# Ethernet Netwo

| Function Class | | Installation Class | | | | |
|---|---|---|---|---|---|---|
| **Ha-VIS eCon** unmanaged | Plug & Play<br>Store and Forward Switching Mode<br>Non-Blocking<br>Auto-negotiation<br>Auto-polarity<br>Auto-crossing | Inside IP 30 Degree of protection | **Ha-VIS eCon 2000**<br>- 3/4/5/16 copper ports (RJ45)<br>- Robust metal housing<br>- Top-Hat rail mount<br>- Optimum installation depth | |  **eCon 2030-A**<br>3 RJ45 |  eCon<br>4 RJ4 |
| | | Inside IP 30 Degree of protection | **Ha-VIS eCon 3000**<br>- 1/6/8/10 copper ports with optional 1/2 F.O. ports<br>- Robust metal housing<br>- Top-Hat Rail mount<br>- Narrow form factor | without FO |  **eCon 3080-A/-A2/-A4**<br>8 RJ45 also available with:<br>- with narrowest housing (-A2)<br>- extended temperature range (-A4)<br>  **eCon 3080 -A1**<br>8 RJ45 | E |
| | | Inside IP 30 / IP 40 Degree of protection | **Ha-VIS eCon 4000**<br>- 8 copper ports (M12 D-coding)<br>- Robust metal housing<br>- EMC, temperature range and mechanical stability meet the highest requirements | |  **eCon 4080-B1**<br>8 M12 D-coding |  |
| | | Outside IP 65 / IP 67 Degree of protection | **Ha-VIS eCon 7000**<br>- 5/10 copper ports (Han® 3 A RJ45 or M12 D-coding)<br>- Robust die-cast zinc housing<br>- EMC, temperature range and mechanical stability meet the highest requirements | 5 Port |  **eCon 7050-A1**<br>5 Han® 3 A RJ45<br>wide power input range |  |
| **Ha-VIS sCon** configurable | via USB interface configurable through a graphic user interface | Inside IP 30 Degree of protection | **Ha-VIS sCon 3000**<br>- 6/8/10 copper ports (RJ45) and optionally 1/2/3 F.O. ports (SC/ST)<br>- Robust metal housing<br>- Parallel-/ ring-redundancy<br>- Top-Hat rail mounting<br>- Potential-free alarm contact | without F.O. |  **sCon 3100-A**<br>10 RJ45 |  |
| **Fast Track Switching** | Webinterface<br>SNMP (v1, v2c, v3)<br>User Management<br>LLDP | Inside IP 30 Degree of protection | **Ha-VIS FTS 3000**<br>- 6/8/10 copper ports (RJ45) and optionally 2 SFP modules<br>- Robust metal housing<br>- Top-Hat rail mounting<br>- Web-management<br>- Fast Track Switching Technology | configurable |  **FTS 3100s-A**<br>10 RJ45 | |
| **Ha-VIS mCon** managed | Quality of Service<br>VLAN support<br>Rapid Spanning Tree<br>802.1X<br>RADIUS Client<br>IP authorize manager<br>Link Aggregation<br>IGMP Snooping (v1, v2, v3) with querier<br>DHCP Client<br>DHCP Option 82<br>SNTP<br>Alarms via Email<br>SNMP Traps<br>Port diagnostic | Inside IP 30 Degree of protection | **Ha-VIS mCon 3000**<br>- 6/8/10 copper ports (RJ45) and optionally 1/2/3 F.O. ports (SC/ST)<br>- Robust metal housing<br>- Top-Hat rail mounting<br>- Web management<br>- Potential-free alarm contact | without FO |  **mCon 3100-AV**<br>10 RJ45<br>  **mCon 31**<br>10 RJ45<br>2 RJ45 Gig | |
| | | Inside IP 30 / IP 40 Degree of protection | **Ha-VIS mCon 4000**<br>- 8 copper ports (M12 D-coding)<br>- Robust metal housing<br>- EMC, temperature range and mechanical stability meet the highest requirements<br>- Web management | |  **mCon 4080-B1V**<br>8 M12 D-Coding |  |
| | | Outside IP 65 / IP 67 Degree of protection | **Ha-VIS mCon 7000**<br>- 5/10 copper ports (Han® 3 A RJ45 or M12 D-coding)<br>- Robust die-cast zinc housing<br>- EMC, temperature range and mechanical stability meet the highest requirements<br>- Web management | 5 Port |  **mCon 7050-B1V**<br>5 M12 D-Coding<br>wide power input range | |
| **Ha-VIS pCon** | Industrial Power Supply 24 V/48 V | Inside IP 20 / IP 65 Degree of protection | **Ha-VIS pCon 2000**<br>- Worldwide application through wide input voltage range: 110 ... 240 V AC<br>- Operating temperature: -25 °C ... +70 °C without derating<br>- Fast installation without tools due to cage clamps<br>- Active PFC | |  **pCon 2035-24**<br>Output:<br>24 V / 1.4 A (35 W) |  **pCon 2**<br>Output:<br>24 V / 2<br>**pCon 2**<br>Output:<br>48 V / 1 |

# ork Components

## Switches

Application

**n 2040-A**
5

**eCon 2050-A**
5 RJ45

**eCon 2050-AA**
5 RJ45 Full Gigabit

**eCon 2160-A**
16 RJ45

Ethernet
IEEE 802.3

**eCon 3061-AD**
6 RJ45, 1 SC

**eCon 3061-AE**
6 RJ45, 1 ST

**eCon 3062-AD/-AD2/-AF**
6 RJ45, 2 SC also available with:
- extended temperature range (-AD2)
- Singlemode (-AF)

**eCon 3062-AE**
6 RJ45, 2 ST

Converter

**eCon 3011-AD**
1 RJ45, 1 SC
- 10/100 Mbit/s
- PoE

**eCon 3011-ASFP**
- 1 RJ45
- 1 SFP module slot
- 10/100 Mbit/s
- PoE

Ethernet
IEEE 802.3

**eCon 4080-B3**
8 M12 D-coding
110 V DC power input

**eCon 4080-BPoE1**
8 M12 D-coding
8 Ports PoE

**Ha-VIS eCon 9000**
- 7 - 8 copper ports M12 D-coding
- Robust metal housing
- 19“ rack mount
- Small form-factor

**eCon 9080-B1**
8 M12
D-coding

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

Ethernet
IEEE 802.3

**eCon 7050- B1**
5 M12 D-coding
wide power input range

10 Port

**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 3100-AA**
10 RJ45
2 RJ45 Gigabit

F.O.

SC

**sCon 3082-AD/-AF**
8 RJ45, 2 SC

**sCon 3063-AD**
6 RJ45, 3 SC

Ethernet
IEEE 802.3

managed

**FTS 3100-A**
10 RJ45

Ethernet
IEEE 802.3

**00-AAV**
gabit

FO

SC

**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-B3V**
8 M12 D-coding
110 V DC power input

**mCon 4080-BPoE1V**
8 M12 D-coding
8 Ports PoE

**Ha-VIS mCon 9000**
- 7 - 8 copper ports D-coding
- Robust metal housing
- 19“ rack mount
- Small form-factor

**mCon 9080-BV**
8 M12
D-coding

**mCon 9070-BV**
7 M12
D-coding
Power input on the front

Ethernet
IEEE 802.3

10 Port

**mCon 7100-B1V**
10 M12 D-coding

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

Ethernet
IEEE 802.3

**2060-24**
2.5 A (60 W)
**2060-48**
.25 A (60 W)

**pCon 2120-24**
Output:
24 V / 5 A (120 W)

**pCon 2120-48**
Output:
48 V / 2.5 A (120 W)

**pCon 20DRM-10A**
Redundancy module:
12 ... 48 V / 16 A

**Ha-VIS pCon 7000**
- DC/DC Converter
- Operating temperature:
- -40 °C ... +70 °C

**pCon 7060-110/24**
110 V DC / 24 V DC
IP 20 Degree of protection

**pCon 7150-110/48**
110 V DC / 48 V DC
IP 65 Degree of protection

**pCon 7150 DC-24/48**
24 V DC / 48 V DC
IP 65 Degree of protection

## Ethernet Switch
## Ha-VIS eCon 2000

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

## General Description

The Ethernet Switches of the product family Ha-VIS eCon 2000 are suitable for industrial applications and support Ethernet (10 Mbit/s), Fast Ethernet (100 Mbit/s) and Gigabit Ethernet (1000 Mbit/s). The product family enables the connection of up to 16 network devices (according to type) over Twisted Pair cables.

Through its flat mounting and the clearly laid out integrated LEDs on each port, the Ha-VIS eCon 2000 Ethernet Switch family supports fast and easy network diagnosis. The eCon Ethernet Switch operates as an unmanaged Switch in Store and Forward Switching Mode and supports Auto-crossing, Auto-negotiation and Auto-polarity.

Due to their mechanical attachment, the Ha-VIS eCon 2000 Ethernet Switches can be mounted on or dismounted from standard 35 mm top-hat rails without tools.

## Features

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

For Ethernet Switch Ha-VIS eCon 2050-AA only:

- complete designed for Gigabit Ethernet
- Jumbo Frames up to 9728 Bytes
- 4 K MAC addresses

## Advantages

- Flat housing design
- Robust metal housing
- Adapted for mounting onto top-hat mounting rail 35 mm according to EN 60 715
- RoHS compliant

## Application fields

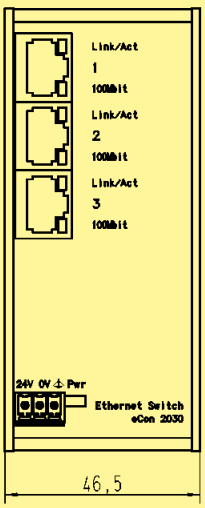
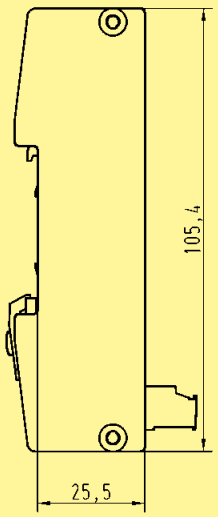
- Industrial automation
- Automotive industry
- Wind power
- Power distribution systems

# Ha-VIS eCon 2000

Ethernet Switch
Ha-VIS eCon 2030-A
3-port Ethernet Switch for flat mounting onto top-hat mounting rail in control cabinets

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 3x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 36 V DC |
| Input current | 100 mA (at 24 V DC) |
| Housing material | Aluminium, anodised |
| Dimensions (W x H x D) | 46.5 x 105 x 25.5 mm (without connectors) |
| Weight | approx. 0.2 kg |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1; DNV |
| MTBF | 1 020 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 2030-A<br>Ethernet Switch<br>with 3 RJ45 ports | 20 76 103 3000 |  |  |

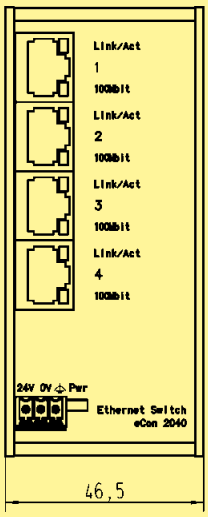
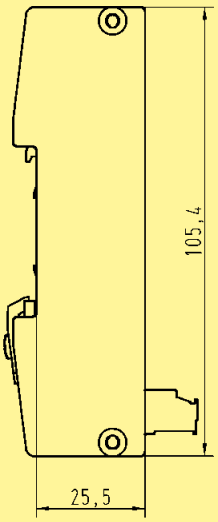
# Ha-VIS eCon 2000

## Ethernet Switch
## Ha-VIS eCon 2040-A

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

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 4x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 36 V DC |
| Input current | 100 mA (at 24 V DC) |
| Housing material | Aluminium, anodised |
| Dimensions (W x H x D) | 46.5 x 105 x 25.5 mm (without connectors) |
| Weight | approx. 0.2 kg |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1; DNV |
| MTBF | 1 020 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 2040-A<br>Ethernet Switch<br>with 4 RJ45 ports | 20 76 104 3000 |  |  |

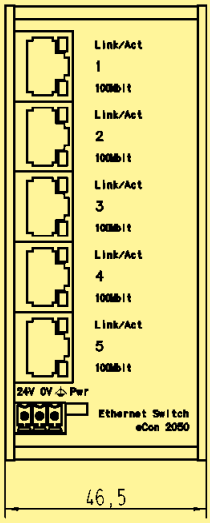
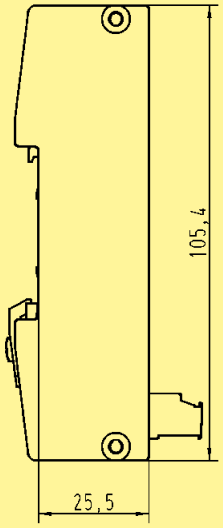
# Ha-VIS eCon 2000

## Ethernet Switch
## Ha-VIS eCon 2050-A

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

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 5x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 36 V DC |
| Input current | 100 mA (at 24 V DC) |
| Housing material | Aluminium, anodised |
| Dimensions (W x H x D) | 46.5 x 105 x 25.5 mm (without connectors) |
| Weight | approx. 0.2 kg |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1; DNV |
| MTBF | 1 020 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 2050-A<br>Ethernet Switch<br>with 5 RJ45 ports | 20 76 105 3000 |  |  |

