Pushing Performance

People | Power | Partnership

HARTING News 2014

Transforming customer wishes into concrete solutions

The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking, as well as in manufacturing, mechatronics and software creation. The Group uses these skills to develop customized solutions and products such as connectors for energy and data transmission applications including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electro-magnetic components for the automobile industry and offers solutions in the field of Enclosures and Shop Systems.
The HARTING Group currently comprises 37 subsidiary companies and worldwide distributors employing a total of approximately 3,800 staff.

HARTING Subsidiary company HARTING Representatives

We aspire to top performance.

Connectors ensure functionality. As core elements of electrical and optical wiring, connection and infrastructure technologies, they are essential in enabling the modular construction of devices, machines and systems across a very wide range of industrial applications. Their reliability is a crucial factor guaranteeing smooth functioning in the manufacturing area, in telecommunications, applications in medical technology – in fact, connectors are at work in virtually every conceivable application area. Thanks to the consistent further development of our technologies, customers enjoy investment security and benefit from durable, long term functionality.

Always at hand, wherever our customers may be.

Increasing industrialization is creating growing markets characterized by widely diverging demands and requirements. The search for perfection, increasingly efficient processes and reliable technologies is a common factor in all sectors across the globe.

HARTING is providing these technologies – in Europe, America and Asia. The HARTING professionals at our international subsidiaries engage in close, partnership based interaction with our customers, right from the very early product development phases, in order to realize customer demands and requirements in the best possible manner.

Our people on location form the interface to the centrally coordinated development and production departments. In this way, our customers can rely on consistently high, superior product quality – worldwide.

Our claim: pushing performance.

HARTING provides more than optimally attuned components. In order to serve our customers with the best possible solutions, HARTING is able to contribute a great deal more and play a closely integrative role in the value creation process.

From ready assembled cables through to control racks or ready-to-go control desks: Our aim is to generate the maximum benefits for our customers – without compromise!

Quality creates reliability – and warrants trust.

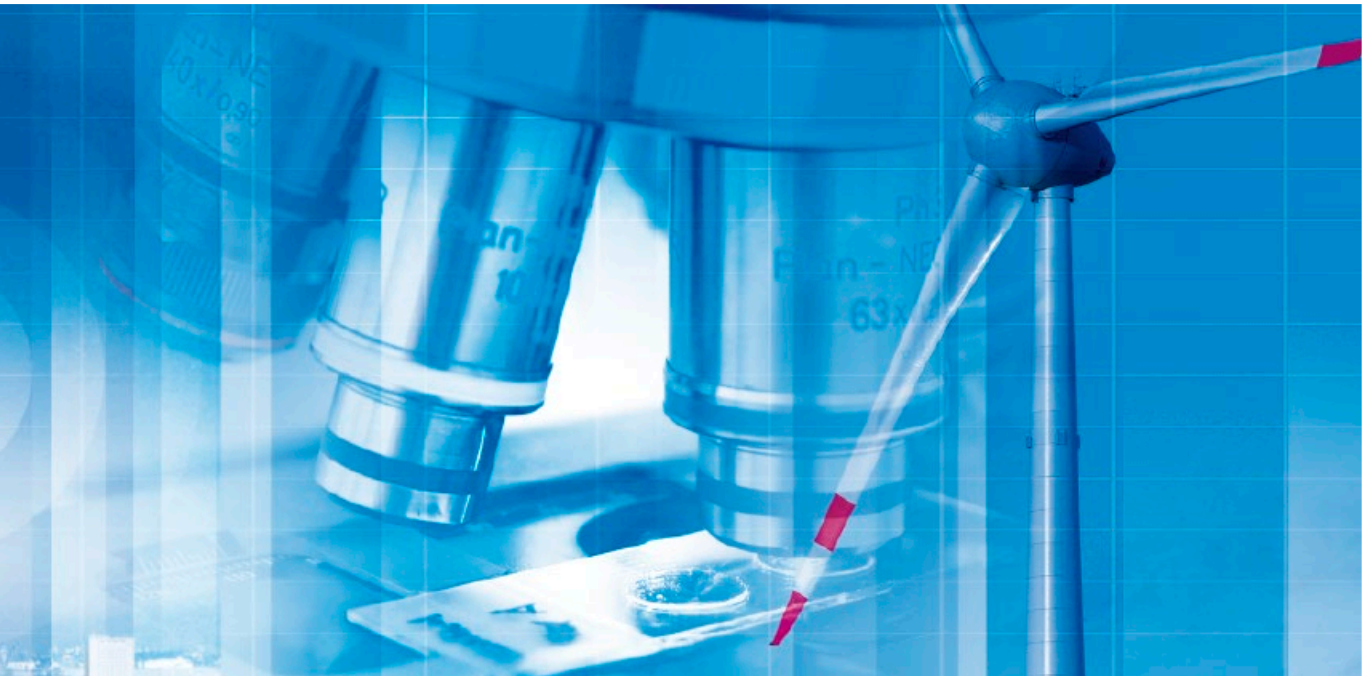
The HARTING brand stands for superior quality and reliability – worldwide. The standards we set are the result of consistent, stringent quality management that is subject to regular certifications and audits.

EN ISO 9001, the EU Eco-Audit and ISO 14001:2004 are key elements here. We take a proactive stance to new requirements, which is why HARTING ranks among the first companies worldwide to have obtained the new IRIS quality certificate for rail vehicles.

HARTING technology creates added value for customers.
Technologies by HARTING are at work worldwide. HARTING's presence stands for smoothly functioning systems, powered by intelligent connectors, smart infrastructure solutions and mature network systems. In the course of many years of close, trust-based cooperation with its customers, the HARTING Technology Group has advanced to one of the worldwide leading specialists for connector technology. Extending beyond the basic functionalities demanded, we offer individual customers specific and innovative solutions. These tailored solutions deliver sustained effects, provide investment security and enable customers to achieve strong added value.

Opting for HARTING opens up an innovative, complex world of concepts and ideas.
In order to develop connectivity and network solutions serving an exceptionally wide range of connector applications and task scopes in a professional and cost optimized manner, HARTING not only commands the full array of conventional tools and basic technologies. Over and beyond these capabilities, HARTING is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that ensure continuity at the same time. In securing this know-how lead, HARTING draws on a wealth of sources from both in-house research and the world of applications alike.
Salient examples of these sources of innovative knowledge include microstructure technologies, 3D design and construction technology, as well as high temperature or ultrahigh frequency applications that are finding use in telecommunications or automation networks, in the automotive industry, or in industrial sensor and actuator applications, RFID and wireless technologies, in addition to packaging and housing made of plastics, aluminum or stainless steel.

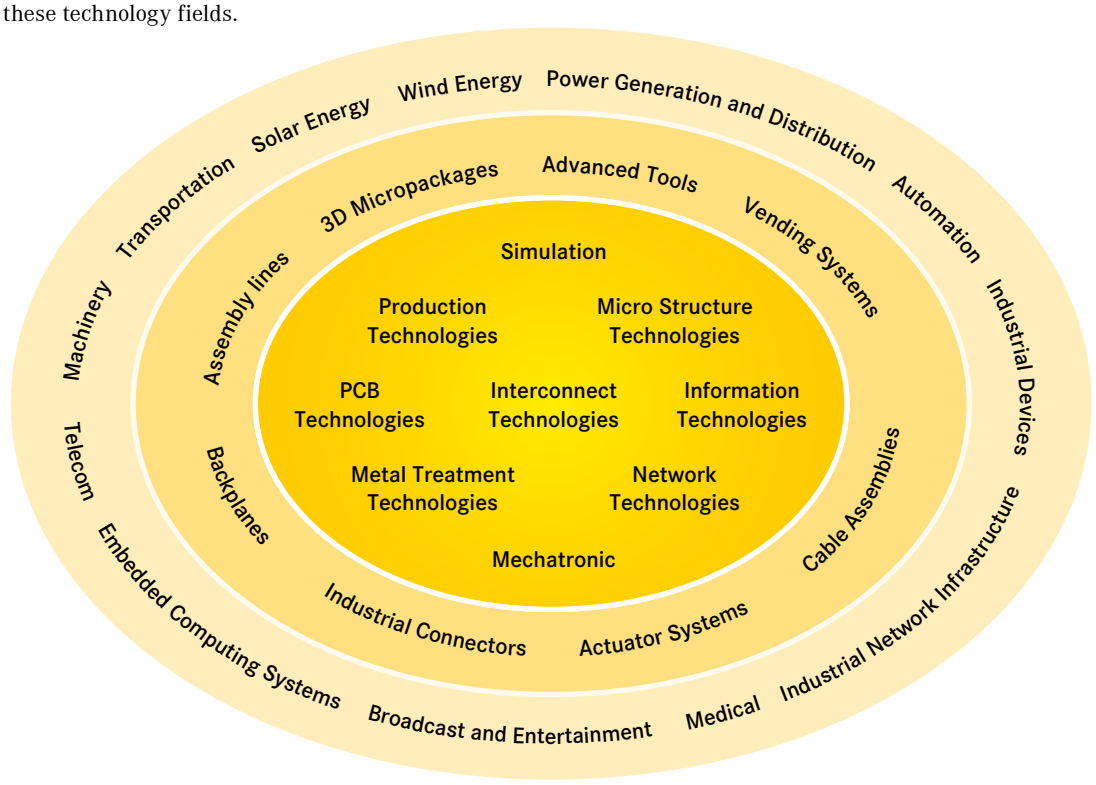
HARTING solutions extend across technology boundaries.
Drawing on the comprehensive resources of the group's technology pool, HARTING devises practical solutions for its customers. Whether this involves industrial networks for manufacturing automation, or hybrid interface solutions for wireless telecommunication infrastructures, 3D circuit carriers with microstructures, or cable assemblies for high-temperature applications in the automotive industry – HARTING technologies offer far more than components, and represent mature, comprehensive solutions attuned to individual customer requirements and wishes. The range covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.
In order to ensure the future proof design of RF- and EMC-compatible interface solutions, the central HARTING laboratory (certified to EN 45001) provides simulation tools, as well as experimental, testing and diagnostics facilities all the way through to scanning electron microscopes. In the selection of materials and processes, lifecycle and environmental aspects play a key role, in addition to product and process capability considerations.



HARTING knowledge is practical know-how generating synergy effects.

HARTING commands decades of experience with regard to the applications conditions of connectors in telecommunications, computer and network technologies and medical technologies, as well as industrial automation technologies, such as the mechanical engineering and plant engineering areas, in addition to the power generation industry or the transportation sector. HARTING is highly conversant with the specific application areas in all of these technology fields.

The key focus is on applications in every solution approach. In this context, uncompromising, superior quality is our hallmark. Every new solution found will invariably flow back into the HARTING technology pool, thereby enriching our resources. And every new solution we go on to create will draw on this wealth of resources in order to optimize each and every individual solution. In this way, HARTING is synergy in action.



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Notes

Han® HPR RFID

Features

- Sizes 6 B, 10 B, 16 B, 24 B
- Large wiring space
- Robust and long-living transponder
- Expanded storage
- Read range 30 cm

Technical characteristics

Hoods/housings

Material	aluminium die cast
Colour	RAL 9005 (black)
Surface	powder coated

Locking element

Screw locking	M6
Material	stainless steel
Tightening torque	4 Nm
Hoods/housings seal	NBR
Limiting temperatures	-40 °C… +125 °C
Degree of protection acc. to DIN EN 60 529 in locked position	IP65, IP68, IP69K

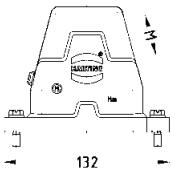
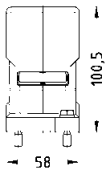
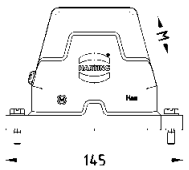
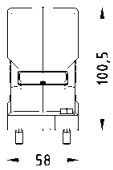
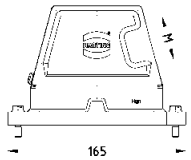
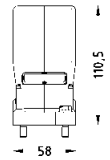
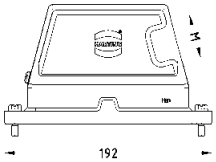
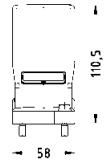
Transponder Ha-VIS RFID VT 86

Frequency range	860….960 MHz
Protocol	EPC C1 Gen2
Storage	512 Bit
IC	Alien Higgs 3
Read range	30 cm
Dimensions (W x D x H)	41 x 11 x 5 mm
Degree of protection	IP65 / IP68 / IP69K

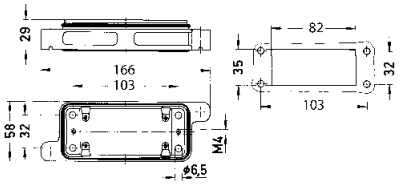
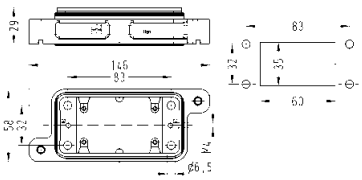
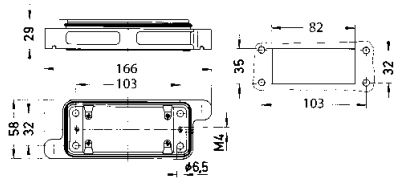
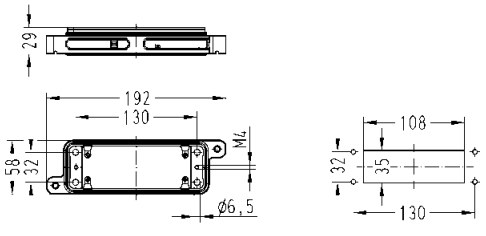
Operating temperature

Function (read)	-50 °C … +85 °C
Function (write)	-50 °C … +85 °C
Max. range	-65 °C …. +210 °C
Mounting Transponder	glue
Colour	black

Hoods/Housings for harsh environmental requirements / Screw locking system

Identification		Size	Part number	Cable entry metric	Drawing	Dimensions in mm
Hoods side entry with RFID transponder		6 B	19 40 006 0522	1 x 32		
Hoods side entry with RFID transponder		10 B	19 40 010 0522	1 x 32		
Hoods side entry with RFID transponder		16 B	19 40 016 0523	1 x 40		
Hoods side entry with RFID transponder		24 B	19 40 024 0523	1 x 40		

Hoods/Housings for harsh environmental requirements / Screw locking system

Identification	Size	Part number	Drawing	Dimensions in mm
Housings, bulkhead mounting 	6 B	09 40 006 0311	 Panel cut out	
Housings, bulkhead mounting 	10 B	09 40 010 0311	 Panel cut out	
Housings, bulkhead mounting 	16 B	09 40 016 0311	 Panel cut out	
Housings, bulkhead mounting 	24 B	09 40 024 0311	 Panel cut out	

Ha-VIS RFID Handheld RF-M3000

Ha-VIS RFID Handheld RF-M3000
mobile UHF RFID Reader

Advantages

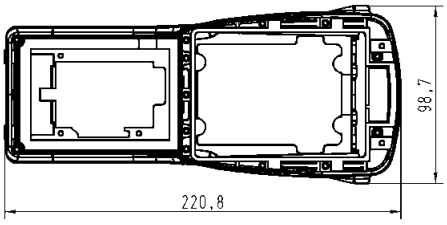
- Robust
- Flexible
- For industrial applications

General Description

The Ha-VIS RF-M3000 is a powerful mobile RFID Reader, approved acc. to ETSI, FCC and IC.

Properties:

- Highly sensitive receiver for extended reading range
- Robust housing
- High protection class IP 65
- WLAN, Bluetooth and RFID in one handheld
- Large, very bright display
- Very long battery life (> 8 h)
- Highly modular

Identification	Part number	Drawing	Dimensions in mm
Ha-VIS RFID Handheld RF-M3000 standard configuration: • WLAN • Bluetooth • large keyboard • no barcode scanner	20 91 211 1011		
Ha-VIS RFID Handheld RF-M3001 additional to Ha-VIS RF-M3000 with: • 1D Laser Scanner	20 91 211 1111		
Ha-VIS RFID Handheld RF-M3002 additional to Ha-VIS RF-M3000 with: • 2D Imager	20 91 211 1311		
Optional: • GPS • small keyboard • GPRS • 3G HSDPA	on request		
Recommended accessories:			
High capacity battery	20 93 405 0101		
Docking Station Desktop	20 93 305 0101		
Docking Station Quad	20 93 305 0102		

Technical characteristics

Processor and memory	PXA270 624 MHz Processor 1 GB FLASH ROM 256 MB RAM
Operating system	Windows(R) CE 5
Wireless communication	WLAN 802.11 b/g Compact Flash Bluetooth® Class II, V 2.0 + EDR
Barcode scanner	1D Laser Scanner Long Range or 2D Area Imager Optional pistol grip
RFID module	UHF module Frequency 868 MHz or 915 MHz Tag supported: EPC Class 1 Gen 2; other protocols on request Reading-Writing distance up to 250 cm
External connections	Tether-Port for RS 232 and USB On-The-Go (USB 1.1) Docking-connector DC power jack
User interface	VGA colour touchscreen 3,6“, resolution 480x640, TFT Sunlight readable (for outdoor use), LED backlight Touch screen pencil (stylus) or finger operation Keyboard (alphanumeric ABCDEF); alternatives on request Audio: 90 dB speaker, microphone, beeper
Programming environment	HTML, XML Mobile Devices SDK .NET and C++ via Microsoft Visual Studio® 2005 Java progamming support JDK 1.2 or higher Standard Protocol APIs Windows sockets (CE.net)
Expansion slots	SD/MMC memory card slot 100-pin Expansion interface supports PCMCIA (Type II), GPRS/EDGE One Type II CF card slot
Power management	4400 mAh High capacity Accu (3,7 V) Advanced Smart Battery System Built-in Charger
Environmental	Withstands several drops from 1.8 m to polished concrete while powered on and configured with accessories Rain/Dust: IP65, IEC 60 629 Operating temperature: -20 °C ... +50 °C Storage temperature: -40 °C ... +60 °C Relative humidity: 5 % ... 95 % (non-condensing) ESD +/- 8 kV DC air discharge; +/- 4 kV DC contact
Dimensions (W x H x D)	223 mm x 75/100 mm x 31/42 mm
Approvals	Safety CSA/UL60 950-1, IEC 60 950-1, EN 60 950-1 EMC FCC Part15 Class B EN 55 022; EN 55 024; EN 301 489 Laser IEC 60 825-1, Class 2 FDA 21 CFR 1040.10, 1040.11 Class II Bluetooth 1.2 In-vehicle cradle: e Mark

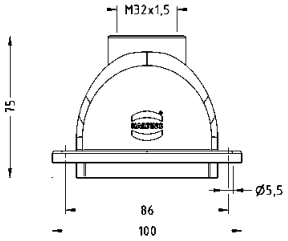
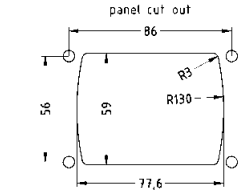
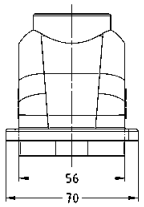
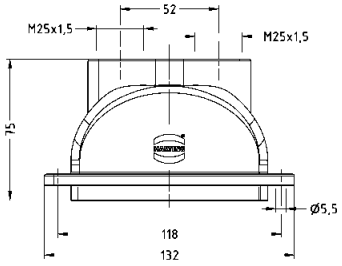
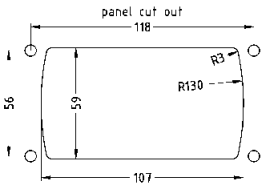
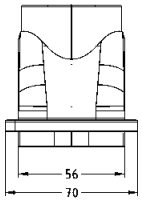
Features

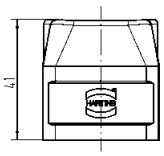
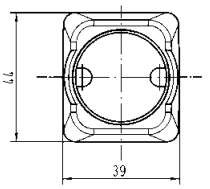
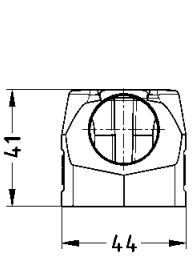
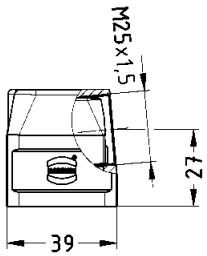
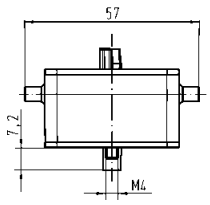
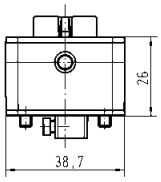
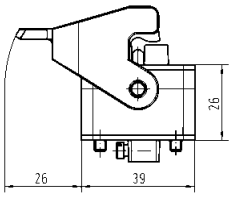
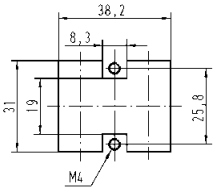
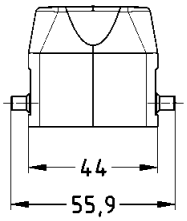
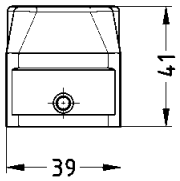
- Large wiring space
- Compact design
- Pre-assembly possible
- High EMC resistance
- For sensitive interfaces that have to be shielded and protected
- Fixing flange for panel mounting

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984
Hoods	
Material	aluminium
Surface	powder coated, RAL 7021 (black grey)
Limiting temperatures	-40 °C ... +125 °C
Working temperatures	-10 °C ... +85 °C
Protection degree acc. to DIN EN 60 529 in screwed-down position	IP65 / IP67

Han-*Yellock*® Panel Feed Through Hoods

Identification	Size	Part number	Metric Cable entry	Drawing	Dimensions in mm
Panel feed through hoods					
1 top entry M32	30	11 12 300 1702	M32	 	
2 top entries M25	60	11 12 600 1711	2x M25	 	

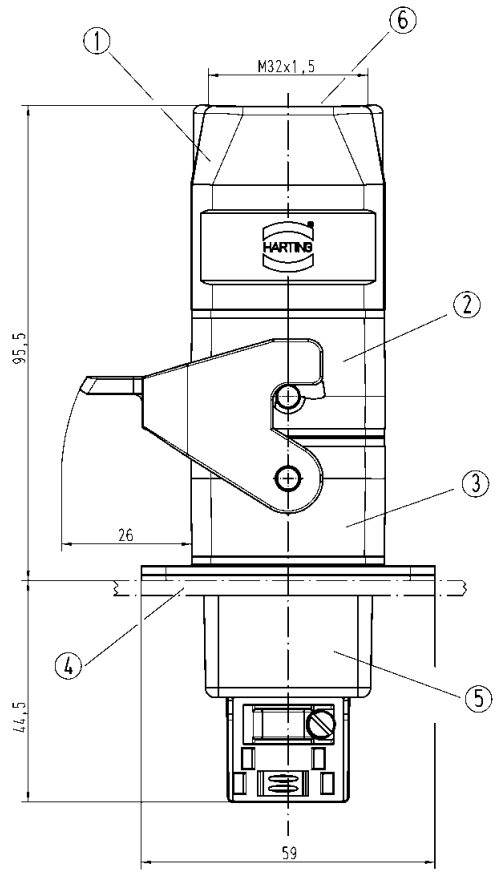
Identification	Part-Number	Cable entry metric	Drawing	Dimensions in mm
Hood				
top entry 	19 14 002 0400 19 14 002 0401 19 14 002 0402	M20 M25 M32		
side entry 	19 14 002 0501	M25		
Carrier hood 	09 14 002 0311	–		
Bulkhead mounted housing 	09 14 002 0301	–		
Cover for bulkhead mounted housing 	09 14 002 5401	–		

Features

- Compact and space-saving
- High flexibility due to modular assembly
- Easy and quick assembly
- Hood consists of two parts
- It is easy to realize a cable-to-cable housing, by screwing hood and bulkhead mounted housing together
- Suitable for two single modules of the Han-Modular® series

Technical characteristics

Specifications	DIN EN 61 984
Hoods/housings	
Material	aluminium die-cast
Surface	powder coated
Locking element	Han-Easy Lock®
Material Panel feed through housing Shielding frame	zinc die-cast
Hoods/housings seal	NBR
Limiting temperatures	-40 °C ... +125 °C
Degree of protection acc. to DIN EN 60 529 in coupled connector	IP65
Mechanichal working life - mating cycles	500
PE contact	
- wire gauge	10 mm² / AWG 8
- stripping length	10 mm
- tightening torque	1 Nm



① Hood
② Carrier hood
③ Bulkhead mounted housing with locking lever
④ Switch board panel
⑤ Optional: Panel feed through housing (to connect shielded conductors within the switch board
⑥ Cable entry M20 up to M32

Han-INOX® 3 A Screw Mounted Housing

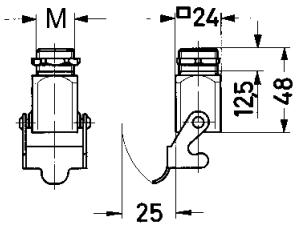
Stainless steel housings

Features

- Hoods and housings as well as locking elements out of stainless steel
- Resistant against aggressive detergents
- Fields of application
  - Food and beverage industry
  - Water and sewage industry
  - Pharmaceutical industry
  - Chemical industry
  - Offshore and shipbuilding
- Suitable for standard inserts that fit into size Han® 3 A

Technical characteristics

Material	stainless steel
Seal	NBR
Limiting temperatures	-40 °C ... +125 °C
Protection degree acc. to DIN EN 60 529 in locked position	IP44
	IP65/67 when using sealing screw 09 20 000 9918
Locking lever	stainless steel

Identification	Part-Number	Drawing	Dimensions in mm
Screw mounted housing top entry M20	19 44 003 1150		

Han® Ex Sets

Connector Sets for explosion-proof environments

Features

- Connector sets especially for explosion-proof applications
- Suitable for intrinsically safe circuits
- Hoods, housings and inserts in one set
- Inserts with compact design and a high number of connections
- Available with innovative Han-Quick Lock® termination technology

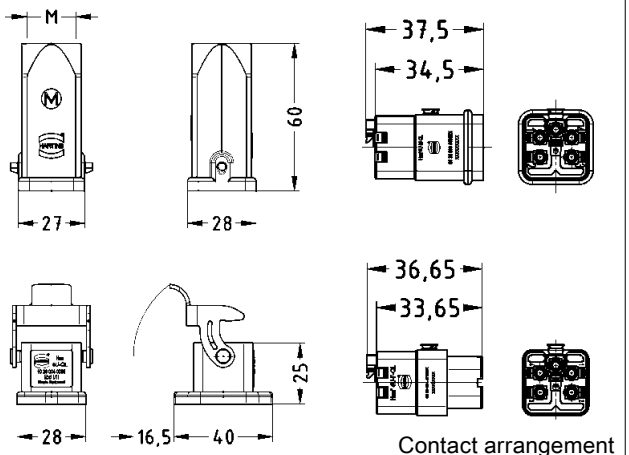
NOTICE **Industrial connectors of the Han® Ex series are designed exclusively for the use in intrinsically safe electrical circuits of categories "ia", "ib" and "ic"!**

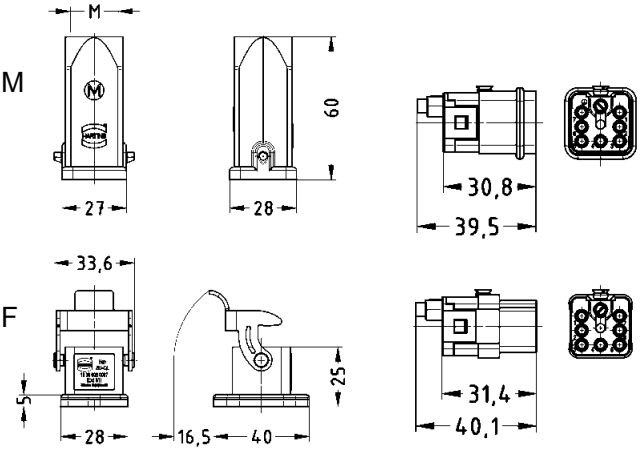
- The explosion group is defined by the intrinsically safe equipment.
- Temperature class T6 according to DIN EN 60079-11

Technical characteristics

Specifications	DIN EN 60 079-0 DIN EN 60 079-11
Hoods/ housings	
Material	Zinc die cast
Colour	RAL 5015 (blue)
Surface	powder coated
Locking element	stainless steel
Lever type	metal lever
Seal	NBR
Limiting temperatures	-20 °C ... +40 °C
Protection degree acc. to DIN EN 60 529 in locked position	IP67 is achieved with seal screw and cable gland
Inserts	
Number of contacts	4, 7, 8, 12
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material	Polycarbonate
Limiting temperatures	-20 °C ... +40 °C
Mechan. working life - mating cycles	≥ 500
Contacts	
Material	copper alloy
Surface - hard-silver plated	3 µm Ag
Contact resistance	≤ 1 mΩ
Crimp termination	0.14 ... 2.5 mm² AWG 26 ... 14
Han-Quick Lock® termination	0.5 ... 2.5 mm² AWG 20 ... 14
Max. insulation diameter	3.6 mm

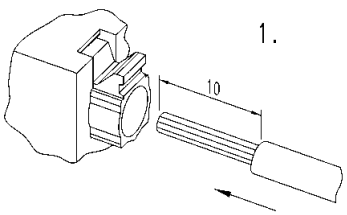
Identification	Part number	Size	Drawing	Dimensions in mm
Han® Ex 4A Quick Lock Set Han-Quick Lock®	10 36 004 0003	3 A	M, F Panel cut out: 22 x 22 mm	Contact arrangement view: termination side
Han® Ex 8D Quick Lock Set Han-Quick Lock®	10 36 008 0007	3 A	M, F Panel cut out: 22 x 22 mm	



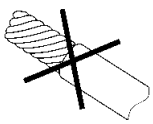


Assembly manual

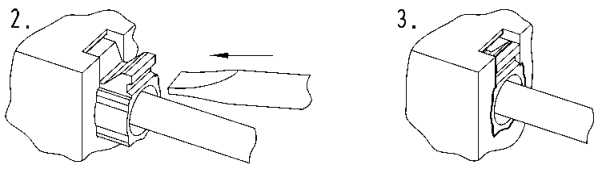
Remove cable jacket and strip the fine stranded wires



Do not twist the fine stranded wires!

