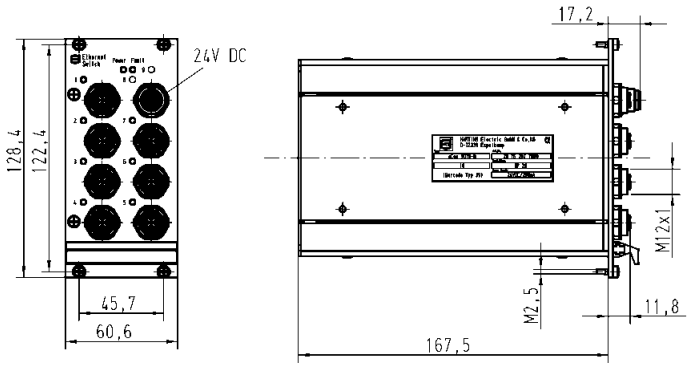
Environmental conditions

Stock temperature	-40 °C ... +85 °C
Relative humidity	10 % ... +95 % (non-condensing)

Ethernet Switch
Ha-VIS mCon 9070-BV
7-port Ethernet Switch for installation in a 19” rack

Managed	IP20	PROFINET compatible	EtherNet/IP compatible
		X	X

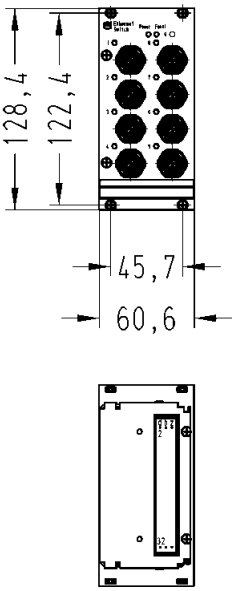
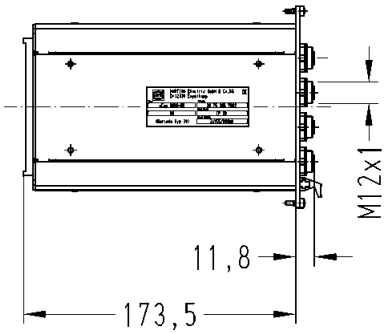
Number of ports, Copper / Termination	7x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / M12 A-coding, male
Permissible range (min./max.)	8 V ... 60 V DC
Input current	approx. 130 mA (at 24 V DC)
Housing material	aluminium, anodised
Dimensions (W x H x D)	60.6 mm (3 U) x 128.4 mm (12 HP) x 167.5 mm
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
MTBF	667.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 9070-BV Ethernet Switch with 7 ports M12 D-coding	20 76 207 7002		

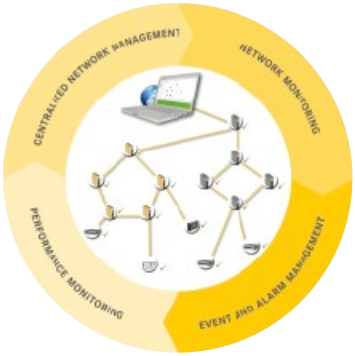
Ethernet Switch
Ha-VIS mCon 9080-B1V
8-port Ethernet Switch for installation in a 19'' rack

Managed	IP20	PROFINET compatible	EtherNet/IP compatible
		X	X

Number of ports, Copper / Termination	8x 10/100Base-T(X) / M12 D-coding (female)
Input voltage / Termination	24 / 48 V DC / DIN frame connector, Type F
Permissible range (min./max.)	8 V ... 60 V DC
Input current	approx. 130 mA (at 24 V DC)
Alarm signalling contact	Change-over contact, potential-free, 24 V DC / 0.5 A DIN frame connector, Type F
Housing material	aluminium, anodised
Dimensions (W x H x D)	60.6 mm (3 U) x 128.4 mm (12 HP) x 173.5 mm
Weight	approx. 0.6 kg
Working temperature	-40 °C ... +70 °C
MTBF	631.000 h
Management	fully managed via Web interface and SNMP Functions see pages 01.141 and 01.142

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS mCon 9080-B1V Ethernet Switch with 8 ports M12 D-coding	20 76 208 7002		

General Description



The Ha-VIS Dashboard acts as central operating and management software for Ethernet networks. The software is developed especially for monitoring, setting up, and maintaining complex and powerful IP-based communication networks.