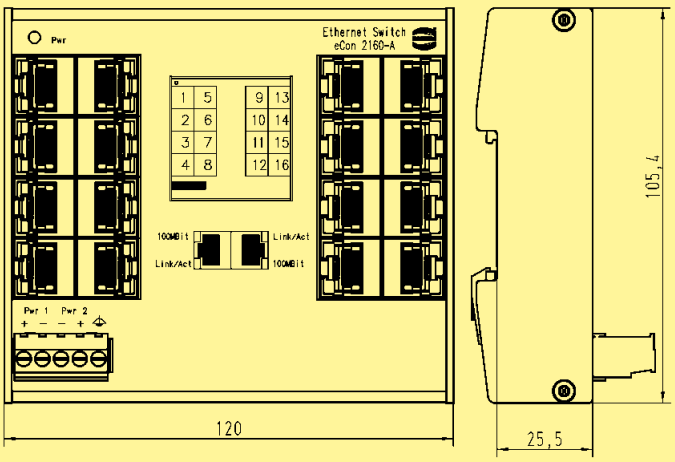
# Ha-VIS eCon 2000

## Ethernet Switch
## Ha-VIS eCon 2160-A

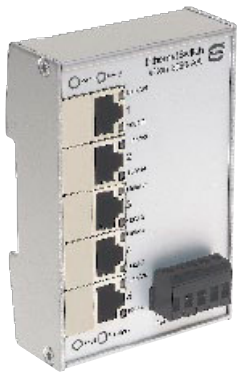
16-port Ethernet Switch for flat mounting onto top-hat mounting rail in control cabinets

| Unmanaged | IP 30 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| 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 (PRW1 + / PWR1 - / PWR2 + / PWR2 - / FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | cUL (in preparation) |

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

# Ha-VIS eCon 2000

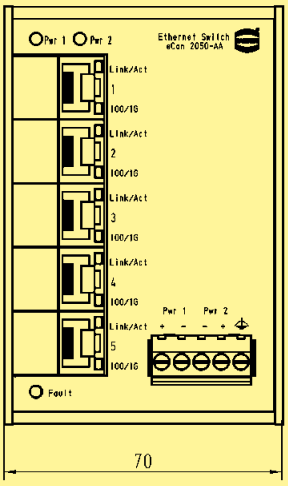
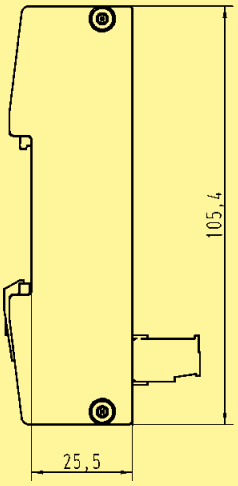


## Ethernet Switch
## Ha-VIS eCon 2050-AA

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

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 5x 10/100/1000Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 5-pole screw terminal, pluggable, redundant power suply (PRW1 + / PWR1 - / PWR2 + / PWR2 - / FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | 250 mA (at 24 V DC) |
| Housing material | Aluminium, anodised |
| Dimensions (W x H x D) | 70 x 105 x 25.5 mm (without connectors) |
| Weight | approx. 0.4 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 2050-AA<br>Gigabit Ethernet Switch with 5 RJ45 ports | 20 76 105 3001 |  |  |

Ethernet Switch
Ha-VIS eCon 3000

Ethernet Switches, unmanaged,
for installation in control cabinets



## General Description

The Fast Ethernet Switches of the product family Ha-VIS eCon 3000 are suitable for industrial applications and support Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s). The product family enables 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 eCon 3000 Ethernet Switch product family, with its integrated LEDs on each port, supports fast and easy network diagnosis.

The eCon Ethernet Switch operates as an unmanaged Switch in Store and Forward Switching Mode and supports Auto-crossing, Auto-negotiation and Auto-polarity.

## Features

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

## Advantages

- Small housing
- Robust metal housing
- Adapted for mounting onto top-hat mounting rail 35 mm according to EN 60 715
- RoHS compliant

## Application fields

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

# Ha-VIS eCon 3000 – Introduction and features

## Ethernet Media converter
## Ha-VIS eCon 3011

Ethernet Media converter, unmanaged,
for installation in control cabinets

## 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 Media converter enables the conversion from Twisted Pair cables to fiber-optic cables (Multimode and Single-mode).

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

- Converter Mode with a very low latency
- Store and Forward switch mode
- Link Fault Path Through (LFP)
- Power over Ethernet (Power Source Equipment)
- 9 kByte Jumbo Frames in converter mode
- 2 kByte Frames in switch mode

## Advantages

- Power over Ethernet (IEEE 802.3af)
- Configuration via Dip Switch
- Small and 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

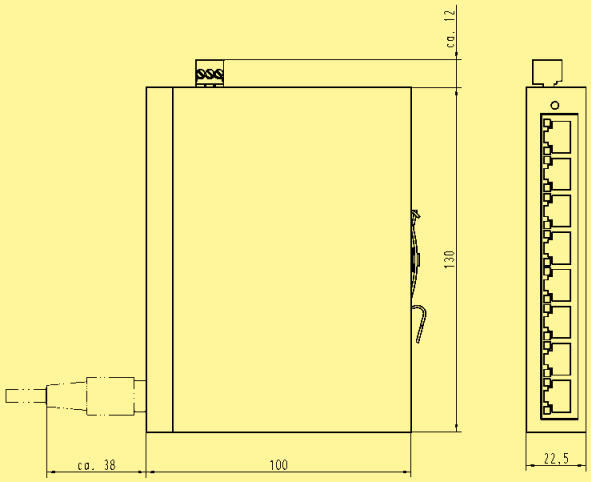
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3080-A

8-port Ethernet Switch for vertical installation in control cabinets

| Unmanaged | IP 30 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 36 V DC |
| Input current | approx. 150 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | e1, UL 508; UL 60 950-1; DNV |
| MTBF | 548 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3080-A<br>Ethernet Switch<br>with 8 RJ45 ports | 20 76 108 3000 |  | |

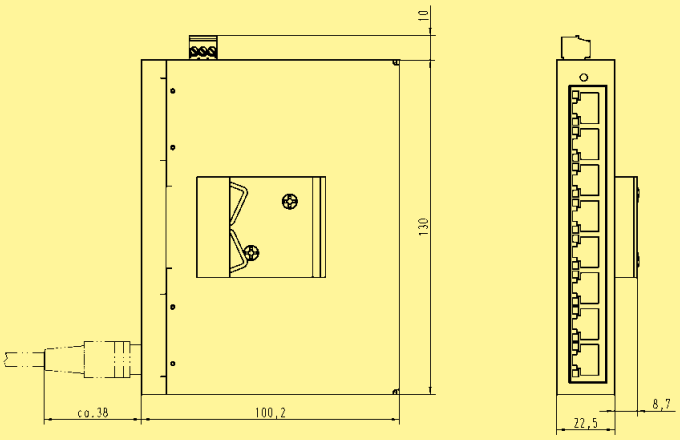
# Ha-VIS eCon 3000

Ethernet Switch
Ha-VIS eCon 3080-A1

8-port Ethernet Switch for flat installation in control cabinets

| Unmanaged | IP 30 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 36 V DC |
| Input current | approx. 150 mA (at 24 V DC) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 130 x 23 x 100 mm (without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –10 °C … +70 °C |
| Approvals | e1, UL 508; UL 60 950-1; DNV |
| MTBF | 548 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3080-A1<br>Ethernet Switch<br>with 8 RJ45 ports | 20 76 108 3001 |  | |

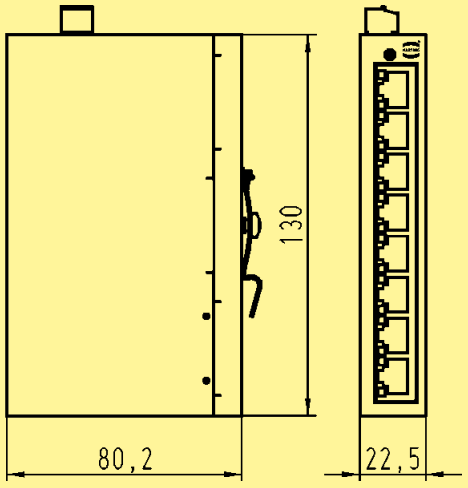
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3080-A2

8-port Ethernet Switch for vertical installation
in control cabinets; low installation depth

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 36 V DC |
| Input current | approx. 150 mA (at 24 V DC) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 23 x 130 x 80 mm (without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508 |
| MTBF | 548 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3080-A2<br>Ethernet Switch<br>with 8 RJ45 ports | 20 76 108 3002 |  | |

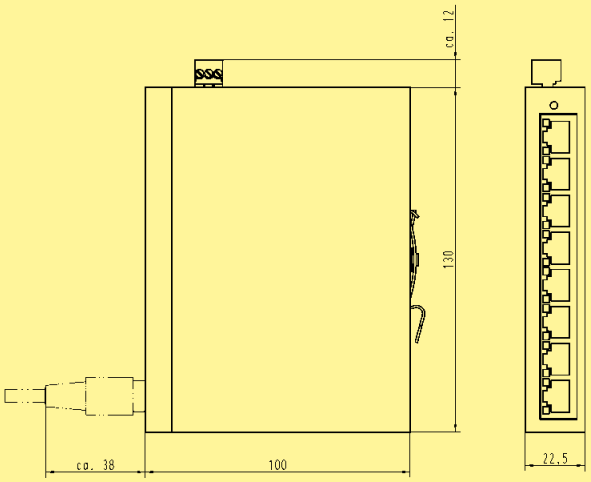
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3080-A4

8-port Ethernet Switch for vertical installation
in control cabinets, with extended temperature range

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 12 V … 30 V DC |
| Input current | approx. 150 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 |
| Operating temperature | –40 °C … +70 °C |
| Approvals | UL 508; DNV |
| MTBF | 540 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3080-A4<br>Ethernet Switch<br>with 8 RJ45 ports | 20 76 108 3004 |  | |

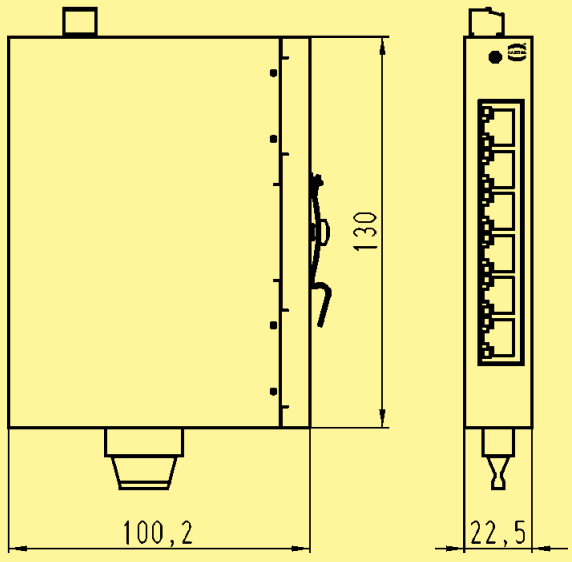
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3061-AD

7-port Ethernet Switch for vertical installation
in control cabinets including 1 F.O. port (SC, MM)

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 6x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Number of ports, F.O. / Termination | 1x 100Base-FX / SC-D female |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | approx. 200 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508 |
| MTBF | 825 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3061-AD<br>Ethernet Switch with<br>6 RJ45 ports<br>1 F.O. port | 20 76 107 3100 |  | |

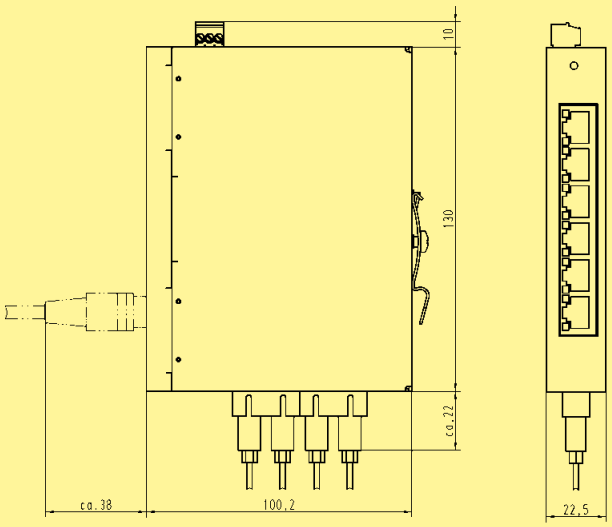
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3062-AD

8-port Ethernet Switch for vertical installation
in control cabinets including 2 F.O. ports (SC, MM)

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 6x 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 / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | max. 240 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1 |
| MTBF | 825 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3062-AD<br>Ethernet Switch with<br>6 RJ45 ports<br>2 F.O. ports | 20 76 108 3100 |  | |