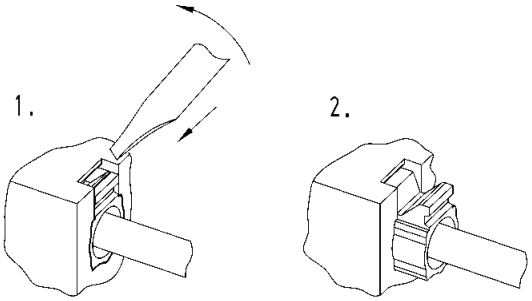


Push fine stranded wires into the Han-Quick Lock® contact and push the blue slide with a screw driver[1] until it comes to a stop



Removal manual

Please insert the screw driver[1] at an angle of 45° into the opening and lever the blue slide out



[1] Screw driver: 0.4 x 2.5 mm

Han® Ex Sets

Identification	Part number	Size	Drawing	Dimensions in mm
Han® Ex Q7 Set Order crimp contacts separately	10 36 007 0001	3 A	M F Panel cut out: 22 x 22 mm	Contact arrangement view: termination side
Han® Ex 8D Set Order crimp contacts separately	10 36 008 0006	3 A	M F Panel cut out: 22 x 22 mm	
Han® Ex Q12 Set Order crimp contacts separately	10 36 012 0001	3 A	M F Panel cut out: 22 x 22 mm	

Identification	Wire gauge mm²	Partnumber Male contact	Partnumber Female contact	Drawing	Dimensions in mm
Crimp contact silver plated	0.14-0.37	09 15 000 6104	09 15 000 6204		
	0.5	09 15 000 6103	09 15 000 6203		
	0.75	09 15 000 6105	09 15 000 6205		
	1.0	09 15 000 6102	09 15 000 6202		
	1.5	09 15 000 6101	09 15 000 6201		
	2.5	09 15 000 6106	09 15 000 6206		

Wire gauge		Ø mm	Stripping length
0.14-0.37 mm²	AWG 26-22	0.9	8 mm
0.5 mm²	AWG 20	1.1	8 mm
0.75 mm²	AWG 18	1.3	8 mm
1.0 mm²	AWG 18	1.45	8 mm
1.5 mm²	AWG 16	1.75	8 mm
2.5 mm²	AWG 14	2.25	6 mm

Han® Hood Link

Size 16 B

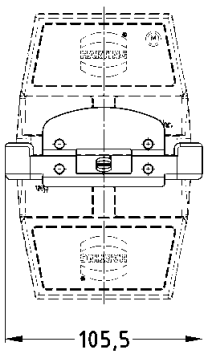
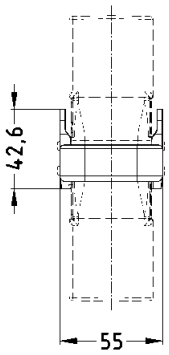
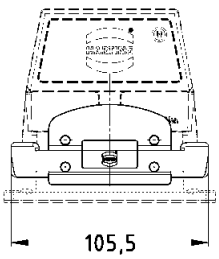
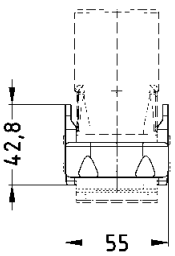
Locking element for hoods and housings

Features

- Cable to cable connection simple to realize and easy to mount
- Resistant elastomer
- Locking as well as seal combined in one system
- Protection degree IP65 in locked position
- For two lever locking system

Technical characteristics

Material	NBR
Colour	black
Limiting temperatures	-40 °C ... +85 °C
Protection degree acc. to DIN EN 60 529 in locked position	IP65

Identification	Part-Number	Size	Drawing	Dimensions in mm
Han® Hood Link for Han® B standard hoods	09 30 016 9901	16 B		
Han® Hood Link for Han® B surface mounted housings bulkhead mounted housings and cable to cable hoods	09 30 016 9801	16 B		

Han® HPR Panel Feed Through Housings

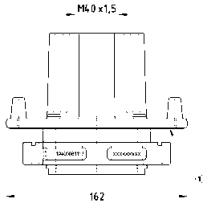
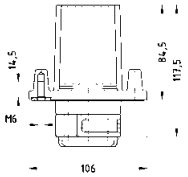
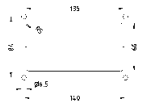
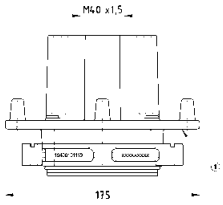
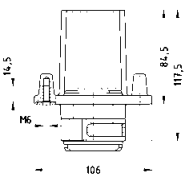
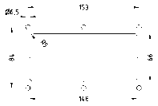
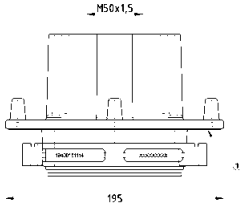
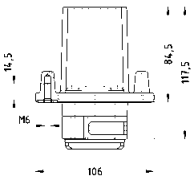
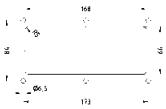
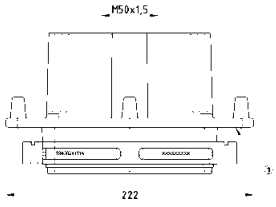
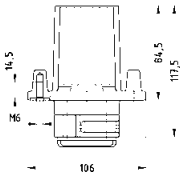
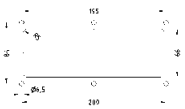
Features

- Suitable for harsh environments
- Suitable for sensitive interconnections that have to be protected and shielded
- Robust metal version
- For size 6, 10, 16 and 24 with screw locking
- For each size, a variant for mounting inside and outside

Technical characteristics

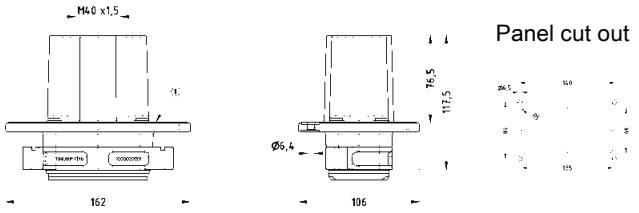
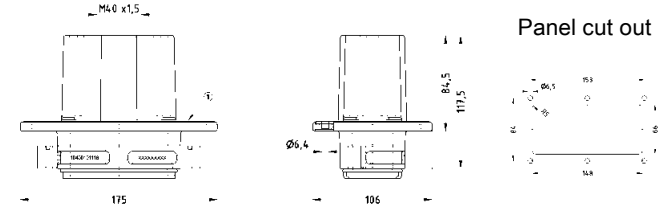
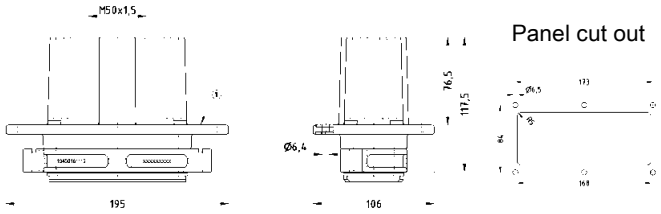
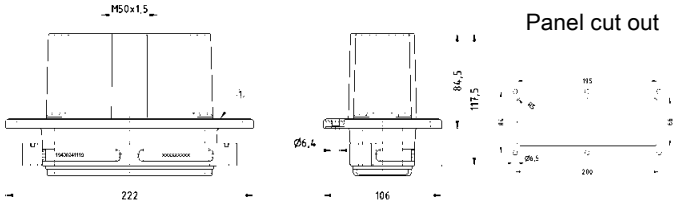
Specifications	DIN EN 61 984
Housings	
Material	aluminium die-cast corrosion resistant
Colour	RAL 9005 (black)
Surface	
- Top coat	powder-coated
Locking element	
- Screw locking	M6
- Material	stainless steel
- Tightening torque	4 Nm
Seal	
- Material	NBR
Limiting temperatures	-40 °C ... +125 °C
Corrosion resistance	ASTM B117-09 (500 h)
Protection degree acc. to DIN EN 60 529 in locked position	IP66 / IP68

Han® HPR Panel Feed Through Housings

Identification	Cable entry	Part number	Drawing	Dimensions in mm
Han® HPR panel feed through housing for mounting from inside				
Size 6 B	1 x 40	19 40 006 1113	 	Panel cut out 
Size 10 B	1 x 40	19 40 010 1113	 	Panel cut out 
Size 16 B	1 x 50	19 40 016 1114	 	Panel cut out 
Size 24 B	1 x 50	19 40 024 1114	 	Panel cut out 

① gasket enclosed separately

Han® HPR Panel Feed Through Housings

Identification	Cable entry	Part number	Drawing	Dimensions in mm
Han® HPR panel feed through housing for mounting from outside				
Size 6 B	1 x 40	19 40 006 1118		Panel cut out
Size 10 B	1 x 40	19 40 010 1118		Panel cut out
Size 16 B	1 x 50	19 40 016 1119		Panel cut out
Size 24 B	1 x 50	19 40 024 1119		Panel cut out

① gasket enclosed separately

Han-Compact® Hood

Plastic hood with 2 cable entries

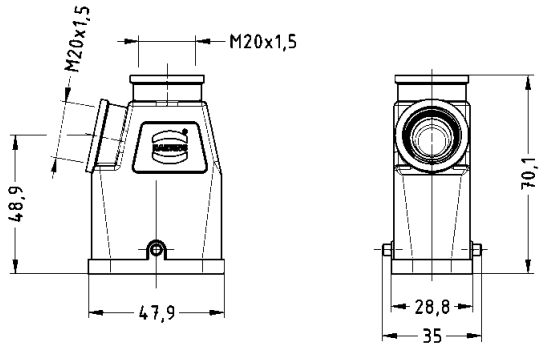
Features

- Suitable for standard inserts that fit into size Han-Compact®
- For cable gland M20
- Top or side entry optional
- In supplied condition both cable entries are closed

Technical characteristics

Material	polycarbonate, glas fibre reinforced
Seal	NBR
Limiting temperatures	-40 °C ... +125 °C
Protection degree acc. to DIN EN 60 529 in locked position	IP65
Locking lever	polyamide

Identification	Part-Number	Drawing	Dimensions in mm
Plastic hood with 2 cable entries M20	19 12 008 0425		



Features

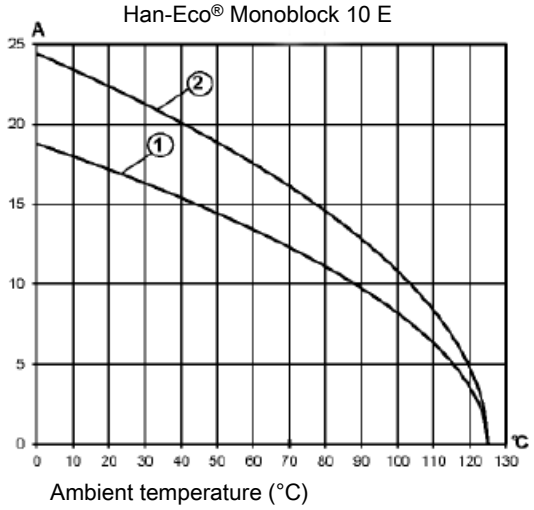
- Han E® screw termination with integrated wire protection
- Suitable in hoods / housings of Han-Eco® series and Han-Modular® docking frame
- High compact density compared to Han E® standard screw inserts (up to 65 %)
- Han-Eco® „click and mate“ assembly concept
- Six-position coding device

Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

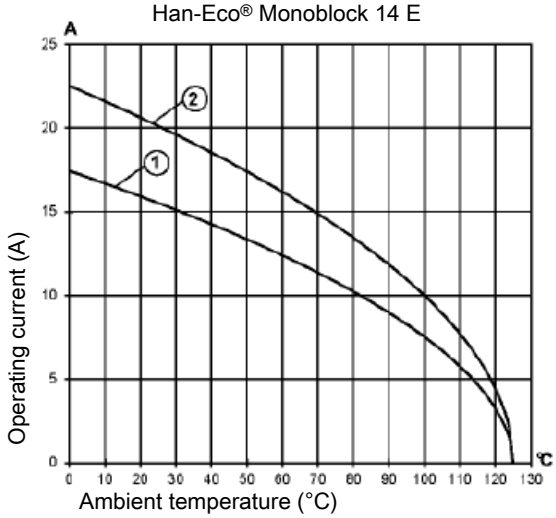
Measuring and testing techniques according to DIN EN 60 512-5

Han-Eco® Monoblock 10 E



Ambient temperature (°C)

Han-Eco® Monoblock 14 E



Ambient temperature (°C)

① Wire gauge: 1.5 mm²
② Wire gauge: 2.5 mm²

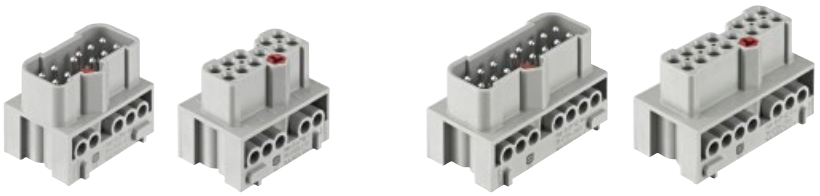
Technical characteristics

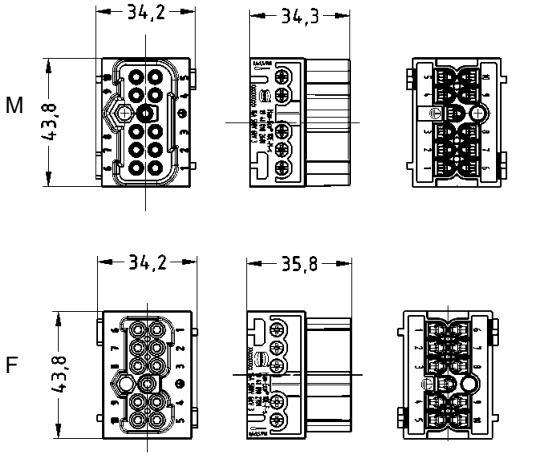
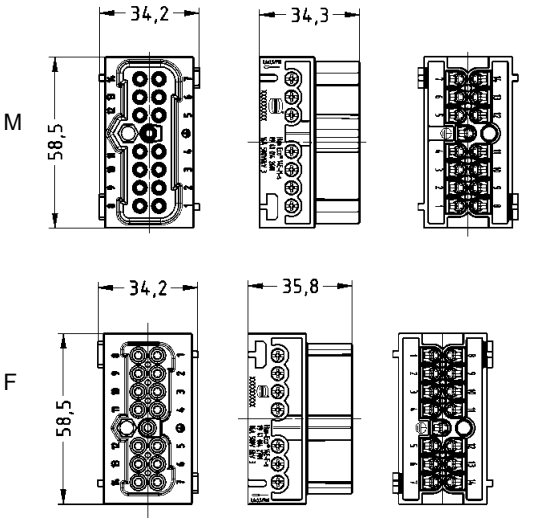
Specifications	DIN EN 60 664-1 DIN EN 61 984
Inserts	
Number of contacts	10, 14, 20, 28 + PE
Electrical data acc. to EN 61 984	**16 A 500 V 6 kV 3**
Rated current	16 A
Rated voltage	500 V
Rated impulse voltage	6 kV
Pollution degree	3
Pollution degree 2 also	16 A 400/690 V 6 kV 2
Rated voltage acc. to UL/CSA	600 V
Insulation resistance	≥ 10^{10} Ω
Material	polycarbonate
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life - mating cycles	≥ 500
Contacts	
Material	copper alloy
Surface	hard-silver plated
Contact resistance	≤ 1 mΩ
Screw terminal - min	0.75 mm² / AWG 18
Screw terminal - max	2.5 mm² / AWG 14
Stripping length	7.5 mm
Tightening / test torque	0.5 Nm

Number of contacts

10 + ⏚

14 + ⏚



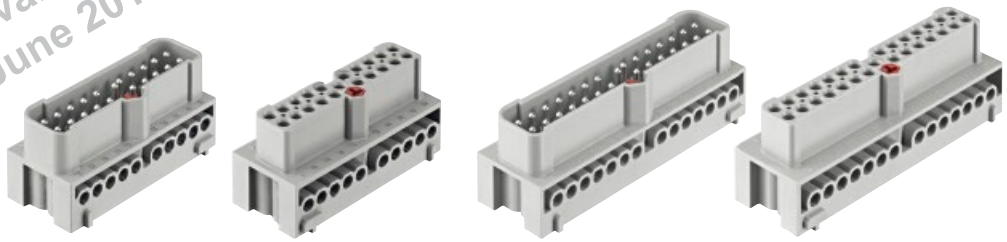
Identification	Part number Male insert (M)	Part number Female insert (F)	Size	Drawing	Dimensions in mm
Screw termination Han-Eco® Monoblock 10 + PE	19 41 010 2601	19 41 010 2701	6 B		
Screw termination Han-Eco® Monoblock 14 + PE	19 41 014 2601	19 41 014 2701	10 B		

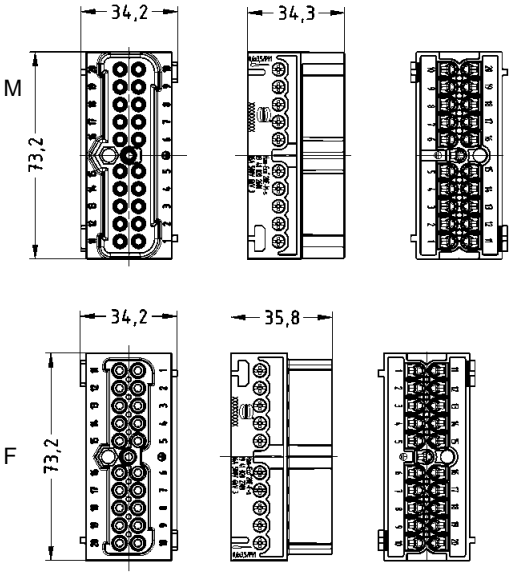
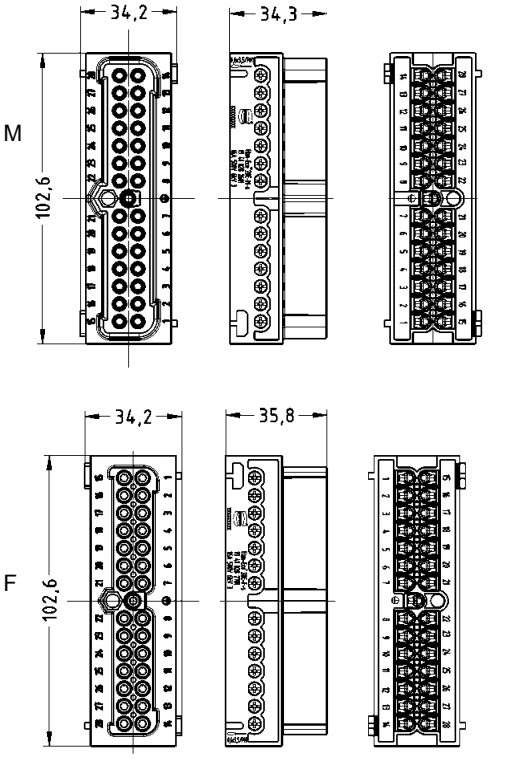
Number of contacts

20 + ⏚

28 + ⏚

Available June 2014



Identification	Part number Male insert (M)	Part number Female insert (F)	Size	Drawing	Dimensions in mm
Screw termination Han-Eco® Monoblock 20 + PE	19 41 020 2601	19 41 020 2701	16 B		
Screw termination Han-Eco® Monoblock 28 + PE	19 41 028 2601	19 41 028 2701	24 B		

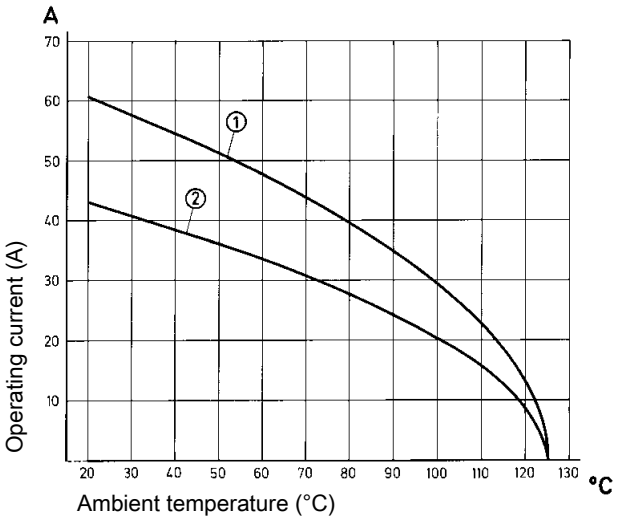
Features

- Crimp termination
- Compatible with Han® 40 A Module with axial screw termination
- According to UL also for 1000 V

Current carrying capacity

The current carrying capacity of the connectors is limited by the thermal load capability of the contact element material including the connections and the insulating parts. The derating curve is therefore valid for currents which flow constantly (non-intermittent) through each contact element of the connector evenly, without exceeding the allowed maximum temperature.

Measuring and testing techniques according to DIN EN 60 512-5



① 24 B hoods/housings with 6 modules: wire gauge: 10 mm²
② 24 B hoods/housings with 6 modules: wire gauge: 6 mm²

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984
Inserts	
Number of contacts	2
Electrical data acc. to EN 61 984	**31 A 1000 V 8 kV 3**
Rated current	31 A
Rated voltage	1000 V
Rated impulse voltage	8 kV
Pollution degree	3
Rated current acc. to UL	31 A
Rated voltage acc. to UL	1000 V
Insulation resistance	≥ 10^{10} Ω
Material	polycarbonate
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life - mating cycles	≥ 500
Contacts	
Material	copper alloy
Surface - hard-silver plated	3 µm Ag
Contact resistance	≤ 0.3 mΩ
Crimp termination - mm²	1.5 ... 10 mm²
- AWG	16 ... 8

Han® 40 A Crimp Module

1000 V 31 A

Number of contacts

2

Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Crimp termination Order crimp contacts separately	09 14 002 3003	09 14 002 3103	M F	Contact arrangement view from termination side

Identification	Wire gauge mm²	Partnumber Male contact	Partnumber Female contact	Drawing	Dimensions in mm
Crimp contacts power contact silver plated	1.5	09 32 000 6104	09 32 000 6204		
	2.5	09 32 000 6105	09 32 000 6205		
	4.0	09 32 000 6107	09 32 000 6207		
	6.0	09 32 000 6108	09 32 000 6208		
	10	09 32 000 6109	09 32 000 6209		

Wire gauge		Ø	Stripping length
1.5 mm²	AWG 16	1.75	9.5 mm
2.5 mm²	AWG 14	2.25	9.5 mm
4.0 mm²	AWG 12	2.85	9.5 mm
6.0 mm²	AWG 10	3.50	9.5 mm
10 mm²	AWG 8	4.30	15 mm
Stripping length a = 15 mm for cables ≥ 5 mm Stripping length a = 18 mm for cables ≥ 6.4 mm			

Features

- For Eurobalise coaxial cable with diameter of 10.8 mm
- Fast, easy and secure assembly
- Crimp termination
- Shielding is connected by means of a crimp flange with strain relief
- Application in Han® 3 HPR hoods and housings with metric cable gland

Technical characteristics

Specifications	DIN EN 60 664-1 DIN EN 61 984

Inserts

Number of contacts	1
Material	polycarbonate
Insulation resistance	≥ 10^{10} Ω
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Mechanical working life - mating cycles	 ≥ 500

Han® Coax contacts

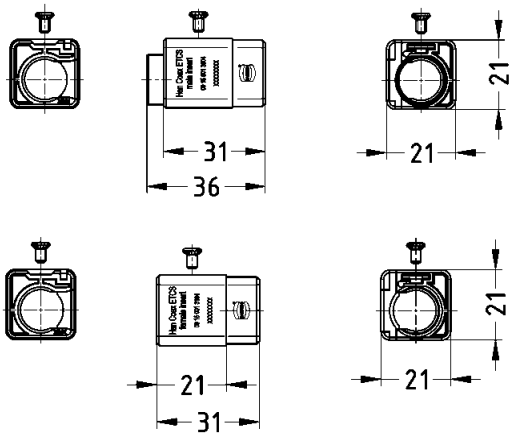
Number of contacts	1 + shielding
Rated current	16 A
Rated voltage	50 V
Pollution degree	3
Insulation resistance	≥ 10^{10} Ω
Material - insert - outer conductor	 polycarbonate brass
Limiting temperatures	-40 °C ... +125 °C
Flammability acc. to UL 94	V 0
Surface outer conductor	Ni

Han E® contacts

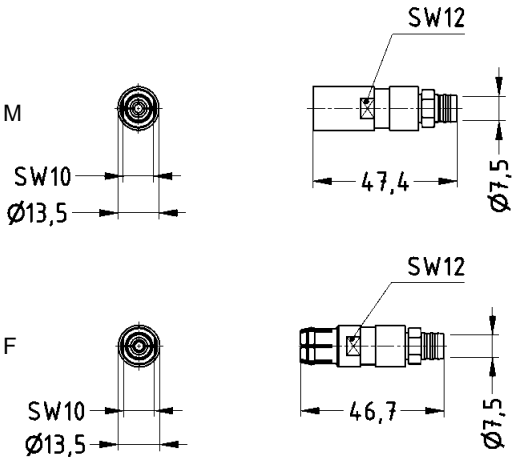
Material	copper alloy
Surface - gold plated	 2 µm Au over 3 µm Ag Ni
Contact resistance	≤ 1 mΩ
Crimp termination - mm² - AWG	 0.14 ... 5.5 mm² 26 ... 10

1 contact + shielding with crimp flange

Identification	Part number Male insert (M)	Part number Female insert (F)	Drawing	Dimensions in mm
Han® ETCS inserts Order Han® Coax ETCS contacts separately	09 15 001 3004	09 15 001 3104	M F	



Identification	Wire gauge mm²	Part number Male contact	Part number Female contact	Drawing	Dimensions in mm
Han® Coax ETCS contacts 1 + shielding, 50 Ω for Han E® crimp contacts	–	09 15 001 6101	09 15 001 6201	M F	
Han E® contacts gold plated	0.14-0.37 0.5 0.75 1.0 1.5 2.5 4.0 5.5	09 33 000 6117 09 33 000 6122 09 33 000 6115 09 33 000 6118 09 33 000 6116 09 33 000 6123 09 33 000 6119 09 33 000 6139	09 33 000 6217 09 33 000 6222 09 33 000 6215 09 33 000 6218 09 33 000 6216 09 33 000 6223 09 33 000 6219 09 33 000 6239		



HARTING Battery-Hydraulic Crimp Tool 60 kN

Part-Number 09 99 000 0850

Features

- Closed hydraulic jack, hinged and rotatable
- Rotatable hydraulic cylinder and lithium-ion battery
- Integrated pressure measuring with optical and acoustic signal in case of failure
- Ergonomic two component plastic housing with soft inlays for comfortable and safe handling
- Automatic flyback after crimping

Technical characteristics

- Crimping force: 60 kN
- Idle stroke: 17.5 mm
- Crimp wire gauge range: 6 – 70 mm^2
- Rechargeable battery voltage: 18 V
- Rechargeable battery capacity: 1.3 Ah
- Charging time: 15 min
- Weight with rechargeable battery: 3.0 kg

Included with the set

- The tool comes in a plastic case with enough space for crimp dies
- HARTING Battery-Hydraulic Crimp Tool 6 – 70 mm^2
- Lithium-ion battery 18 V / 1.3 Ah (23.4 Wh)
- Battery charger for 18 V lithium-ion rechargeable batteries

Suitable for

- Compatible with all HARTING crimp dies for 60 kN tools as well as with the respective contacts
  - TC 70
  - TC 100
  - TC 200
  - TC 250
  - TC 350 up to 70 mm^2
  - TC 650 up to 70 mm^2

HARTING Hand-Hydraulic Crimp Tool 60 kN

Part-Number 09 99 000 0851

Features

- Closed hydraulic jack, hinged and rotatable
- Low weight due to premium aluminium housing
- 2-step hydraulic with fast forward motion and power stroke
- Automatic flyback after crimping

Technical characteristics

- Crimping force: 60 kN
- Crimp wire gauge range: 6 – 70 mm^2
- Idle stroke: 17 mm
- Length: 460 mm
- Weight: 3.3 kg
- Ambient temperature: -20 °C ... +40 °C

Included with the set

- The tool comes in a metal case
- HARTING Hand-Hydraulic Crimp Tool 60 kN
- Metal case acommodates up to 17 HARTING crimp dies for 60 kN-tools

Suitable for

- Compatible with all HARTING crimp dies for 60 kN tools as well as with the respective contacts
  - TC 70
  - TC 100
  - TC 200
  - TC 250
  - TC 350 up to 70 mm^2
  - TC 650 up to 70 mm^2

HARTING Crimp Dies for 60 kN Tools

Features

- Compatible with all HARTING 60 kN crimp tools
- Optimal crimp process due to 9 mm wide crimp dies
- Polished crimp profile in order to achieve optimal termination results

Technical characteristics

- Crimp zone following DIN 46 235

Identification	Part-Number	Compatible contacts	
		male	**female**
Crimp die 10 mm² for 60 kN tools	09 99 000 0852	09 11 000 6131 09 11 000 6114	09 11 000 6231 09 11 000 6214
Crimp die 16 mm² for 60 kN tools	09 99 000 0853	09 11 000 6132 09 11 000 6116	09 11 000 6232 09 11 000 6216
Crimp die 25 mm² for 60 kN tools	09 99 000 0854	09 11 000 6120 09 11 000 6125 09 11 000 6126 09 11 000 6133 09 11 000 6139	09 11 000 6220 09 11 000 6225 09 11 000 6226 09 11 000 6233 09 11 000 6239
Crimp die 35 mm² for 60 kN tools	09 99 000 0855	09 11 000 6104 09 11 000 6121 09 11 000 6127 09 11 000 6135 09 11 000 6140	09 11 000 6204 09 11 000 6221 09 11 000 6227 09 11 000 6235 09 11 000 6240
Crimp die 50 mm² for 60 kN tools	09 99 000 0856	09 11 000 6122 09 11 000 6128 09 11 000 6141	09 11 000 6222 09 11 000 6228 09 11 000 6241
Crimp die 70 mm² for 60 kN tools	09 99 000 0857	09 11 000 6123 09 11 000 6129 09 11 000 6142 09 11 000 6161	09 11 000 6223 09 11 000 6229 09 11 000 6242 09 11 000 6261

HARTING Four-Indent Crimp Tool

Available
July 2014

Part-Number 09 99 000 0888

Features

- Profile geometry four-indent crimp (synchronous drive of the crimping dies)
- Releasable locking device guarantees safe crimping
- Integrated turnable mutiple locator with legibly contact marking
- Setting of indenters in 0.01 mm steps
- Low hand force due to optimal transmission
- Integrated locking device against accidental height adjustment
- Suitable for turned crimp contacts series Han D®, Han E®, Han-*Yellock*®, Han® C ranging from 0.14 up to 4 mm² (AWG 26-12)

Technical characteristics

- Dimensions: length x width 205 x 67 mm
- Weight: approx. 390 g
- Maximum outer diameter: 6.2 mm
- Specifications: IEC 60 352-2
- Wire gauge range: 0.14 – 4 mm²
  AWG 26 - 12

HARTING Battery-Hydraulic Punch Driver

Part-Number 09 99 000 0900

Features

- High-capacity rechargeable battery punch driver
- Rotatable hydraulic cylinder and lithium-ion battery
- Fatigue-free punching due to easy handling and low weight
- Electronic monitoring of the punching process
- Compatible to all HARTING punch units

Technical characteristics

- Weight: 2 kg
- Punching capacity: 60 kN
- Battery voltage: 18 V DC
- Battery capacity: 3 Ah
- Battery charging time: 22 min
- Max. sheet thickness: 2 mm mild steel (acc. to EN 10 025)[1)]

[1)] Punch units for stainless steel available on request

Included with the set

- Tool comes in a plastic case
- HARTING Battery-Hydraulic Punch Driver
- Lithium-ion battery 18 V, 3 Ah
- Battery charger
- Draw stud 9.5 x 19.0 mm (3/8” x 3/4”) UNF
- Draw stud 19.0 x 125.0 mm (3/4” x 5‘‘) UNF
- Spacer
- Lubricant
- HSS-E pilot drill (multi-step drill)
- 1 punch unit in size M16, M20, M25, M32 and Pg 16 each

Suitable for

- HARTING punch units for hydraulic punch drivers

HARTING Hand-Hydraulic Punch Driver

Part-Number 09 99 000 0901

Features

- Small-sized punch driver without hose
- 360° rotatable hydraulic cylinder (on 3 axes)
- Maximum flexibility, even in hard-to-reach places
- Compatible to all HARTING punch units

Technical characteristics

- Punching capacity: 60 kN
- Max. sheet thickness: 2 mm mild steel (acc. to EN 10 025)[1)]

[1)] Punch units for stainless steel available on request

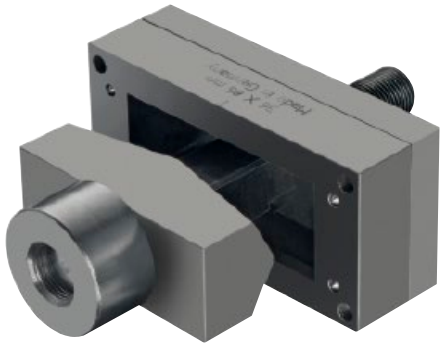
Included with the set

- Tool comes in a plastic case
- HARTING Hand-Hydraulic Punch Driver
- Draw stud 9.5 x 19.0 mm (3/8” x 3/4”) UNF
- Draw stud 19.0 x 130.0 mm (3/4” x 130.0 mm) UNF
- Spacer
- Lubricant
- HSS cobalt pilot drill (multi-step drill)

Suitable for

- HARTING punch units for hydraulic punch drivers

HARTING Punch Units for Hydraulic Punch Drivers



Features

- Integrated centre punch for exact positioning of mounting holes
- Long lifetime due to CAD-optimized punch geometry and special inert gas hardening
- Reduced punching forces due to innovative punch geometry
- Reduced punching force results in lower stress on hydraulic seals

Technical characteristics

- Max. sheet thickness: 2 mm mild steel (acc. to EN 10 025)[1)]

[1)] Punch units for stainless steel available on request

Identification	Part-Number	Panel cut out	Availability
Punch Unit Han® 6 B	09 99 000 0902	36.0 x 52.0 mm	May 2014
Punch Unit Han® 10 B	09 99 000 0903	36.0 x 65.0 mm	May 2014
Punch Unit Han® 16 B	09 99 000 0904	36.0 x 86.0 mm	May 2014
Punch Unit Han® 24 B	09 99 000 0905	36.0 x 112.0 mm	May 2014
Punch Unit Han® 3 HPR	09 99 000 0906	21.3 x 21.3 mm	May 2014
Punch Unit Han® 3 A	09 99 000 0907	22.0 x 22.0 mm	May 2014
Punch Unit Han® 10 A	09 99 000 0908	24.0 x 57.0 mm	August 2014
Punch Unit Han® 16 A	09 99 000 0909	24.0 x 73.0 mm	May 2014
Punch Unit Han-*Yellock*® 10	09 99 000 0910	22.0 x 22.0 mm	August 2014
Punch Unit Han® Compact	09 99 000 0911	22.7 x 26.9 mm	August 2014
Punch Unit Han-Modular® Compact	09 99 000 0912	27.5 x 31.5 mm	May 2014
Punch Unit Han-Modular® Eco	09 99 000 0913	18.0 x 37.0 mm	August 2014

HARTING Torque Driver Set for Guiding Pins and Bushes

Part-Number 09 99 000 0840

Features

- Easy and safe assembly of HARTING guiding pins and bushes
- Available as a set incl. torque driver or as spare part
- Also suitable for the removal of fixing screws
- Audible click signal when the pre-set torque value has been attained
- Ergonomic multi-component handle, particularly light and compact

Included with the set: 09 99 000 0840

- TorqueFix®* torque driver 0.5 Nm
- Torque bit universal holder ¼“
- 1 HARTING guiding pins and bushes bit
- Product comes already pre-assembled in practical plastic packaging

* TorqueVario® is a registered trademark of Wiha Werkzeuge GmbH

Included with the set: 09 99 000 0841

- Single HARTING guiding pins and bushes bit (packaging unit: 5 pieces)

Technical characteristics

- Pre-set torque value: 0.5 Nm
- Torque accuracy: ± 6 %
- Specifications: EN ISO 6789
  BS EN 26 789
  ASME B107.14M

HARTING Screwdriver-Set Slimline

Part-Number 09 99 000 0844

Features

- Achieves blade diameters up to 33 % narrower utilizing integrated insulation, ideal for jobs where access is limited
- Handle & insulation molded on for maximum durability. Front part of the tool is fully integrated.
- Each tool for 1000 V AC certification (10.000 V tested)
- Super hardened and tempered for long life performance
- Ergonomic SoftFinish®* multi-component handle with roll off protection

* SoftFinish® is a registered trade mark of Wiha Werkzeuge GmbH

Technical characteristics

- Specifications: DIN ISO 2380, DIN ISO 8764

  1000 V IEC 60900:2004

- Dimensions (tool length x diameter):
  0.6 x 3.5: 204 x 23 mm
  0.8 x 4.5: 211 x 30 mm
  PH1: 191 x 30 mm
  PH2: 218 x 36 mm

HARTING Contact Lubricant

Part-Number 09 99 000 0829

Features

- Reduction of mating and unmating forces up to 50 - 60 %
- Good compatibility with all HARTING plastic materials such as PC, PA or NBR
- Suitable for all electrical Han® contacts
- Only a small quantity of application cycles necessary
- Best performance is achieved after some initial mating cycles

Technical characteristics

- Ingredient: PFPE
- Limiting temperatures: -40 °C ... +200 °C
- Content: 40 ml
- Classification: Not hazardous acc. to directive 67/548/EEC or 1999/45/EC

Notes

Ha-VIS eCon 2000 Fast and Full Gigabit Ethernet Basic

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

General description

Unmanaged Ethernet switches of the Ha-VIS eCon 2000 group enable cost-effective and quick extension or restructuring of network infrastructures. Owing to the extremely flat design, these switches can be accommodated in installations where space is restricted towards the cable connection at the front. The selection includes various combinations of variants with RJ45s and fibre optic cables. These switches are available with two different speeds: Fast Ethernet (FE) with a bandwidth of 100 Mbit/s and full gigabit Ethernet (Full GbE) with 1000 Mbit/s for applications requiring a high data transfer rate. Thanks to the PoE+ standard, our switches enable end devices to be supplied with energy. There is a wide range of application areas for Ha-VIS eCon switches. Approvals for the industrial market, including the maritime sector and the transportation sector, enable the optimum selection of switches for any application.