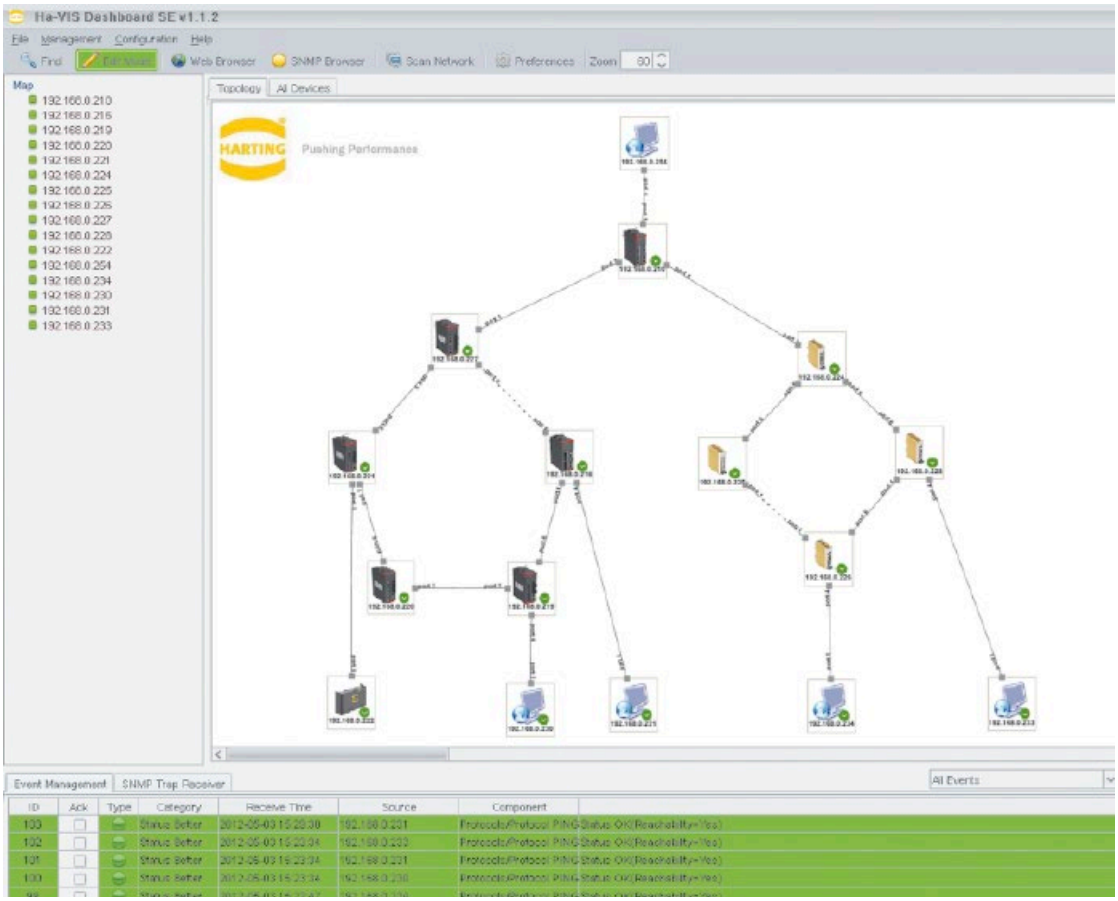
The Ha-VIS Dashboard detects managed network devices and is capable of representing the network topology automatically. All intelligent HARTING network devices can be centrally monitored and administrated.

A list of individual devices and a topology overview are displayed. A search function is also available for these devices.

The software displays ring topologies recognized by HARTING switches using the Rapid Spanning Tree Protocol.

HARTING's Ha-VIS Dashboard displays connectivity interruptions within the topology and lists them in an event log. Events (including SNMP traps) can be configured to trigger further actions such as sending e-mails or executing programs.