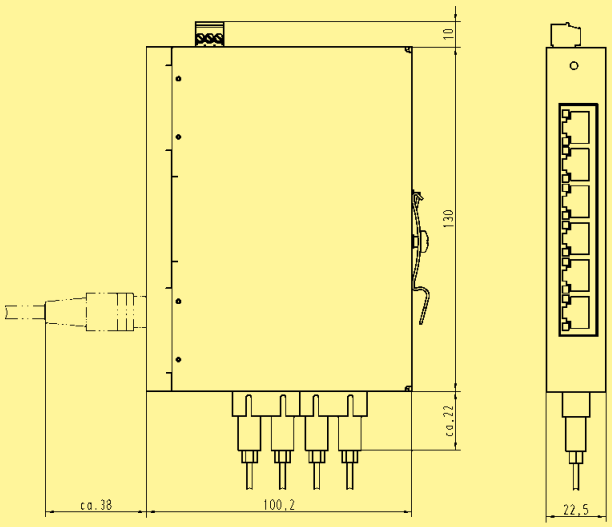
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3062-AD2

8-port Ethernet Switch including 2 F.O. ports (SC, SM); extended temperature range

| Unmanaged | IP 30 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 6x 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 / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | approx. 240 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 |
| Operating temperature | –40 °C … +70 °C |
| Approvals | UL 508 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3062-AD2<br>Ethernet Switch with<br>6 RJ45 ports<br>2 F.O. ports | 20 76 108 3102 |  | |

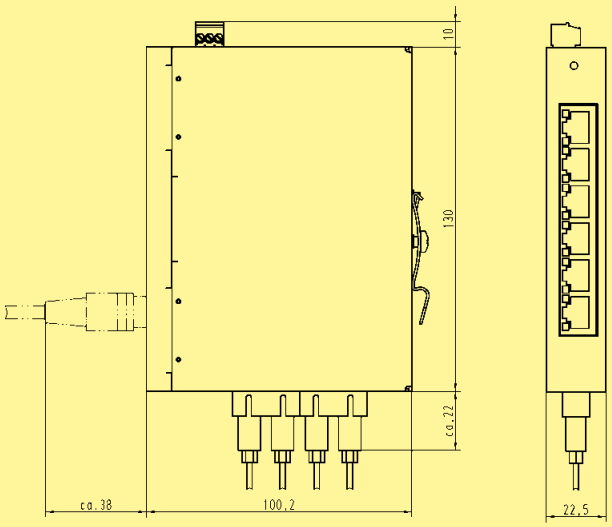
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3062-AF

8-port Ethernet Switch for vertical installation
in control cabinets including 2 F.O. ports (SC, SM)

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 6x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Number of ports, F.O. / Termination | 2x 100Base-FX / SC-D female (Singlemode) |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | approx. 240 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3062-AF<br>Ethernet Switch with<br>6 RJ45 ports<br>2 F.O. ports | 20 76 108 3103 |  | |

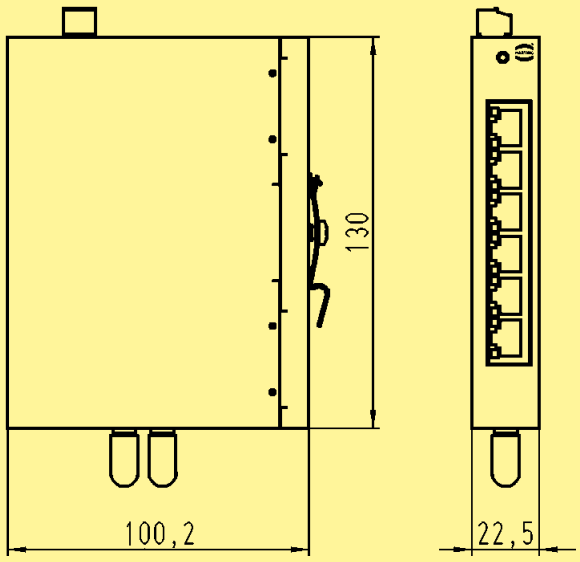
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3061-AE

7-port Ethernet Switch for vertical installation
in control cabinets including 1 F.O. port (ST, MM)

| Unmanaged | IP 20 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 6x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Number of ports, F.O. / Termination | 1x 100Base-FX / ST female |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9.6 V … 60 V DC |
| Input current | approx. 200 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508 |
| MTBF | 825 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3061-AE<br>Ethernet Switch with<br>6 RJ45 ports<br>1 F.O. port | 20 76 107 3200 |  | |

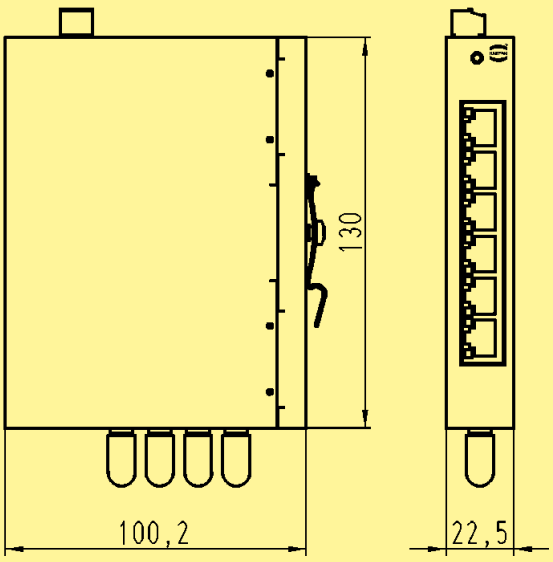
# Ha-VIS eCon 3000

## Ethernet Switch
## Ha-VIS eCon 3062-AE

8-port Ethernet Switch for vertical installation
in control cabinets including 2 F.O. ports (ST, MM)

| Unmanaged | IP 20 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 6x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Number of ports, F.O. / Termination | 2x 100Base-FX / ST female |
| Input voltage / Termination | 24 V DC / 3-pole pluggable screw contact (24 V; 0; FE) |
| Permissible range (min/max) | 9,6 V … 60 V DC |
| Input current | approx. 240 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 |
| Operating temperature | –10 °C … +70 °C |
| Approvals | UL 508 |
| MTBF | 825 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3062-AE<br>Ethernet Switch with<br>6 RJ45 ports<br>2 F.O. ports | 20 76 108 3200 |  | |

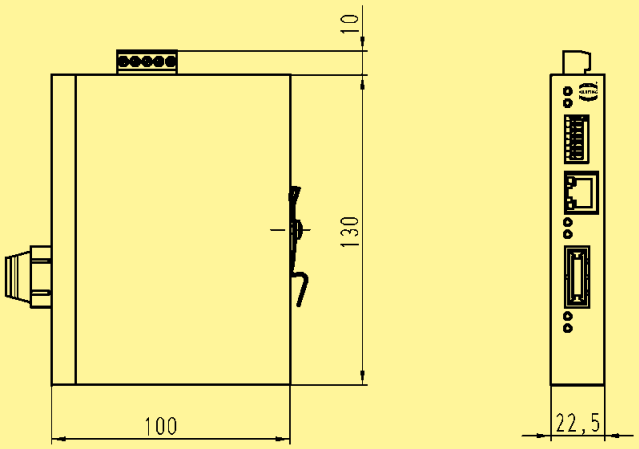
# Ha-VIS eCon 3000

## 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 | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 1x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Number of ports, F.O. / Termination | 1x 100Base-FX / SC-D female |
| Input voltage / Termination | 24 V DC / 5-pole pluggable screw contact, redundancy (PRW1 + / PWR1 - / PWR2 + / PWR2 - / FE) |
| Permissible range (min/max) | 12 V … 30 V DC |
| Input voltage mode PoE | 48 V DC when using as PSE |
| Permissible range (min/max) | 46 V … 57 V DC |
| Input current | approx. 100 mA (at 24 V DC)<br>approx. 100 … 400 mA (at 48 V DC with PoE) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 23 x 130 x 100 mm (without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3011-AD<br>Ethernet Media converter with<br>1 RJ45 port<br>1 F.O. port | 20 76 102 3100 |  | |

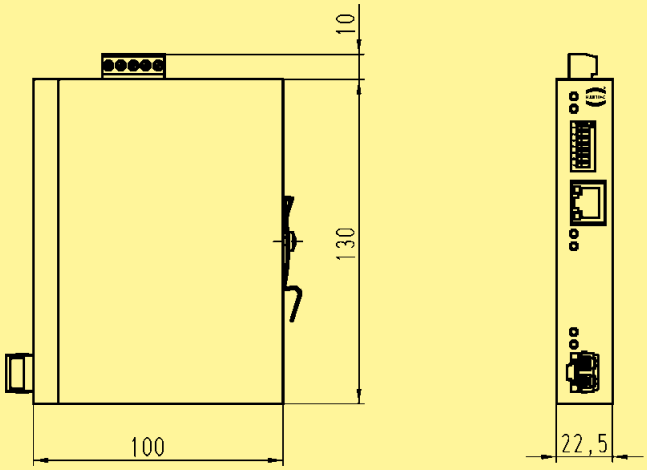
# Ha-VIS eCon 3000

## 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 | IP 30 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 1x 10/100Base-T(X) / RJ45 (Twisted Pair) |
| Number of ports, F.O. / Termination | 1x 100 Mbit/s SFP module slot |
| Input voltage / Termination | 24 V DC / 5-pole pluggable screw contact, redundant (PRW1 + / PWR1 - / PWR2 + / PWR2 - / FE) |
| Permissible range (min/max) | 12 V … 30 V DC |
| Input voltage mode PoE | 48 V DC when using as PSE |
| Permissible range (min/max) | 46 V … 57 V DC |
| Input current | approx. 100 mA (at 24 V DC)<br>approx. 100 … 400 mA (at 48 V DC with PoE) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 23 x 130 x 100 mm (without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 3011-ASFP<br>Ethernet Media converter with<br>1 RJ45 port<br>1 port SFP module slot<br><br>SFP modules on request | 20 76 102 3101 |  | |

# SFP modules

Accessories
SFP modules



## General Description

SFPs (**S**mall **F**orm-factor **P**luggable) 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

SFP modules

- 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

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

# SFP modules

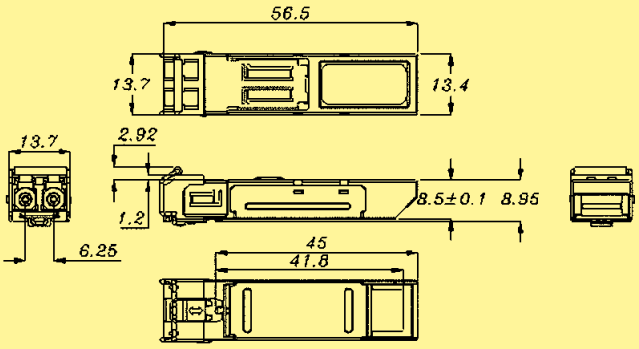
Accessories
SFP modules

SFP:

| Type | SFP Fast Ethernet Transceiver 155 Mbit/s MM | SFP Fast Ethernet Transceiver 155 Mbit/s SM | SFP Gigabit Ethernet Transceiver 1.25 Gbit/s MM | SFP Gigabit Ethernet Transceiver 1.25 Gbit/s SM |
|---|---|---|---|---|
| Wave length | 1310 nm | 1310 nm | 850 nm | 1310 nm |
| Mode | Multimode | Singlemode | Multimode | Singlemode |
| Fiber | 50 / 125 µm or 62.5 / 125 µm | 9 / 125 µm | 50 / 125 µm or 62.5 / 125 µm | 9 / 125 µm |
| Max. cable length* | 2 km | 15 km | 550 m (50 / 125) 275 m (62.5 / 125) | 10 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. 9 dB | min. 9 dB |
| Data rate | 155 Mbit/s | 155 Mbit/s | 1250 Mbit/s | 1250 Mbit/s |

* 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 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 | | |
| other types on request | | | |



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 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
- Store and Forward Switching Mode, non blocking
- Diagnostic LEDs (Link status, Data, Power)
- Mounting onto wall, optionally onto top-hat mounting rail
- PoE support (Ha-VIS eCon 4080-BPoE1)

## Advantages

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

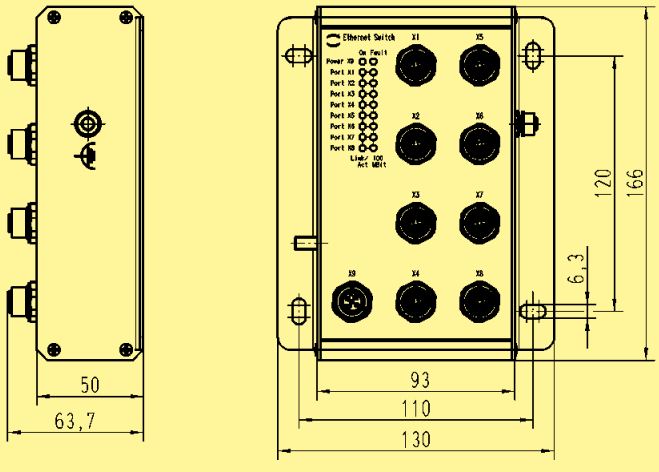
## Application fields

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

## Ethernet Switch
## Ha-VIS eCon 4080-B1
8-port Ethernet Switch for flat installation

| Unmanaged | IP 40 | 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 |
| Weight | approx. 0.85 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | e1 |
| MTBF | 1 544 000 h |