Features

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

Advantages

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

Field of application

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

Technical characteristics

Switch Features

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

Ethernet Ports Twisted Pair

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

Ethernet ports, fibre optic cables

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

Status and diagnostic displays (Switch and Ports)

Power ⏻ lit green	Supply voltage is applied
Link/Activity ("L/A") off	No link
Link/Activity ("L/A") lit green	Link is active
Link/Activity ("L/A") flashes green	Link is active and data is transferred
Link speed ("Spd") off	10 Mbit/s
Link speed ("Spd") lit yellow	100 Mbit/s
Link speed ("Spd") lit green	1000 Mbit/s (Full Gigabit Ethernet Basic)
PoE off	PoE is inactive / low voltage
PoE lit green	Voltage in PoE range
PoE lit blue	Voltage in PoE+ range
PoE lit red	Fault (see manual)

Technical characteristics

Power supply

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

Power over Ethernet PoE

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

Enclosures

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

Ambient conditions

Commercial temperature range	0 °C ... +55 °C
Industrial temperature range	-40 °C ... +70 °C
Storage temperature range	-40 °C ... +85 °C
Relative humidity (operation)	0 % ... 95 % (not-condensing)
Relative humidity (storage/transport)	0 % ... 95 % (not-condensing)
Air pressure	2000 m (795 hPa)

EMC and environmental conditions

EMC interference immunity (EN 61 000-6-1, 61 000-6-2, 55204)	Electrostatic discharge (ESD) EN 61 000-4-2 Electromagnetiic field EN 61000-4-3 Rapid transients (burst) EN 61 000-4-4 Surge voltages EN 61 000-4-5 Conducted interference voltages EN 61 000-4-6
EMC interference emission	EN 61 000-6-4, EN 55 022, FCC CFR 47 Part 15
Mechanical stability (EN 60721-3)	IEC 60068-2-6 Vibration IEC 60068-2-6 Vibration resonance search IEC 60068-2-27 Shock test

Included in delivery

Pluggable screw contact for power supply	Yes
Operating manual	Yes

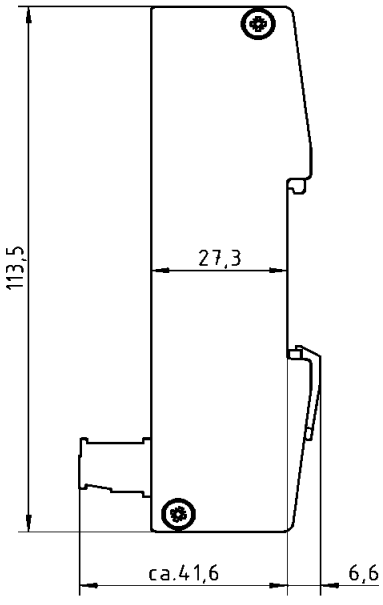
Ha-VIS eCon 2000 Fast Ethernet Basic

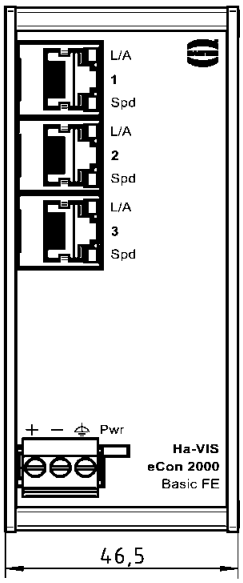
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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





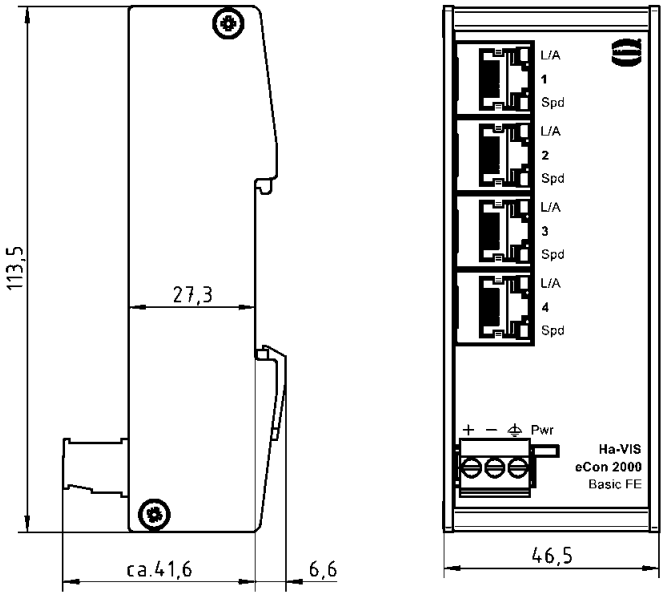
Ha-VIS eCon 2000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



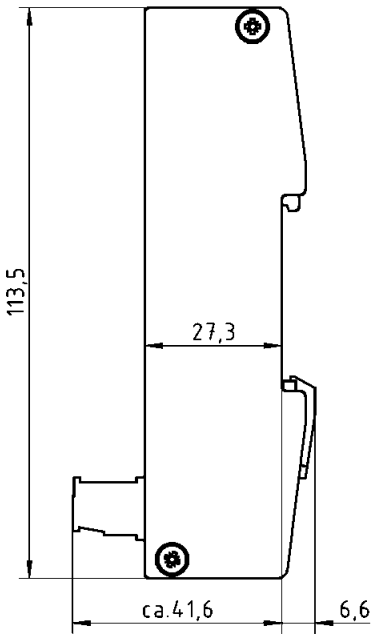
Ha-VIS eCon 2000 Fast Ethernet Basic

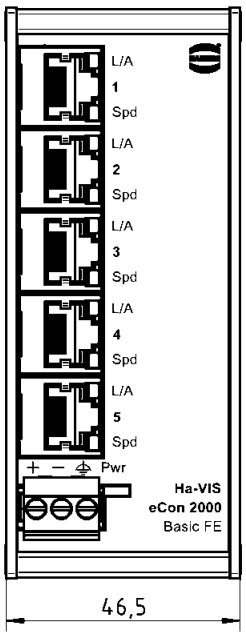
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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





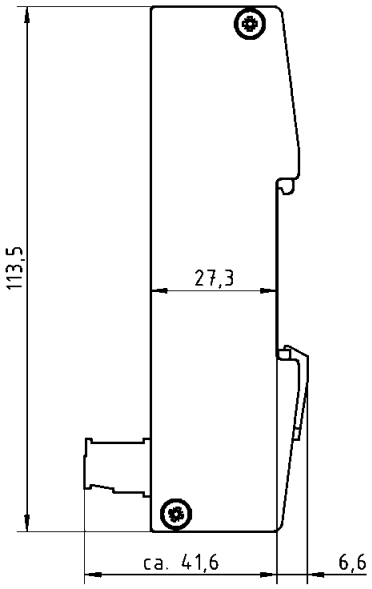
Ha-VIS eCon 2000 Fast Ethernet Basic

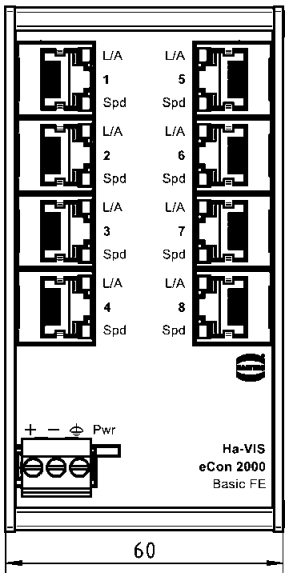
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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





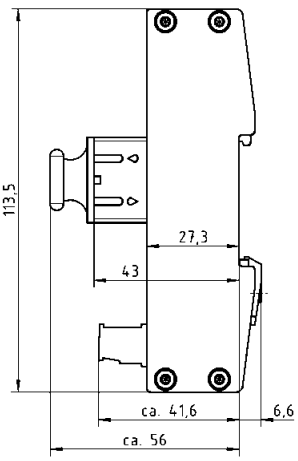
Ha-VIS eCon 2000 Fast Ethernet Basic

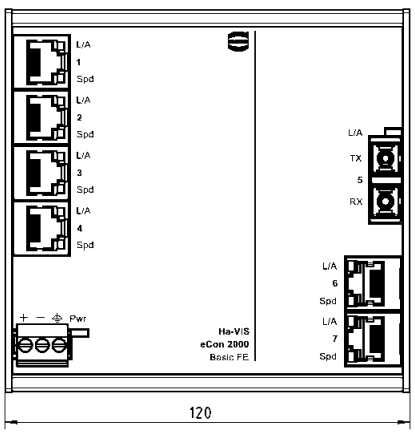
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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





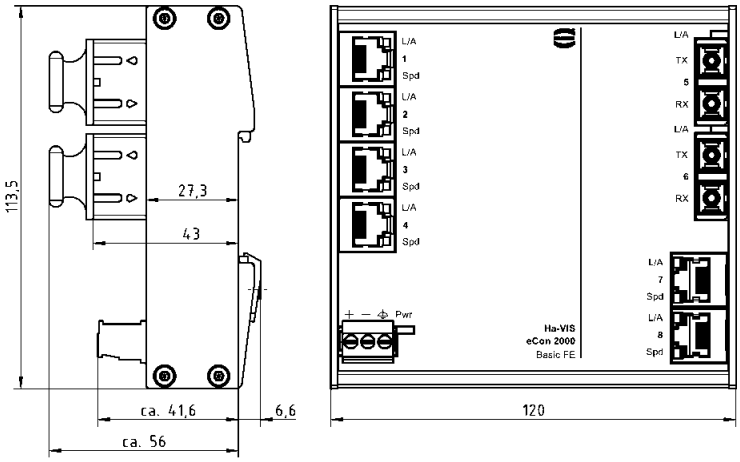
Ha-VIS eCon 2000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



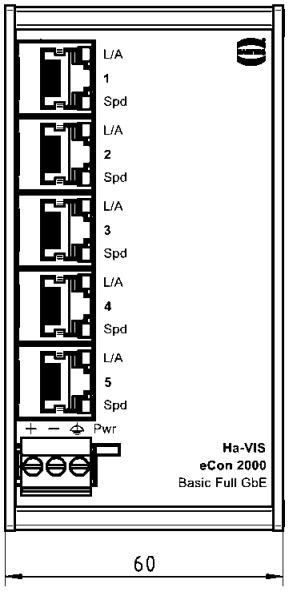
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

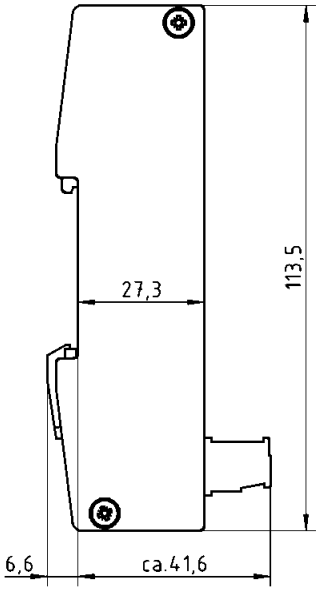
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	5 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	60.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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





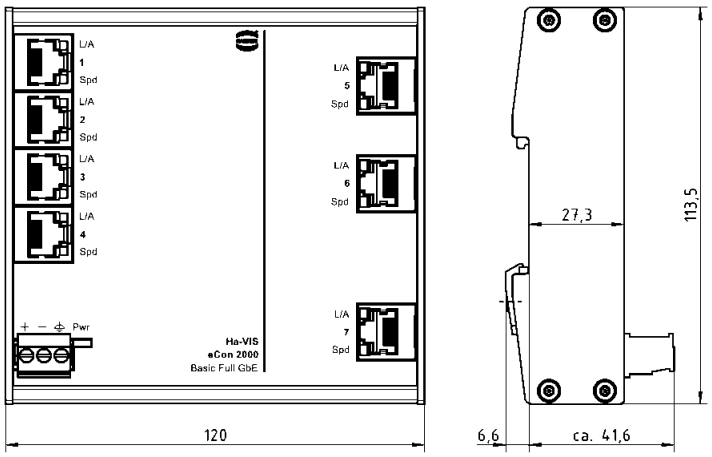
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	7 x 10BASE-Te / 100BASE-TX EEE / 1000BASE-T EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	120.0 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	See eCatalogue
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



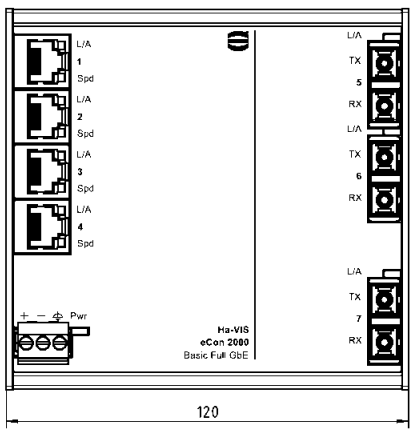
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

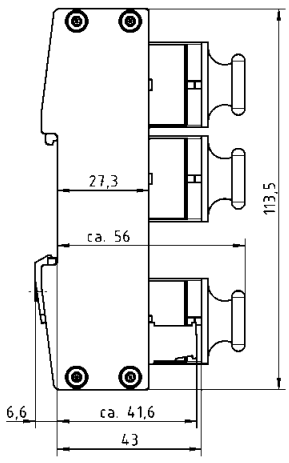
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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





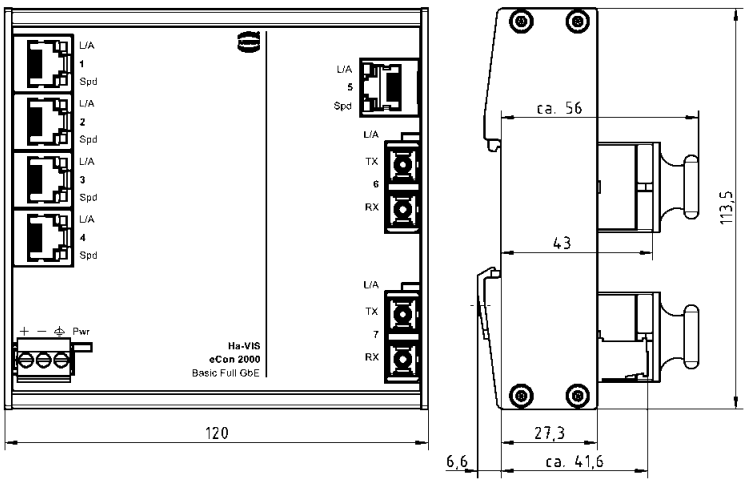
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



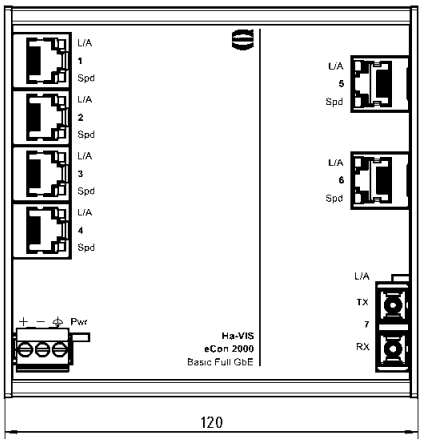
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic

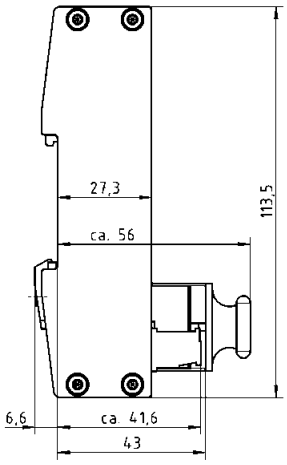
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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





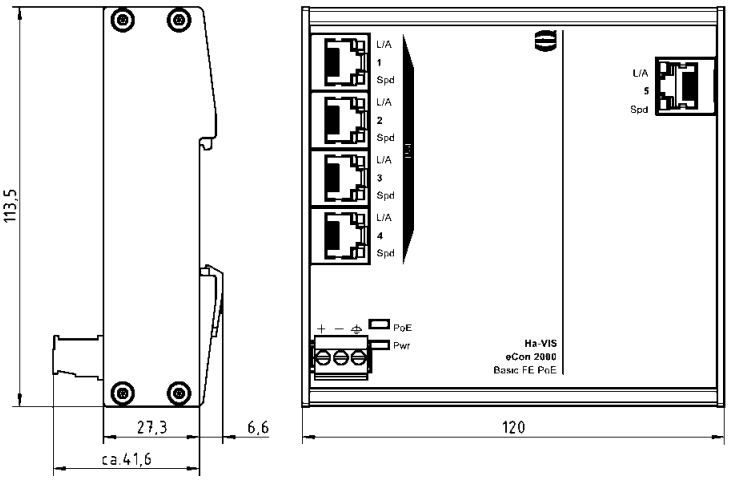
Ha-VIS eCon 2000 Fast Ethernet Basic PoE

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

Specification

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

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



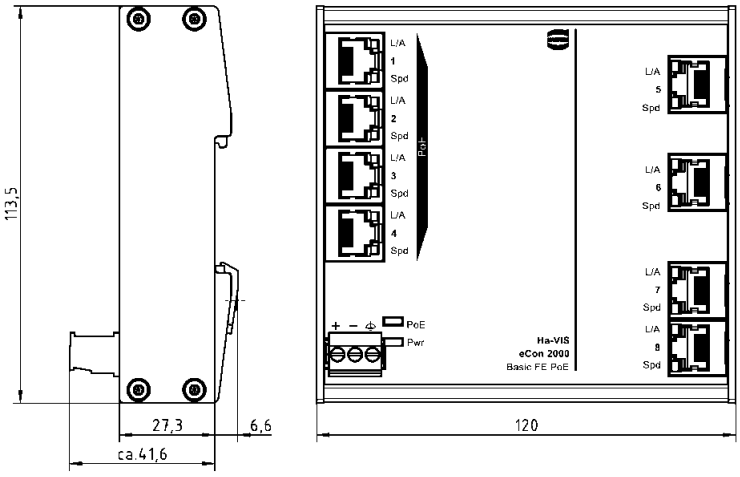
Ha-VIS eCon 2000 Fast Ethernet Basic PoE

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

Specification

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

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



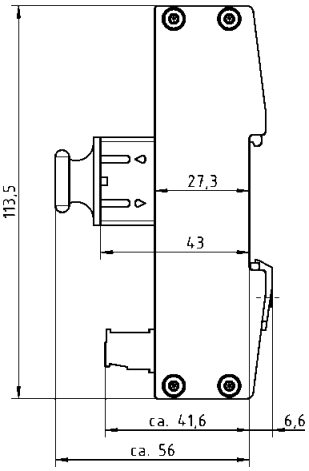
Ha-VIS eCon 2000 Fast Ethernet Basic PoE

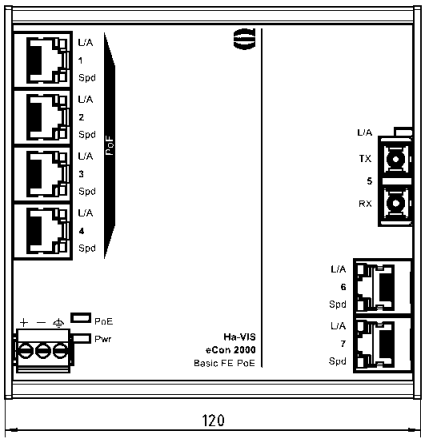
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	406 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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





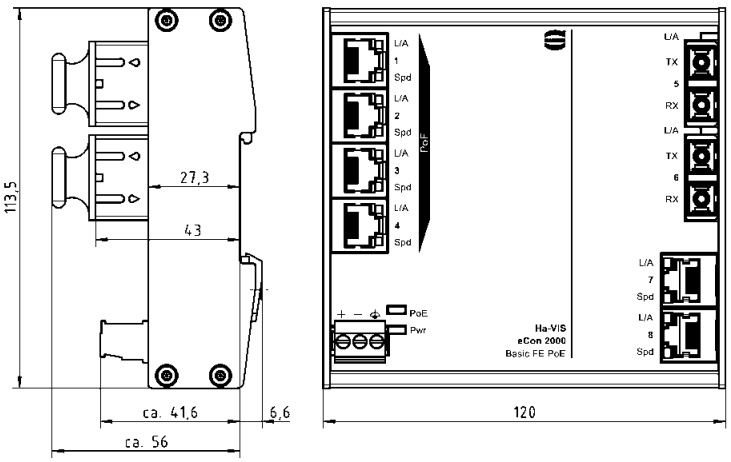
Ha-VIS eCon 2000 Fast Ethernet Basic PoE

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

Specification

Number of ports copper / termination, including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	120 x 113.5 x 27.3 mm (without pluggable screw type terminal block)
Weight	414 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	FCC CFR 47 Part 15, cUL US 508 listed, E1, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



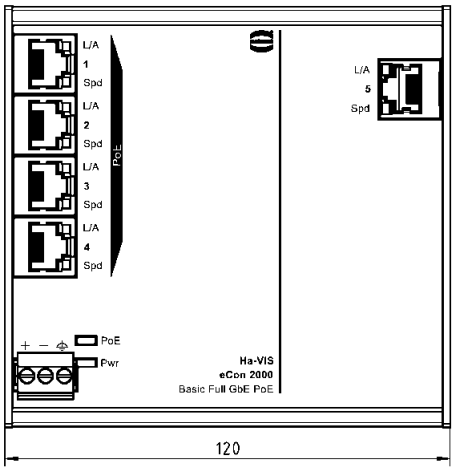
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

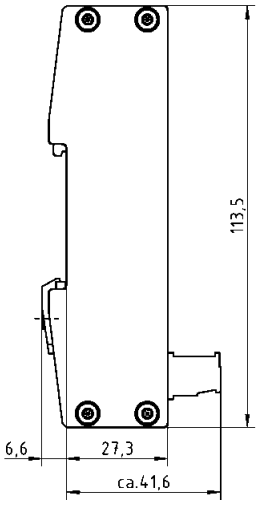
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

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

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





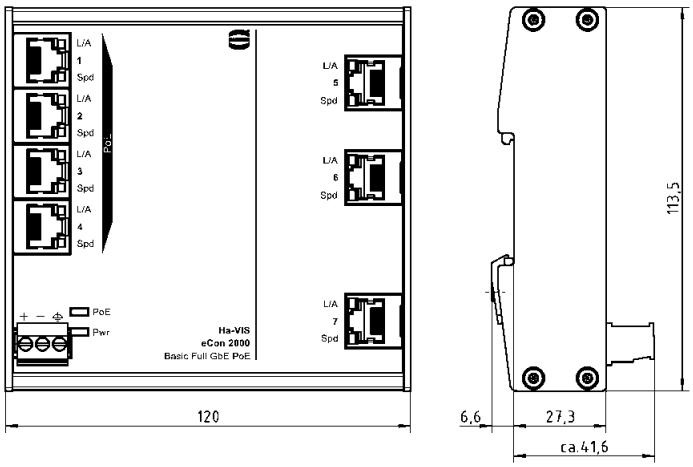
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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



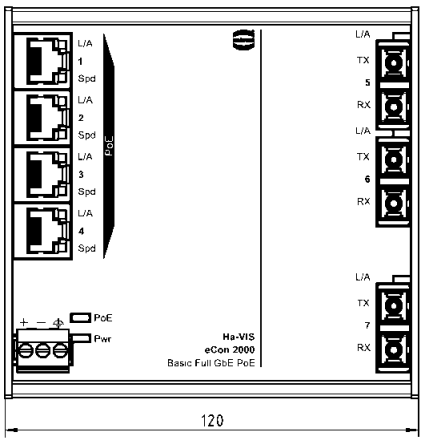
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

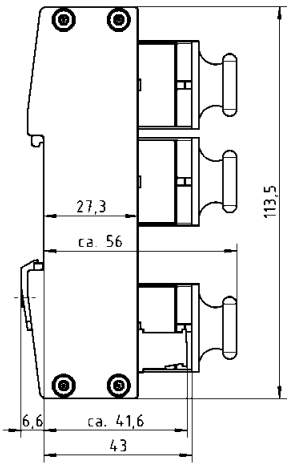
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

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

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





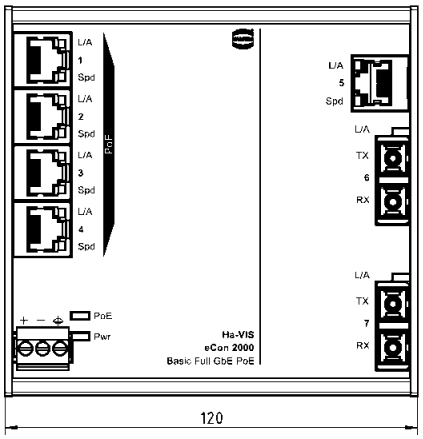
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

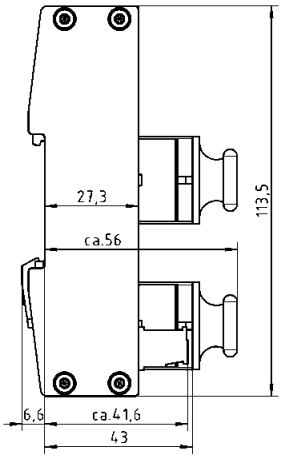
Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C
Power Sourcing Equipment (PSE) with 4 Ports PoE+ (34.2 watts per port)

Specification

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

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





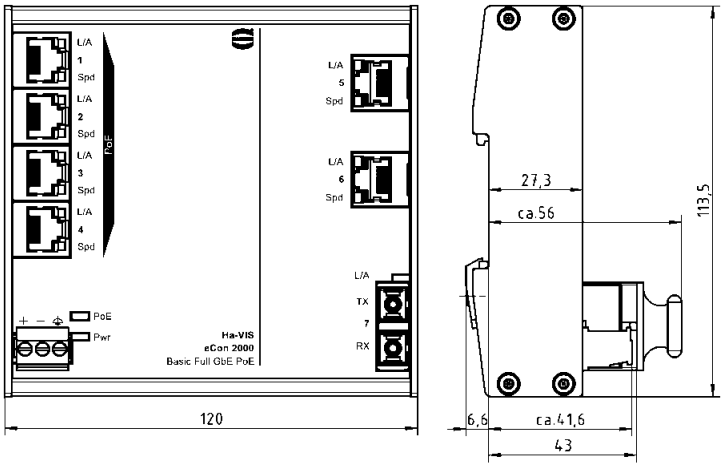
Ha-VIS eCon 2000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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



Notes

Ha-VIS eCon 3000 Fast and Full Gigabit Ethernet Basic

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

General description

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

Features

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

Advantages

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

Field of application

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

Technical characteristics

Switch Features

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

Ethernet Ports Twisted Pair

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

Ethernet ports, fibre optic cables

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

Ethernet ports, SFP

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

Status and diagnostics displays (Switch and Ports)

Power ⏻ lit green	Supply voltage is applied
Link/Activity ("L/A") off	No link
Link/Activity ("L/A") lit green	Link is active
Link/Activity ("L/A") flashes green	Link is active and data is transferred
Link speed ("Spd") off	10 Mbit/s
Link speed ("Spd") lit yellow	100 Mbit/s
Link speed ("Spd") lit green	1000 Mbit/s (Full Gigabit Ethernet Basic)
PoE 🔌 off	PoE is inactive / low voltage
PoE 🔌 lit green	Voltage in PoE range
PoE 🔌 lit blue	Voltage in PoE+ range
PoE 🔌 lit red	Fault (see manual)

Technical characteristics

Power supply

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

Power over Ethernet PoE

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

Enclosures

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

Ambient conditions

Commercial temperature range	0 °C ... +55 °C
Industrial temperature range	-40 °C ... +70 °C
Storage temperature range	-40 °C ... +85 °C
Relative humidity (operation)	0 % ... 95 % (not-condensing)
Relative humidity (storage/transport)	0 % ... 95 % (not-condensing)
Air pressure	2000 m (795 hPa)

EMC and environmental conditions

EMC interference immunity	
(EN 61 000-6-1, 61 000-6-2, 55204)	Electrostatic discharge (ESD) EN 61 000-4-2
	Electromagnetiic field EN 61000-4-3
	Rapid transients (burst) EN 61 000-4-4
	Surge voltages EN 61 000-4-5
	Conducted interference voltages EN 61 000-4-6
EMC interference emission	EN 61 000-6-4, EN 55 022, FCC CFR 47 Part 15
Mechanical stability (EN 60721-3)	IEC 60068-2-6 Vibration
	IEC 60068-2-6 Vibration resonance search
	IEC 60068-2-27 Shock test

Included in delivery

Pluggable screw type terminal block for power supply	Yes
Operating manual	Yes

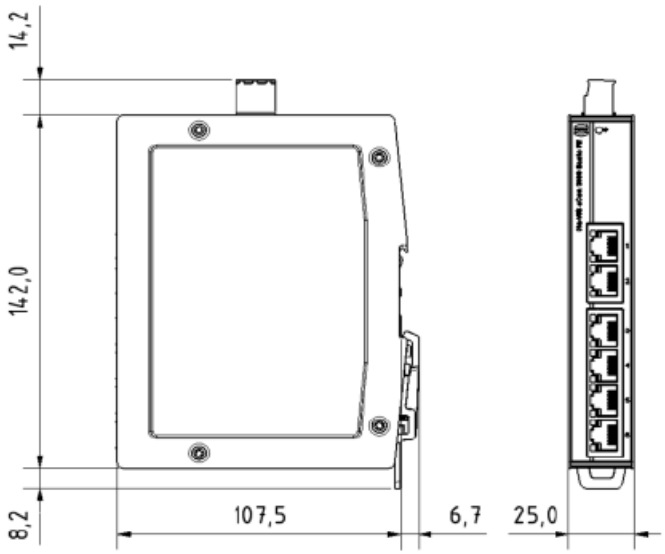
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



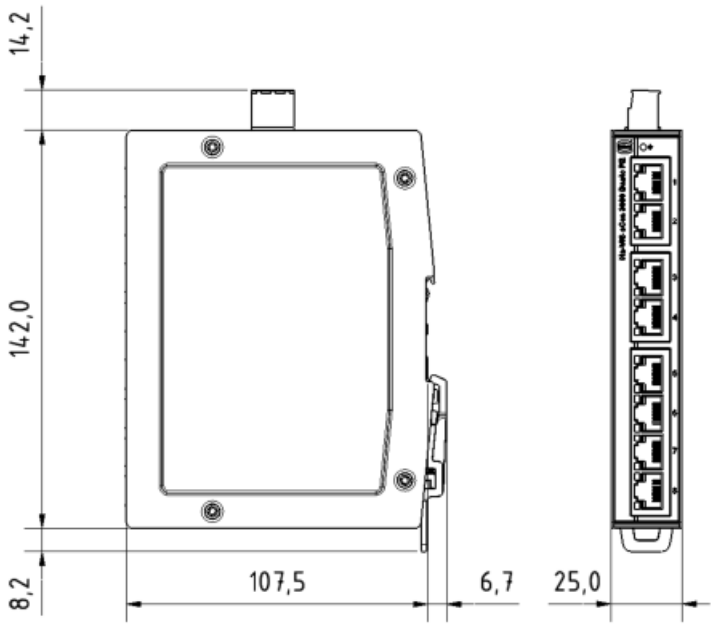
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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

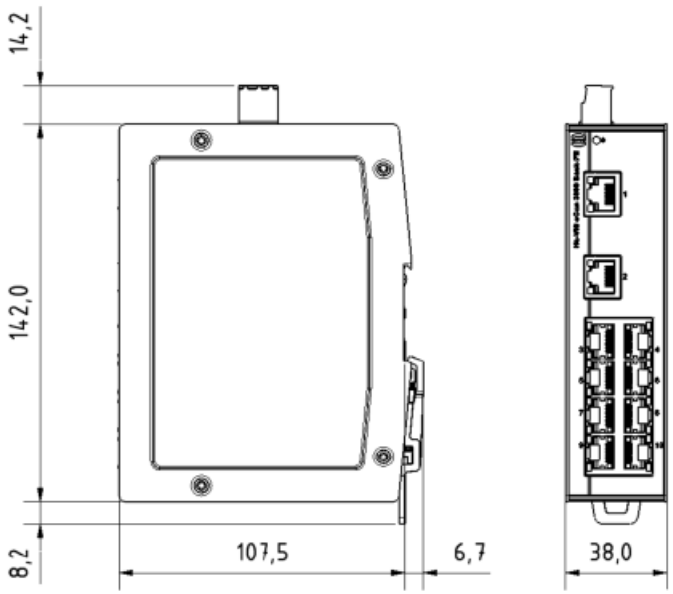


Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	10 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	512 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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

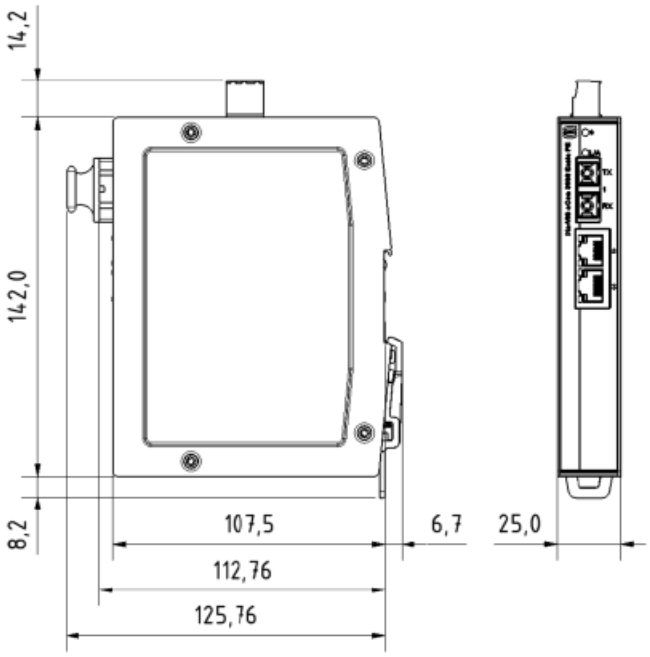
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

Identification	Part number	Drawings	Dimensions in mm
Ha-VIS eCon 3021B-AD 0 °C ... +55 °C 1 x MM (2 km)	24 03 004 1110		
Ha-VIS eCon 3021B-AF 0 °C ... +55 °C 1 x SM (15 km)	24 03 004 1210		
Ha-VIS eCon 3021BT-AD -40 °C ... +70 °C 1 x MM (2 km)	24 03 004 1100		
Ha-VIS eCon 3021BT-AF -40 °C ... +70 °C 1 x SM (15 km)	24 03 004 1200		



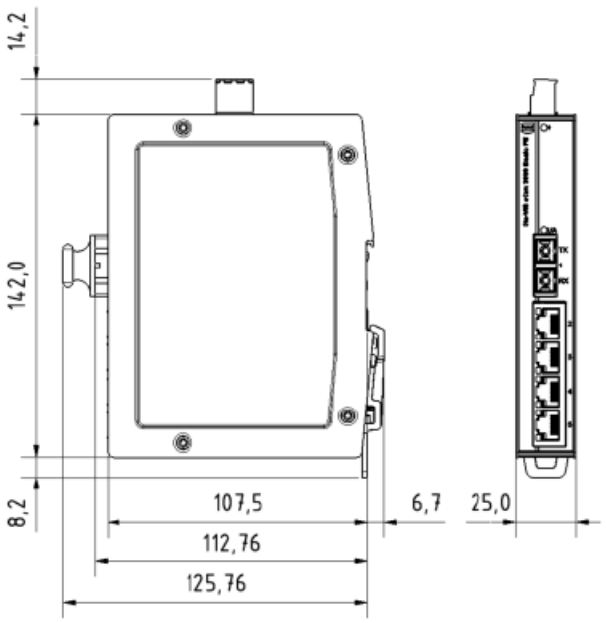
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