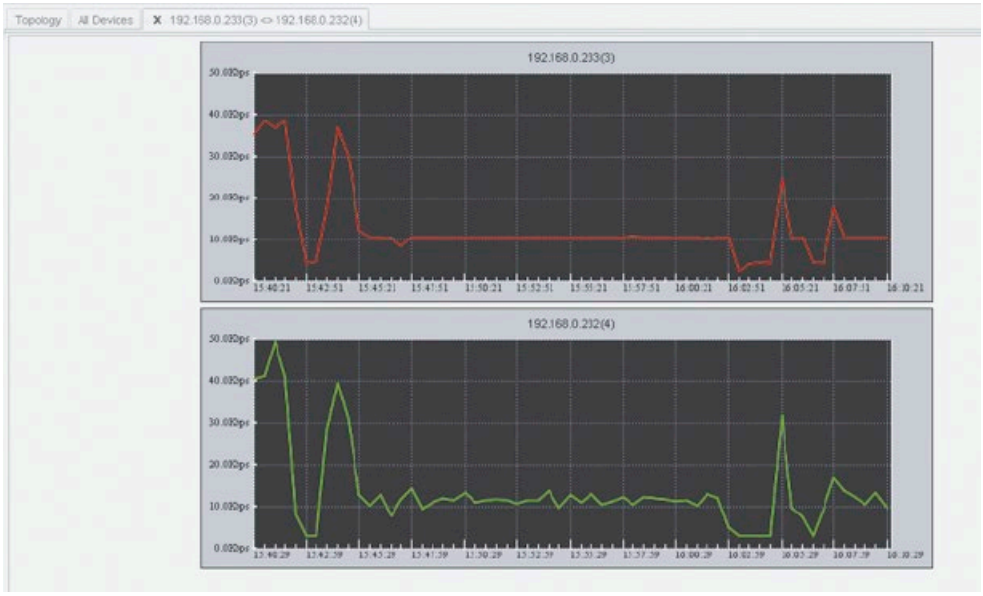
To improve clarity, events which have already been processed can be manually confirmed by the user. Custom filters can be created to filter out certain types of event messages



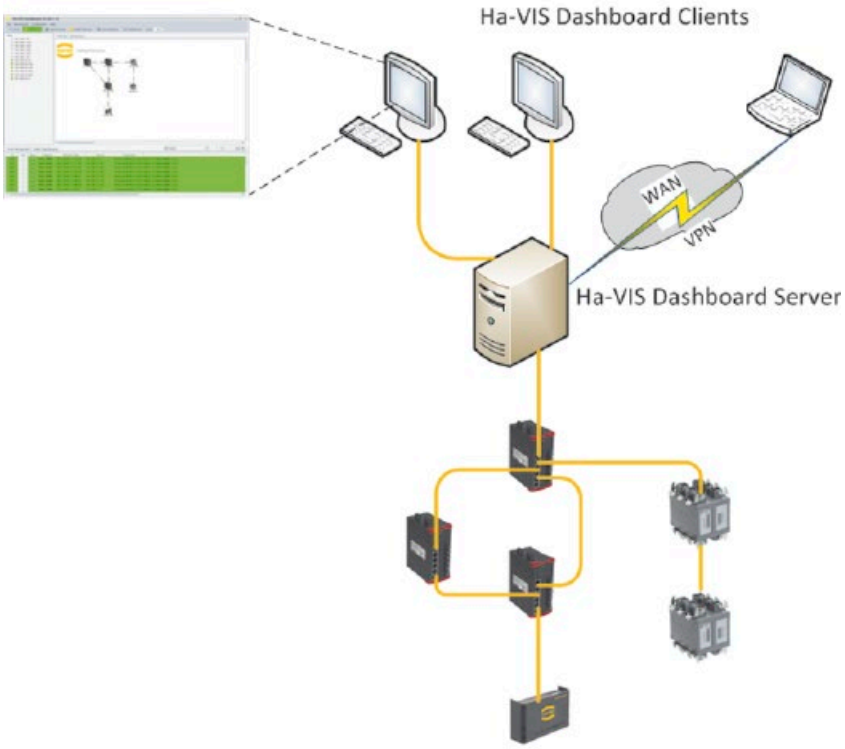
The Ha-VIS Dashboard features web-based configuration, SNMP, Telnet and SSH for configuring network devices.

The software provides centralized monitoring and configuring for an Ethernet network with up to 256 network devices. The Ha-VIS Dashboard also enables you to analyse the network load by illustrating the link and port based loads in a graph over a period of 30 minutes.

General description



You can also configure the Ha-VIS Dashboard so that external programs are integrated into its context menu. This feature allows the Ha-VIS Dashboard to be used together with other applications in a centralized display and management software system.



The Ha-VIS Dashboard can be installed as a local installation or as a server-client application, depending on your requirements. The server-client installation minimizes the network traffic generated by the monitoring process and centralizes data storage, since the key processes all run on a central server.