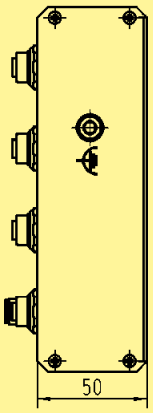
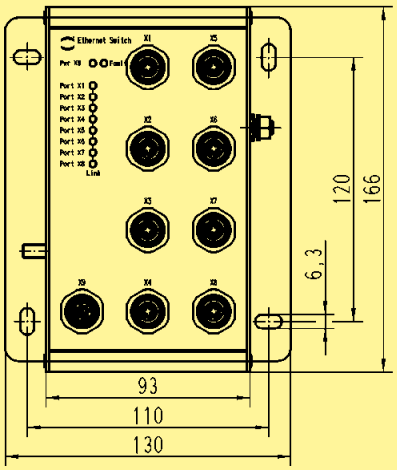
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 4080-B1<br>Ethernet Switch<br>with 8 ports M12 D-coding<br>for wall mounting | 20 77 208 3001 |  | |

# Ha-VIS eCon 4000

Ethernet Switch
Ha-VIS eCon 4080-B3
8-port Ethernet Switch (110 V DC) for flat installation

| Unmanaged | IP 40 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

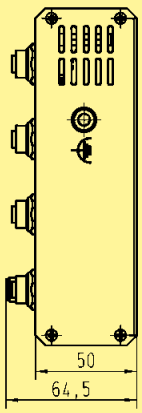
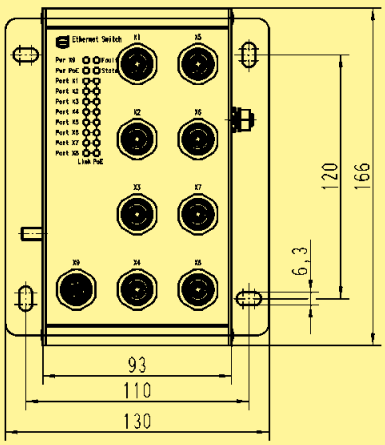
| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / M12 D-coding |
| Input voltage / Termination | 72 / 110 V DC / M12 A-coding, male, for redundant power supply |
| Permissible range (min/max) | 50.4 V … 137.5 V DC |
| Input current | approx. 40 mA (at 110 V DC) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 130 x 166 x 50 mm |
| Weight | approx. 0.85 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 1 183 000 h |

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

## Ethernet Switch
## Ha-VIS eCon 4080-BPoE1
8-port Ethernet Switch with Power over Ethernet

| Unmanaged | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / M12 D-coding<br>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. 3.0 A (at 48 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 |
| Weight | approx. 0.85 kg |
| Operating temperature | –40 °C … +70 °C |

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

Ethernet Switch
Ha-VIS eCon 9000

19“ Ethernet Switch, unmanaged, 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 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
- Store and Forward Switching Mode, non-blocking
- Auto-crossing, Auto-negotiation, Auto-polarity
- Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s)
- Diagnostic LEDs (Link status, Data, Power)
- Pluggable in 19“ racks
- Ha-VIS eCon 9070-B:
  Power input on the front
  no backplane necessary

## Advantages

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

## Application fields

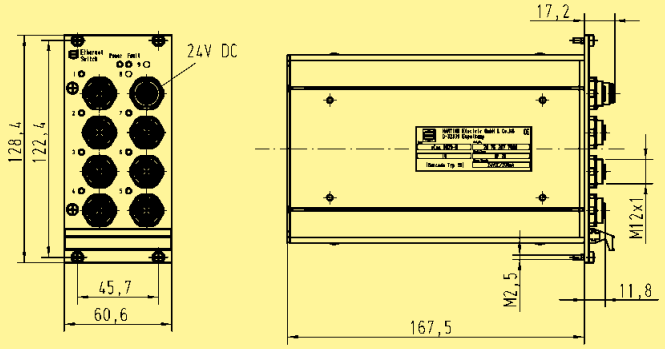
- Railway applications
- Industrial automation
- Automotive industry
- Wind power
- Power distribution systems

# Ha-VIS eCon 9000

Ethernet Switch
Ha-VIS eCon 9070-B
7-port Ethernet Switch for installation in a 19'' rack

| Unmanaged | IP 20 | 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 |
| 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 (12 HP) x 128.4 mm (3 U) x 173.5 mm |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |

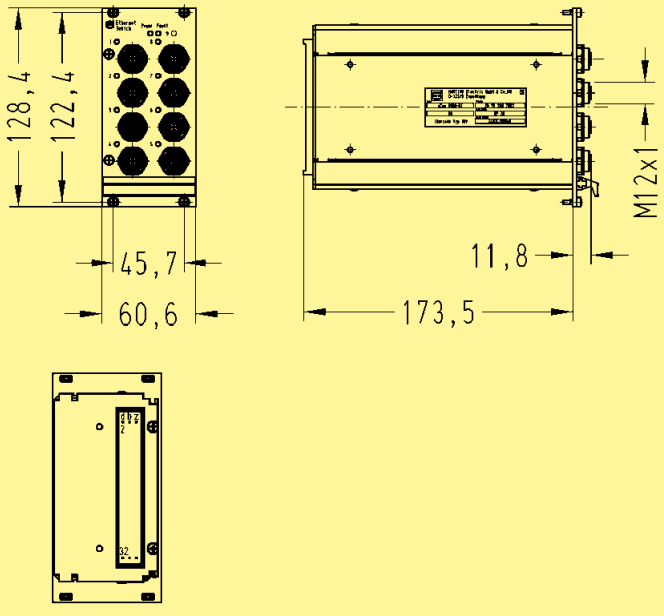
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 9070-B<br>Ethernet Switch<br>7 ports, M12 D-coding | 20 76 207 7000 |  | |

# Ha-VIS eCon 9000

Ethernet Switch
Ha-VIS eCon 9080-B1
8-port Ethernet Switch for installation in a 19'' rack

| Unmanaged | IP 20 | 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 / 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 (12 HP) x 128.4 mm (3 U) x 173.5 mm |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |

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

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
- Store and Forward Switching Mode, non-blocking
- 5 / 10 ports unmanaged
- 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 IP 65 / IP 67
- Robust metal housing
- Can be used directly in industrial environments
- EMC, temperature range and mechanical stability meet the highest demands
- PROFINET compatible

## Application fields

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

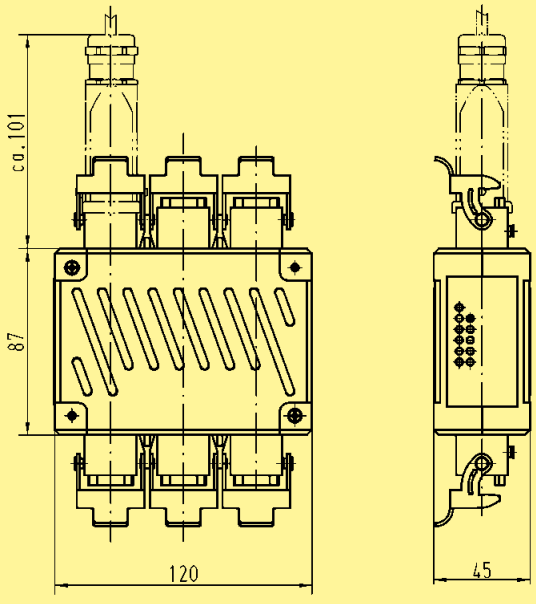
# Ha-VIS eCon 7000

## Ethernet Switch
## Ha-VIS eCon 7050-A1

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

| Unmanaged | IP 67 | 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)*<br>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 (without connectors) |
| Weight | approx. 0.8 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 1 150 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 7050-A1<br>Ethernet Switch, unmanaged<br>5 Han® 3 A RJ45 ports | 20 70 305 3923 |  | |

* Order insert fixing screw 09 20 000 9918 separately

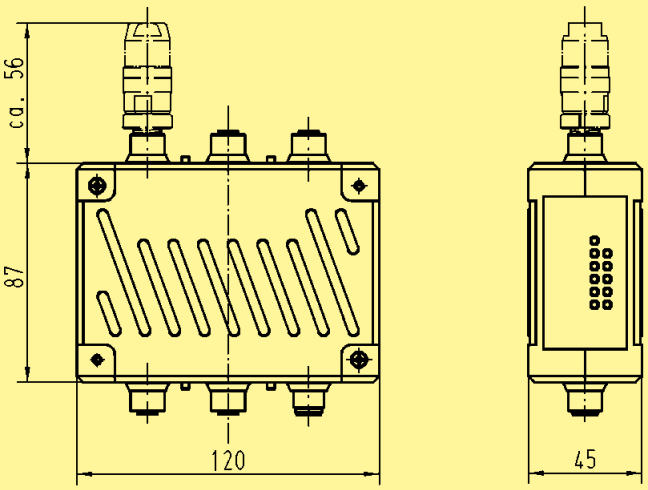
# Ha-VIS eCon 7000

## 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 | IP 67 | PROFINET compatible [X] | EtherNet/IP compatible [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)<br>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 (without connectors) |
| Weight | approx. 0.8 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 1 140 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 7050-B1<br>Ethernet Switch, unmanaged<br>5 ports, M12 D-coding | 20 70 305 3943 |  | |

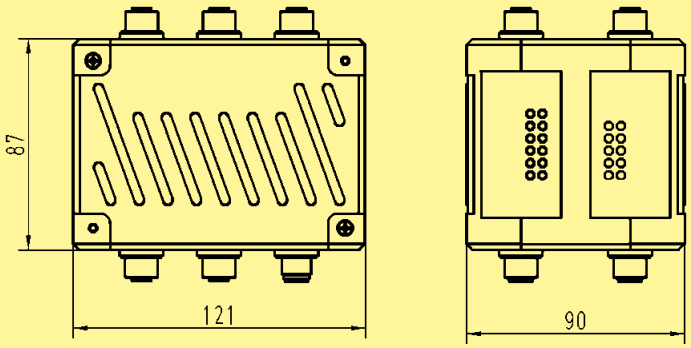
# Ha-VIS eCon 7000

## Ethernet Switch
## Ha-VIS eCon 7100-B1

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

| Unmanaged | IP 67 | 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)<br>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<br>M12 D-coding (male) |
| Housing material | Zinc die-cast |
| Dimensions (W x H x D) | 90 x 120 x 87 mm (without connectors) |
| Weight | approx. 1.4 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 740 000 h |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 7100-B1<br>Ethernet Switch, unmanaged<br>10 ports, M12 D-coding | 20 70 310 3942 |  | |

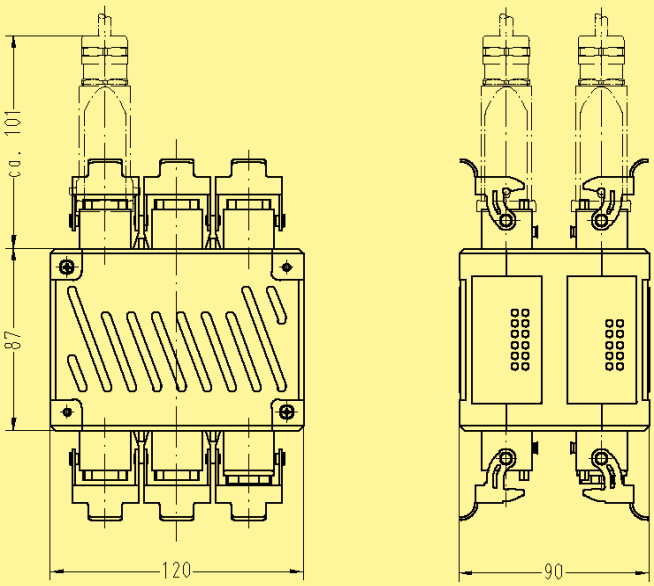
# Ha-VIS eCon 7000

## Ethernet Switch
## Ha-VIS eCon 7100-AA

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

| Unmanaged | IP 67 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / Han® 3 A RJ45 (female)*<br>2x 10/100/1000Base-T(X) / Han® 3 A RJ45 (female)* |
| Input voltage / Termination | 24 / 48 V DC / Han® 4 A (male)*<br>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<br>Han® 3 A (male)* |
| Housing material | Zinc die-cast |
| Dimensions (W x H x D) | 90 x 120 x 87 mm (without connectors) |
| Weight | approx. 1.4 kg |
| Operating temperature | –40 °C … +70 °C |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS eCon 7100-AA<br>Ethernet Switch, unmanaged<br>10 Han® 3 A RJ45 ports | 20 70 310 3924 |  | |

* Order insert fixing screw 09 20 000 9918 separately

# Ha-VIS sCon 3000 – Introduction and features

Ethernet Switch
Ha-VIS sCon 3000
Ethernet Switch family, 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:
  - Alarm signalling contact
  - Auto-negotiation
  - 10/100/1000 Mbit/s
  - Full/Half Duplex
  - Ring and/or parallel redundancy
  - Port enable / disable
  - Port priority
  - Port mirroring
  - Pause Frame