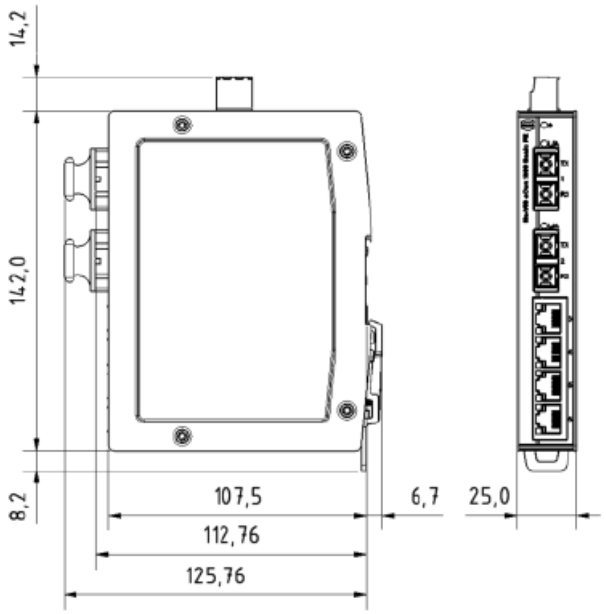
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



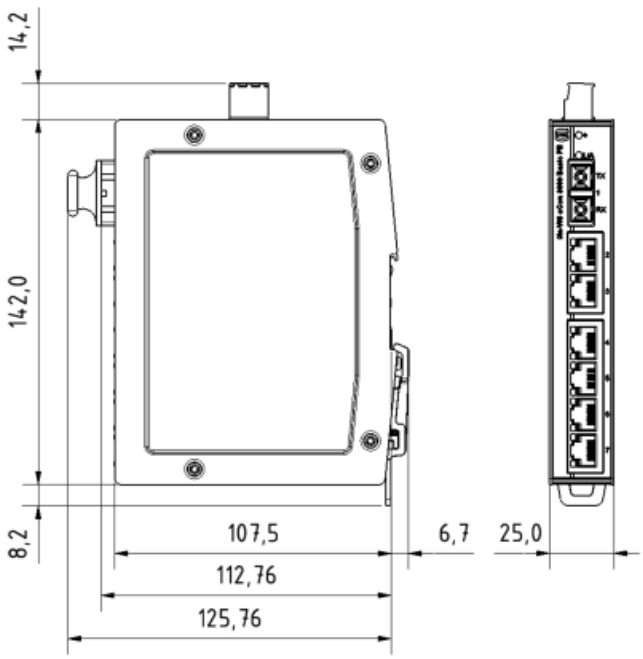
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



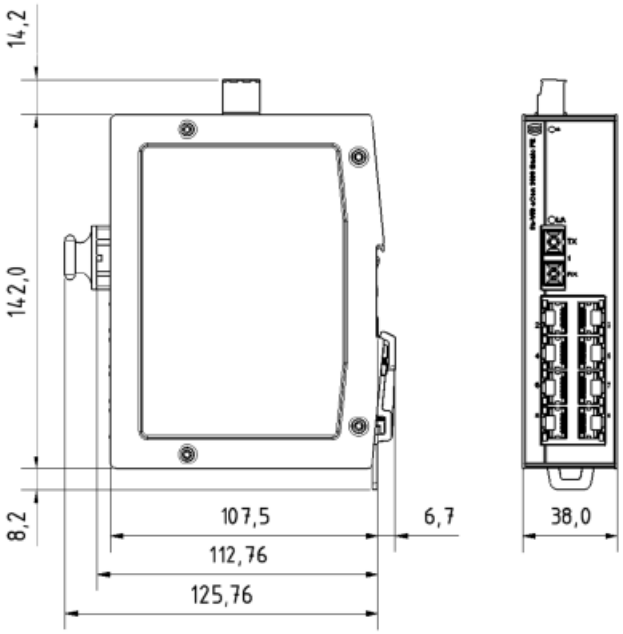
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	514 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



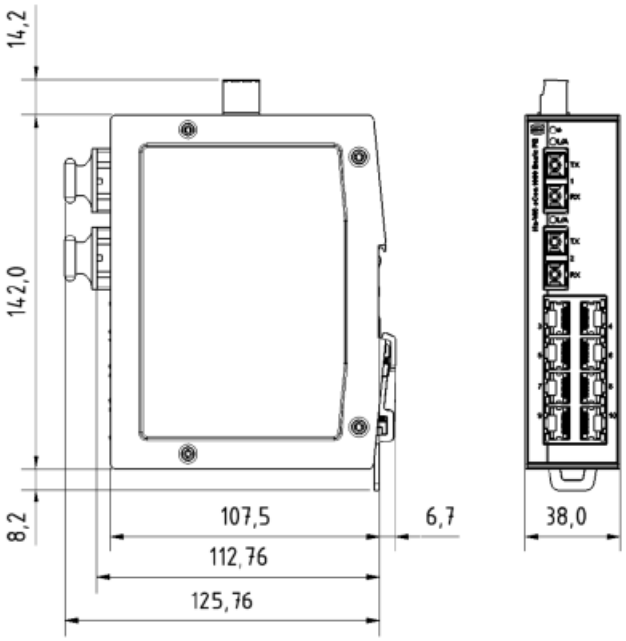
Ha-VIS eCon 3000 Fast Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

Number of ports copper / termination	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair)
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage	24 / 48 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	531 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



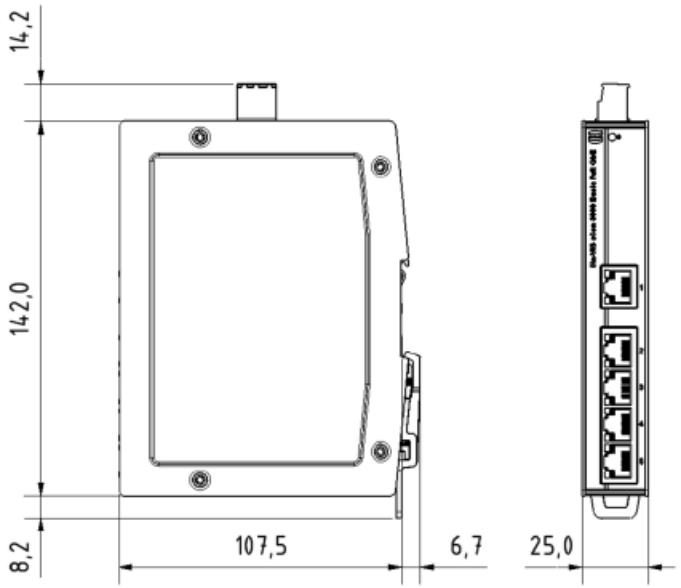
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



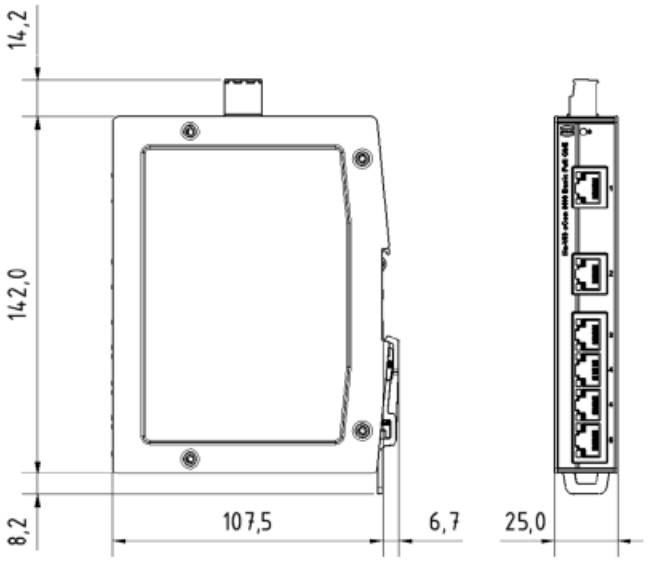
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



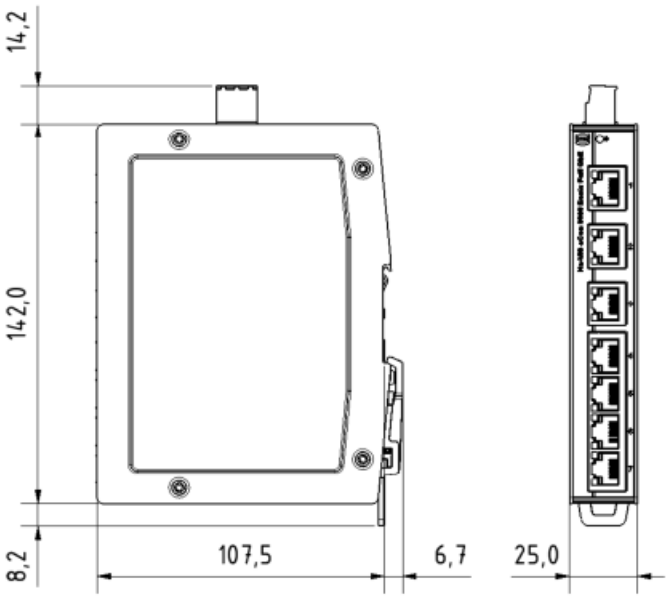
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



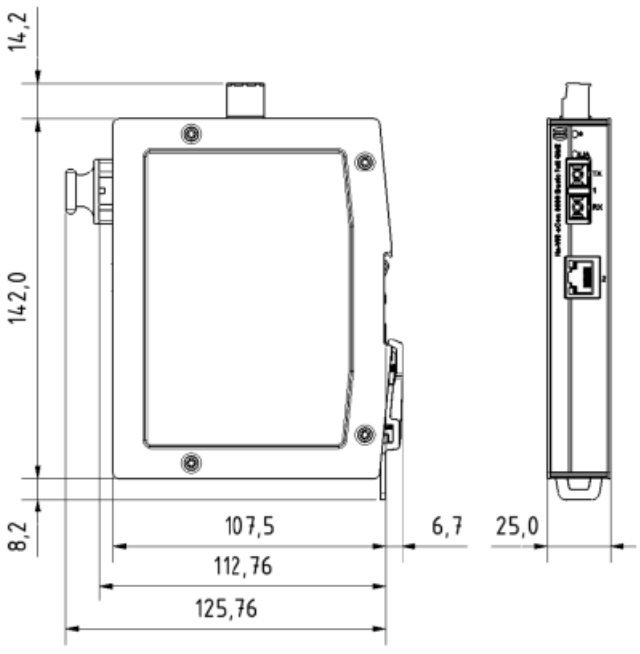
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



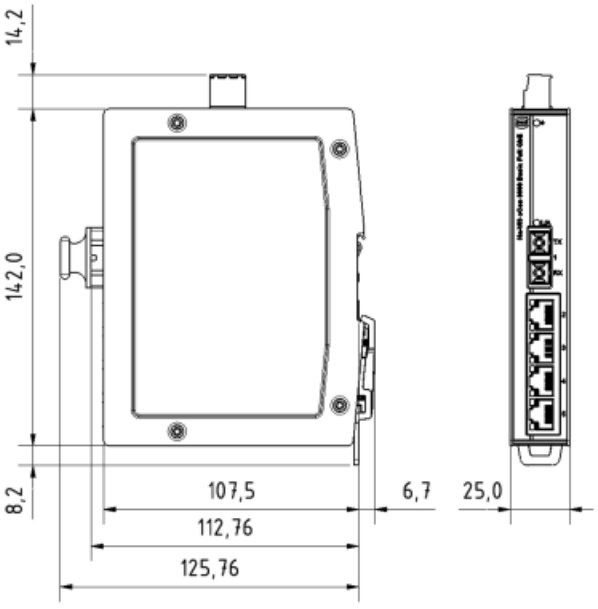
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



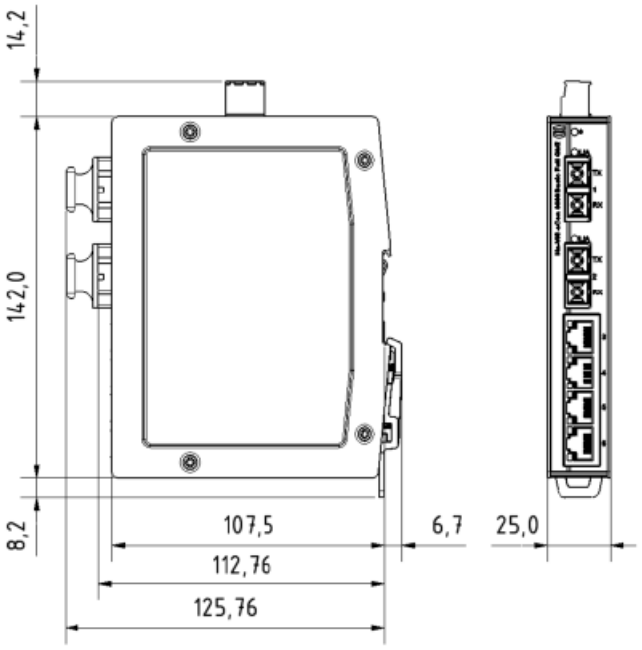
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



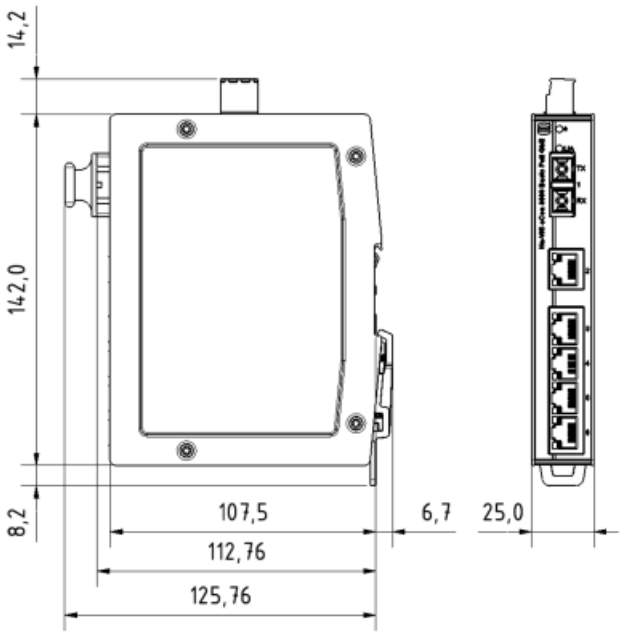
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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

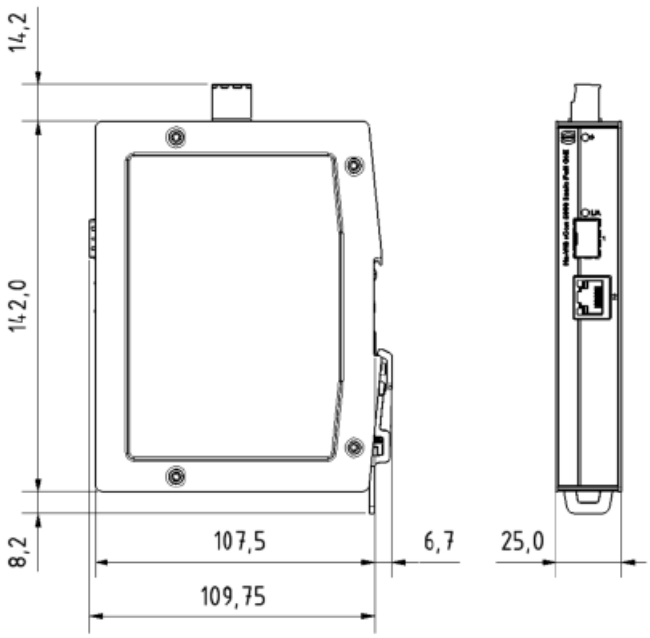


Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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

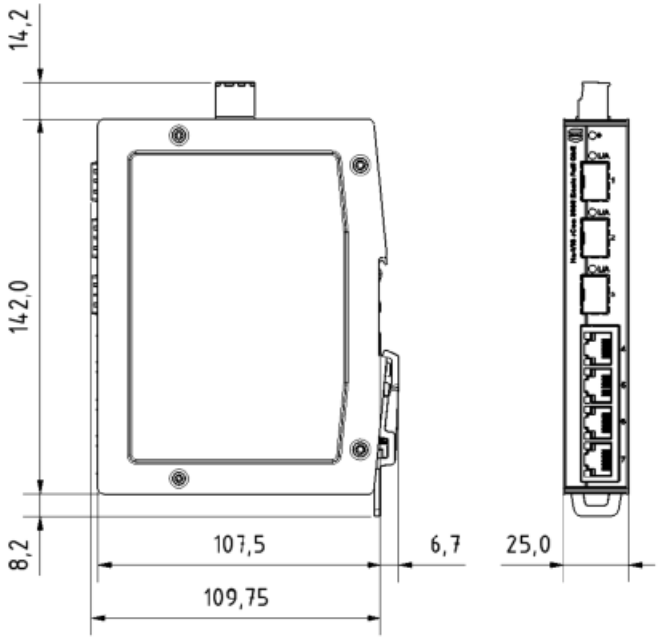
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



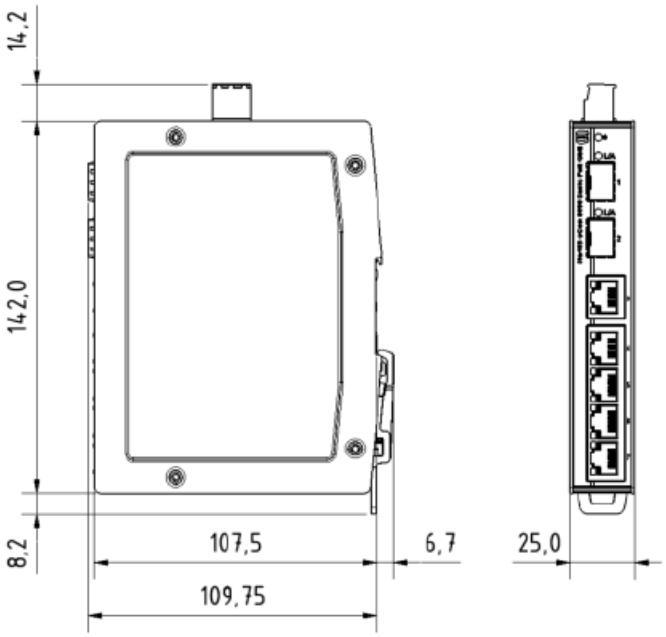
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



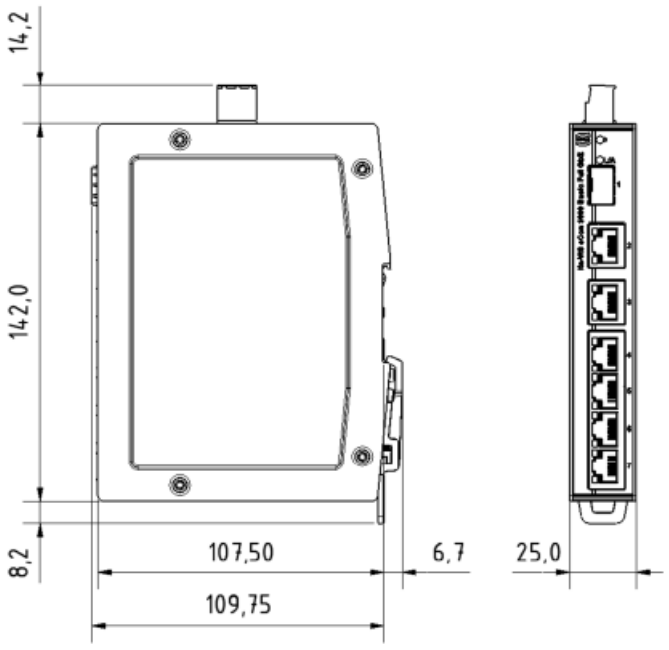
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic

Unmanaged Plug-and-Play Ethernet Switches
for Assembly on DIN Rail in Control Cabinets
Commercial Temp.: 0 °C ... +55 °C / Industrial Temp.: -40 °C ... +70 °C

Specification

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

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



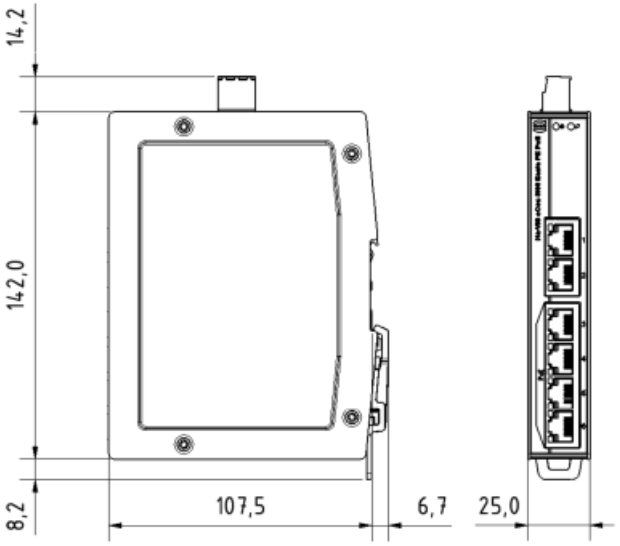
Ha-VIS eCon 3000 Fast Ethernet Basic PoE

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

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	430 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



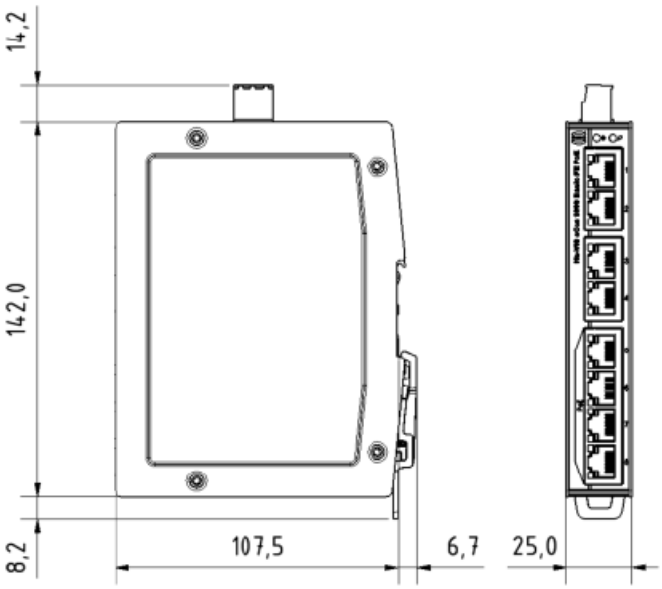
Ha-VIS eCon 3000 Fast Ethernet Basic PoE

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

Specification

Number of ports copper / termination including PoE+ ports	8 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	430 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



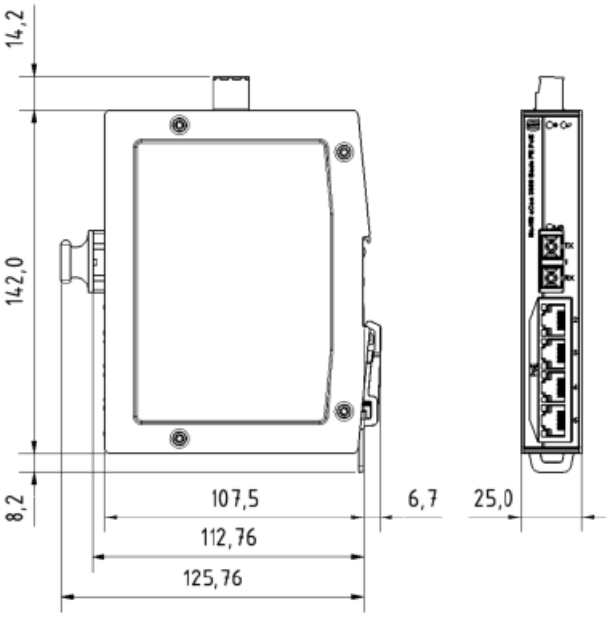
Ha-VIS eCon 3000 Fast Ethernet Basic PoE

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

Specification

Number of ports copper / termination, including PoE+ ports	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	430 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



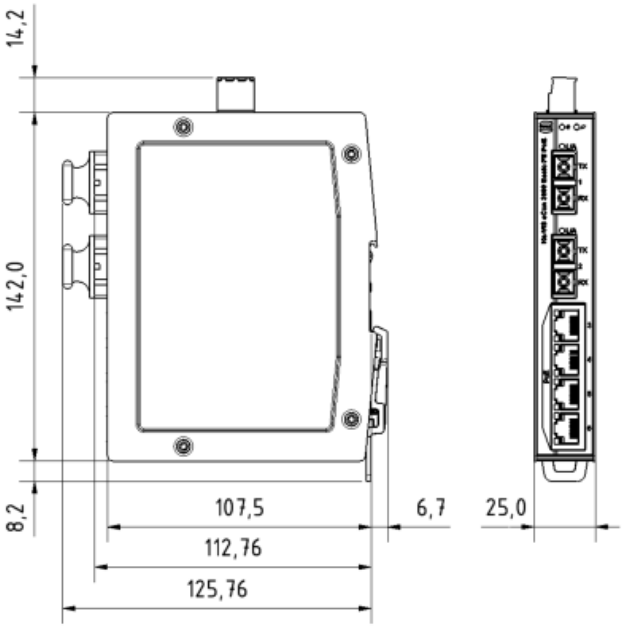
Ha-VIS eCon 3000 Fast Ethernet Basic PoE

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

Specification

Number of ports copper / termination including PoE+ ports	4 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	2 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



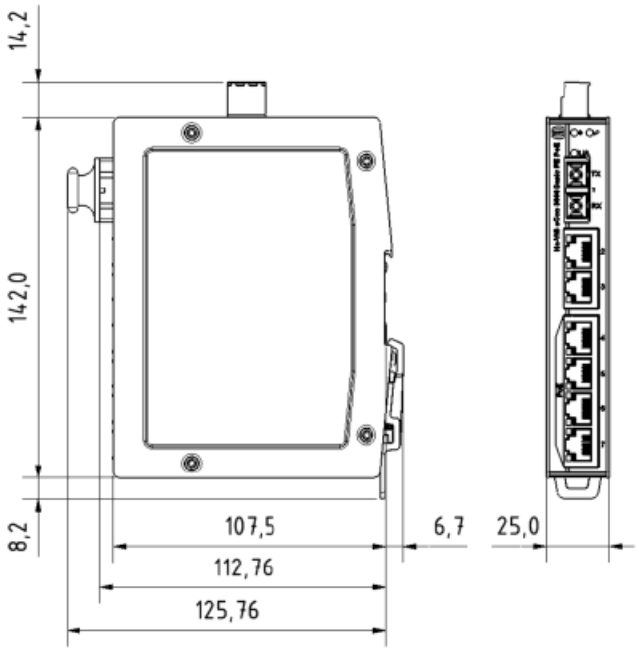
Ha-VIS eCon 3000 Fast Ethernet Basic PoE

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

Specification

Number of ports copper / termination including PoE+ ports	6 x 10BASE-Te / 100BASE-TX EEE / RJ45 (twisted pair) 4 x PoE+ with 34.2 watts per port
Number of ports F.O. / termination	1 x 100BASE-FX / SC duplex socket
Nominal voltage (without PoE / PoE / PoE+)	24 / 48 / 54 VDC ⎓
Permissible voltage range	9 V ... 60 VDC ⎓
Termination	Screw type terminal block, pluggable, 3-poles (+ / - / ⏚)
Current consumption typical @ 24 V	See eCatalogue
Dimensions (W x H x D)	25.0 x 142.0 x 107.5 mm (without pluggable screw type terminal block)
Weight	445 g
MTBF	See eCatalogue
Approvals	CE
Approvals (in preparation)	Federal Communications Commission (FCC), cUL US 508 listed, Det Norske Veritas (DNV), Germanischer Lloyd (GL), American Bureau of Shipping (ABS), Nippon Kaiji Kyokai (NK)

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



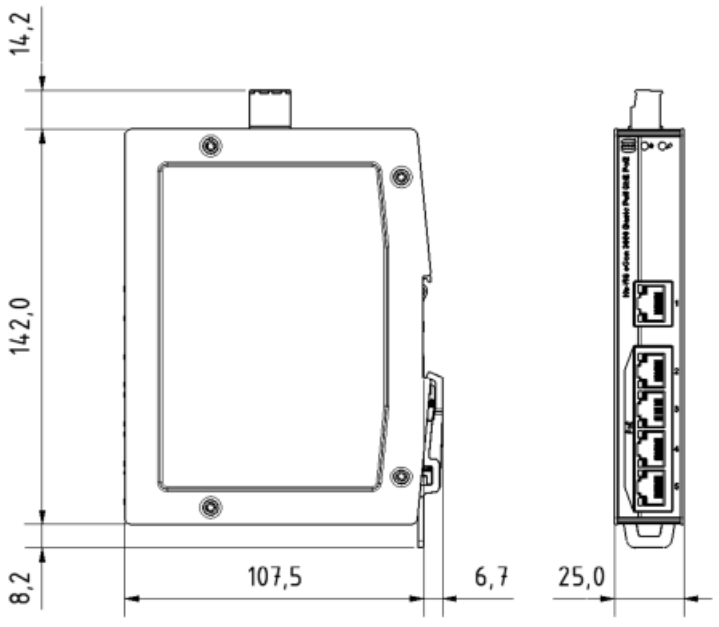
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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

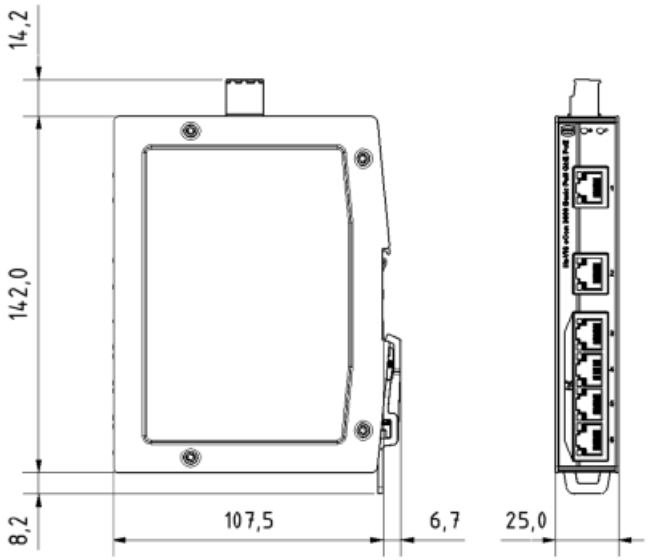


Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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

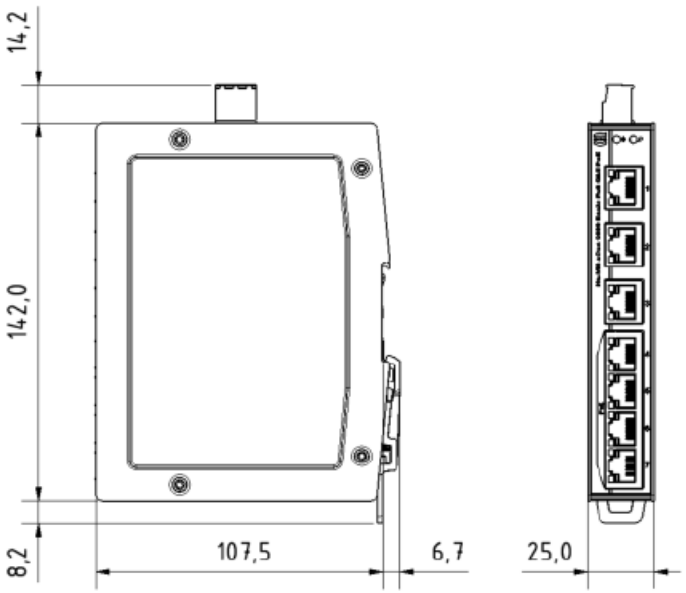
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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

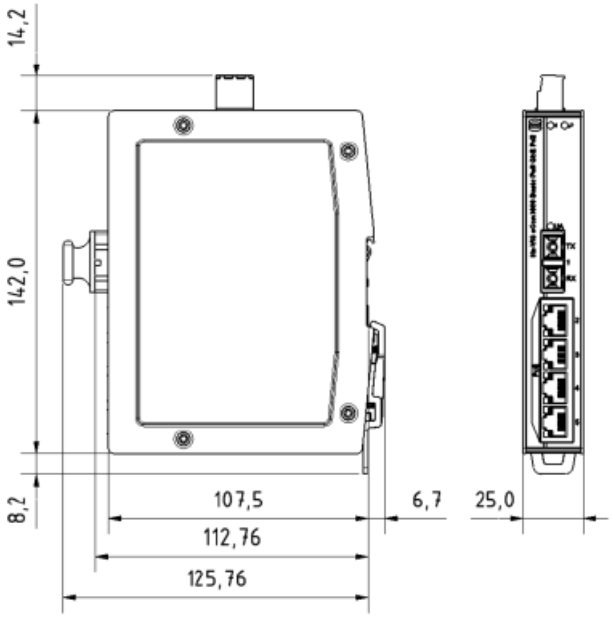


Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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

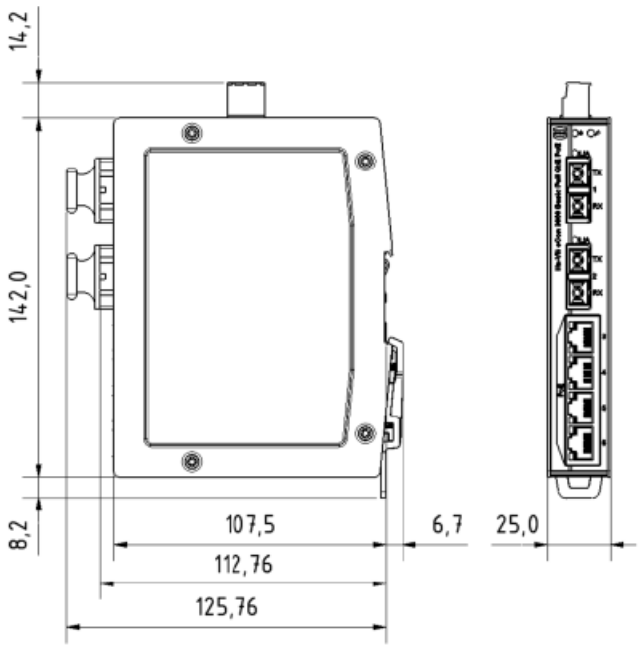
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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



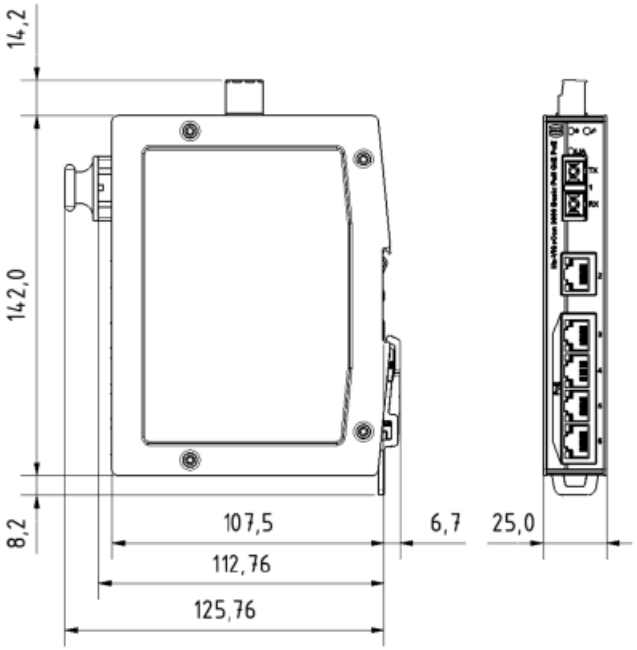
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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