A VPN connection from the client can be used to establish a wide-area network (WAN) link so that the full functionality of Ha-VIS Dashboard is available on the client.

Technical Characteristics

Functionality

- Centralized management application for HARTING network devices
- Network topology visualization with all managed network devices
- Automatic topology detection based on LLDP
- Manages up to 256 network devices (basic version: 16)
- Third party devices can be included
- Link down detection and visualization
- Event logging
- Event triggered email messages or call of executable files are possible
- Possible to configure devices via SNMP, Telnet, SSH or web interface
- SNMP Trap handling
- Traffic monitoring per connection
- Possible to start up external applications
- Device images and background image are changeable
- Server-Client application with up to 5 parallel clients

Hardware

- CPU: Minimum 2 core processor with 2.5 GHz, x86 or x64 compatible
- RAM: Minimum 1 GB
- Hard Drive: Minimum 1 GB

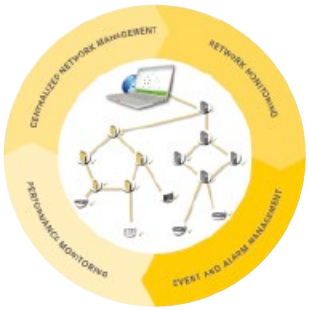
Software

Operating Systems

- Windows XP
- Windows 7
- Windows Server 2003
- Windows Server 2008

Java

- Java Runtime Version 1.6.0_29 or newer



Ha-VIS Dashboard

Advantages

- **Centralized management for managed Ethernet devices**
- **Network monitoring**
- **Event and alarm management**
- **Performance monitoring**

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS Dashboard *			
Ha-VIS Dashboard License 64	20 16 111 2110		
Ha-VIS Dashboard License 128	20 16 111 3110		
Ha-VIS Dashboard License 256	20 16 111 4110		

* ... The basic version is included in the scope of delivery of Ethernet Switches of the Ha-VIS mCon series.

Available July 2015

Energy Management System

Advantages

- User-defined reports in various formats, with periodic automatic shipping: load profile curve, ABC analysis, Sankey diagram, heat map analysis, etc.
- Formula-based performance measurement system
- Monitoring of systems, measurements and metrics; with user-group alarm functionality
- Wide variety of interfaces: Modbus RTU and TCP, mbus, S0, CSV, SQL, OPC-UA, etc.
- Every Ha-VIS smartPN unit has digital outputs which can be switched automatically and manually.
- Complete web-based system including SQL database

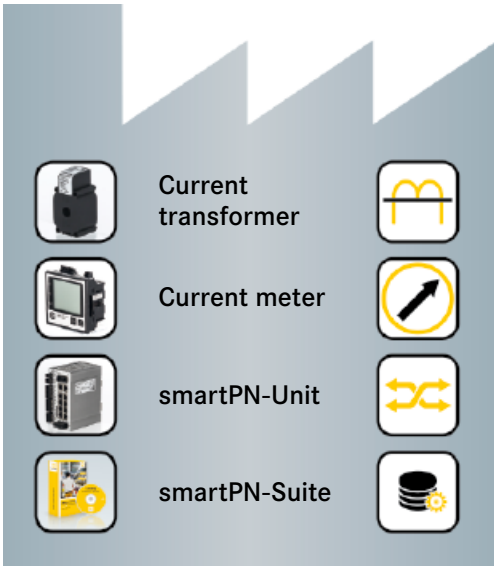
General description

Companies nowadays must monitor and actively manage their energy consumption and associated costs. The smart Power Networks system provides the basis for measuring all relevant energy flows and for optimising the the data in a beneficial way. Measuring equipment is interfaced with smart Power Network Units which monitor, convert and forward their data over the Ethernet to centralized software modules. Our integrated network switch can be used to expand your network and to enhance your management capabilities.

The web-based software can be configured to fit your requirements. It provides a messaging/alarm system, evaluative functionality, and a reporting function for automatically generating periodic user-defined reports. The live-view function enables you to analyse live measurement values.

This system provides the necessary conditions for a DIN EN ISO 50 001 certification.