## Advantages

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

## Application fields

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

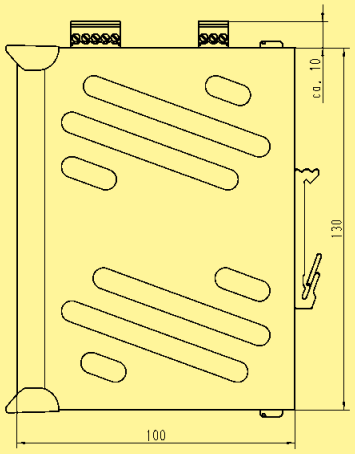
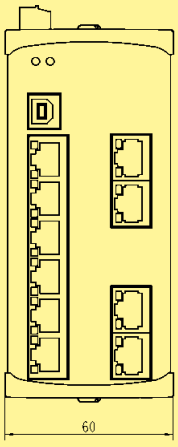
# Ha-VIS sCon 3000

## 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 | IP 30 | 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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating 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<br>Ethernet Switch<br>with 10 RJ45 ports<br>including<br>Set for assembly on standard rail | 20 76 110 1000 |   | |

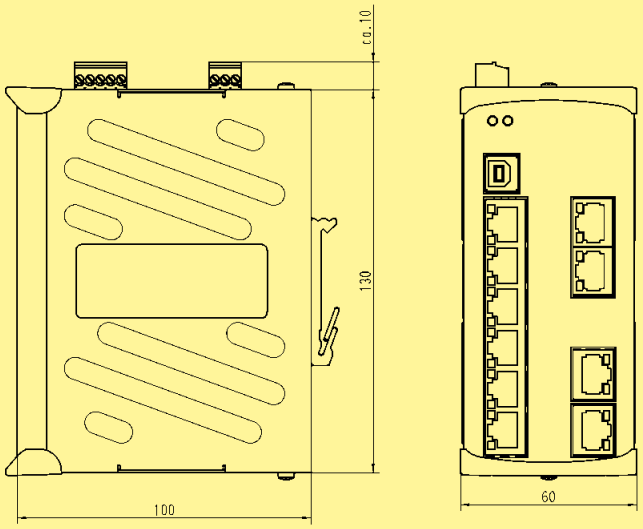
# Ha-VIS sCon 3000

## 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 | IP 30 | PROFINET compatible ☒ | EtherNet/IP compatible ☐ |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair)<br>2x 10/100/1000Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 / 48 V DC / 5-pole screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating 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<br>Ethernet Switch<br>with 10 RJ45 ports<br>including<br>Set for assembly on standard rail | 20 76 110 1001 |  | |

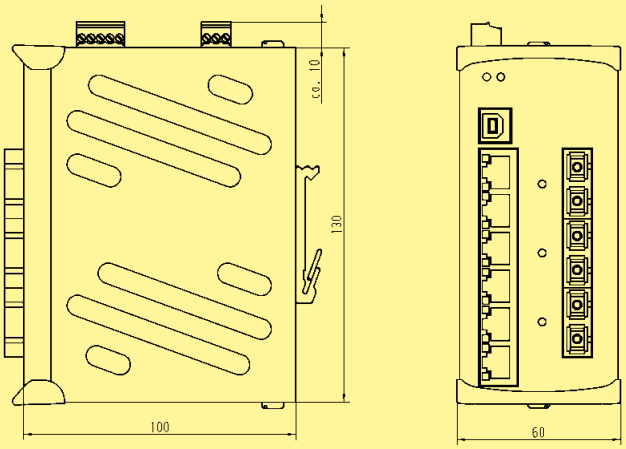
# Ha-VIS sCon 3000

## 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 | IP 30 | 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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating 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<br>Ethernet Switch<br>6 RJ45 ports<br>3 SC ports<br>including<br>Set for assembly on standard rail | 20 76 109 1100 |  | |

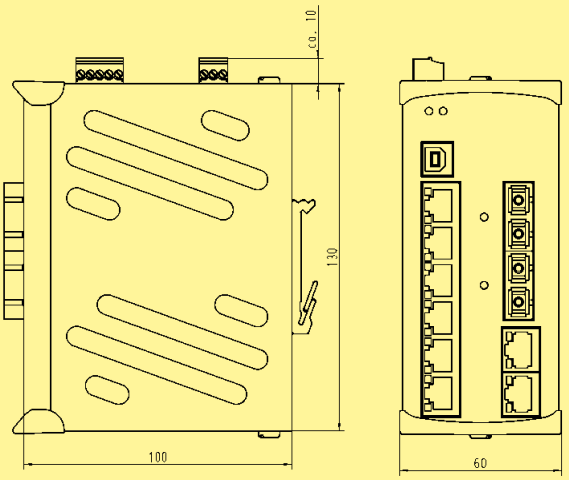
# Ha-VIS sCon 3000

## 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 | IP 30 | PROFINET compatible ☒ | EtherNet/IP compatible ☐ |
|---|---|---|---|

| | |
|---|---|
| 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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating 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<br>Ethernet Switch<br>8 RJ45 ports<br>2 SC ports<br>including<br>Set for assembly on standard rail | 20 76 110 1100 |  | |

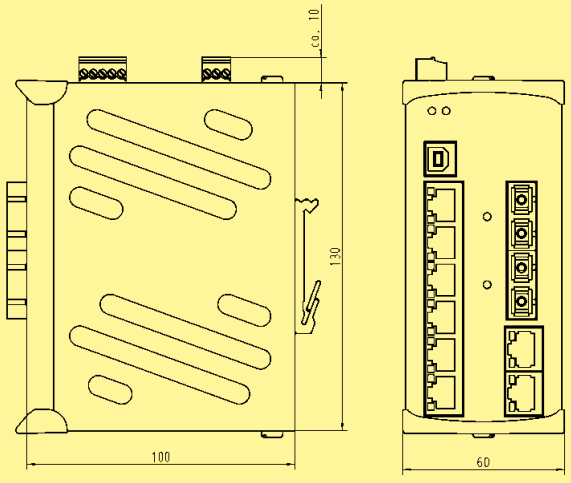
# Ha-VIS sCon 3000

## Ethernet Switch
## Ha-VIS sCon 3082-AF

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

| Unmanaged | IP 30 | PROFINET compatible ☒ | EtherNet/IP compatible ☐ |
|---|---|---|---|

| | |
|---|---|
| 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 (Singlemode) |
| Input voltage / Termination | 24 V DC / 5-pole screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | -40 °C … +70 °C |
| Approvals | cUL (in preparation) |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS sCon 3082-AF<br>Ethernet Switch<br>8 RJ45 ports<br>2 SC ports<br>including<br>Set for assembly on standard rail | 20 76 110 1102 |  | |

Ethernet Switch
Ha-VIS FTS 3100s-A
10-port Ethernet Switch with Fast Track Technology configurable via USB

## 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. It supports Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s).

The Ethernet Switch works as an unmanaged 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

- 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)
- 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

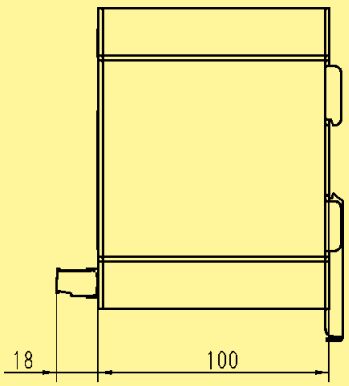
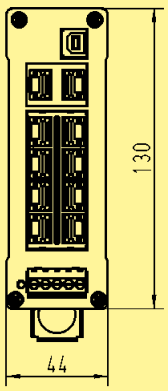
- Industrial automation
- Power distribution systems
- Automotive industry
- Mechanical engineering

# Ha-VIS FTS 3000s

Ethernet Switch
Ha-VIS FTS 3100s-A
10-port Ethernet Switch with Fast Track Technology
configurable via USB

| Unmanaged | IP 30 | 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 screw terminal, pluggable<br>redundant power supply |
| Permissible range (min/max) | 12 V … 48 V DC |
| Input current | approx. 270 mA (at 24 V DC) |
| Housing material | Aluminium, anodized |
| Dimensions (W x H x D) | 44 x 130 x 100 mm (without connectors) |
| Weight | approx. 0.5 kg |
| Operating temperature | 0 °C … +55 °C |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS FTS 3100s-A<br>Ethernet Switch with 10 RJ45 ports<br><br>for assembly on standard rail | 20 78 110 1000 |  |  |

Ethernet Switch
Ha-VIS FTS 3100s-A
10-port Ethernet Switch with Fast Track Technology configurable via USB

## 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. It supports Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s).

The Ethernet Switch works as an unmanaged 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

- 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)
- 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

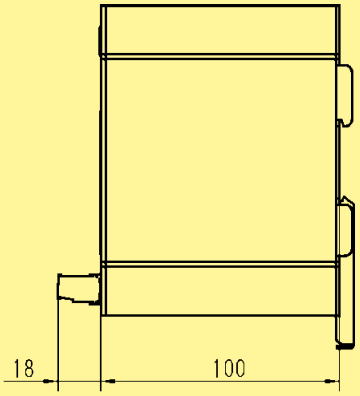
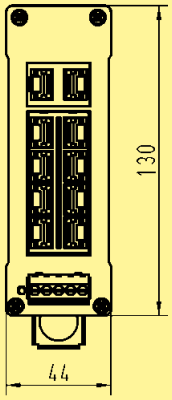
- Industrial automation
- Power distribution systems
- Automotive industry
- Mechanical engineering

# Ha-VIS FTS 3000

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

| Unmanaged | IP 30 | 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 screw terminal, pluggable<br>redundant power supply |
| Permissible range (min/max) | 12 V … 48 V DC |
| Input current | approx. 270 mA (at 24 V DC) |
| Housing material | Aluminium, anodized |
| Dimensions (W x H x D) | 44 x 130 x 100 mm (without connectors) |
| Weight | approx. 0.5 kg |
| Operating temperatur | 0 °C … +55 °C |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS FTS 3100-A<br>Ethernet Switch with 10 RJ45 ports<br><br>for assembly on standard rail | 20 78 110 4000 |  |  |

# Ha-VIS mCon 3000 – Introduction and features

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

- Metal housing
- EMC, temperature range and mechanical stability meet the highest demands
- Integrated management functions

## Application fields

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

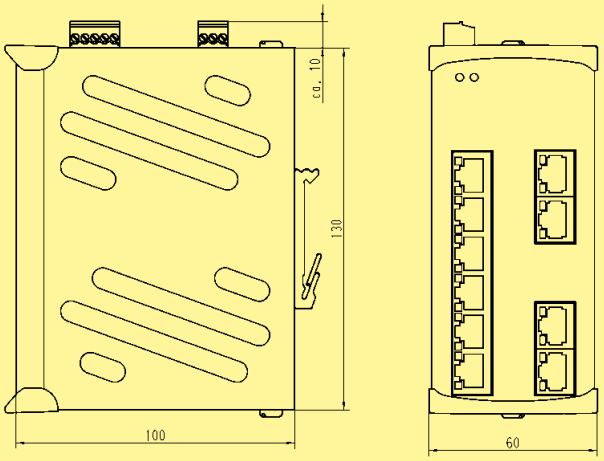
# Ha-VIS mCon 3000

## Ethernet Switch
## Ha-VIS mCon 3100-AV

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

| Managed | IP 30 | 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 DC / 5-pole screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1 |
| MTBF | 625 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3100-AV<br>Ethernet Switch, managed<br>10 RJ45 ports<br>including<br>Set for assembly on standard rail | 20 76 110 4002 |  | |

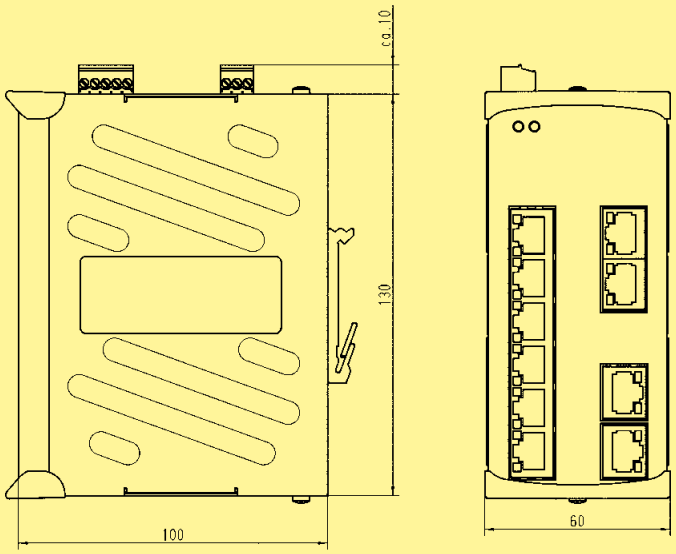
# Ha-VIS mCon 3000

## 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 | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [X] |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / RJ45 (Twisted Pair)<br>2x 10/100/1000Base-T(X) / RJ45 (Twisted Pair) |
| Input voltage / Termination | 24 / 48 V DC / 5-pole screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | UL 60 950-1 |
| MTBF | 720 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3100-AAV<br>Ethernet Switch, managed<br>10 RJ45 ports<br>including<br>Set for assembly on standard rail | 20 76 110 4003 |  | |