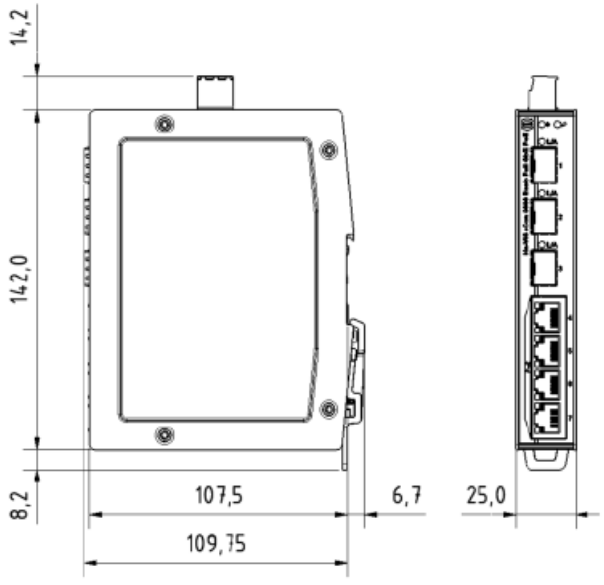


Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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

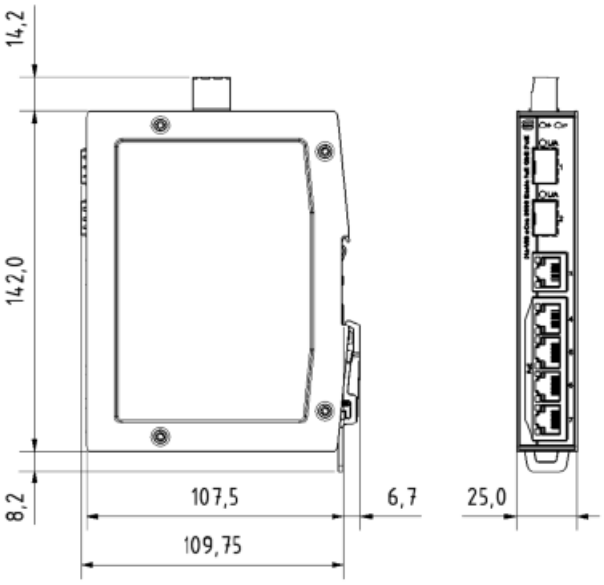
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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



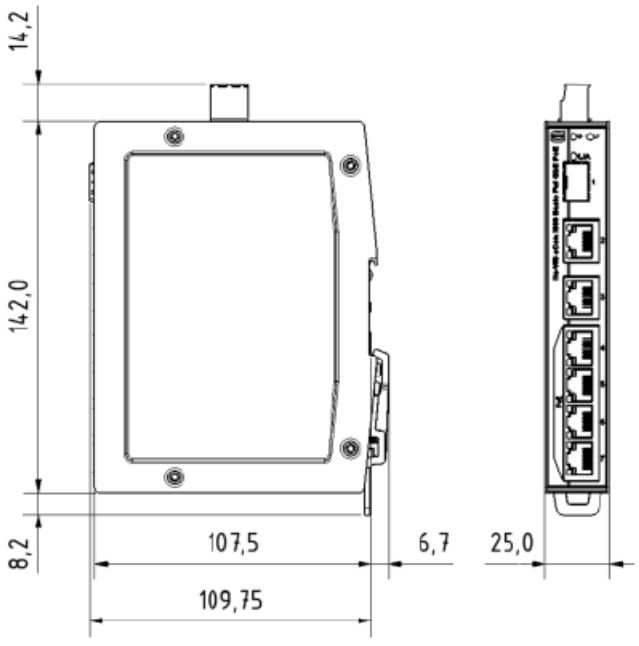
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE

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

Specification

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

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



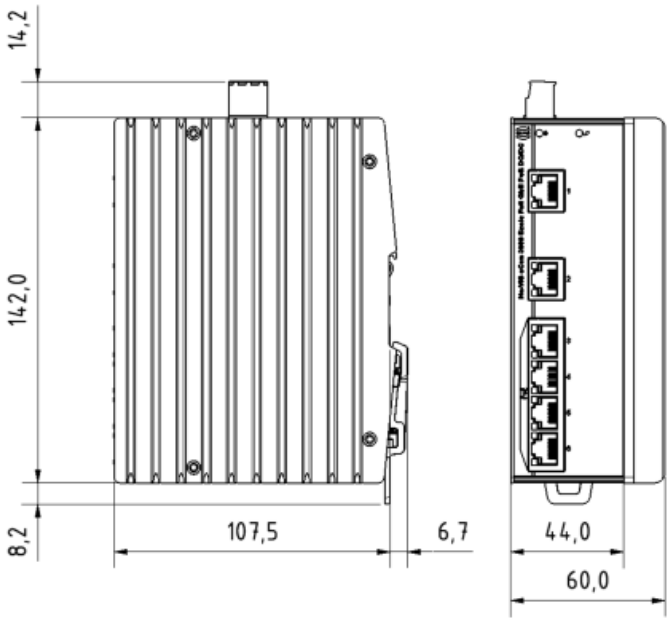
Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

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

Specification

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

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



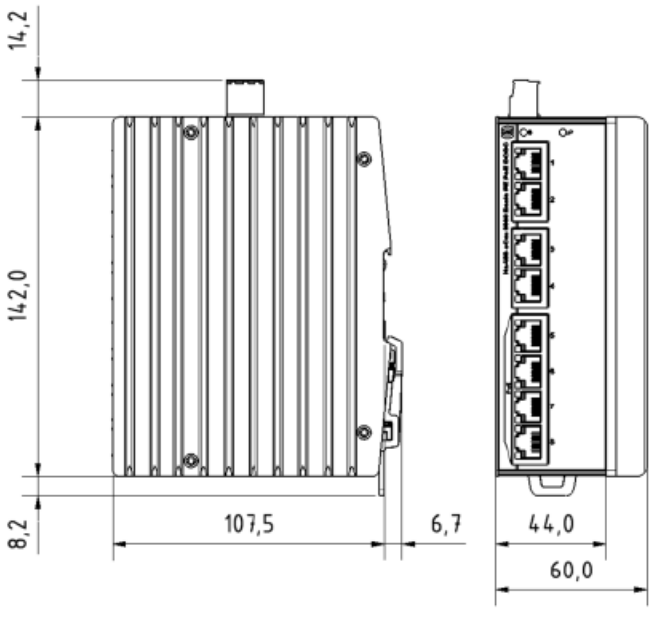
Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

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

Specification

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

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



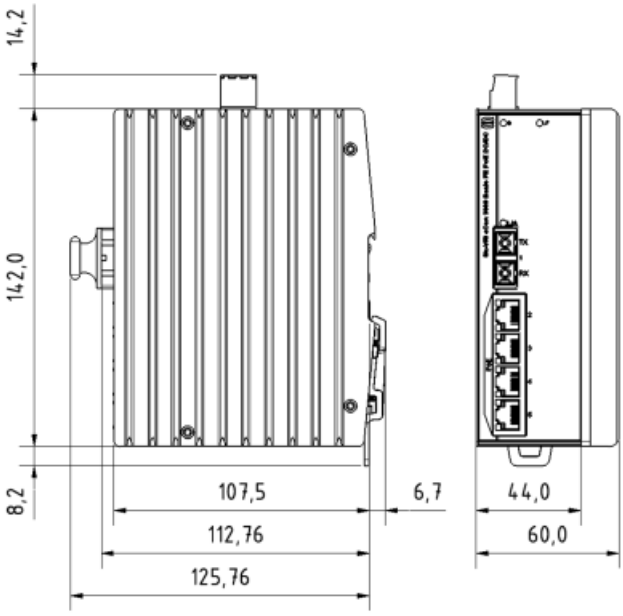
Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

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

Specification

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

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



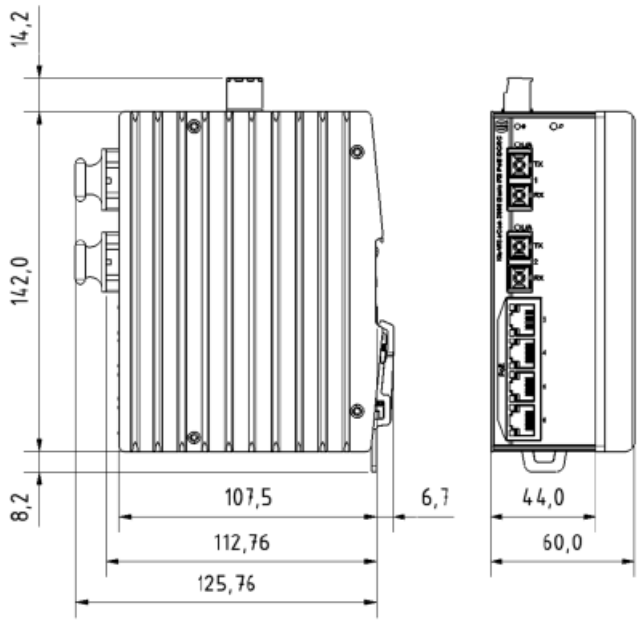
Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

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

Specification

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

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



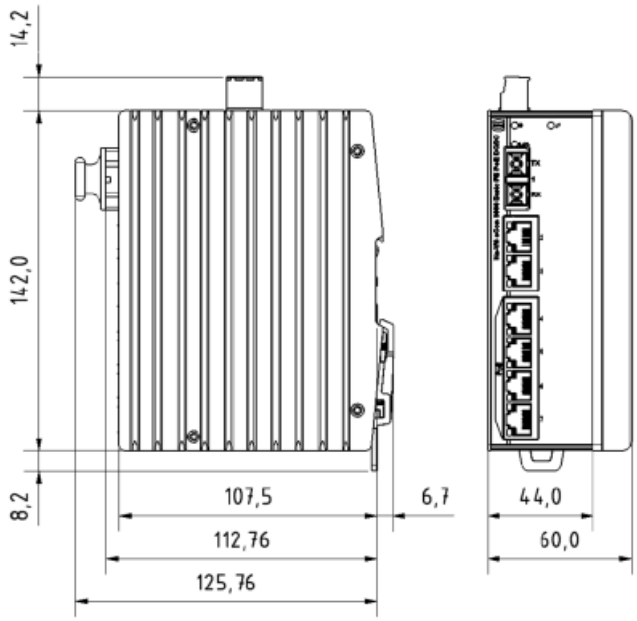
Ha-VIS eCon 3000 Fast Ethernet Basic PoE DC/DC

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

Specification

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

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



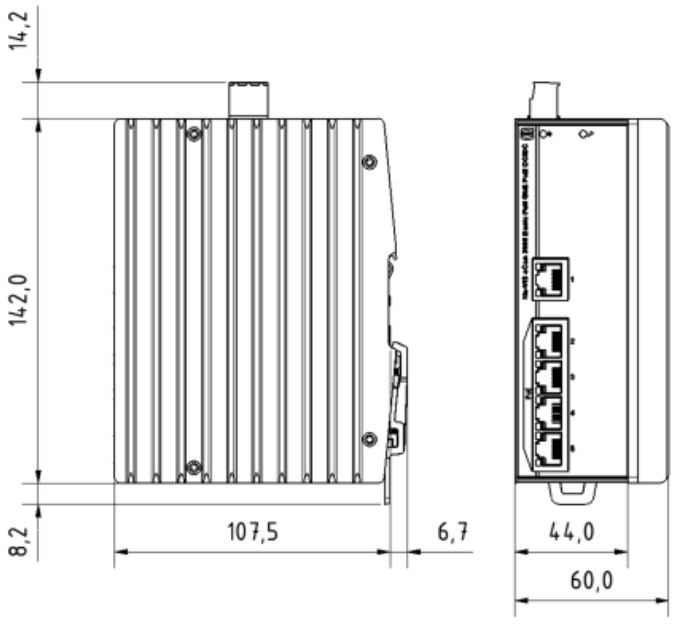
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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

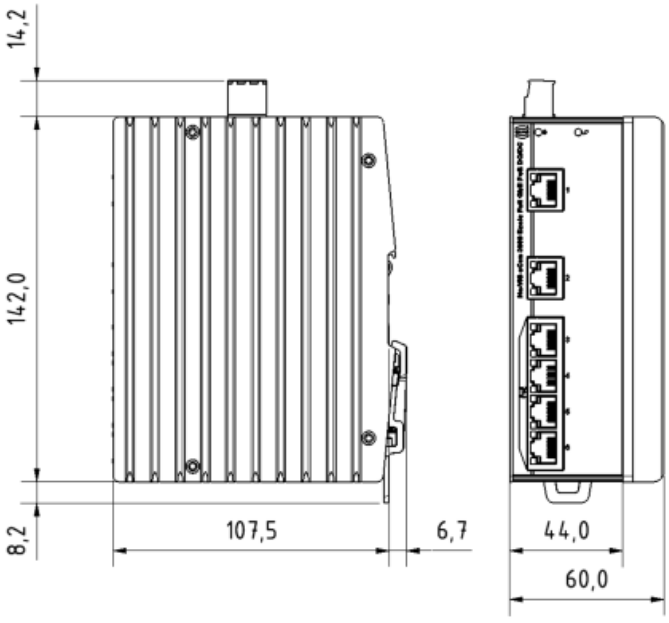


Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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

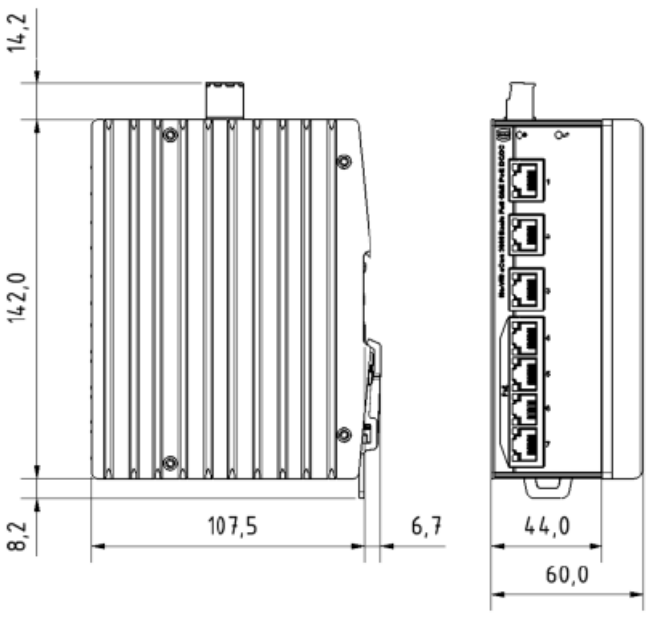
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



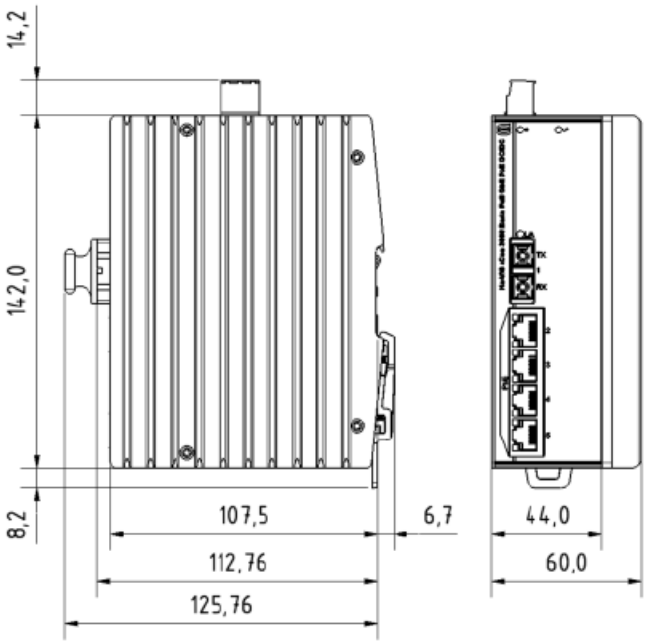
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



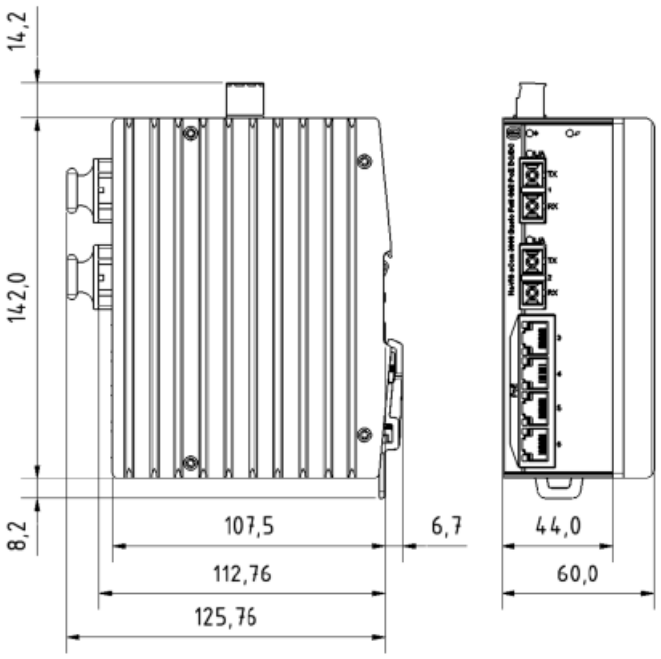
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



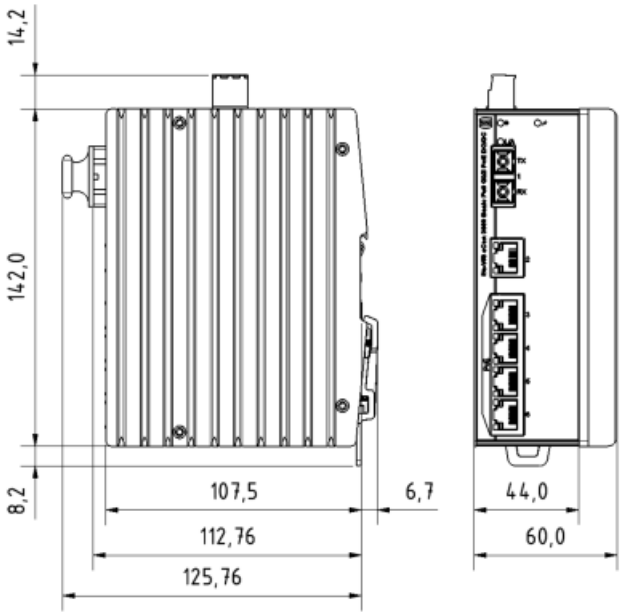
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



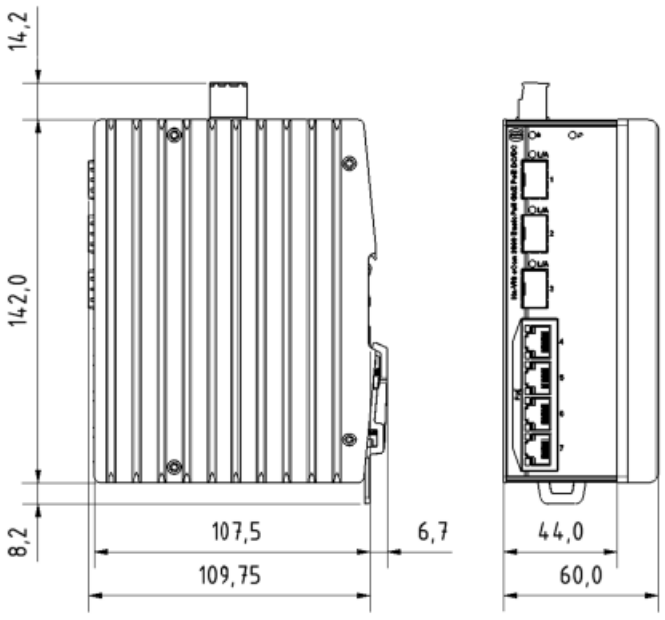
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



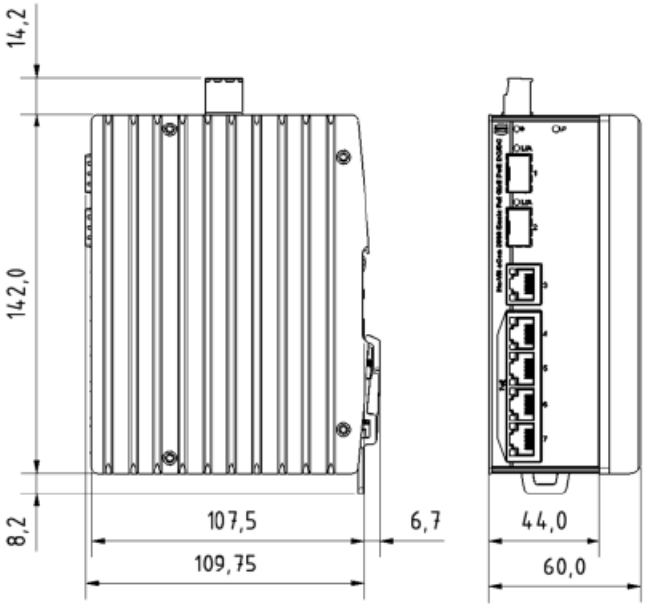
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



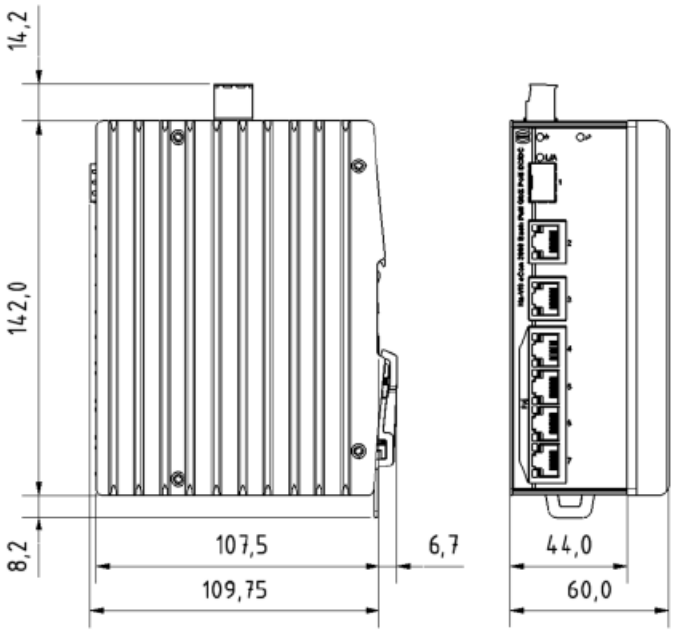
Ha-VIS eCon 3000 Full Gigabit Ethernet Basic PoE DC/DC

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

Specification

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

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



Ha-VIS RFID VT 86 S (HT)

Transponder
Ha-VIS RFID VT 86 S (HT)

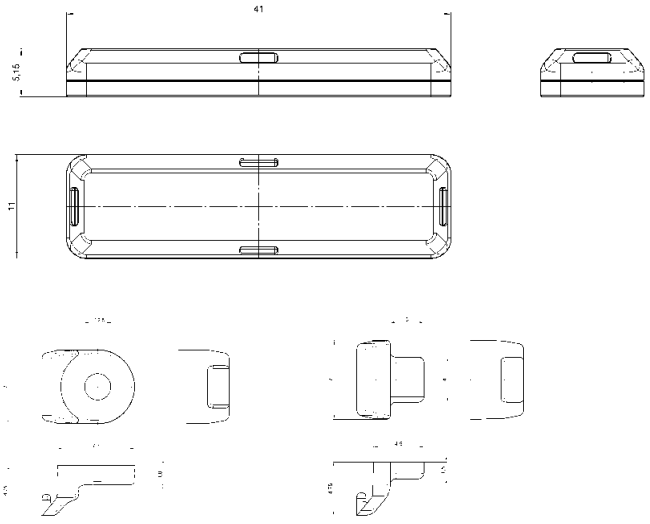
Advantages

- Optimized for the EU band
- Very high read ranges, in relation to the housing dimension
- Robust, chemical resistant housing
- Small size
- Flexible mounting
- High temperature resistance
- Protection class IP69K
- Integration in type labels possible

Application

- Particularly robust and durable transponder for repair and maintenance cycles in extremely harsh environments
- Optimized for function on metal
- EPC C1 Gen2 compatible
- Read range (on metal, 2 W ERP, 868 MHz): > 4 m

Identification		Part-Number	Drawing	Dimensions in mm
Ha-VIS RFID VT 86 S (HT)				
Packaging unit	10 pieces	20 92 611 0201		
	50 pieces	20 92 611 0202		

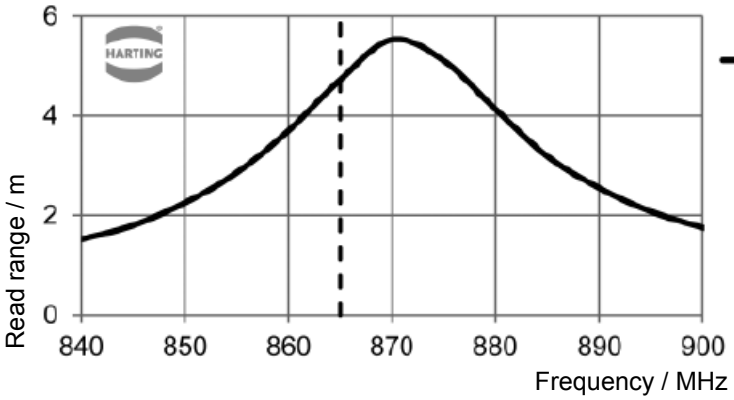


Technical characteristics

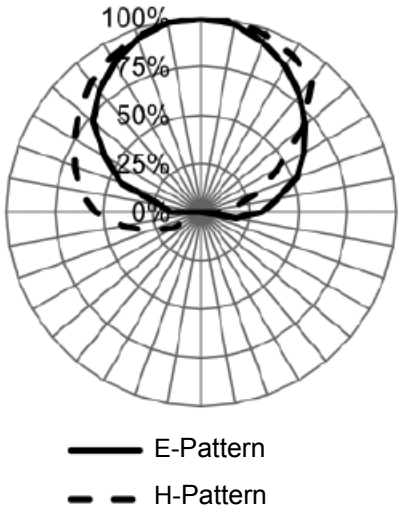
Frequency range	860 ... 870 MHz	EU Band
Protocol	EPC Class 1 Gen 2	
EPC / User Memory (Chip)	96 Bit / 512 Bit	(Alien Higgs 3)
Temperature range	Function	-50 °C ... +85 °C
	Storage	-65 °C ... +160 °C
	Thermal shock (0 °C to 210 °C)	5000 cycles
	Thermal stress test (210 °C)	5000 h
Housing	Size (W x D x H)	41 x 11 x 5.15 mm
	Protection class	IP64 / IP67 / IP69K
	Mounting	screws, glue
	Colour	black

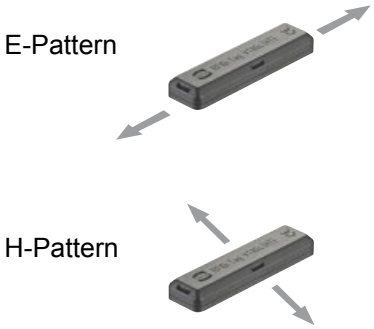
Measurements

Read range / Radiation pattern



Theoretical read range measured in free field conditions (radiated power – 2 W ERP).





The general shape of the radiation pattern remains the same, regardless of:

- Placement of tag on different metallic surfaces

Ha-VIS RFID VT 92 S (HT)

Transponder
Ha-VIS RFID VT 92 S (HT)

Advantages

- Optimized for the US/Asia band
- Very high read ranges, in relation to the housing dimension
- Robust, chemical resistant housing
- Small size
- Flexible mounting
- High temperature resistance
- Protection class IP69K
- Integration in type labels possible

Application

- Particularly robust and durable transponder for repair and maintenance cycles in extremely harsh environments
- Optimized for function on metal
- EPC C1 Gen2 compatible
- Read range (on metal, 2 W ERP, 915 MHz): > 4 m

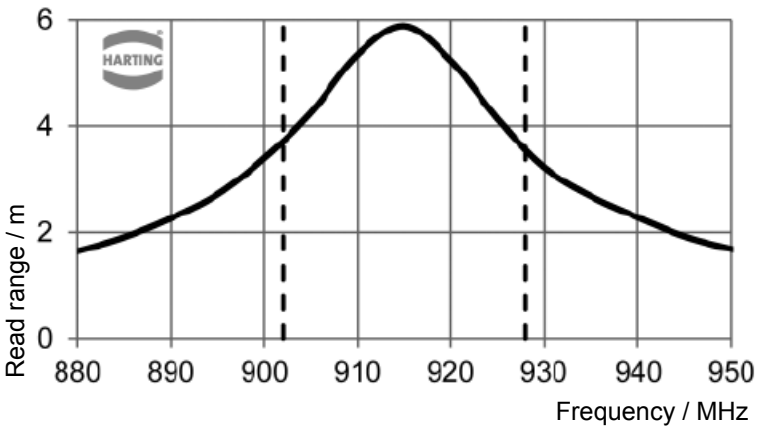
Identification		Part-Number	Drawing	Dimensions in mm
Ha-VIS RFID VT 92 S (HT)				
Packaging unit	10 pieces	20 92 621 0201		
	50 pieces	20 92 621 0202		

Technical characteristics

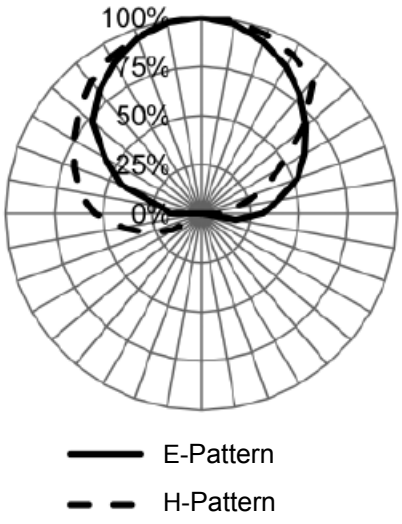
Frequency range	900 ... 930 MHz	US/Asia Band
Protocol	EPC Class 1 Gen 2	
EPC / User Memory (Chip)	96 Bit / 512 Bit	(Alien Higgs 3)
Temperature range	Function	-50 °C ... +85 °C
	Storage	-65 °C ... +160 °C
	Thermal shock (0 °C to 210 °C)	5000 cycles
	Thermal stress test (210 °C)	5000 h
Housing	Size (W x D x H)	41 x 11 x 5 mm
	Protection class	IP64 / IP67 / IP69K
	Mounting	screws, glue
	Colour	black

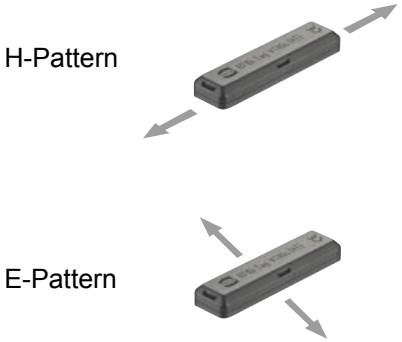
Measurements

Read range / Radiation pattern



Theoretical read range measured in free field conditions (radiated power – 2 W ERP).





The general shape of the radiation pattern remains the same, regardless of:

- Placement of tag on different metallic surfaces

Ha-VIS RFID FT 89 on metal (NT)

Transponder
Ha-VIS RFID FT 89 on metal (NT)

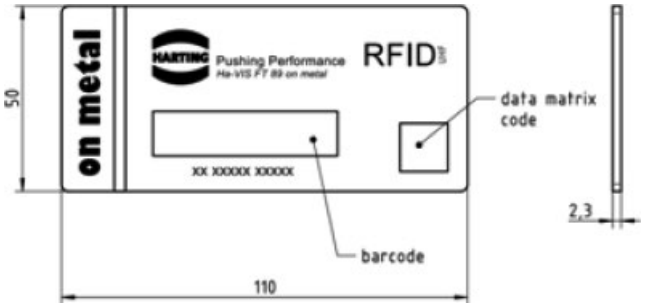
Advantages

- Global use possible thanks to wideband antenna design
- High read ranges on metal
- Scratch- and smudge-resistant by polycarbonate film
- Washable, resistant to chemicals
- Flexible mounting on different forms
- Flexible printing possible (barcode, datamatrix, custom logo / name)

Application

- Applications on metallic and non-conducting surfaces
- Metal container detection
- Container management
- Asset management
- Intralogistic
- EPC C1 Gen2 compatible
- Read range (on metal, 2 W ERP): > 2 m

Identification		Part-Number	Drawing	Dimensions in mm
Ha-VIS RFID FT 89 on metal (NT)				
Packaging unit	50 pieces	20 92 641 0752		
	500 pieces	20 92 641 0753		



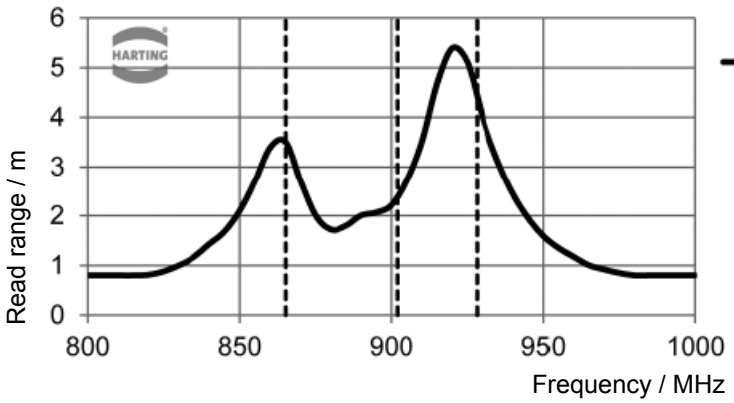
Ha-VIS RFID FT 89 on metal (NT)

Technical characteristics

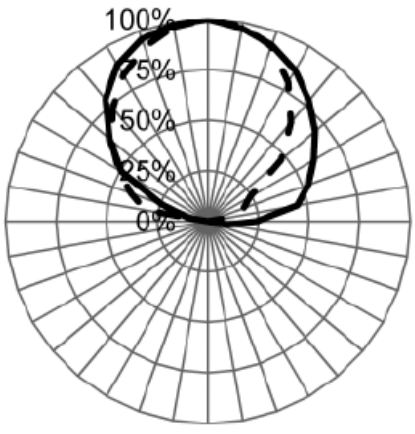
Frequency range	860 ... 930 MHz	global use
Protocol	EPC Class 1 Gen 2	
EPC / User Memory (Chip)	496 Bit / 128 Bit	(Impinj Monza 4E)
Temperature range	Function	-32 °C ... +90 °C
	Storage	-32 °C ... +90 °C
Housing	Size (W x D x H)	110 x 50 x 2.3 mm
	Protection class	IP64 / IP67 / IP69K
	Mounting	glue
	Colour	white / flexible

Measurements

Read range / Radiation pattern

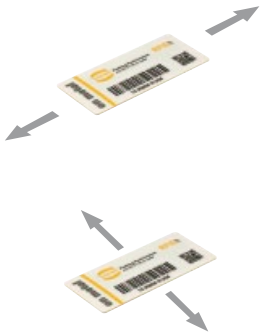


Theoretical read range measured in free field conditions (radiated power – 2 W ERP).



