



3 to 16 Ethernet ports RJ45 and SC

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



- Fast Ethernet Non-Blocking switch architecture in accordance with IEEE 802.3
- Variants with industrial temperature range of -40 °C ... +70 °C
- Wide range power supply 24/48 VDC
- Surge protection and reverse polarity protection
- Minimum energy consumption due to energy-efficient Ethernet
- Optimised DIN rail bracket

Target markets

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



General description

The Ha-VIS eCon 3000 Fast Ethernet family of unmanaged Ethernet switches is equipped with up to 16 Fast Ethernet ports and allow for cost-efficient and quick expansion and/or reconstruction of network infrastructures. The slender design of the switches enables an extremely high packing density on the DIN rail. The selection includes various combinations of variants with

RJ45 and fibre optic ports. Automatic detection of the transmission rate (auto-negotiation) and of the wiring of the twisted pair data cable (auto-polarity and auto-MDI(X)) allow for simple plug and play. All variants are available with the temperature ranges "Industrial" and "Commercial".

Technical characteristics

Switch features

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

Power supply

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

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

| | |
|---------------------|-----------------------------|
| Type of connection | RJ45 |
| Auto-negotiation | Yes |
| Auto-polarity | Yes |
| Auto-MDI(X) | Yes |
| Transfer conditions | Twisted pair |
| Transfer speed | 10 / 100 Mbit/s |
| Transfer length | 100 m (Twisted Pair, Cat 5) |

Ethernet ports 100BASE-FX

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

Environmental conditions

| | |
|-------------------------------------------|-------------------------------|
| Commercial temperature range | 0 °C ... +55 °C |
| Industrial temperature range | -40 °C ... +70 °C |
| Storage temperature range | -40 °C ... +85 °C |
| Relative humidity (operation) | 0 % ... 95 % (non-condensing) |
| Relative humidity (storage and transport) | 0 % ... 95 % (non-condensing) |
| Air pressure | 2000 m (795 hPa) |



HARTING Technology Group
P.O.Box 1473, D-32325 Espelkamp
Wilhelm-Harting-Straße 1, D-32325 Espelkamp, Germany

ICPN-Service@harting.com | Service hotline: +49 5772 47-9479
Fax: +49 5772 47-495 | www.HARTING.com/de/ethernet-switches

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Enclosures

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

Status and diagnostic displays

| | |
|-----------------------------------------|----------------------------------------|
| Power ("Pwr") \odot illuminated green | Supply voltage is applied |
| Link/Activity ("L/A") off | No link |
| Link/Activity ("L/A") illuminated green | Link is active |
| Link/Activity ("L/A") flashes green | Link is active and data is transferred |
| Link speed ("Spd") off | 10 Mbit/s |
| Link speed ("Spd") illuminated yellow | |

Approvals

CE, FCC CFR 47 Part 15, cUL US 508 listed, DNV, GL, ABS, NK, ABB IIT

EMC and environmental conditions

EMC interference immunity (EN 61000-6-1, 61 000-6-2 55024)

- Electrostatic discharge (ESD) EN 61 000-4-2
- Electromagnetic field EN 61 000-4-3
- Rapid transients (burst) EN 61 000-4-4
- Surge voltages EN 61 000-4-5
- Conducted interference voltages EN 61 000-4-6

EMC interference emission (EN 61000-6-4, EN 55 022, FCC CFR 47 Part 15)

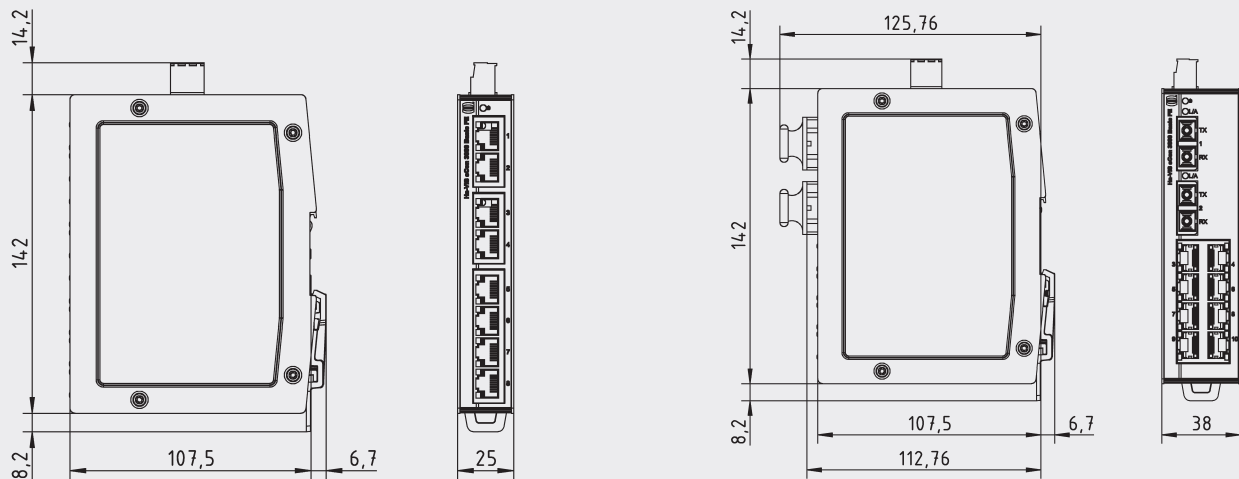
Mechanical stability (EN 60721-3)

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

Included in delivery

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

Drawings



Technical characteristics / order information

Ports / order information

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



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Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.