Identification	Part No.	Drawing
Ha-VIS TD 64:1 AS		
Current transformer with 64:1 A ratio - Additional types available on request -	20 74 000 4101	
Ha-VIS UMG 96 RM		
3-phase current meter - Additional types available on request -	20 74 000 3210	
Ha-VIS smartPN Unit		
Managed switch with interfaces for recording measurement data	20 74 112 4611	
Ha-VIS smartPN Suite		
smart Power Networks software	20 74 000 5110	



System description

Measuring

The key to energy management is being able to record all of the company's relevant consumption-based power data. The power usage of your main consumer loads must be measured and analysed for optimisation potential. In addition to the electrical loads which are recorded using these current transformers and meters, you should also be able to measure air consumption, heating energy and cooling capacity. This is why the smart Power Network provides all standard industrial interfaces for connecting any of your existing and other conventional meters.

Collecting data

The smartPN unit collects this measurement data, validates it, and checks that it is within the specified limits. The data is then forwarded via TCP/IP to your database. The data can be saved to the unit itself if your database is unreachable. The smartPN unit integrates into your existing network infrastructure so that you can use it to capture measurement data wherever you have network connectivity. The integrated switch also permits you to expand your network and connect to network-compliant meters directly. The management functionality (including RSTP, MRP and VLAN) makes it is easy to use in a modern industrial network environment.

Evaluating

Data is processed in the central module of the Ha-VIS smartPN software suite and then displayed using the web interface. This is where consistency checks are run, metrics and virtual measuring points are determined, and automatic reports are generated.

The following functions are available:

- Individually customized and configured briefing reports and overviews
- Line, column and pie charts
- Sankey diagrams, heat maps and ABC analyses
- Comparisons of time and measuring points
- User-defined evaluation rules
- User groups can be specified for alarm and messaging functions

Optimising

Based on this data and the many evaluative options, you can quickly and easily discover where your power saving potential lies. You can also demonstrate the potential savings that would be generated by any implemented changes. The live-view function enables you to get a detailed analysis of individual measurements: values are displayed directly with minimal delays so that you can analyse routines such as a machine's start-up behaviour.

Services

HARTING supports you during the planning and implementation of your smart Power Networks energy management system. You can take advantage of our installation, configuration and maintenance service contracts, or use these services on an as-needed basis.

Industrial DC/DC converter
Serial Ha-VIS pCon 7000
for centralised power supply
with degree of protection IP20 / IP65

General Description

These primary switched DC/DC converters of the product family Ha-VIS pCon 7000 are designed for the decentralised supply of control units, Ethernet components or automation devices in industrial areas and harsh environments.

With their wide range of input voltage, the units are suitable for world-wide use.

The converters need no ground load and are short-circuit protected by primary and secondary power limitation.

The converters are maintenance free, vacuum potted and prepared for the use in devices with Protection Class I or II, depending on the type of the converter.

Features

- Wide input range for world-wide use
- Easy installation
- Galvanically seperated
- Short circuit protected
- Ambient Temperature up to 70 °C
- High degree of protection IP65 / IP67

Advantages

- Robust housing
- Wide operating temperature range
- Mechanical stability for highest demands
- Can be used directly in industrial and railway environments
- Compact design and high power density
- Proofed against short-circuits, overloads and no-load operation
- International approvals

Application fields

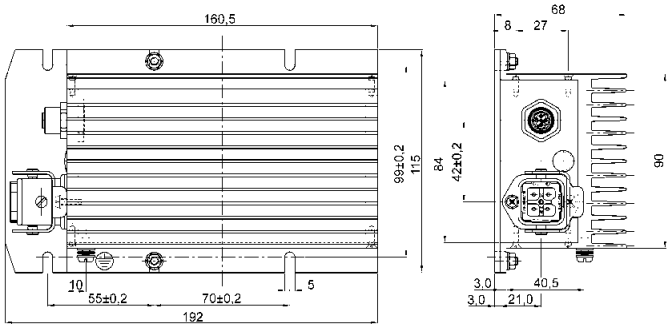
- Industrial automation
- Automotive industry
- Railway applications
- Power generation and distribution

DC/DC converter
Ha-VIS pCon 7150-110/48
for centralised power supply
with degree of protection IP65