E-Pattern

H-Pattern



The general shape of the radiation pattern remains the same, regardless of:

- placement of tag on different metallic surfaces
- 868 MHz or 910 MHz

Ha-VIS Application-Suite

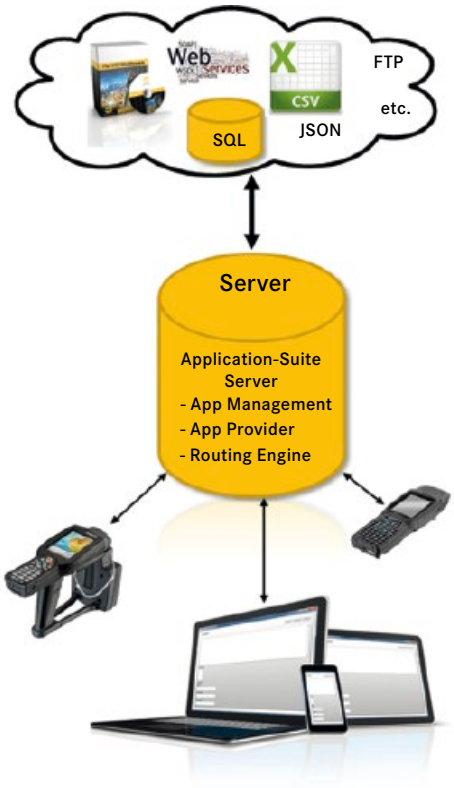
Advantages

- A simple and quick interface to a variety of end devices
- Vendor-neutral applications (Windows CE, Windows, Android, iOS)
- Versatile and modular application solutions
- Based on open standards (e.g. HTML 5)

General description

The development of mobile applications or applications involving separate process steps can often take much time and money. Our Application-Suite takes an innovative approach to this problem: it is based on a client-server model and creates an abstraction layer for end-device hardware. Thus it provides a solution which enables versatile, modular and hardware-neutral application development. So an application needs to be coded and tested once, and then it can be implemented across various hardware platforms.

The modular strategy – using multiple pre-tested modules that are combined with each other – reduces development time while increasing reliability.

Identification	Part No.	Drawing
Ha-VIS Application-Suite Including the Application Suite Server und a demo app for the Workabout Pro, Windows CE 6.0	26 99 310 1110 00	
Ha-VIS Application Suite Client A current list of the hardware devices we support can be found at www.HARTING-RFID.com.		

Technical characteristics

Functionality

The Application-Suite is a tool for developing hardware-independent, vendor-neutral applications (apps). An abstraction layer is sustained from the server to the client so that your development work is simplified. The applications are built using individual, modular processes, which make them extensible and versatile. The integrated routing engine simplifies the integration of these apps into your existing IT architecture.

The Application-Suite consists of two main components:

1) The Application-Suite Server: used for saving, publishing, updating or deleting the modelled applications. The applications are modelled processes which are saved to the server.
2) The Application-Suite Client: consisting of a special engine which enables the application to have a uniform design across a multitude of end-device platforms. This client uses a hardware abstraction layer which makes it easier for you to develop applications that are independent of the target hardware (e.g. an RFID reader head).

Our service

As a special service for system integrators we offer to develop apps according to your requirement specifications.

Your benefits:

- No time-consuming trainings and familiarisation processes are required.
- HARTING programs and tests the app‘s process logic, thus ensuring its quality.
- Savings of time and resources that can be better used to accomplish customer projects

If you are interested in details, please do not hesitate to contact us.

System requirements

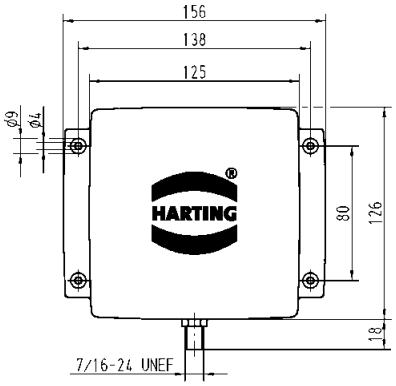
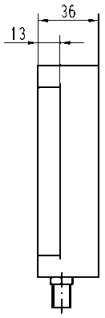
The Application-Suite Server comes with a pre-configured virtual machine upon delivery. This virtual appliance complies with the OVF standard. The installation is based on a Linux x86 system and can therefore function in practically all virtualisation environments.

The virtual machine requires at least:

- 1 GB of RAM
- A single-core 1.3 GHz processor

Ha-VIS RF-ANT-sMR20

Planar RFID antenna

Identification	Part-Number	Drawing	Dimensions in mm
Ha-VIS RF-ANT-sMR20	20 93 201 0304		

Recommended accessories

Antenna cables

Ha-VIS Coax ...		
... SMA-TNC, RG58	3 m	20 93 204 0101
... SMA-TNC, LL240flex	3 m	20 93 204 0102
... SMA-TNC, LL240flex	10 m	20 93 204 0103

Technical characteristics

General characteristics

Read range	0.2 … 1 m
Optimized for	automation applications harsh environments intralogistics outdoor applications integration in machines with little space

Electric properties

Frequency range	865 ... 928 MHz
Impedanz	50 Ohm
VSWR	< 1.4:1
Polarisation	circular
Gain	-12 dBic @ 866 MHz -10 dBic @ 915 MHz
Far field half-power beam width	100°
Front to back ratio	> 8 dB
Axial ratio	typ. 2 dB
Max. power (FCC15.247 / ETSI EN 302 208)	1.0 W ERP
Connection	TNC socket

Mechanical properties

Dimensions (B x H x T)	156 x 126 x 36 mm
Weight	0.3 kg
Degree of protection	IP67
Antenna cover	robust, weather-resistant polymer blend
Colour	RAL 7045 (light grey)
Installation	4 through-holes diameter 4.2 mm for M4 screws
Operating temperature range	– 20 °C ... + 55 °C
Storage temperature range	– 40 °C ... + 85 °C

Notes

Notes

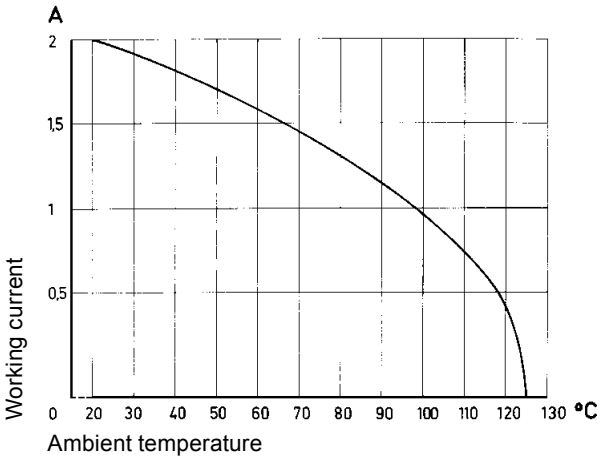
Notes

Number of contacts	20-30
Contact spacing (mm)	2.54
Working current see current carrying capacity chart	2 A max.
Clearance	≥ 1.2 mm
Creepage	≥ 1.2 mm
Working voltage The working voltage also depends on the clearance and creepage dimensions of the pcb itself, and the associated wiring	according to the safety regulations of the equipment
Test voltage $U_{r.m.s.}$	1 kV
Contact resistance	≤ 20 mΩ
Insulation resistance	≥ 10^{12} Ω
Temperature range	– 55 °C … + 125 °C
The higher temperature limit includes the local ambient and heating effects of the contacts under load	– 40 °C … + 105 °C for press-in connector
During reflow soldering	max. + 240 °C for 15 s for SMC connectors
Electrical termination	
	Solder pins for pcb connections Ø 1.0 ± 0.1 mm according to IEC 60 326-3 wrap posts 0.6 x 0.6 mm diagonal 0.79-0.86 mm
Compliant press-in terminations	
PCB thickness	≥ 1.6 mm
Recommended PCB holes for press-in technology	in acc. to EN 60 352-5
Insertion and withdrawal force	20way ≤ 20 N 30way ≤ 30 N
Materials	
Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy
Contact surface	
Contact zone	Selectively plated according to performance level

Current carrying capacity

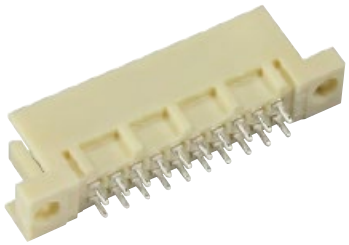
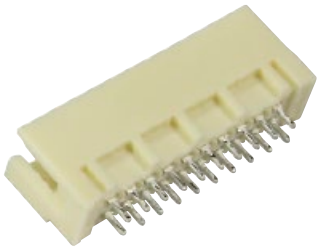
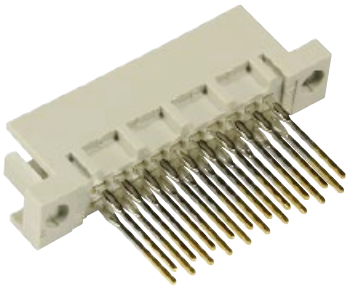
The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512



Number of contacts

20

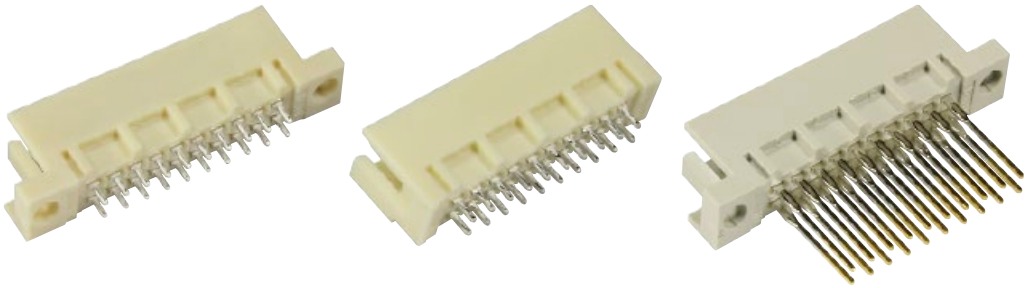
Male connectors

Identification	Number of contacts	Contact arrangement	Part No. 3	Performance levels according to IEC 60603-2. 2	1
Male connector with solder pins 2.5 mm			Performance level 3 on request		Performance level 1 on request
with fixing flange	20			09 75 120 6902	
with fixing flange, SMC	20			09 75 120 6519[d)]	
without fixing flange	20			09 75 120 6592	
without fixing flange, SMC	20			09 75 120 6569[d)]	
Male connector with solder pins 4.0 mm					
with fixing flange	20			09 75 120 6903	
with fixing flange, SMC	20			09 75 120 6520[d)]	
without fixing flange	20			09 75 120 6593	
without fixing flange, SMC	20			09 75 120 6570[d)]	
Male connector with solder pins 13 mm					
with fixing flange	20			09 75 120 6577	
with fixing flange, SMC	20			09 75 120 6521[d)]	
Male connector with wrap posts[1)] 13 mm					
with fixing flange	20			09 75 120 6907	
Male connector with press-in pins 5.0 mm					
with fixing flange	20			09 75 120 6904	
without fixing flange	20			09 75 120 6504	
Male connector with press-in pins 13 mm					
with fixing flange	20			09 75 120 6985 09 75 120 6974•	
without fixing flange	20			09 75 120 6574•	

• Wrap posts for interfacing selectively gold plated (performance level 3)
[1)] To be used only for wire wrap termination
[d)] CTI > 400

Number of contacts

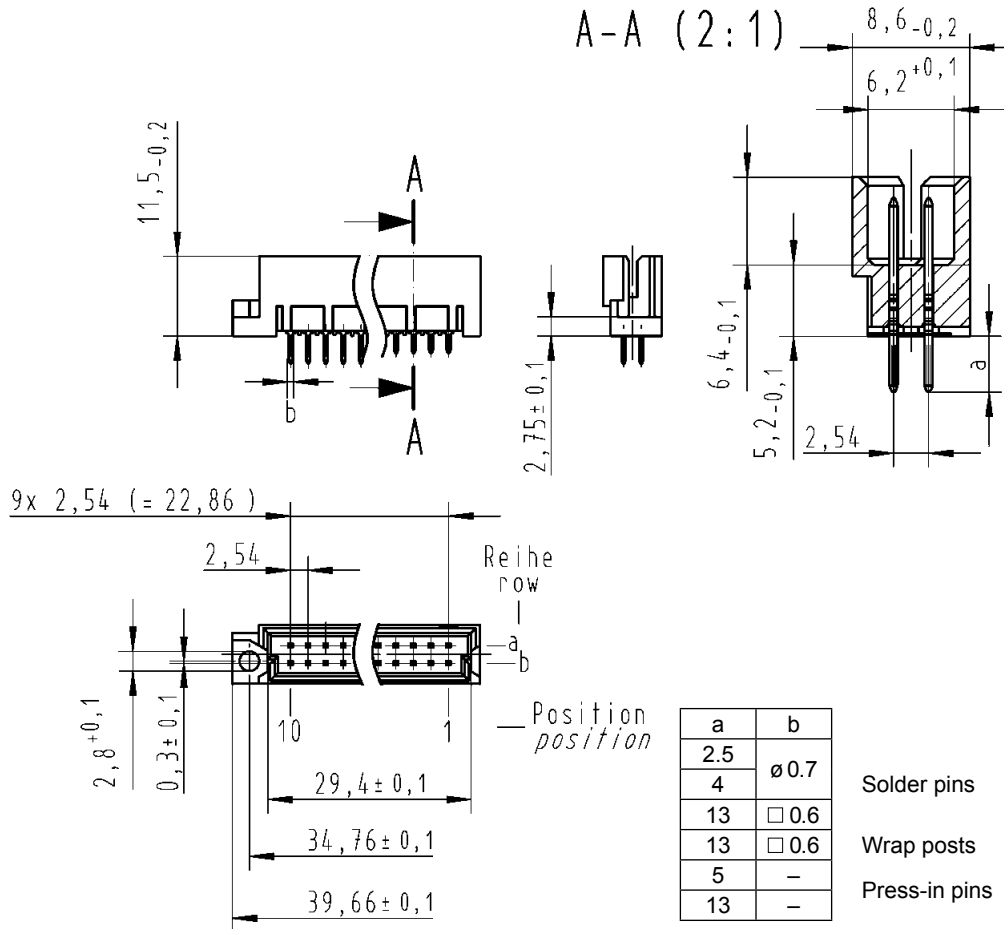
20



Male connectors

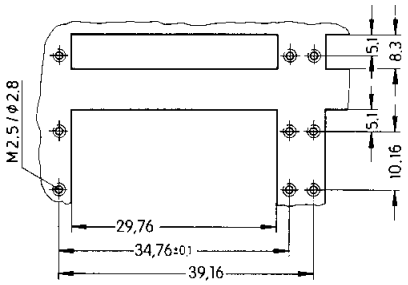
Identification	Drawing	Dimensions in mm

Dimensions



a	b	
2.5	ø 0.7	Solder pins
4		
13	□ 0.6	
13	□ 0.6	Wrap posts
5	–	
13	–	Press-in pins

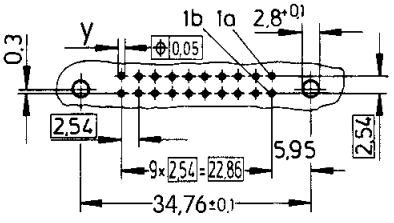
Panel cut out



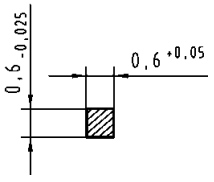
	Y
Solder	1 ± 0.1

Board drillings

Mounting side



Cross section of solder terminations

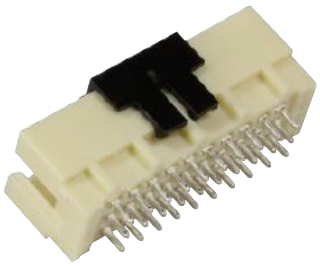


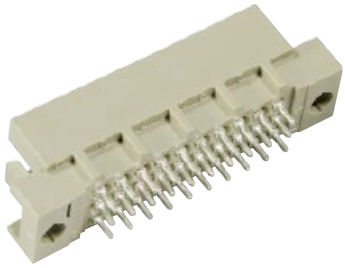
Cross area (A) of contacts row a, b, c: A = 0.35 - 0.39 mm²

Other contact arrangements as well with lagging/leading pins on request

Number of contacts

30, 20





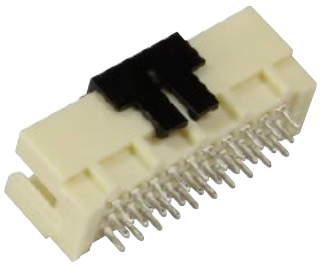
Male connectors

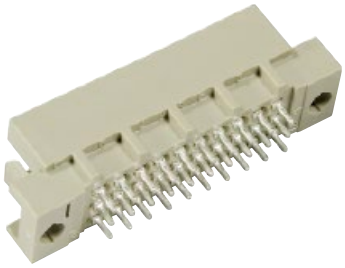
Identification	Number of contacts	Contact arrangement	Part No. 3	Performance levels according to IEC 60603-2. 2	1
Male connector with solder pins 2.5 mm	30		Performance level 3 on request	09 29 130 6902	Performance level 1 on request
with fixing flange	20			09 29 120 6902	
with fixing flange, SMC	30			09 29 130 6519[d]	
without fixing flange	30			09 29 130 6592	
without fixing flange, SMC	30			09 29 130 6569[d]	
Male connector with solder pins 4.0 mm	30			09 29 130 6903	
with fixing flange	20			09 29 120 6903	
with fixing flange, SMC	30			09 29 130 6520[d]	
without fixing flange	30			09 29 130 6593	
without fixing flange, SMC	30			09 29 130 6570[d]	
Male connector with solder pins 13 mm	30			09 29 130 6577	
with fixing flange	20			09 29 120 6577	
with fixing flange, SMC	30			09 29 130 6521[d]	
Male connector with wrap posts[1] 13 mm					
with fixing flange	30			09 29 130 6907	
Male connector with press-in pins 5.0 mm	30			09 29 130 6904	
with fixing flange	20			09 29 120 6904	
without fixing flange	30			09 29 130 6504	
Male connector with press-in pins 13 mm	30			09 29 130 6985 09 29 130 6974•	
with fixing flange	20			09 29 120 6974•	
without fixing flange	30			09 29 130 6574•	

• Wrap posts for interfacing selectively gold plated (performance level 3)
[1] To be used only for wire wrap termination
[d] CTI > 400

Number of contacts

30, 20

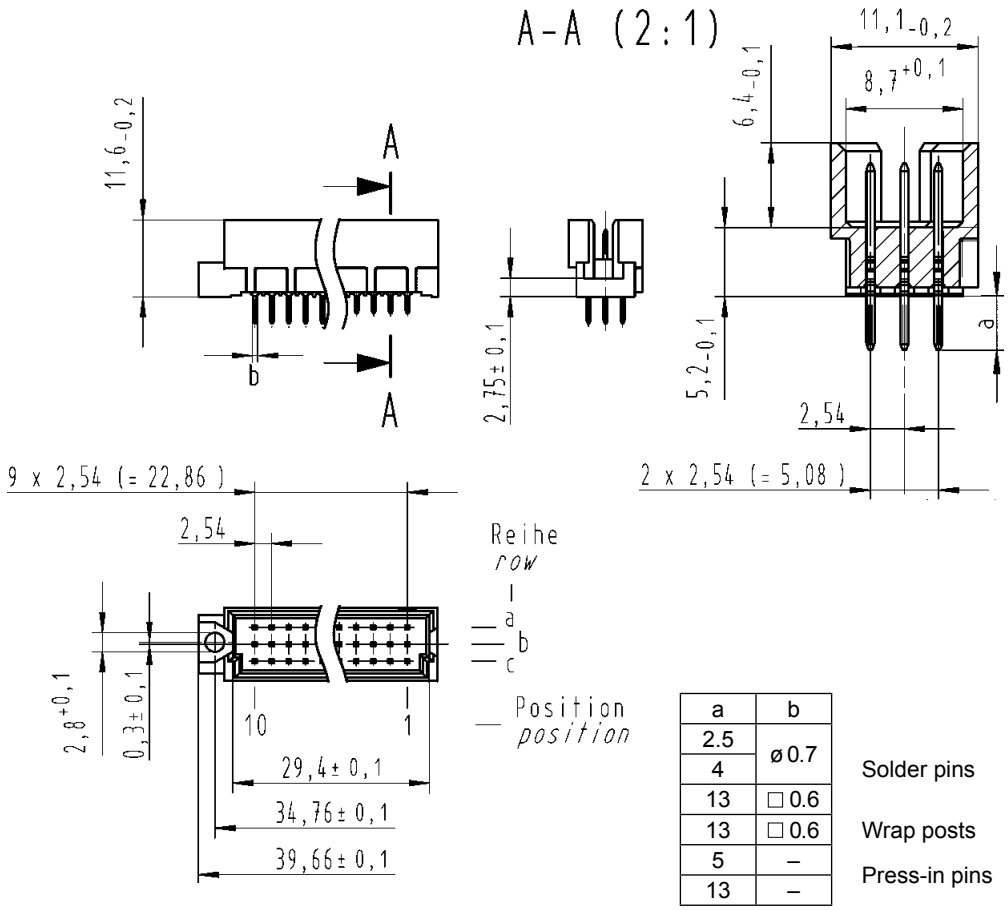




Male connectors

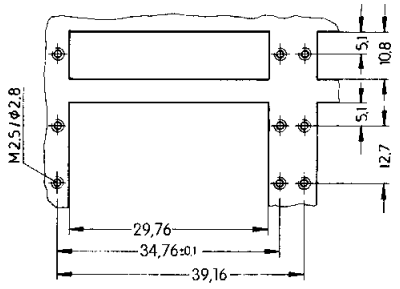
Identification	Drawing	Dimensions in mm

Dimensions



a	b	
2.5	ø 0.7	Solder pins
4		
13	□ 0.6	
13	□ 0.6	Wrap posts
5	–	
13	–	Press-in pins

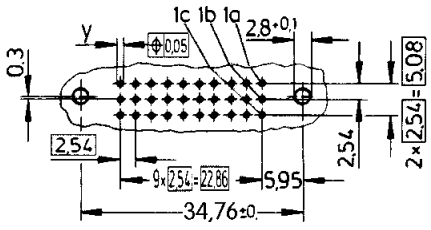
Panel cut out



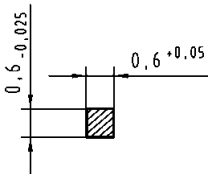
	Y
Solder	1 ± 0.1

Board drillings

Mounting side



Cross section of solder terminations



Cross area (A) of contacts row a, b, c: A = 0.35 - 0.39 mm²

Other contact arrangements as well with lagging/leading pins on request

Number of contacts	160
Contact spacing (mm)	2.54
Working current see current carrying capacity chart	1 A at 70 °C and all contacts are loaded

Clearance and creepage distances

minimal clearance and creepage distance		distance in mm rows a, b, c	rows z, d
between two rows	clearance	1.2	1.2
	creepage	1.2	1.2
between two contacts (in a row)	clearance	1.2	1.0
	creepage	1.2	1.0

Working voltage The working voltage also depends on the clearance and creepage dimensions of the pcb itself and the associated wiring	according to the safety regulations of the equipment
Test voltage $U_{r.m.s.}$	1 kV
Contact resistance	
rows a, b, c	≤ 20 mΩ
rows z, d	≤ 30 mΩ
Insulation resistance	≥ 10^{10} Ω acc. to IEC 60 512-2
Temperature range The higher temperature limit includes the local ambient and heating effects of the contacts under load	– 55 °C … + 125 °C
Electrical termination	Solder pins for pcb termination Ø 1.0 ± 0.1 mm according to IEC 60 326-3
Insertion and withdrawal force	≤ 160 N

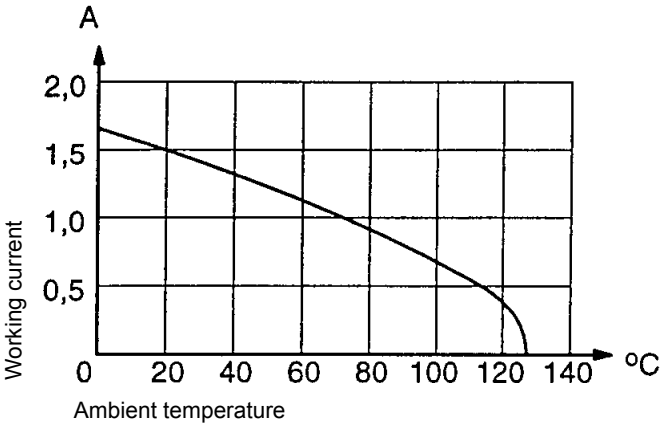
Materials

Mouldings	• Liquid Cristal Polymer (LCP) • Thermoplastic resin glass-fibre filled, UL 94-V0
Contacts	Copper alloy
Contact surface	
Contact zone	Plated acc. to performance level

Current carrying capacity chart

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

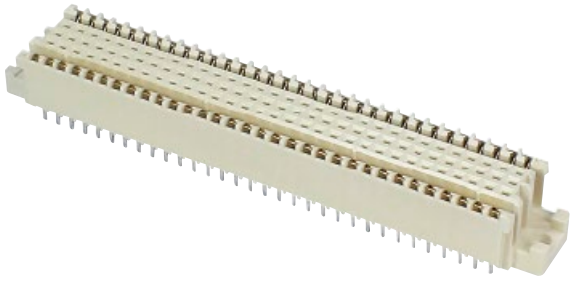
Control and test procedures according to DIN IEC 60 512



With selective loading higher currents can be transmitted. The requirements according to VITA 1.7 are fulfilled.

Number of contacts

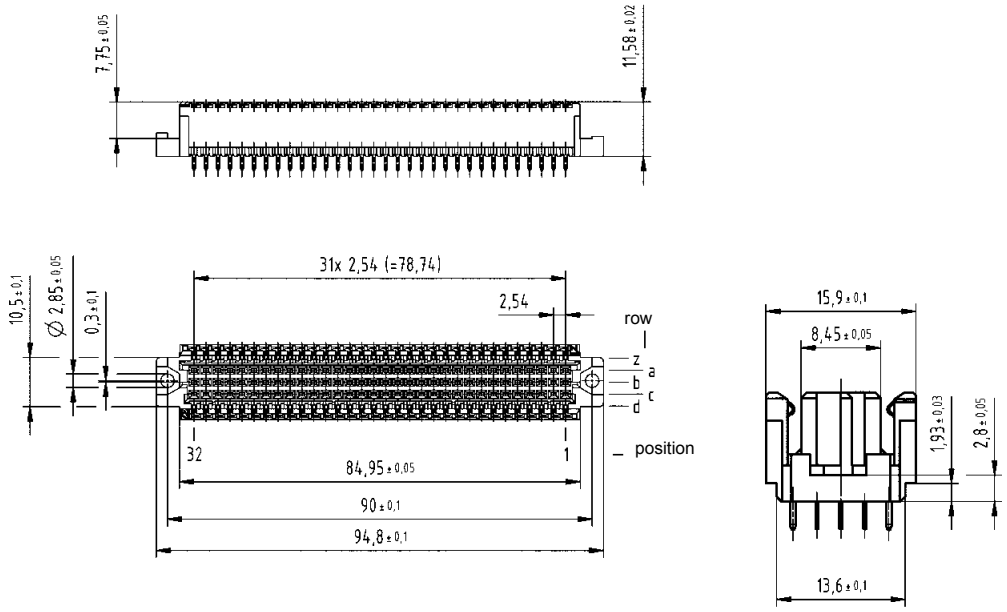
160



Female connectors

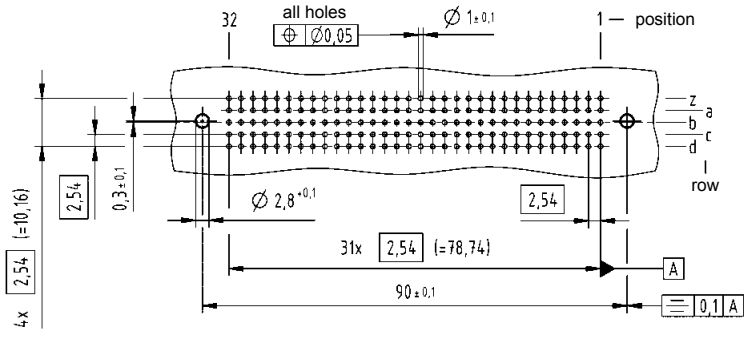
Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to IEC 61 076-4-113 1
Female connectors, straight with solder terminations 2.9 mm	160	z, a, b, c, d	02 02 160 2804

Dimensions



Board drillings

Mounting side



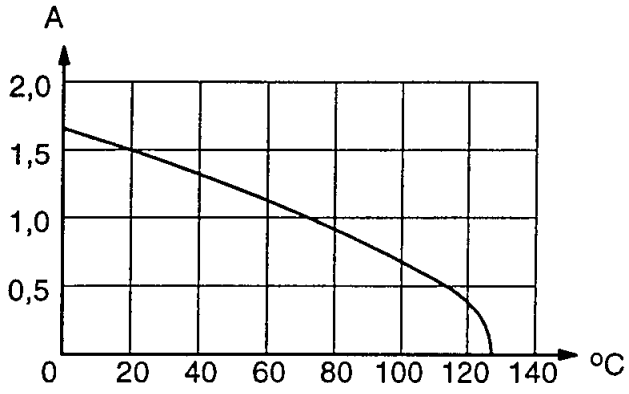
Dimensions in mm

Number of contacts	48
Contact spacing (mm)	5.08
Working current	1 A at 70 °C and all contacts are loaded
Clearance	≥ 3.0 mm
Creepage	≥ 3.0 mm
Working voltage The working voltage also depends on the clearance and creepage dimensions of the pcb itself and the associated wiring	according to the safety regulations of the equipment
Test voltage $U_{r.m.s.}$	1.55 kV
Contact resistance	≤ 20 mΩ
Insulation resistance	≥ 10^{12} Ω
Temperature range The higher temperature limit includes the local ambient and heating effects of the contacts under load	– 55 °C … + 125 °C
Degree of protection for crimp terminal according to DIN 40 050	IP20
Electrical termination	Solder pins for pcb connections Ø 1.0 ± 0.1 mm according to IEC 60 326-3
Insertion and withdrawal force	≤ 75 N
Materials	
Mouldings	Thermoplastic resin, glass-fibre filled, UL 94-V0
Contacts	Copper alloy
Contact surface	
Contact zone	Selectively gold plated according to performance level

Current carrying capacity chart

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60 512



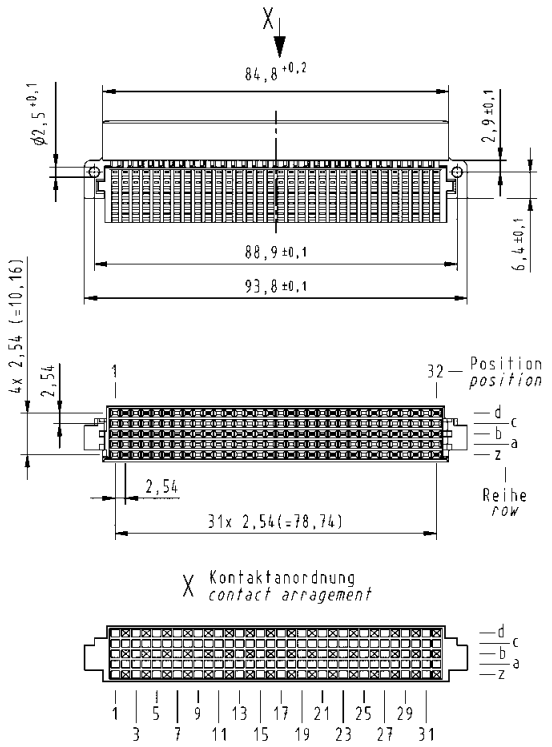
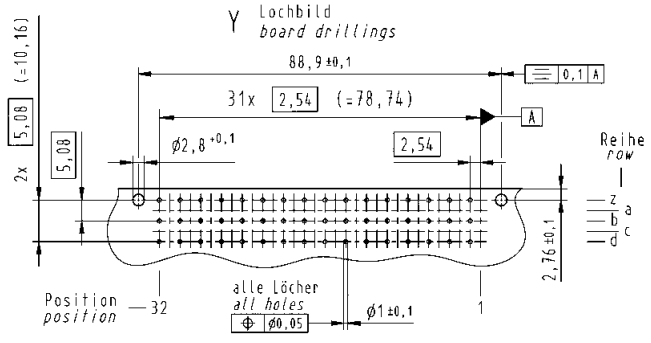
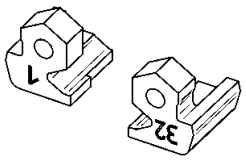
Ambient temperature

With selective loading higher currents can be transmitted. The requirements according to VITA 1.7 are fulfilled.