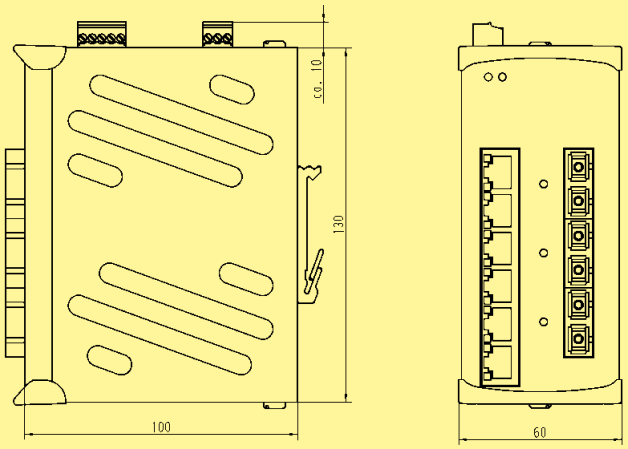
# Ha-VIS mCon 3000

## 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 | IP 30 | PROFINET compatible [X] | EtherNet/IP compatible [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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1 |
| MTBF | 710 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3063-ADV<br>Ethernet Switch, managed<br>6 RJ45 ports<br>3 SC ports<br>including<br>Set for assembly on standard rail | 20 76 109 4101 |  | |

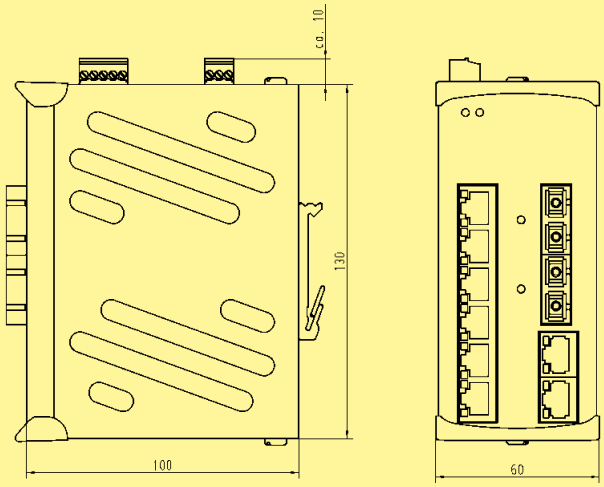
# Ha-VIS mCon 3000

## 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 | IP 30 | 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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating 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<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3082-ADV<br>Ethernet Switch, managed<br>8 RJ45 ports<br>2 SC ports<br>including<br>Set for assembly on standard rail | 20 76 110 4101 |  | |

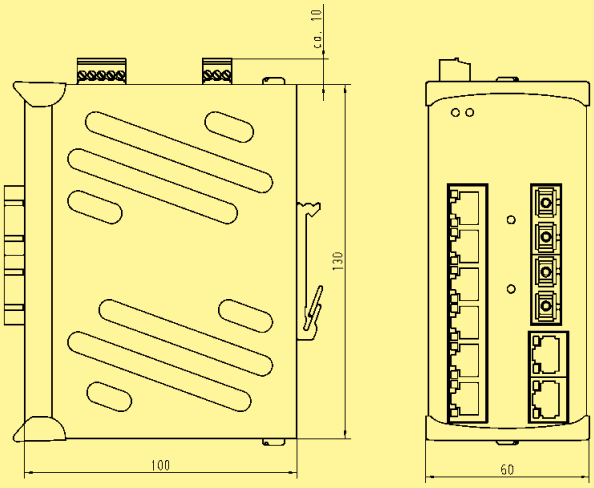
# Ha-VIS mCon 3000

## 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 | IP 20 | 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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3082-AFV<br>Ethernet Switch, managed<br>8 RJ45 ports<br>2 ST port<br>including<br>Set for assembly on standard rail | 20 76 110 4102 |  | |

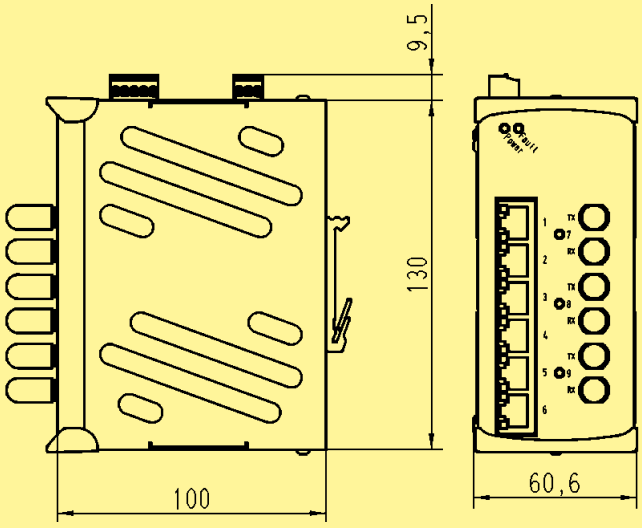
# Ha-VIS mCon 3000

## 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 | IP 20 | PROFINET compatible [X] | EtherNet/IP compatible [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 screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | UL 508; UL 60 950-1 |
| MTBF | 710 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3063-AEV<br>Ethernet Switch, managed<br>6 RJ45 ports<br>3 ST ports<br>including<br>Set for assembly on standard rail | 20 76 109 4201 |  | |

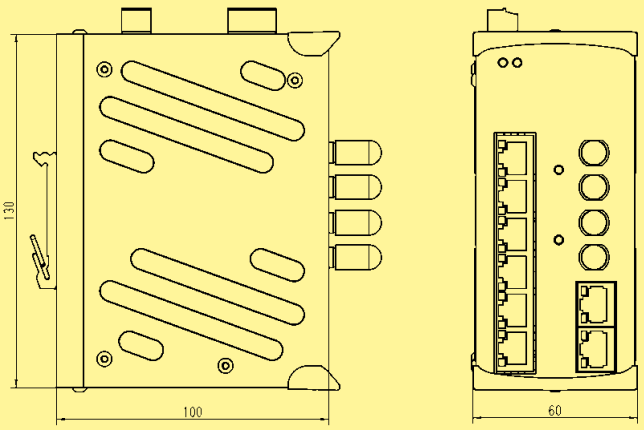
# Ha-VIS mCon 3000

## 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 | IP 20 | 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 / ST female |
| Input voltage / Termination | 24 V DC / 5-pole screw terminal, pluggable<br>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<br>3-pole pluggable screw contact |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 60 x 132 x 104 mm (incl. cap, without connectors) |
| Weight | approx. 0.6 kg |
| Operating 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<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 3082-AEV<br>Ethernet Switch, managed<br>8 RJ45 ports<br>2 ST ports<br>including<br>Set for assembly on standard rail | 20 76 110 4201 |  | |

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
- Store and Forward Switching Mode, non blocking
- Diagnostic LEDs (Link status, Data, Power)
- Mounting onto wall,
  optionally onto top-hat mounting rail

## Advantages

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

## Application fields

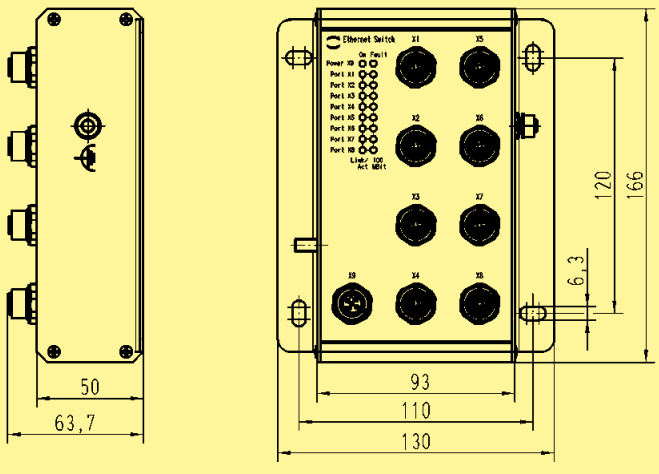
- Railway applications
- Industrial automation
- Automotive industry
- Wind power

# Ha-VIS mCon 4000

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

| Managed | IP 40 | 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. 165 mA (at 24 V DC) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 130 x 166 x 50 mm |
| Weight | approx. 0.85 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | e1 |
| MTBF | 489 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

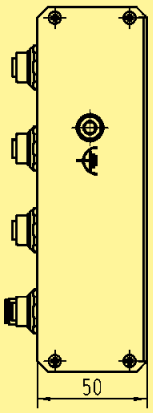
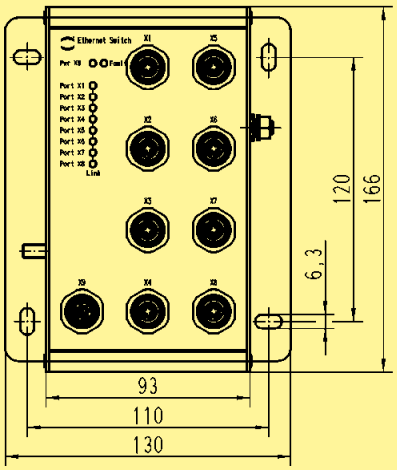
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 4080-B1V<br>Ethernet Switch, managed, with 8 ports M12 D-coding<br>for wall mounting | 20 77 208 4001 |  | |

# Ha-VIS mCon 4000

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

| Managed | IP 40 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| 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. 48 mA (at 110 V DC) |
| Housing material | Metal (powder coated) |
| Dimensions (W x H x D) | 130 x 166 x 50 mm |
| Weight | approx. 0.85 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 446 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 4080-B3V<br>Ethernet Switch, managed,<br>110 V DC<br>with 8 ports M12 D-coding<br>for wall mounting | 20 77 208 4003 |  |  |

# Ha-VIS mCon 9000 – Introduction and features

Ethernet Switch
Ha-VIS mCon 9000
Ethernet Switch, 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
- Store and Forward Switching Mode, non-blocking
- Auto-crossing, Auto-negotiation, Auto-polarity
- Ethernet (10 Mbit/s) and Fast Ethernet (100 Mbit/s)
- Diagnostic LEDs (Link status, Data, Power)
- Pluggable in 19“ racks
- mCon 9070-BV:
  Power input on the front
  no backplane necessary

## Advantages

- Robust metal housing
- Management function integrated
- EMC, temperature range and mechanical stability meet the highest demands

## Application fields

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

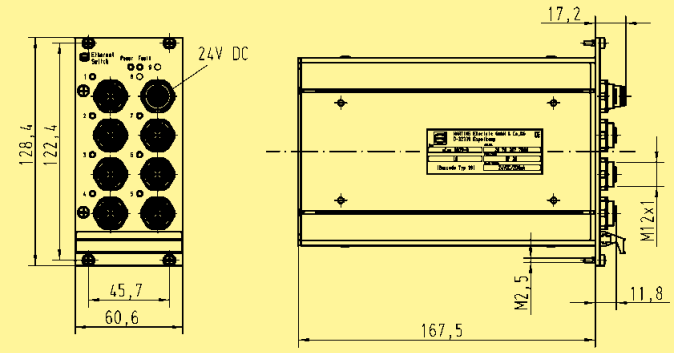
# Ha-VIS mCon 9000

## Ethernet Switch
## Ha-VIS mCon 9070-BV

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

| Managed | IP 20 | 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 (on front side) |
| 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 (12 HP) x 128.4 mm (3 U) x 173.5 mm |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

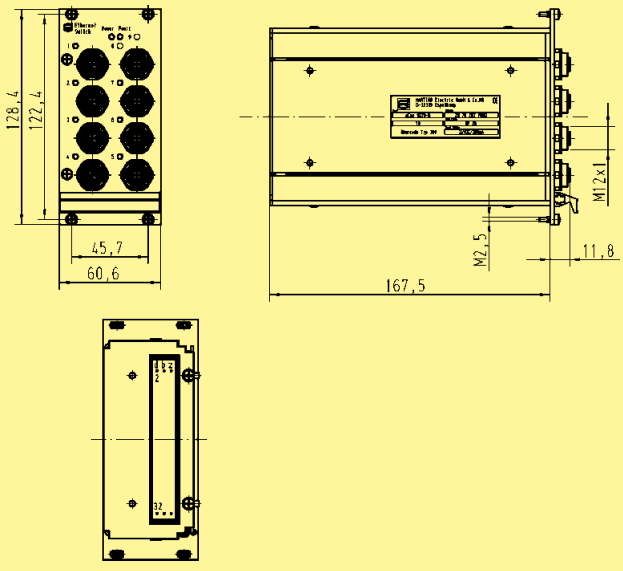
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 9070-BV<br>Ethernet Switch, managed<br>7 ports, M12 D-coding | 20 76 207 7002 |  | |

# Ha-VIS mCon 9000

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

| Managed | IP 20 | 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 / 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 |
| Housing material | Aluminium, anodised |
| Dimensions (W x H x D) | 60.6 mm (12 HP) x 128.4 mm (3 U) x 173.5 mm |
| Weight | approx. 0.6 kg |
| Operating temperature | –40 °C … +70 °C |
| Approvals | cUL (in preparation) |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 9080-B1V<br>Ethernet Switch, managed<br>8 ports M12 D-coding | 20 76 208 7002 |  | |

Ethernet Switch
Ha-VIS mCon 7000

Ethernet Switch, 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 IP 65 / IP 67
- Robust metal housing, zinc die-cast
- Can be used directly in industrial environments
- EMC, temperature range and mechanical stability meet the highest demands
- Integrated management functions