Han® 3 A / M12 A-coding	IP65	110 V DC	48 V DC

Input		**Output**	
Input voltage	50.4 ... 154 V DC (wide range input)	Output voltage	48 V DC -1 % / +2 %
Inrush current	< 7 x $I_{in\ nom}$	Output current	3.1 A
Switching frequency	approx. 70 kHz	Ripple	≤ 1 % p-p
Efficiency	≥ 88 %	Noise	≤ 2 % p-p
Input filter	two-step filter	Starting time	≤ 200 ms
Reverse polarity protection	by means of connector with coding	No load characteristics	no ground load
Termination	Han® 3 A	Current limiting	105 ... 130 % stabilised current
Protection class	I	Termination	M12 A-coding

General data	
Operating temperature	-40 °C ... +70 °C / -40 °C ... +85 °C for t ≤ 10 min. according to EN 50 155
Cooling	free convection
Weight	approx. 1800 g
Relative humidity	30 % ... 95 % (non-condensing)
Dimensions	192 x 115 x 68 mm
MTBF	> 950 000 hours (according to SN 29 500, T_A = +50 °C)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS pCon 7150-110/48 DC/DC converter	20 80 300 3026		

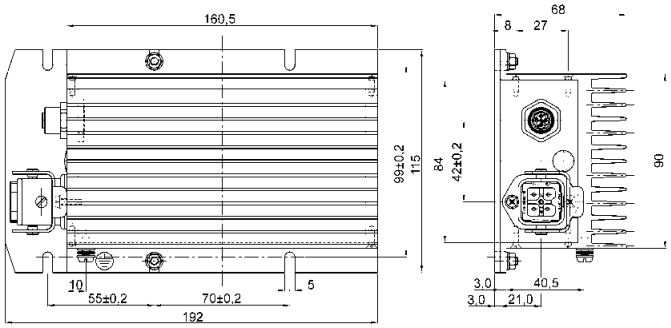
DC/DC converter
Ha-VIS pCon 7150-24/48
for centralised power supply
with degree of protection IP65

Han® 3 A / M12 A-coding	IP65	24 V DC	48 V DC

Input		**Output**	
Input voltage	16.8 ... 33.6 V DC (wide range input)	Output voltage	48 V DC -1 % / +2 %
Inrush current	< 7 x $I_{in\ nom}$	Output current	3.1 A
Switching frequency	approx. 70 kHz	Ripple	≤ 1 % p-p
Efficiency	> 90 %	Noise	≤ 2 % p-p
Input filter	two-step filter	Starting time	≤ 200 ms
Reverse polarity protection	by means of connector with coding	No load characteristics	no ground load
Termination	Han® 3 A	Current limiting	105 ... 130 % stabilised current
Protection class	I	Termination	M12 A-coding

General data

Operating temperature	-40 °C ... +70 °C / -40 °C ... +85 °C for t ≤ 10 min. according to EN 50 155
Cooling	free convection
Weight	approx. 1800 g
Relative humidity	30 % ... 95 % (non-condensing)
Dimensions	192 x 115 x 68 mm
Approvals	E1
MTBF	> 950 000 hours (according to SN 29 500, T_A = +50 °C)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS pCon 7150-24/48 DC/DC converter	20 80 300 3027		

DC/DC converter
Ha-VIS pCon 7060-110/24
for centralised power supply
with degree of protection IP20

2x spring-type terminals	IP20	110 V DC	24 V DC

Input

Input voltage	43.2 ... 154 V DC (wide range input)
Switching frequency	approx. 70 kHz
Efficiency	≥ 85 %
Input filter	LC filter
Transient protection	1.8 kV / 5/50 µs
Reverse polarity protection	cross diode (together with external fuse)
Termination	Spring clamps
Protection class	II (no earth connection necessary)