Number of contacts

48

Female connectors

Identification	Part No.	Drawing	Dimensions in mm
Female connector with angled solder pins	Performance level 1 02 04 048 1101		
Board drillings Mounting side			
Fixing bracket Position 1 Position 32	02 09 000 0018 02 09 000 0017		

Dimensions in mm

PCB connectors with IDC termination for SMT reflow soldering pitch 1.27 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB connectors with IDC termination			
Female	4	14 31 041 0301 000	50
Male	4	14 11 041 0002 . . .	560
Screw driver, 1.5 x 40		14 99 000 0002	

333 000 for samples (1 piece) for 560 pieces on reel

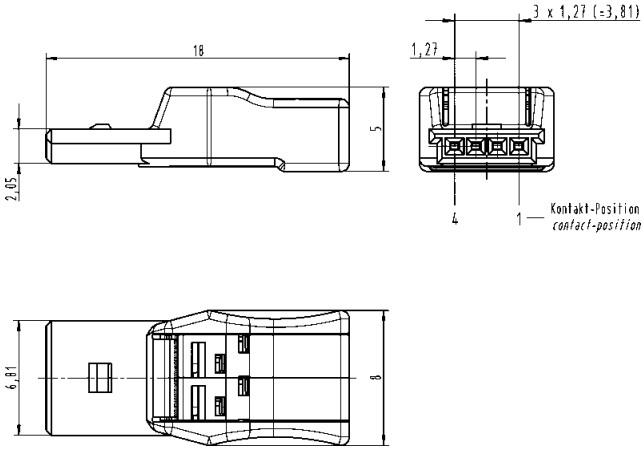
PCB connectors with IDC termination
for SMT reflow soldering
pitch 1.27 mm

Drawing

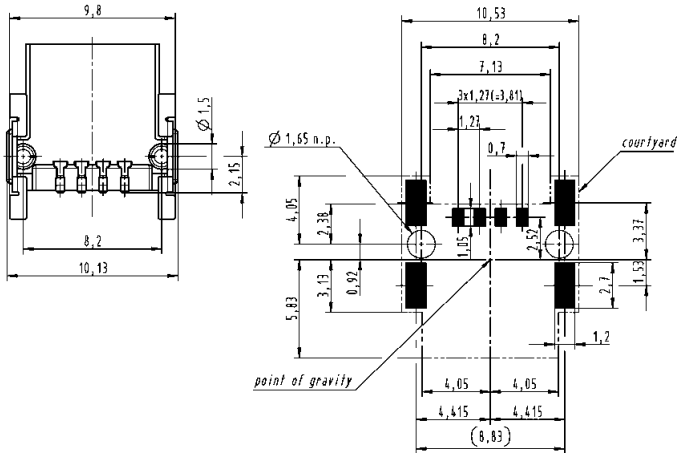
Dimensions in mm

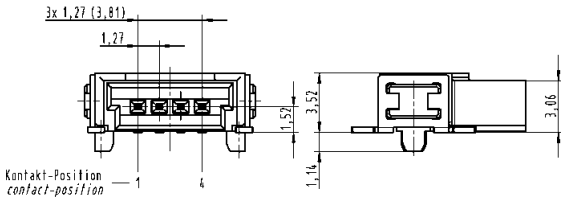
Dimensions

female



male





Technical characteristics

Technical data

Rated current	2 A
Pitch	1.27 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	–	–	16 V
Rated surge voltage	–	–	0.5 kV

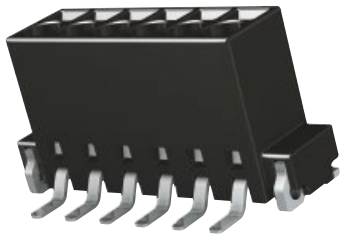
Conductor data

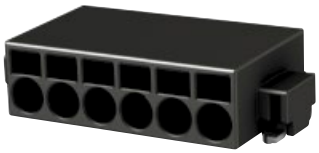
Connection technology wire	IDC termination
Conductor size solid / stranded	– / 0.05 - 0.14 mm²
Conductor size AWG	28 - 26
Stripping length	0 mm
Conductor diameter	max. 1 mm

Material data

Group of insulation material	III a
Type of insulation material	LCP
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +125 °C
Contact material	Copper alloy
Contact plating	Nickel plated

PCB terminal blocks,
vertical/horizontal
with push-in-spring-cage termination
for SMT reflow soldering
pitch 2.54 mm





Identification	No. of contacts	Part No.		Packaging unit (pieces)
PCB terminal blocks, vertical/horizontal with push-in-spring-cage termination				vertical / horizontal
	2	14 01 021 310 .	. . .	250 / 500
	3	14 01 031 310 .	. . .	250 / 500
	4	14 01 041 310 .	. . .	250 / 500
	5	14 01 051 310 .	. . .	250 / 500
	6	14 01 061 310 .	. . .	250 / 500
	7	14 01 071 310 .	. . .	250 / 500
	8	14 01 081 310 .	. . .	250 / 500
	9	14 01 091 310 .	. . .	250 / 500
	10	14 01 101 310 .	. . .	250 / 500
	11	14 01 111 310 .	. . .	250 / 500
	12	14 01 121 310 .	. . .	250 / 500

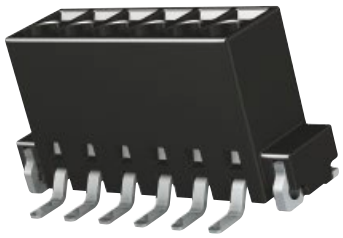
Please insert digit for

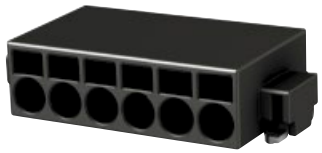
vertical ▶ 1
horizontal ▶ 2

Suitable screw driver 2.0 x 40: Part No. 14 99 000 0001

333
000
for samples (1 piece)
for 250/500 pieces on reel

PCB terminal blocks,
vertical/horizontal
with push-in-spring-cage termination
for SMT reflow soldering
pitch 2.54 mm



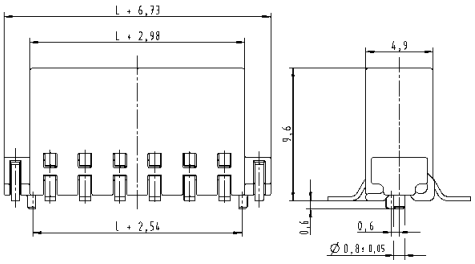


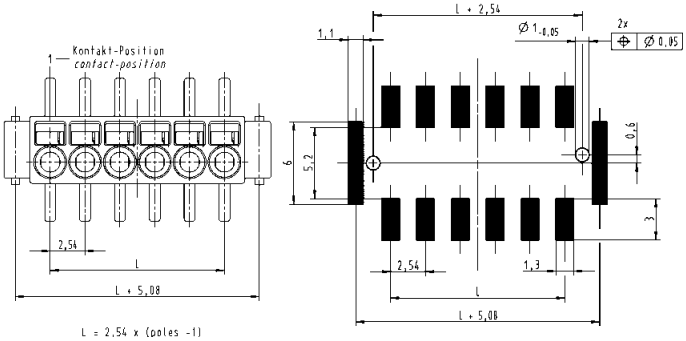
Drawing

Dimensions in mm

Dimensions

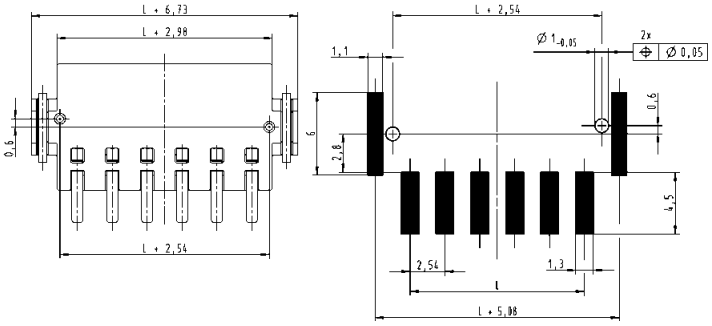
vertical

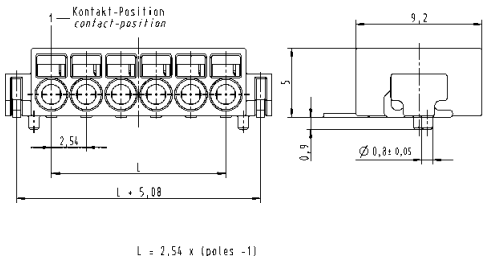




L = 2,54 x (poles -1)

horizontal





L = 2,54 x (poles -1)

Technical characteristics

Technical data

Rated current	6 A
Pitch	2.54 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	32 V	160 V	160 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

Conductor data

Connection technology wire	push-in-spring-cage termination
Conductor size solid / stranded	0.14 - 0.5 / 0.2 - 0.5 mm²
Conductor size AWG	24 - 20
Stripping length	6 mm

Material data

Group of insulation material	III a
Type of insulation material	LCP
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +125 °C
Contact material	copper alloy
Contact plating	tin plated

PCB connectors female, vertical with push-in-spring-cage termination pitch 2.54 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB connectors female, vertical with push-in-spring-cage termination	2	14 31 021 3101 000	200
	3	14 31 031 3101 000	200
	4	14 31 041 3101 000	200
	5	14 31 051 3101 000	150
	6	14 31 061 3101 000	150
	7	14 31 071 3101 000	150
	8	14 31 081 3101 000	100
	9	14 31 091 3101 000	100
	10	14 31 101 3101 000	100
	11	14 31 111 3101 000	50
	12	14 31 121 3101 000	50

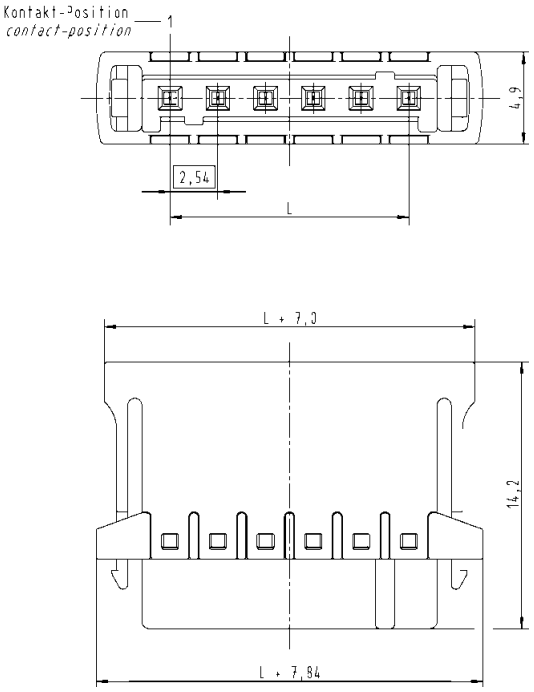
Suitable screw driver 2.0 x 40: Part No. 14 99 000 0001

PCB connectors female,
vertical
with push-in-spring-cage termination
pitch 2.54 mm

Drawing

Dimensions in mm

Dimensions



L = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	6 A
Pitch	2.54 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	32 V	160 V	160 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

Conductor data

Connection technology wire	push-in-spring-cage termination
Conductor size solid / stranded	0.14 - 0.5 / 0.2 - 0.5 mm²
Conductor size AWG	24 - 20
Stripping length	6 mm

Material data

Group of insulation material	III a
Type of insulation material	LCP
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +125 °C
Contact material	copper alloy
Contact plating	tin plated

PCB connectors male,
vertical/horizontal
for SMT reflow soldering
pitch 2.54 mm

Identification	No. of contacts	Part No.		Packaging unit (pieces)
PCB connectors male, vertical/horizontal				vertical / horizontal
	2	14 11 021 300	. . .	500 / 600
	3	14 11 031 300	. . .	500 / 600
	4	14 11 041 300	. . .	500 / 600
	5	14 11 051 300	. . .	500 / 600
	6	14 11 061 300	. . .	500 / 600
	7	14 11 071 300	. . .	500 / 600
	8	14 11 081 300	. . .	500 / 600
	9	14 11 091 300	. . .	500 / 600
	10	14 11 101 300	. . .	500 / 600
	11	14 11 111 300	. . .	500 / 600
	12	14 11 121 300	. . .	500 / 600

Please insert digit for

vertical ▶ 1
horizontal ▶ 2

333
000 for samples (1 piece)
for 500/600 pieces on reel

PCB connectors male,
vertical/horizontal
for SMT reflow soldering
pitch 2.54 mm

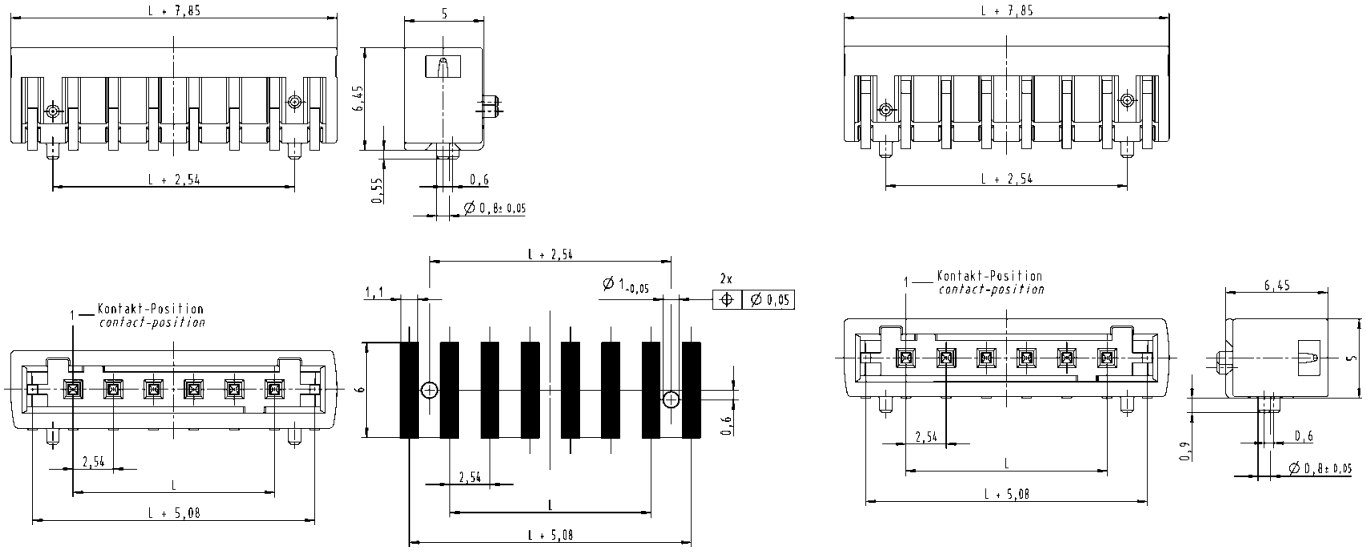
Drawing

Dimensions in mm

Dimensions

vertical

horizontal



L = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	6 A
Pitch	2.54 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	32 V	160 V	160 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

Material data

Group of insulation material	III a
Type of insulation material	LCP
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +125 °C
Contact material	copper alloy
Contact plating	tin plated

PCB terminal blocks, vertical with push-in-spring-cage termination for reflow soldering pitch 3.50 / 3.81 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB terminal blocks, vertical with push-in-spring-cage termination	2	14 02 021 . 101 . . .	100
	3	14 02 031 . 101 . . .	100
	4	14 02 041 . 101 . . .	75
	5	14 02 051 . 101 . . .	75
	6	14 02 061 . 101 . . .	50
	7	14 02 071 . 101 . . .	50
	8	14 02 081 . 101 . . .	50
	9	14 02 091 . 101 . . .	50
	10	14 02 101 . 101 . . .	50
	11	14 02 111 . 101 . . .	50
	12	14 02 121 . 101 . . .	50
	13	14 02 131 . 101 . . .	50
	14	14 02 141 . 101 . . .	50
	15	14 02 151 . 101 . . .	50
	16	14 02 161 . 101 . . .	50

Please insert digit for

pitch 3.50 mm ▶ 4

pitch 3.81 mm ▶ 5

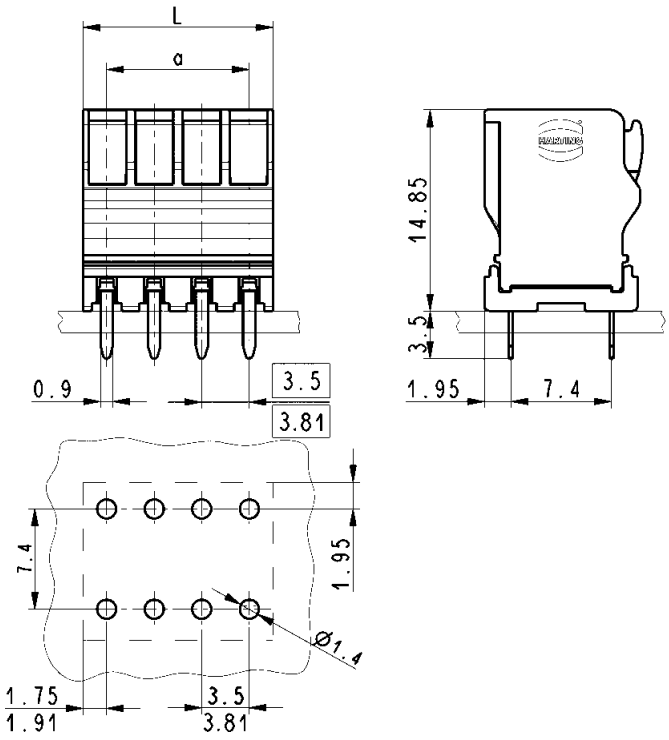
for samples (5-10 pieces) / for a packaging unit 333 000

PCB terminal blocks,
vertical with push-in-spring-cage termination
for reflow soldering
pitch 3.50 / 3.81 mm

Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	10 A
Pitch	3.50 mm / 3.81 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	220 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor and solder pin data

Connection technology wire	push-in-spring-cage termination
Conductor size solid / stranded	0.14 - 1.5 / 0.14 - 1.5 mm²
Conductor size AWG	30 - 16
Stripping length	9 - 10 mm
Solder pin: drilled hole diameter	1.4 mm

PCB terminal blocks, horizontal with screw termination for reflow soldering pitch 3.50 / 3.81 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB terminal blocks, horizontal with screw termination	2	14 02 021 . 402 . . .	100
	3	14 02 031 . 402 . . .	100
	4	14 02 041 . 402 . . .	75
	5	14 02 051 . 402 . . .	75
	6	14 02 061 . 402 . . .	50
	7	14 02 071 . 402 . . .	50
	8	14 02 081 . 402 . . .	50
	9	14 02 091 . 402 . . .	50
	10	14 02 101 . 402 . . .	50
	11	14 02 111 . 402 . . .	50
	12	14 02 121 . 402 . . .	50

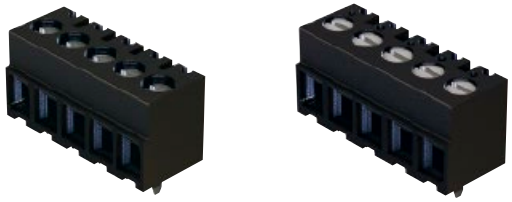
Please insert digit for

pitch 3.50 mm ▶ 4

pitch 3.81 mm ▶ 5

for samples (5-10 pieces) 333
for a packaging unit 000

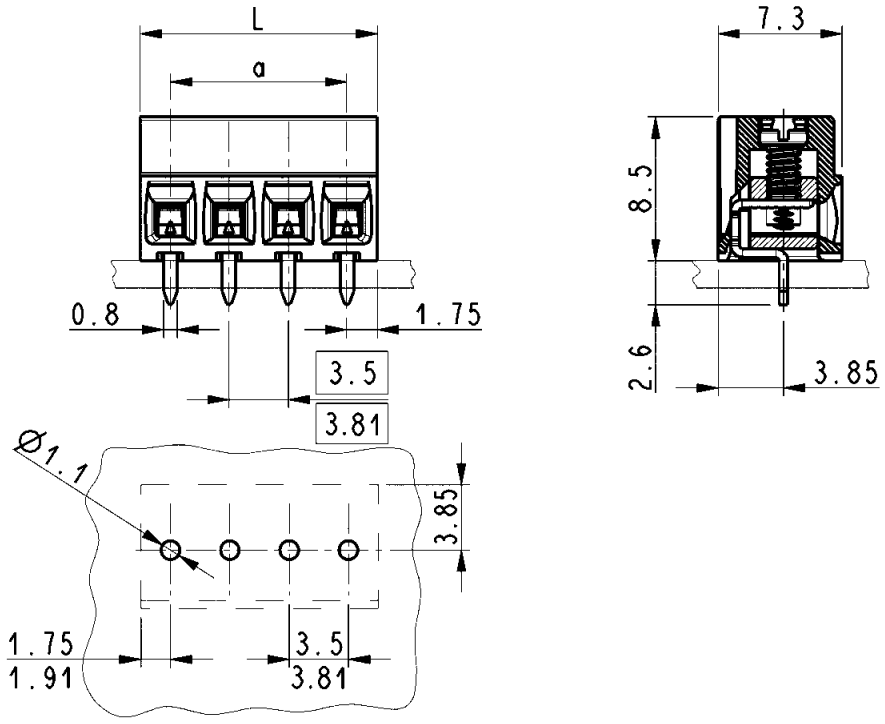
PCB terminal blocks,
horizontal with screw termination
for reflow soldering
pitch 3.50 / 3.81 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	12 A
Pitch	3.50 mm / 3.81 mm

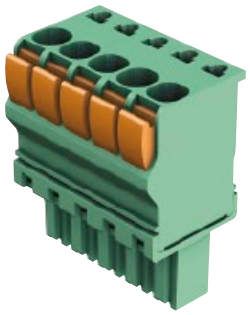
Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	150 V	150 V	300 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

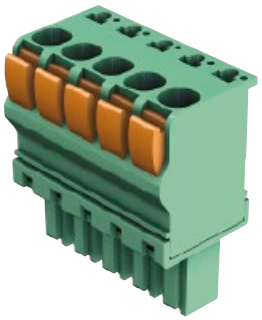
Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor and solder pin data

Connection technology wire	screw termination
Conductor size solid / stranded	0.05 - 1.5 / 0.05 - 1 mm²
Conductor size AWG	28 - 16
Screw thread	M2
Tightening torque	0.2 - 0,25 Nm
Stripping length	5 - 6 mm
Solder pin: drilled hole diameter	1.1 mm





PCB connectors female, horizontal with push-in-spring-cage termination pitch 3.50 / 3.81 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB connectors female, horizontal with push-in-spring-cage termination	2	14 31 021 . 102 000	300
	3	14 31 031 . 102 000	200
	4	14 31 041 . 102 000	150
	5	14 31 051 . 102 000	150
	6	14 31 061 . 102 000	100
	7	14 31 071 . 102 000	100
	8	14 31 081 . 102 000	100
	9	14 31 091 . 102 000	100
	10	14 31 101 . 102 000	100
	11	14 31 111 . 102 000	100
	12	14 31 121 . 102 000	100
	13	14 31 131 . 102 000	50
	14	14 31 141 . 102 000	50
	15	14 31 151 . 102 000	50
	16	14 31 161 . 102 000	50
	17	14 31 171 . 102 000	50
	18	14 31 181 . 102 000	50
	19	14 31 191 . 102 000	50
	20	14 31 201 . 102 000	50
	21*	14 31 211 . 102 000	25
	22*	14 31 221 . 102 000	25
	23*	14 31 231 . 102 000	25
	24*	14 31 241 . 102 000	25
	25*	14 31 251 . 102 000	25

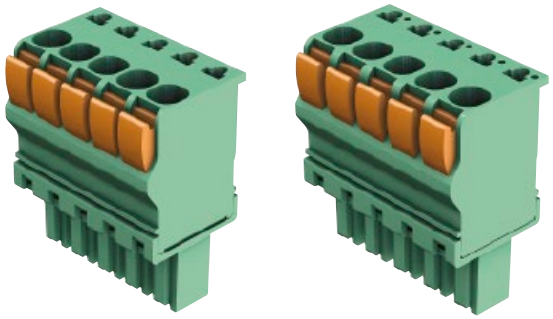
Please insert digit for

pitch 3.50 mm ▶ 4

pitch 3.81 mm ▶ 5

* Pitch 3.50 mm only available with 2-20 contacts

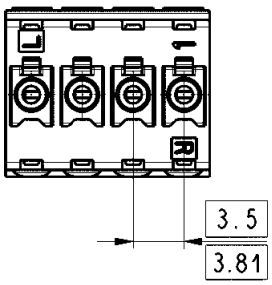
PCB connectors female,
horizontal
with push-in-spring-cage termination
pitch 3.50 / 3.81 mm

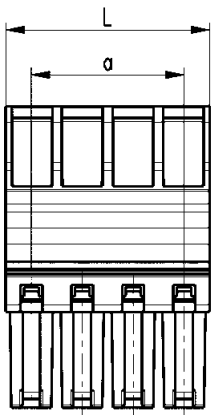


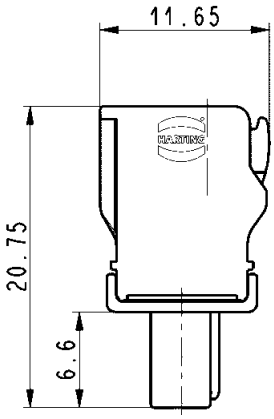
Drawing

Dimensions in mm

Dimensions







L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	11 A
Pitch	3.50 mm / 3.81 mm

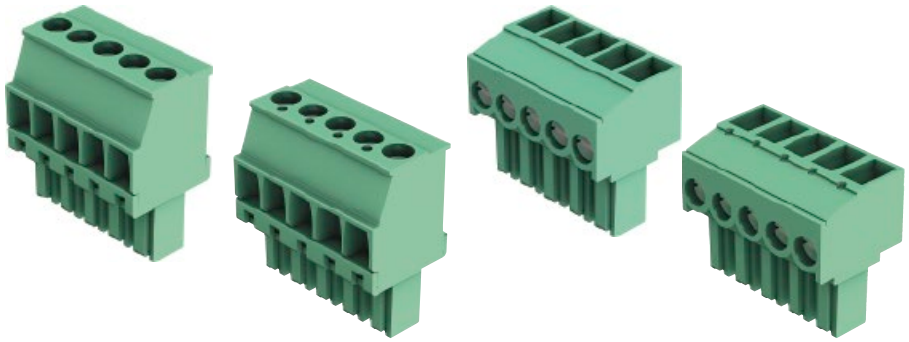
Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	150 V	150 V	300 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor data

Connection technology wire	push-in-spring-cage termination
Conductor size solid / stranded	0.14 - 1.5 / 0.14 - 1.5 mm²
Conductor size AWG	30 - 14
Stripping length	9 - 10 mm



PCB connectors female, vertical/horizontal with screw termination pitch 3.50 / 3.81 mm

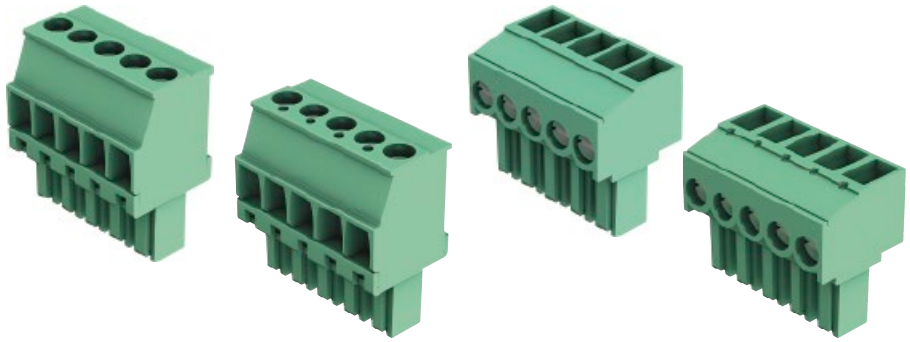
Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB connectors female, vertical/horizontal with screw termination	2	14 31 021 . 40 . 000	300
	3	14 31 031 . 40 . 000	200
	4	14 31 041 . 40 . 000	150
	5	14 31 051 . 40 . 000	150
	6	14 31 061 . 40 . 000	100
	7	14 31 071 . 40 . 000	100
	8	14 31 081 . 40 . 000	100
	9	14 31 091 . 40 . 000	100
	10	14 31 101 . 40 . 000	100
	11	14 31 111 . 40 . 000	100
	12	14 31 121 . 40 . 000	100
	13	14 31 131 . 40 . 000	50
	14	14 31 141 . 40 . 000	50
	15	14 31 151 . 40 . 000	50
	16	14 31 161 . 40 . 000	50
	17*	14 31 171 . 40 . 000	50
	18*	14 31 181 . 40 . 000	50
	19*	14 31 191 . 40 . 000	50
	20*	14 31 201 . 40 . 000	50
	21*	14 31 211 . 40 . 000	25
	22*	14 31 221 . 40 . 000	25
	23*	14 31 231 . 40 . 000	25
	24*	14 31 241 . 40 . 000	25
	25*	14 31 251 . 40 . 000	25

Please insert digit for

pitch 3.50 mm ▶	4
pitch 3.81 mm ▶	5
vertical ▶	1
horizontal ▶	2

* Pitch 3.81 mm (vertical) only available with 2-16 contacts

PCB connectors female,
vertical/horizontal
with screw termination
pitch 3.50 / 3.81 mm

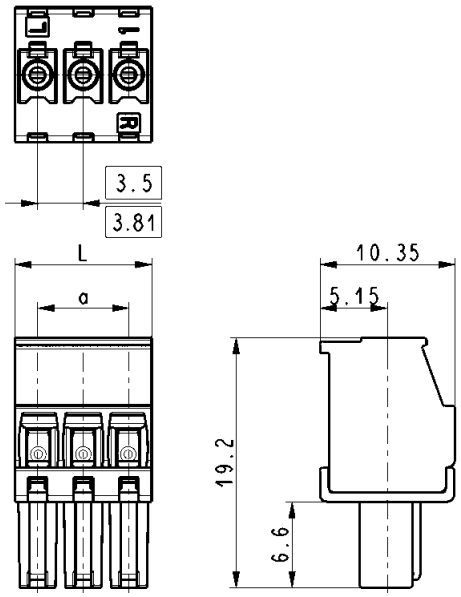


Drawing

Dimensions in mm

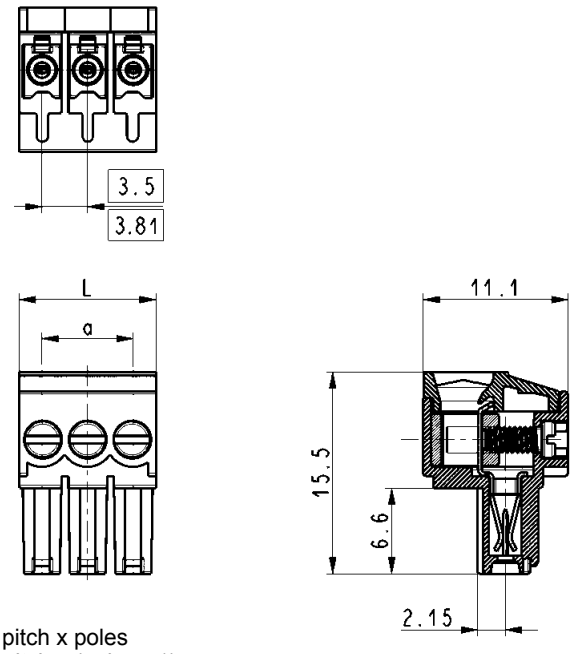
Dimensions

vertical



L = pitch x poles
a = pitch x (poles - 1)

horizontal



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	10 A
Pitch	3.50 mm / 3.81 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	150 V	150 V	300 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

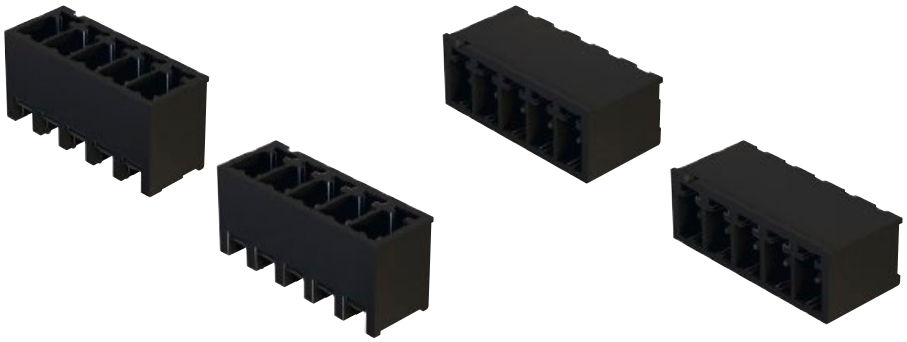
Conductor data

Connection technology wire	screw termination
Conductor size solid / stranded	0.05 - 1.5 / 0.05 - 1.5 mm²
Conductor size AWG	30 - 14
Screw thread	M2
Tightening torque	0.2 - 0.25 Nm
Stripping length	5.0 - 6.0 mm

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

PCB connectors male, vertical/horizontal for reflow soldering pitch 3.50 / 3.81 mm



Connectors, male, vertical/horizontal

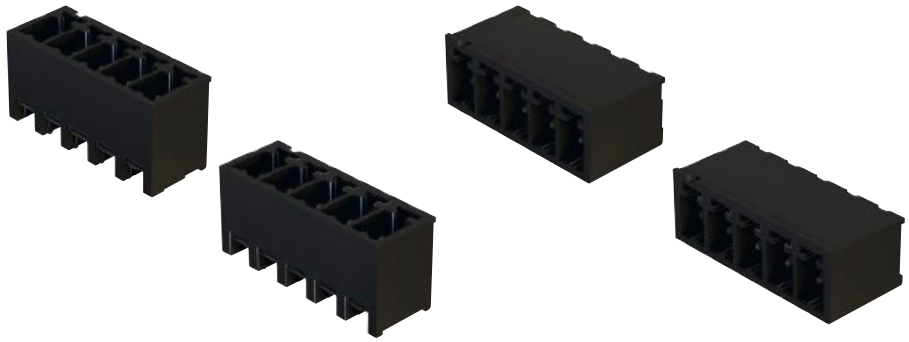
Identification	No. of contacts	Part No.	Packaging unit (pieces)
	2	14 12 021 . 00	100
	3	14 12 031 . 00	100
	4	14 12 041 . 00	75
	5	14 12 051 . 00	75
	6	14 12 061 . 00	50
	7	14 12 071 . 00	50
	8	14 12 081 . 00	50
	9	14 12 091 . 00	50
	10	14 12 101 . 00	50
	11	14 12 111 . 00	50
	12	14 12 121 . 00	50
	13	14 12 131 . 00	50
	14	14 12 141 . 00	50
	15	14 12 151 . 00	50
	16	14 12 161 . 00	50
	17	14 12 171 . 00	50
	18	14 12 181 . 00	50
	19	14 12 191 . 00	50
	20	14 12 201 . 00	50
	21	14 12 211 . 00	25
	22	14 12 221 . 00	25
	23	14 12 231 . 00	25
	24	14 12 241 . 00	25
	25	14 12 251 . 00	25

Please insert digit for

pitch 3.50 mm ▶	4
pitch 3.81 mm ▶	5
vertical ▶	1
horizontal ▶	2

for samples (5-10 pieces)
for a packaging unit 333 000

PCB connectors male,
vertical/horizontal
for reflow soldering
pitch 3.50 / 3.81 mm

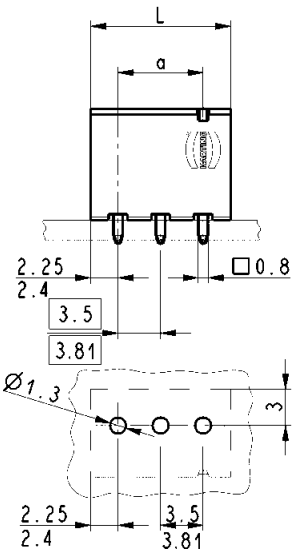


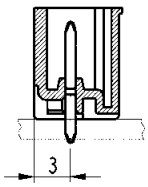
Drawing

Dimensions in mm

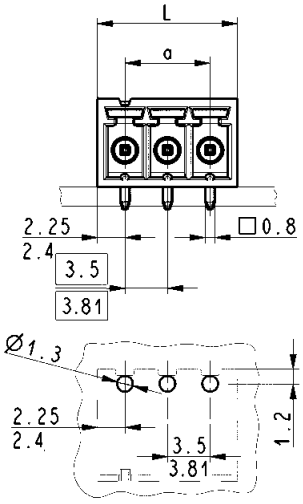
Dimensions

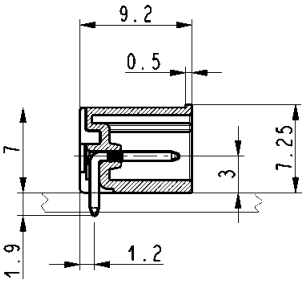
vertical





horizontal





L = (pitch x poles) + 1
a = pitch x (poles - 1)