## Application fields

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

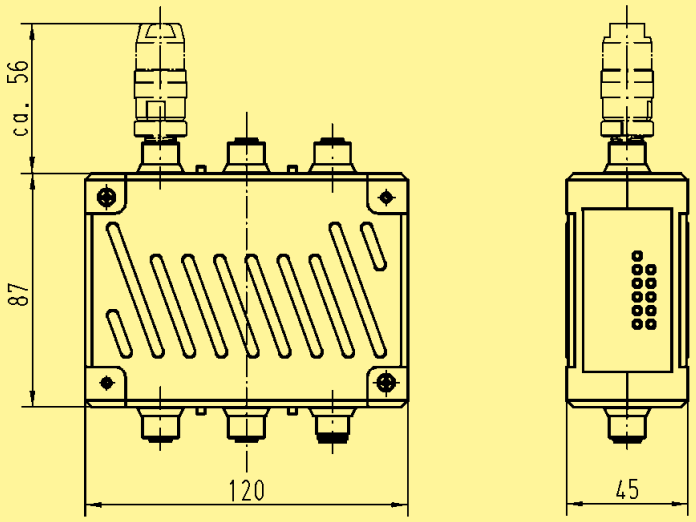
# Ha-VIS mCon 7000

## 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 | IP 67 | PROFINET compatible X | EtherNet/IP compatible 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), 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 (without connectors) |
| Weight | approx. 0.8 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 462 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 7050-B1V<br>Ethernet Switch, managed<br>M12 D-coding | 20 70 305 4943 |  | |

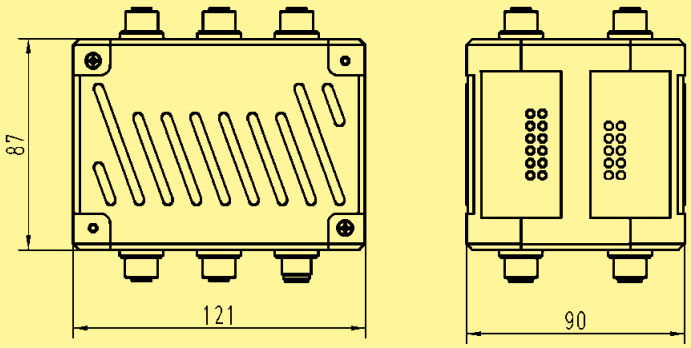
# Ha-VIS mCon 7000

## Ethernet Switch
## Ha-VIS mCon 7100-B1V

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

| Managed | IP 67 | 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),<br>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<br>M12 D-coding (male) |
| Housing material | Zinc die-cast |
| Dimensions (W x H x D) | 90 x 120 x 87 mm (without connectors) |
| Weight | approx. 1.4 kg |
| Operating temperature | –40 °C … +70 °C |
| MTBF | 378 000 h |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 7100-B1V<br>Ethernet Switch, managed<br>M12 D-coding | 20 70 310 4945 |  | |

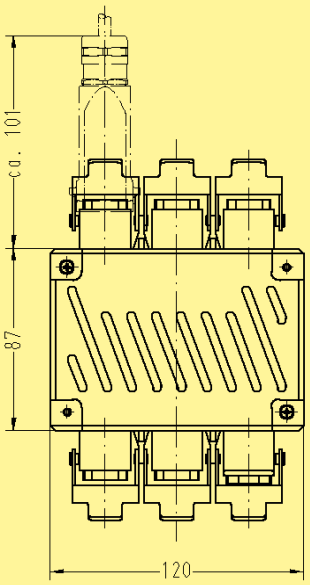
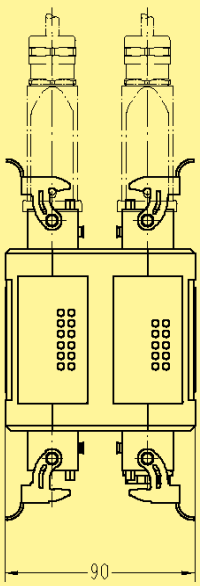
# Ha-VIS mCon 7000

## Ethernet Switch
## Ha-VIS mCon 7100-AAV

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

| Unmanaged | IP 67 | PROFINET compatible X | EtherNet/IP compatible X |
|---|---|---|---|

| | |
|---|---|
| Number of ports, Copper / Termination | 8x 10/100Base-T(X) / Han® 3 A RJ45 (female)*<br>2x 10/100/1000Base-T(X) / Han® 3 A RJ45 (female)* |
| Input voltage / Termination | 24 / 48 V DC / Han® 4 A (male)*, 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<br>Han® 3 A (male)* |
| Housing material | Zinc die-cast |
| Dimensions (W x H x D) | 90 x 120 x 87 mm (without connectors) |
| Weight | approx. 1.4 kg |
| Operating temperature | –40 °C … +70 °C |
| Management | fully managed via Web interface and SNMP<br>Functions see page A·4 3 |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS mCon 7100-AAV<br>Ethernet Switch, managed<br>10 Han® 3 A RJ45 ports | 20 70 310 4924 |  |  |

* Order insert fixing screw 09 20 000 9918 separately

# Ha-VIS pCon 2000 – Industrial Power supply

## Industrial Power supplies
## Serial Ha-VIS pCon 2000

for centralised power supply
in control cabinets with degree of protection IP 20

## General Description

The power supplies of the product family Ha-VIS pCon 2000 are designed for power supply solutions for control units, Ethernet and other automation components. With their wide range of input voltage, the units are suitable for world-wide use.

The quick connection technique guarantees easy installation.

## Features

- Wide range input for world-wide use
- High efficiency of up to 92 %
- Easy installation and toolless connection
- Range of operating temperature of up to 70 °C without derating

## Advantages

- Wide operating temperature range
- Compact design and high power density
- Proof against sustained short-circuits, overloads and no-load operation
- International approvals
- Protection class II (no earth connection necessary)
- Proof against dynamic overload (150% rated current for up to 2.5 seconds)

## Application fields

- Industrial automation
- Automotive industry
- Power generation and distribution

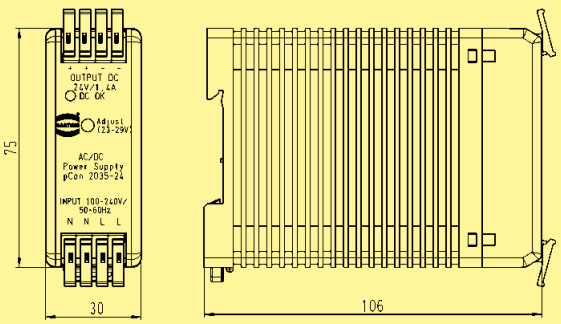
# Ha-VIS pCon 2000

## Industrial Power supply
## Ha-VIS pCon 2035-24

for centralised power supply in control cabinets
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 24 V DC | 34 W |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Input** | | **Output** | |
| Rated voltage | 100 … 240 V AC<br>(Wide range input) | Output voltage | 24 V DC ± 1%<br>(setting range 23 … 29 V) |
| Input voltage range | 85 … 264 V AC<br>(100 … 375 V DC) | Output current | 1.4 A |
| Input rated current | < 0.4 A at 230 V<br>< 0.8 A at 100 V | Max. output power | 34 W |
| Input current | < 40 A (active limiting) | Main buffering time | > 100 ms (at 230 V AC)<br>> 15 ms (at 115 V AC) |
| Input frequency | 47 … 63 Hz | Remaining ripple | < 40 mVss (at rated values) |
| Input fuse | internal T 4 A | Sensibility | < 2% |
| Recommended backup fuse | B 16 A (EN 60 898) | Protection function | Proof against sustained short-circuits, overloads and no-load operation |
| Protection class | II (no earth connection necessary) | Overload behavior | Limiting current 2.5 A |
| | | Output voltage indication | LED Green |
| **General data** | | | |
| Termination Power / Load | Spring-type terminal 0.3 … 2.5 mm² / AWG 28 … 12 (solid) / 0.3 … 4 mm² / AWG 28 … 12 (stranded) | | |
| Product standards | EN 60 950 (SELV) | Efficiency | 89% (230 V) / 87% (115 V) |
| Approvals | CE, GS, cCSA$_{us}$<br>(UL 60 950, UL 508) | Weight | approx. 160 g |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS pCon 2035-24<br>Industrial Power supply for mounting onto 35 mm top-hat mounting rail according to DIN EN 60 715 | 20 80 000 3123 |  | |

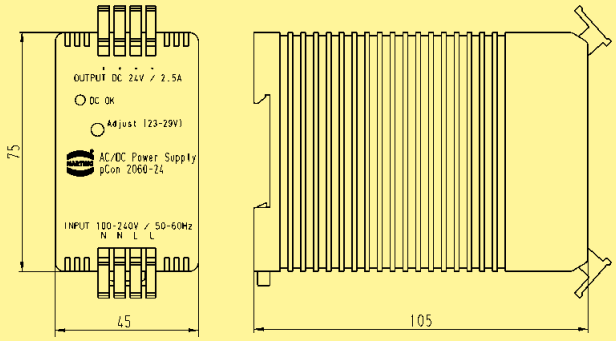
# Ha-VIS pCon 2000

## Industrial Power supply
## Ha-VIS pCon 2060-24

for centralised power supply in control cabinets
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 24 V DC | 60 W |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Input** | | **Output** | |
| Rated voltage | 100 … 240 V AC<br>(Wide range input) | Output voltage | 24 V DC ± 1%<br>(setting range 23 … 29 V) |
| Input voltage range | 85 … 264 V AC<br>(100 … 375 V DC) | Output current | 2.5 A |
| Input rated current | < 0.7 A at 230 V<br>< 1.3 A at 100 V | Max. output power | 60 W |
| Input current | < 40 A (active limiting) | Main buffering time | > 100 ms (at 230 V AC)<br>> 15 ms (at 115 V AC) |
| Input frequency | 47 … 63 Hz | Remaining ripple | < 40 mVss (at rated values) |
| Input fuse | internal T 4 A | Sensibility | < 2% |
| Recommended backup fuse | B 16 A (EN 60 898) | Protection function | Proof against sustained short-circuits, overloads and no-load operation |
| Protection class | II (no earth connection necessary) | Overload behavior | Limiting current<br>2.7 A (static) / 5.0 A (dynamic) |
| | | Output voltage indication | LED Green |
| **General data** | | | |
| Termination Power / Load | Spring-type terminal 0.3 … 2.5 mm² / AWG 28 … 12 (solid) / 0.3 … 4 mm² / AWG 28 … 12 (stranded) | | |
| Product standards | EN 60 950 (SELV) | Efficiency | 91.5% (230 V) / 90% (115 V) |
| Approvals | CE, GS, cCSA$_{us}$<br>(UL 60 950, UL 508) | Weight | approx. 250 g |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS pCon 2060-24<br>Industrial Power supply for mounting onto 35 mm top-hat mounting rail according to DIN EN 60 715 | 20 80 000 3121 |  | |

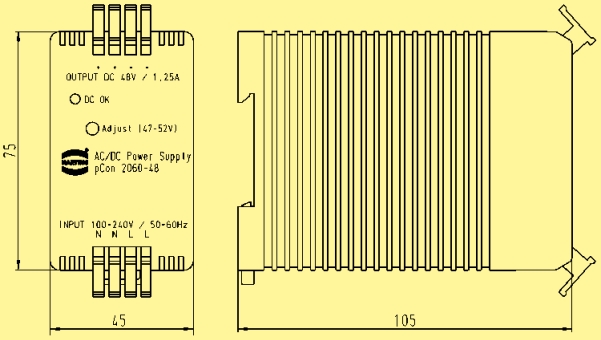
# Ha-VIS pCon 2000

## Industrial Power supply
## Ha-VIS pCon 2060-48

for centralised power supply in control cabinets
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 48 V DC | 60 W |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Input** | | **Output** | |
| Rated voltage | 100 … 240 V AC<br>(Wide range input) | Output voltage | 48 V DC ± 1%<br>(setting range 47 … 52 V) |
| Input voltage range | 85 … 264 V AC<br>(100 … 375 V DC) | Output current | 1.25 A |
| Input rated current | < 0.7 A at 230 V<br>< 1.3 A at 100 V | Max. output power | 60 W |
| Input current | < 40 A (active limiting) | Main buffering time | > 100 ms (at 230 V AC)<br>> 15 ms (at 115 V AC) |
| Input frequency | 47 … 63 Hz | Remaining ripple | < 40 mVss (at rated values) |
| Input fuse | internal T 4 A | Sensibility | < 2% |
| Recommended backup fuse | B 16 A (EN 60 898) | Protection function | Proof against sustained short-circuits, overloads and no-load operation |
| Protection class | II (no earth connection necessary) | Overload behavior | Limiting current<br>1.5 A (static) / 2.5 A (dynamic) |
| | | Output voltage indication | LED Green |
| **General data** | | | |
| Termination Power / Load | Spring-type terminal 0.3 … 2.5 mm² / AWG 28 … 12 (solid) / 0.3 … 4 mm² / AWG 28 … 12 (stranded) | | |
| Product standards | EN 60 950 (SELV) | Efficiency | 92% (230 V) / 90% (115 V) |
| Approvals | CE, GS, cCSA$_{us}$<br>(UL 60 950, UL 508) | Weight | approx. 250 g |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS pCon 2060-48<br>Industrial Power supply for mounting onto 35 mm top-hat mounting rail according to DIN EN 60 715 | 20 80 000 3122 |  | |