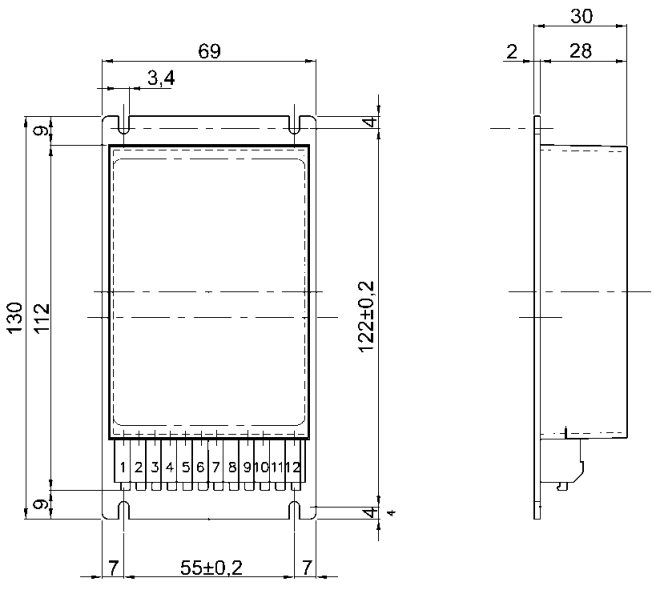
Output

Output voltage	24 V DC ±2 %
Output current	2.5 A
Ripple	≤ 1.5 % p-p
Noise	≤ 2 % p-p
Starting time	≤ 200 ms
No load characteristics	no ground load
Current limiting	105 ... 130 % stabilised current
Termination	Spring clamps

General data

Operating temperature	-40 °C ... +70 °C / -40 °C ... +85 °C for t ≤ 10 min. according to EN 50 155
Cooling	mounting on heat sink with R_{th} < 2.5 K/W, thermal coupling with Al base plate
Weight	approx. 400 g
Relative humidity	30 % ... 95 % (non-condensing)
Dimensions	69 x 130 x 30 mm
MTBF	> 1 400 000 hours (according to SN 29 500, T_A = +50 °C)

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS pCon 7060-110/24 DC/DC converter	20 80 300 3025		



Ha-VIS SFP Modules

Accessories
Ha-VIS SFP modules

General description

SFPs (Small Form-factor Pluggable) are small standardized modules for network connections.

These modules are a specification for a new generation of modular optical transceivers. The devices are constructed as connecting plugs for extremely quick network connections.

The SFPs are available in a variety of models, depending on the cable type (multi-mode or single-mode), the wave length (850 nm, 1300 nm, 1550 nm or CWDM), data rate or range.

Copper-based SFP are also available.

Features

- Highly flexible
- Easily swapped out in event of malfunction
- Hot swappable
- Variants:

	SM fibre	MM fibre
100 Mbit/s	X	X
1000 Mbit/s	X	X

Advantages

- SFP used as connecting plug for extremely quick network connections
- Standardized modules for network connections

Application fields

- Industrial automation
- Automotive industry
- Wind power

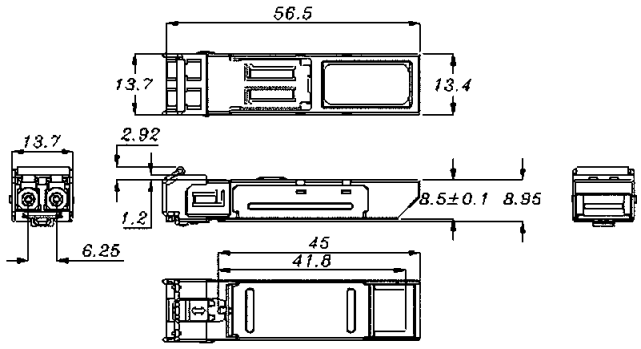
Accessories
Ha-VIS SFP modules

SFP:

Type	SFP Fast Ethernet Transceiver 155 Mbit/s MM	SFP Fast Ethernet Transceiver 155 Mbit/s SM	SFP Fast Ethernet Transceiver 155 Mbit/s SM	SFP Fast Ethernet Transceiver 155 Mbit/s SM
Wave length	1310 nm	1310 nm	1310 nm	1550 nm
Mode	Multimode	Singlemode	Singlemode	Singlemode
Fiber	50 / 125 µm or 62.5 / 125 µm	9 / 125 µm	9 / 125 µm	9 / 125 µm
Max. cable length*	2 km	15 km	40 km	80 km
Connector	LC connector duplex	LC connector duplex	LC connector duplex	LC connector duplex
Optical budget	min. 8.2 dB	min. 8.2 dB	min. 10 dB	min. 10 dB
Data rate	155 Mbit/s	155 Mbit/s	155 Mbit/s	155 Mbit/s
Operating temperature	-40 °C … +70 °C	-40 °C … +70 °C	-40 °C … +70 °C	-40 °C … +70 °C

* Typical cable length depending on attenuation of each specific application.