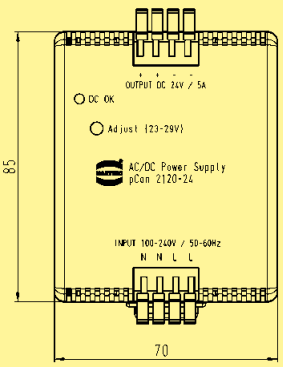
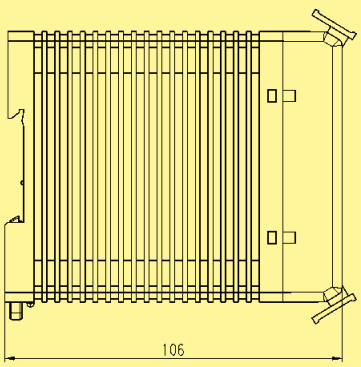
# Ha-VIS pCon 2000

## Industrial Power supply
## Ha-VIS pCon 2120-24

for centralised power supply in control cabinets
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 24 V DC | 120 W |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Input** | | **Output** | |
| Rated voltage | 100 … 240 V AC<br>(Wide range input) | Output voltage | 24 V DC ± 1%<br>(setting range 23 … 29 V) |
| Input voltage range | 85 … 264 V AC<br>(100 … 375 V DC) | Output current | 5 A |
| Input rated current | < 1.6 A at 230 V<br>< 2.6 A at 100 V | Max. output power | 120 W |
| Input current | < 40 A (active limiting) | Main buffering time | > 100 ms (at 230 V AC)<br>> 15 ms (at 115 V AC) |
| Input frequency | 47 … 63 Hz | Remaining ripple | < 40 mVss (at rated values) |
| Input fuse | internal T 4 A | Sensibility | < 2% |
| Recommended backup fuse | B 16 A (EN 60 898) | Protection function | Proof against sustained short-circuits, overloads and no-load operation |
| Protection class | II (no earth connection necessary) | Overload behavior | Limiting current<br>5 A (static) / 10 A (dynamic) |
| | | Output voltage indication | LED Green |
| **General data** | | | |
| Termination Power / Load | Spring-type terminal 0.3 … 2.5 mm² / AWG 28 … 12 (solid) / 0.3 … 4 mm² / AWG 28 … 12 (stranded) | | |
| Product standards | EN 60 950 (SELV) | Efficiency | 92% (230 V) / 90.5% (115 V) |
| Approvals | CE, GS, cCSA$_{us}$<br>(UL 60 950, UL 508) | Weight | approx. 500 g |

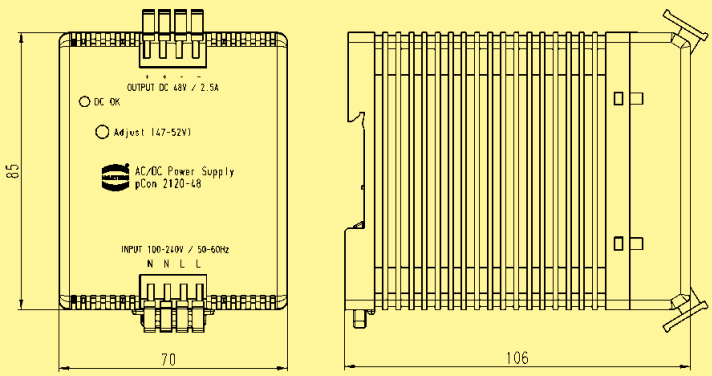
| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS pCon 2120-24<br>Industrial Power supply for mounting onto 35 mm top-hat mounting rail according to DIN EN 60 715 | 20 80 000 3124 |   | |

## Industrial Power supply
## Ha-VIS pCon 2120-48

for centralised power supply in control cabinets
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 48 V DC | 120 W |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Input** | | **Output** | |
| Rated voltage | 100 … 240 V AC<br>(Wide range input) | Output voltage | 48 V DC ± 1%<br>(setting range 47 … 52 V) |
| Input voltage range | 85 … 264 V AC<br>(100 … 375 V DC) | Output current | 2.5 A |
| Input rated current | < 1.6 A at 230 V<br>< 2.6 A at 100 V | Max. output power | 120 W |
| Input current | < 40 A (active limiting) | Main buffering time | > 100 ms (at 230 V AC)<br>> 15 ms (at 115 V AC) |
| Input frequency | 47 … 63 Hz | Remaining ripple | < 40 mVss (at rated values) |
| Input fuse | internal T 4 A | Sensibility | < 2% |
| Recommended backup fuse | B 16 A (EN 60 898) | Protection function | Proof against sustained short-circuits, overloads and no-load operation |
| Protection class | II (no earth connection necessary) | Overload behavior | Limiting current<br>2.7 A (static) / 4.0 A (dynamic) |
| | | Output voltage indication | LED Green |
| **General data** | | | |
| Termination Power / Load | Spring-type terminal 0.3 … 2.5 mm² / AWG 28 … 12 (solid) / 0.3 … 4 mm² / AWG 28 … 12 (stranded) | | |
| Product standards | EN 60 950 (SELV) | Efficiency | 90.7% (230 V) / 90.4% (115 V) |
| Approvals | CE, GS, cCSA$_{us}$<br>(UL 60 950, UL 508) | Weight | approx. 500 g |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|
| Ha-VIS pCon 2120-48<br>Industrial Power supply for mounting onto 35 mm top-hat mounting rail according to DIN EN 60 715 | 20 80 000 3125 |  | |

# Ha-VIS pCon 2000

## Redundant module
## Ha-VIS pCon 20DRM-10A

for redundant power supply in control cabinets
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 24 V DC | 60 W |
|---|---|---|---|

**Input**

| | |
|---|---|
| Rated voltage | 12 … 48 V DC |
| Input rated current | 10 A |
| Protection class | II (no earth connection necessary) |

**Output**

| | |
|---|---|
| Output voltage | same as Input voltage |
| Output current | 16 A (max.) |
| Voltage drop | 300 mV (max.) |
| Current limiting | No. The upstream power supply has to fullfill this function. |
| Overload protection | No. The upstream power supply has to fullfill this function. |
| Overtemperature shutt-off | No |
| Power loss | 6 W (max.) |
| Indication | LED Green |
| Green flashing: | Only one input connected. Output voltage present |
| Green continuous ON: | Both inputs are connected. Output voltage present |

**General data**

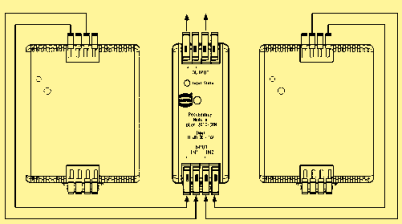
| | | | |
|---|---|---|---|
| Termination Power / Load | Spring-type terminal 0.3 … 2.5 mm² / AWG 28 … 12 (solid) / 0.3 … 4 mm² / AWG 28 … 12 (stranded) | | |
| Product standards | EN 60 950 (SELV) | Weight | approx. 100 g |
| Approvals | CE, GS, cCSA$_{us}$ (UL 60 950, UL 508) | | |

| Identification | Part number | Drawing | Dimensions in mm |
|---|---|---|---|

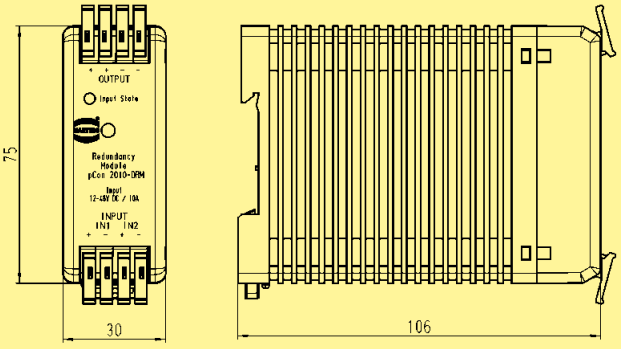
### Ha-VIS pCon 20DRM-10A

Redundant module for mounting onto 35 mm top-hat mounting rail according to DIN EN 60 715

Example for application:



20 80 000 3130



# Ha-VIS pCon 7000 – Industrial DC/DC Converters

Industrial DC/DC converter
Serial Ha-VIS pCon 7000

for centralised power supply
with degree of protection IP 20 / IP 65

## 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 IP 65 / IP 67

## 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

# Ha-VIS pCon 7000


## DC/DC converter
## Ha-VIS pCon 7150-110/48

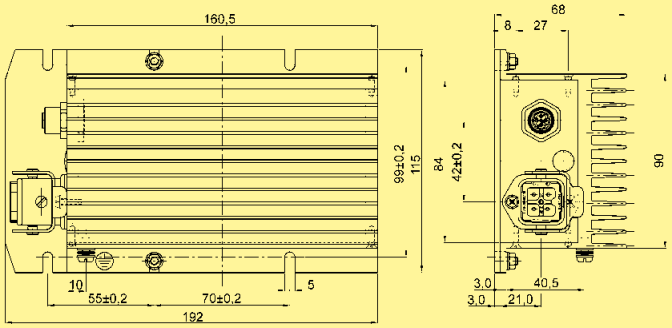
for centralised power supply
with degree of protection IP 65

| Han® 3 A / M12 A-coding | IP 65 | 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 $I_{in\ nom}$ | Ripple | ≤ 1 % p-p |
| Switching frequency | approx. 70 kHz | Noise | ≤ 2 % p-p |
| Efficiency | ≥ 88 % | Starting time | ≤ 200 ms |
| Input filter | two-step filter | No load characteristics | no ground load |
| Reverse polarity protection | by means of connector with coding | Current limiting | 105 ... 130 % stabilised current |
| Termination | Han® 3 A | Termination | M12 A-coding |
| Protection class | I | | |

**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<br>DC/DC converter | 20 80 300 3026 |  | |

# Ha-VIS pCon 7000

## DC/DC converter
## Ha-VIS pCon 7150-24/48

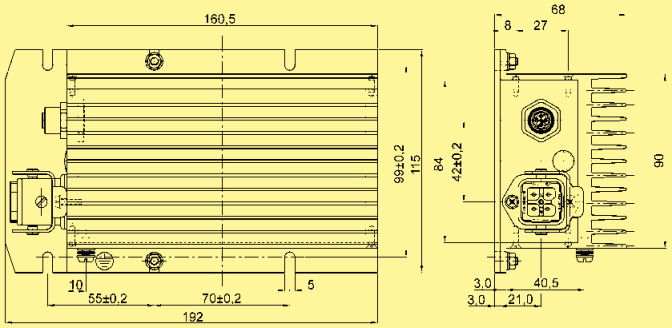
for centralised power supply
with degree of protection IP 65

| Han® 3 A / M12 A-coding | IP 65 | 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 $I_{in\ nom}$ | Ripple | ≤ 1 % p-p |
| Switching frequency | approx. 70 kHz | Noise | ≤ 2 % p-p |
| Efficiency | > 90 % | Starting time | ≤ 200 ms |
| Input filter | two-step filter | No load characteristics | no ground load |
| Reverse polarity protection | by means of connector with coding | Current limiting | 105 ... 130 % stabilised current |
| Termination | Han® 3 A | Termination | M12 A-coding |
| Protection class | I | | |

**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 7150-24/48<br>DC/DC converter | 20 80 300 3027 |  | |

## DC/DC converter
## Ha-VIS pCon 7060-110/24

for centralised power supply
with degree of protection IP 20

| 2x spring-type terminals | IP 20 | 110 V DC | 24 V DC |
|---|---|---|---|

**Input**

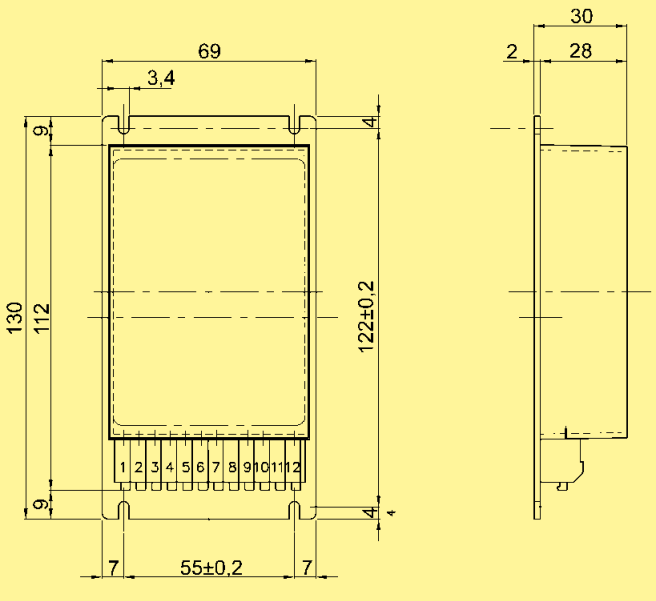
| | |
|---|---|
| Input voltage | 43.2 ... 154 V DC (wide range input) |
| Switching frequency | approx. 70 kHz |
| Efficiency | ≥ 85 % |
| Input filter | LC filter |
| Transient protection | 1.8 kV / 5/50 µs |
| Reverse polarity protection | cross diode (together with external fuse) |
| Termination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

**Output**

| | |
|---|---|
| Output voltage | 24 V DC ±2 % |
| 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<br>DC/DC converter | 20 80 300 3025 |  | |