Identification	Part number	Drawing	Dimensions in mm
SFP modules			
SFP Fast Ethernet Transceiver 155 Mbit/s MM	20 76 000 0300		
SFP Fast Ethernet Transceiver 155 Mbit/s SM	20 76 020 0300		
SFP Fast Ethernet Transceiver L40 155 Mbit/s SM	20 76 024 0300		
SFP Fast Ethernet Transceiver L80 155 Mbit/s SM	20 76 028 0300		
other types on request			



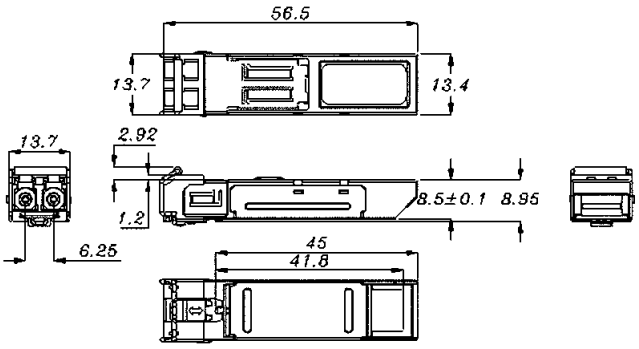
Accessories
Ha-VIS SFP modules 1000 Mbit/s

SFP:

Type	SFP Gigabit Ethernet Transceiver 1.25 Gbit/s MM	SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM	SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM	SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM
Wave length	850 nm	1310 nm	1310 nm	1310 nm
Mode	Multimode	Singlemode	Singlemode	Singlemode
Fiber	50 / 125 µm or 62.5 / 125 µm	9 / 125 µm	9 / 125 µm	9 / 125 µm
Max. cable length*	550 m (50 / 125) 275 m (62.5 / 125)	10 km	40 km	80 km
Connector	LC connector duplex	LC connector duplex	LC connector duplex	LC connector duplex
Optical budget	min. 9 dB	min. 9 dB	min. 9 dB	min. 9 dB
Data rate	1250 Mbit/s	1250 Mbit/s	1250 Mbit/s	1250 Mbit/s
Operating temperature	-40 °C … +70 °C	-40 °C … +70 °C	-40 °C … +70 °C	-40 °C … +70 °C

* Typical cable length depending on attenuation of each specific application.

Identification	Part number	Drawing	Dimensions in mm
SFP modules			
SFP Gigabit Ethernet Transceiver 1,25 Gbit/s MM	20 76 010 0300		
SFP Gigabit Ethernet Transceiver 1,25 Gbit/s SM	20 76 030 0300		
SFP Gigabit Ethernet Transceiver L40 1,25 Gbit/s SM	20 76 034 0300		
SFP Gigabit Ethernet Transceiver L80 1,25 Gbit/s SM	20 76 038 0300		
other types on request			



Accessories
Ha-VIS Memory cards

The HARTING SD cards are used for saving the switch configuration. The web interface can be used to save the current configuration to the SD card.

If an SD card is inserted in the back of the switch, the switch will use the configuration saved on the card when it boots.

So it’s quite easy when replacing a switch to transfer the entire configuration to the new switch. The old SD card with your current configuration is simply pushed into the new switch which then boots with these settings. No special network expertise is required.

Note: The HARTING Ethernet Switches are not compatible with conventional memory cards.

MRP memory cards allow you to activate the MRP functionality (media redundancy protocol) when using switches from the FTS 3000 and mCon 3000 series (with firmware ver. 3.0.0.1 and later). For example, in order to operate the device as an MRP Ring Client, you need only have the corresponding MRP Ring Client card inserted during operations.

Operating temperature	-40 °C ... +70 °C
Memory space	128 MB

Identification	Part number	Drawing	Dimensions in mm
SD Memory cards			
Configuration memory	20 89 900 1000		
MRP Ring Client	20 89 900 1001		
MRP Ring Manager	20 89 900 1002		

Ha-VIS 19” DIN-Rail Mounting kit – Introduction and features

Ha-VIS 19” DIN-Rail Mounting kit

The 19’’ mounting kit has been designed to install DIN-Rail mounted systems in a standard 19’’ rack.

The mounting kit is modular and very flexible. The DIN-Rail position can be changed in a very easy way. It can be installed in a horizontal or in a vertical position.

Each mounting kit has a cable management at the backside.

Features:

- 19 inch / 3 U
- Flexible installation
- Variable mounting
- Integrated mounting rail
- Robust design

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS 19” DIN-Rail Mounting kit	20 80 000 0007