L = (pitch x poles) + 1
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	11 A
Pitch	3.50 mm / 3.81 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	150 V	150 V	300 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV

Solder pin data

Solder pin: drilled hole diameter	1.2 mm

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

PCB terminal blocks,
vertical with push-in-spring-cage termination
for wave soldering
pitch 5.00 mm

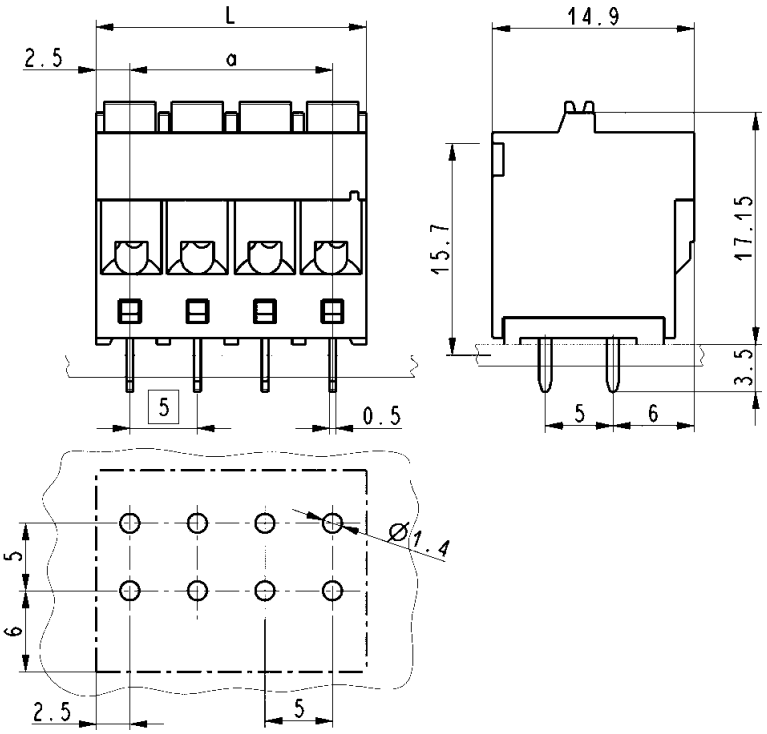
Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB terminal blocks, vertical with push-in-spring-cage termination	2	14 03 021 6101 000	300
	3	14 03 031 6101 000	200
	4	14 03 041 6101 000	150
	5	14 03 051 6101 000	150
	6	14 03 061 6101 000	100
	7	14 03 071 6101 000	100
	8	14 03 081 6101 000	100
	9	14 03 091 6101 000	100
	10	14 03 101 6101 000	100
	11	14 03 111 6101 000	100
	12	14 03 121 6101 000	100
	13	14 03 131 6101 000	50
	14	14 03 141 6101 000	50
	15	14 03 151 6101 000	50
	16	14 03 161 6101 000	50
	17	14 03 171 6101 000	50
	18	14 03 181 6101 000	50

PCB terminal blocks,
vertical with push-in-spring-cage termination
for wave soldering
pitch 5.00 mm

Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	12 A
Pitch	5.00 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	300 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

Material data

Group of insulation material	I
Type of insulation material	PA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor and solder pin data

Connection technology wire	push-in-spring-cage termination
Conductor size solid / stranded	0.2 - 2.5 / 0.2 - 2.5 mm²
Conductor size AWG	30 - 12
Stripping length	10 mm
Solder pin: drilled hole diameter	1.4 mm

PCB terminal blocks, horizontal with screw termination for reflow soldering pitch 5.00 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB terminal blocks, horizontal with screw termination			
for wire gauge 2.5 mm²	2	14 02 021 6404 . . .	100
	3	14 02 031 6404 . . .	100
	4	14 02 041 6404 . . .	75
	5	14 02 051 6404 . . .	75
	6	14 02 061 6404 . . .	50
	7	14 02 071 6404 . . .	50
	8	14 02 081 6404 . . .	50

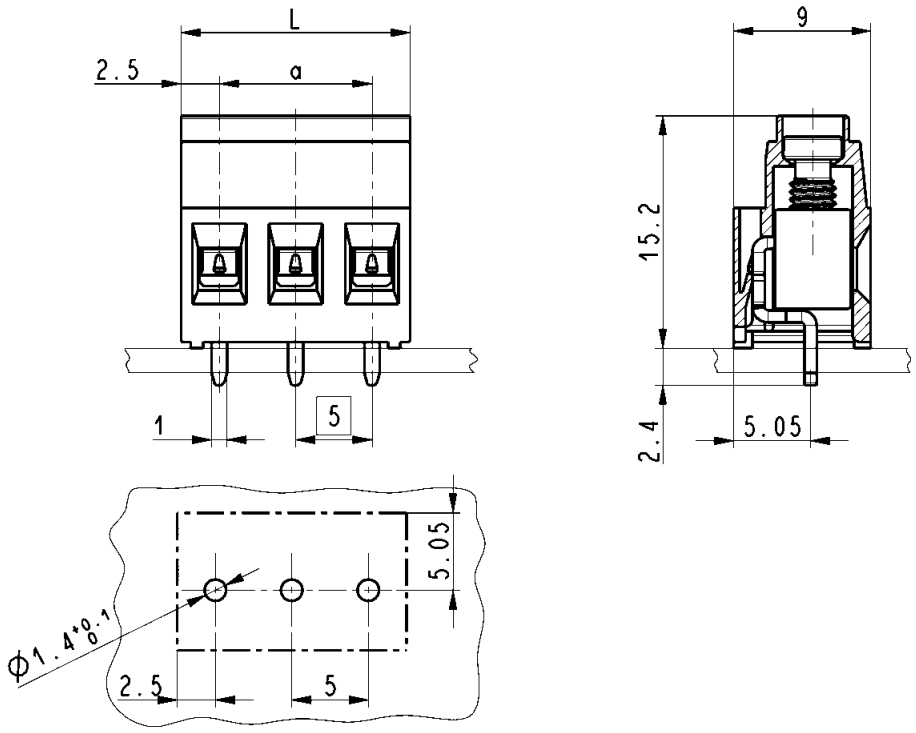
for samples (5-10 pieces)
for a packaging unit 333 000

PCB terminal blocks,
horizontal with screw termination
for reflow soldering
pitch 5.00 mm

Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	17.5 A
Pitch	5.00 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	300 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor and solder pin data

Connection technology wire	screw termination
Conductor size solid / stranded	0.05 - 2.5 / 0.05 - 2.5 mm²
Conductor size AWG	30 - 12
Screw thread	M3
Tightening torque	0.5 - 0.6 Nm
Stripping length	5.5 - 6.5 mm
Solder pin: drilled hole diameter	1.4 mm

PCB terminal blocks, horizontal with screw termination for reflow soldering pitch 5.00 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB terminal blocks, horizontal with screw termination			
for wire gauge 1.5 mm²	2	14 02 021 6402 . . .	100
	3	14 03 031 6402 . . .	100
	4	14 03 041 6402 . . .	75
	5	14 03 051 6402 . . .	75
	6	14 03 061 6402 . . .	50
	7	14 03 071 6402 . . .	50
	8	14 03 081 6402 . . .	50
	9	14 03 091 6402 . . .	50
	10	14 03 101 6402 . . .	50
	11	14 03 111 6402 . . .	50
	12	14 03 121 6402 . . .	50

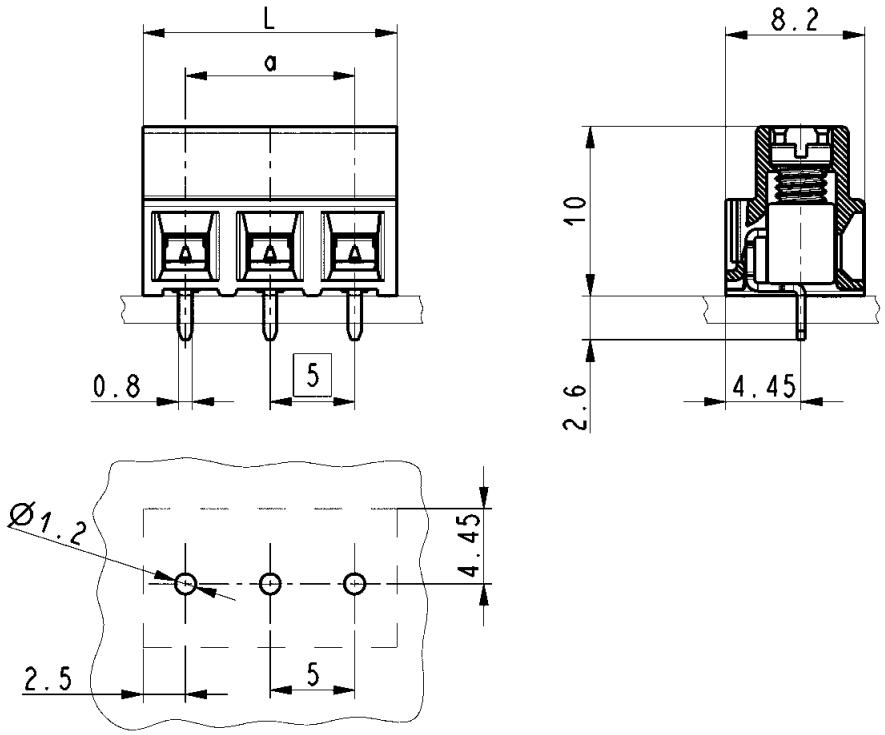
for samples (5-10 pieces) 333
for a packaging unit 000

PCB terminal blocks,
horizontal with screw termination
for reflow soldering
pitch 5.00 mm

Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	13.5 A
Pitch	5.00 mm

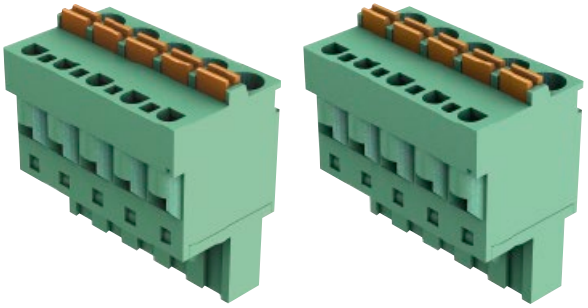
Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	220 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor and solder pin data

Connection technology wire	screw termination
Conductor size solid / stranded	0.05 - 1.5 / 0.05 - 1.5 mm²
Conductor size AWG	30 - 16
Screw thread	M3
Tightening torque	0.5 - 0.6 Nm
Stripping length	5.0 - 6.0 mm
Solder pin: drilled hole diameter	1.1 mm



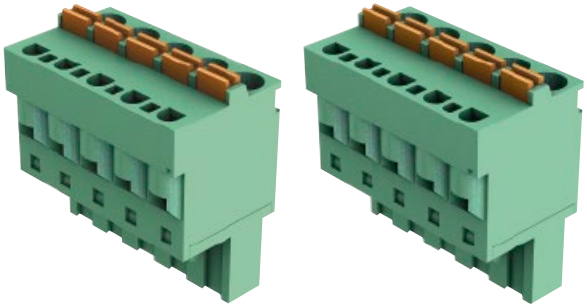
PCB connectors female,
horizontal
with push-in-spring-cage termination
pitch 5.00 / 5.08 mm

Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB connectors female, horizontal with push-in-spring-cage termination	2	14 31 021 . 102 000	300
	3	14 31 031 . 102 000	200
	4	14 31 041 . 102 000	150
	5	14 31 051 . 102 000	150
	6	14 31 061 . 102 000	100
	7	14 31 071 . 102 000	100
	8	14 31 081 . 102 000	100
	9	14 31 091 . 102 000	100
	10	14 31 101 . 102 000	100
	11	14 31 111 . 102 000	100
	12	14 31 121 . 102 000	100
	13	14 31 131 . 102 000	50
	14	14 31 141 . 102 000	50
	15	14 31 151 . 102 000	50
	16	14 31 161 . 102 000	50
	17	14 31 171 . 102 000	50
	18	14 31 181 . 102 000	50

Please insert digit for

pitch 5.00 mm ▶ 6
pitch 5.08 mm ▶ 7

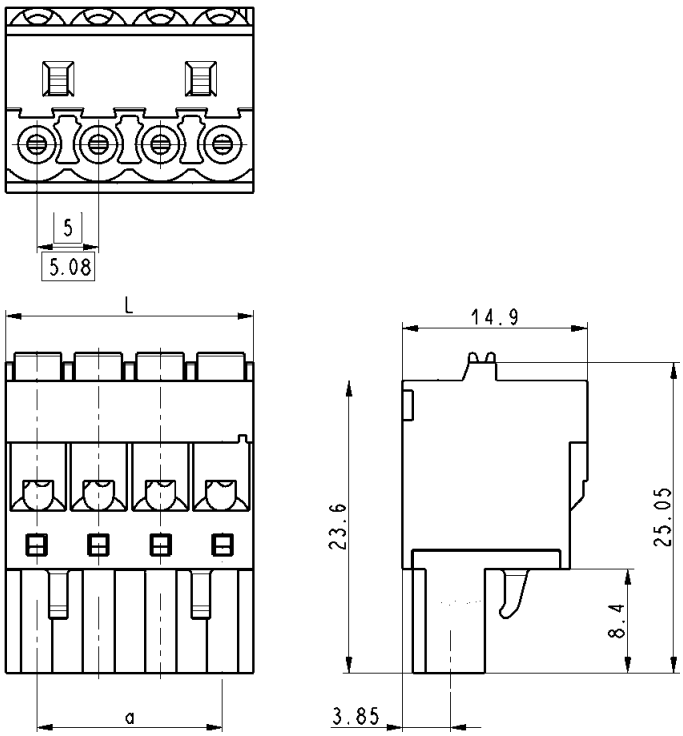
PCB connectors female,
horizontal
with push-in-spring-cage termination
pitch 5.00 / 5.08 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	12 A
Pitch	5.00 mm / 5.08 mm

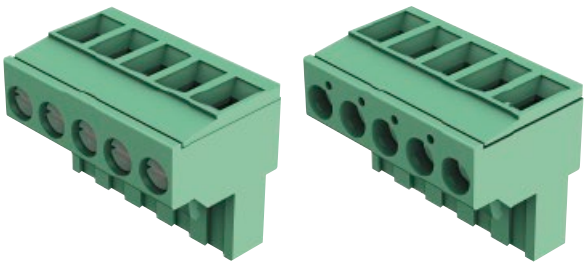
Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	250 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

Conductor data

Connection technology wire	push-in-spring-cage termination
Conductor size solid / stranded	0.2 - 2.5 / 0.2 - 2.5 mm²
Conductor size AWG	30 - 12
Stripping length	10 mm

Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated



PCB connectors female, horizontal with screw termination pitch 5.00 / 5.08 mm

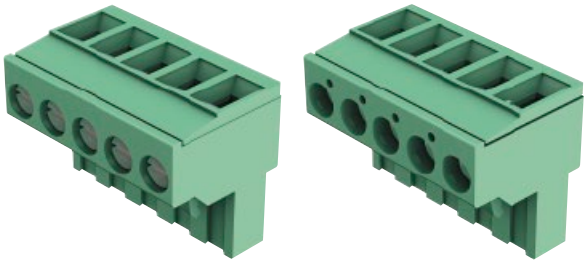
Identification	No. of contacts	Part No.	Packaging unit (pieces)
PCB connectors female, horizontal with screw termination	2	14 31 021 . 402 000	300
	3	14 31 031 . 402 000	200
	4	14 31 041 . 402 000	150
	5	14 31 051 . 402 000	150
	6	14 31 061 . 402 000	100
	7	14 31 071 . 402 000	100
	8	14 31 081 . 402 000	100
	9	14 31 091 . 402 000	100
	10	14 31 101 . 402 000	100
	11	14 31 111 . 402 000	100
	12	14 31 121 . 402 000	100
	13	14 31 131 . 402 000	50
	14	14 31 141 . 402 000	50
	15	14 31 151 . 402 000	50
	16	14 31 161 . 402 000	50
	17	14 31 171 . 402 000	50
	18	14 31 181 . 402 000	50
	19	14 31 191 . 402 000	50
	20	14 31 201 . 402 000	50
	21	14 31 211 . 402 000	25
	22	14 31 221 . 402 000	25
	23	14 31 231 . 402 000	25
	24	14 31 241 . 402 000	25
	25	14 31 251 . 402 000	25

Please insert digit for

pitch 5.00 mm ▶ 6

pitch 5.08 mm ▶ 7

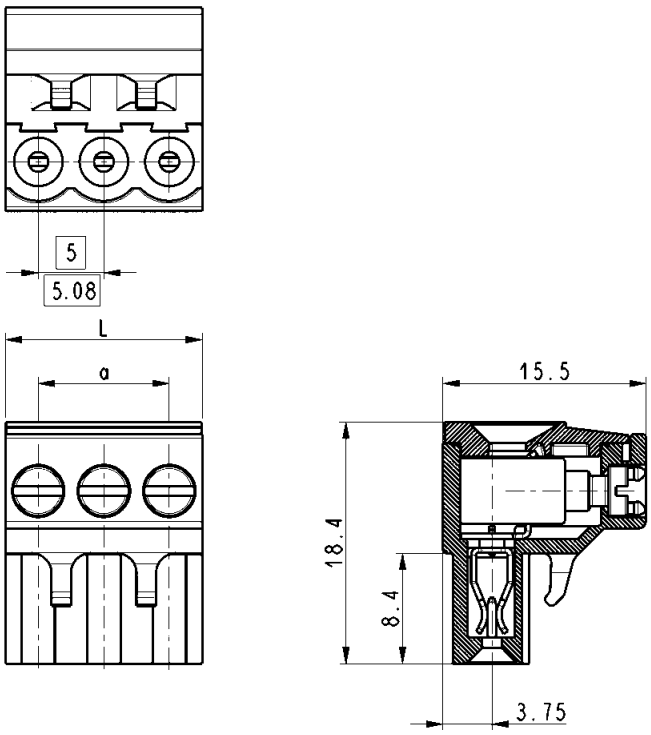
PCB connectors female,
horizontal
with screw termination
pitch 5.00 / 5.08 mm



Drawing

Dimensions in mm

Dimensions



L = pitch x poles
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	15 A
Pitch	5.00 mm / 5.08 mm

Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	250 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

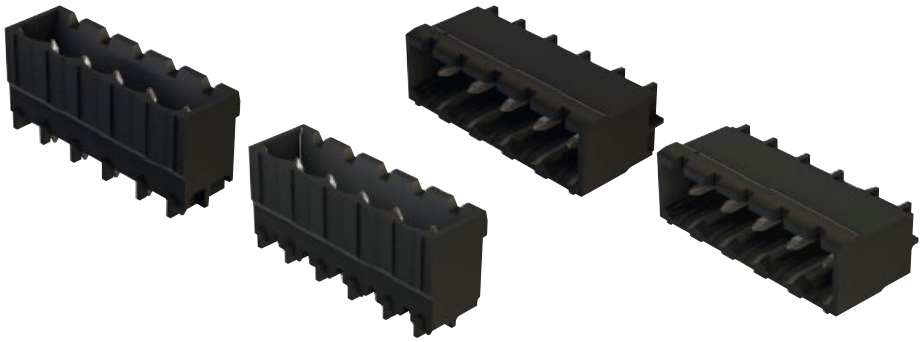
Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Conductor data

Connection technology wire	screw termination
Conductor size solid / stranded	0.05 - 2.5 / 0.05 - 2.5 mm²
Conductor size AWG	30 - 12
Screw thread	M3
Tightening torque	0.5 - 0.6 Nm
Stripping length	6.0 - 7.5 mm

PCB connectors male, vertical/horizontal for reflow soldering pitch 5.00 / 5.08 mm



PCB connectors male, vertical/horizontal

Identification	No. of contacts	Part No.	Packaging unit (pieces)
	2	14 12 021 . 00	100
	3	14 12 031 . 00	100
	4	14 12 041 . 00	75
	5	14 12 051 . 00	75
	6	14 12 061 . 00	50
	7	14 12 071 . 00	50
	8	14 12 081 . 00	50
	9	14 12 091 . 00	50
	10	14 12 101 . 00	50
	11*	14 12 111 . 00	50
	12*	14 12 121 . 00	50
	13*	14 12 131 . 00	50
	14*	14 12 141 . 00	50
	15*	14 12 151 . 00	50
	16*	14 12 161 . 00	50
	17*	14 12 171 . 00	50
	18*	14 12 181 . 00	50
	19*	14 12 191 . 00	50

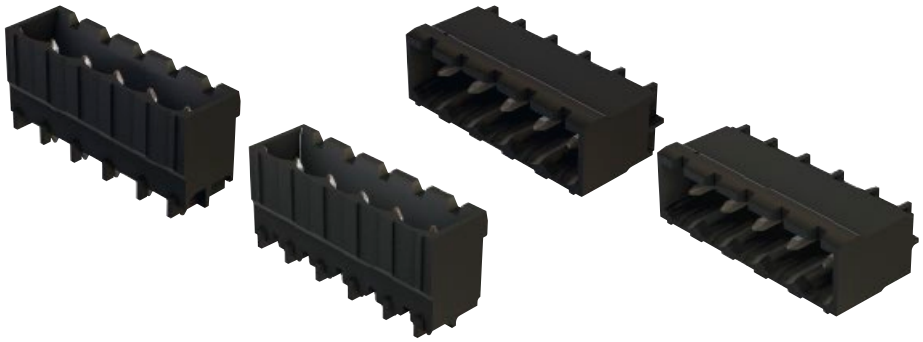
Please insert digit for

pitch 5.00 mm ▶	6
pitch 5.08 mm ▶	7
vertical ▶	1
horizontal ▶	2

* Only available in pitch 5.00 mm (horizontal)

for samples (5-10 pieces)
for a packaging unit 333 000

PCB connectors male,
vertical/horizontal
for reflow soldering
pitch 5.00 / 5.08 mm

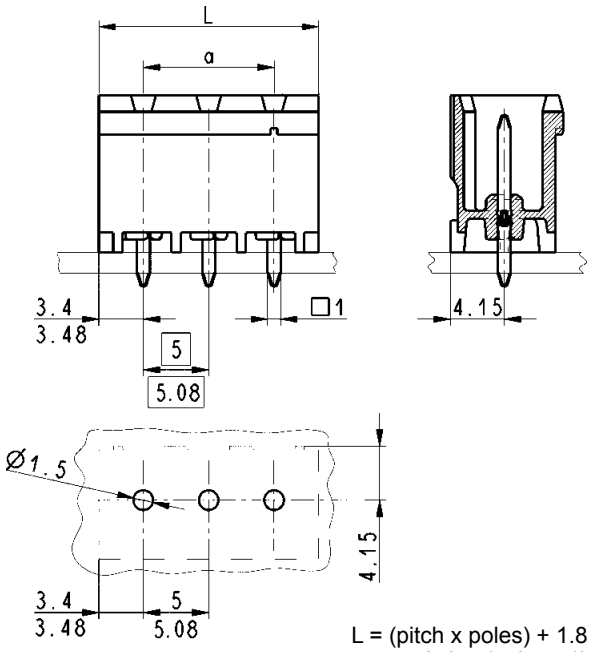


Drawing

Dimensions in mm

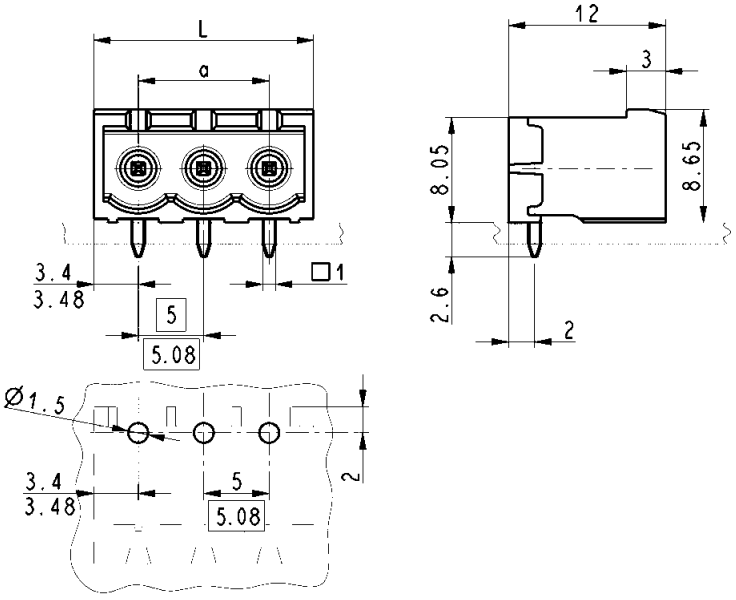
Dimensions

vertical



L = (pitch x poles) + 1.8
a = pitch x (poles - 1)

horizontal



L = (pitch x poles) + 1.8
a = pitch x (poles - 1)

Technical characteristics

Technical data

Rated current	15 A
Pitch	5.00 mm / 5.08 mm

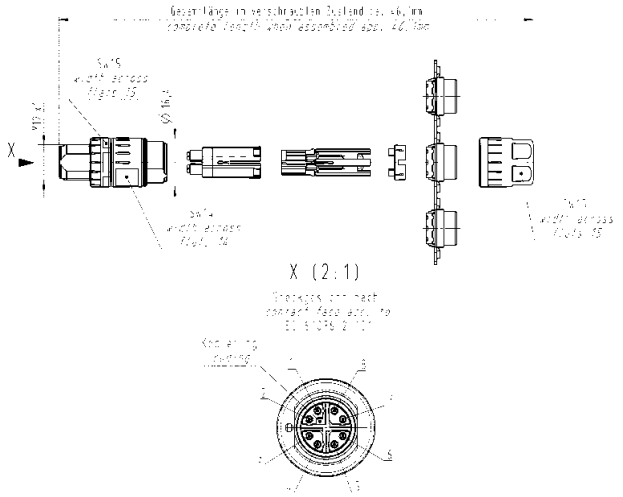
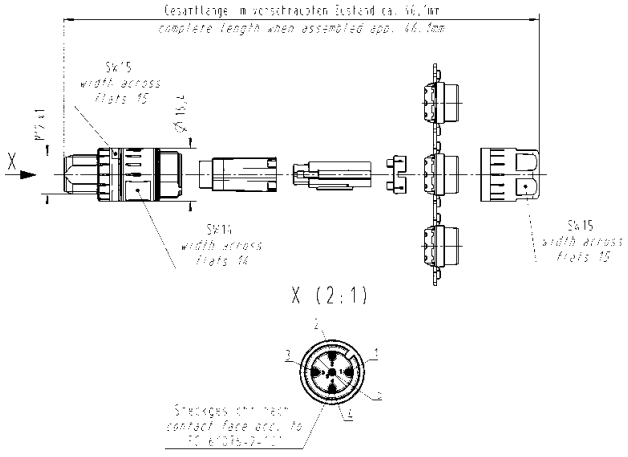
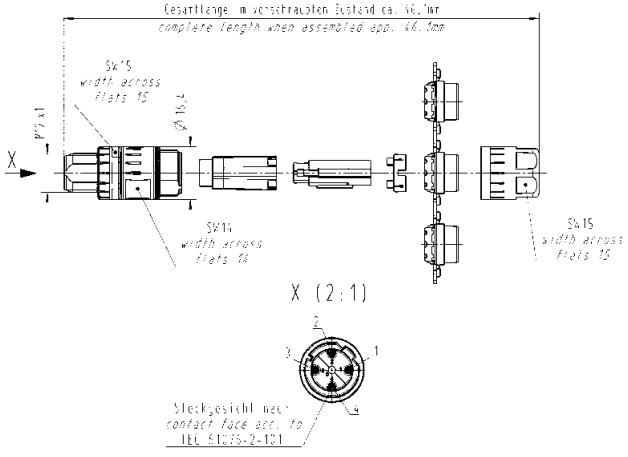
Surge voltage category / pollution degree	III/3	III/2	II/2
Rated voltage	250 V	300 V	600 V
Rated surge voltage	4 kV	4 kV	4 kV

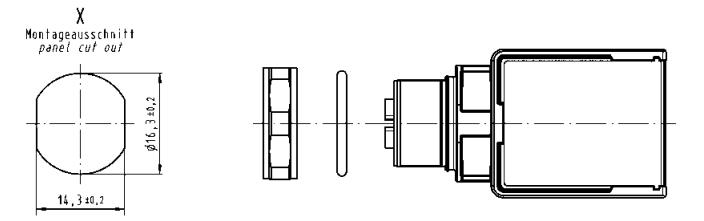
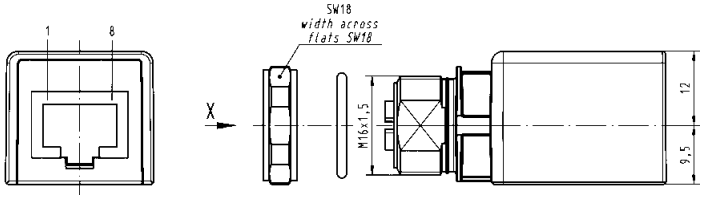
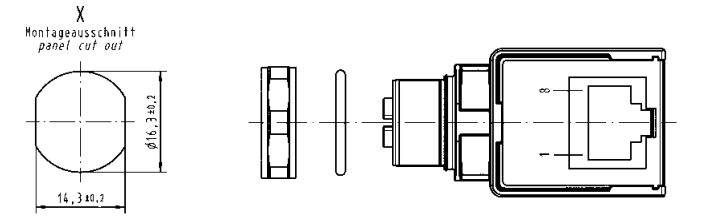
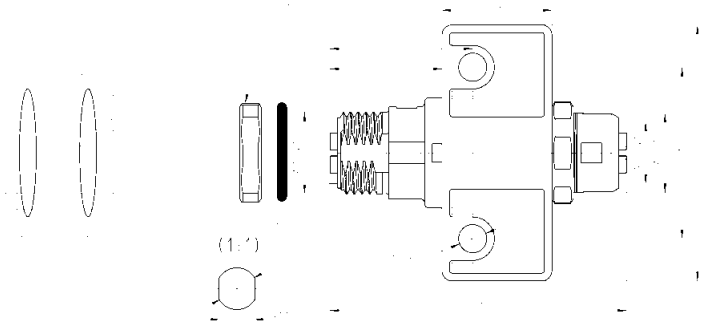
Solder pin data

Solder pin: drilled hole diameter	1.4 mm

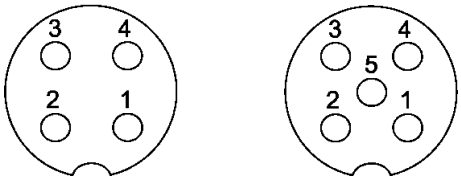
Material data

Group of insulation material	I
Type of insulation material	PA / PPA
Flammability rating per UL 94	V0
Operating temperature	-40 °C … +110 °C
Contact material	copper alloy
Contact plating	tin plated

Identification	Part No.	Drawing	Dimensions in mm
***har*-speed M12** 8 poles, X-coded, Cat. 6_A Cable: 4.4 - 8.8 mm outer diameter	21 03 881 1805		
M12 Crimp 5 poles, A-coded Cable: 4.4 - 8.8 mm outer diameter	21 03 821 1505		
4 poles, D-coded Cable: 4.4 - 8.8 mm outer diameter	21 03 881 1405		

Identification	Part No.	Drawing	Dimensions in mm
har-speed M12 adapter M12-RJ45			
straight, Cat. 6_A Panel thickness min. 2.1 mm max. 4.5 mm	21 03 381 2800		
angled, Cat. 6_A Panel thickness min. 2.1 mm max. 4.5 mm	21 03 381 4800		
Genderchanger, Cat. 6_A without wall bracket	21 03 381 6815		
Wall bracket	21 01 000 0036		

Mating faces



A-coding
4 poles

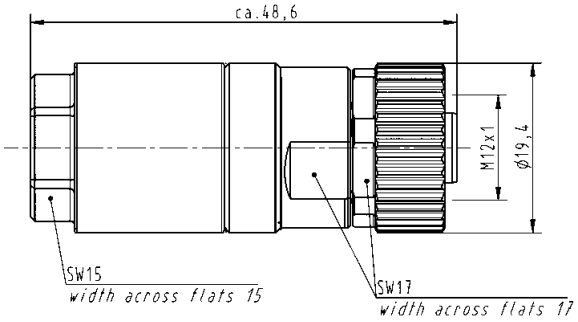
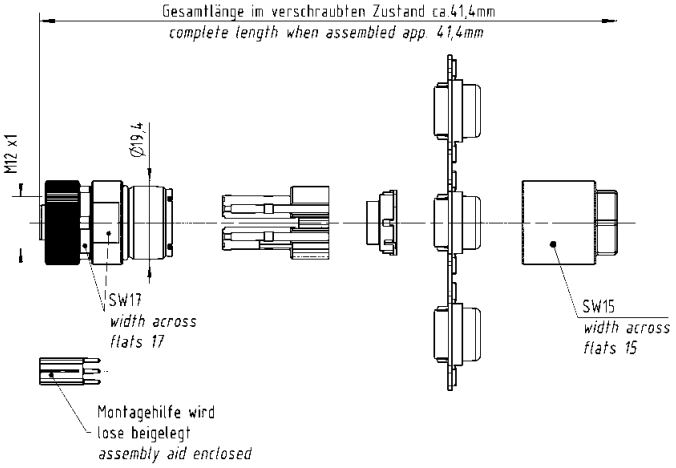
A-coding
5 poles

Mating faces acc. to IEC 61076-2-101

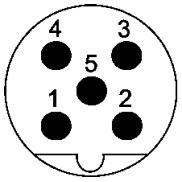
RoHS

Applications / Advantages

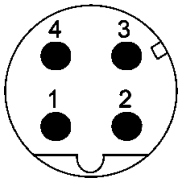
- Designed for rough outdoor applications in harsh environments
- Material V4A
- Available with crimp resp. *HARAX*® rapid termination
- Extreme robust design, quick assembly

Identification	Part No.	Drawing	Dimensions in mm
HARAX® M12-L INOX  Female, A-coding, straight version 4 poles	21 03 222 2435		
M12-L Crimp INOX  Female, A-coding, straight version 5 poles	21 03 822 2535		

Mating faces



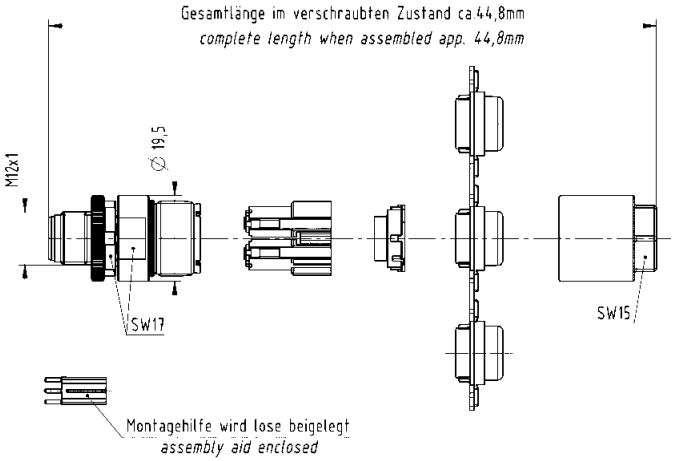
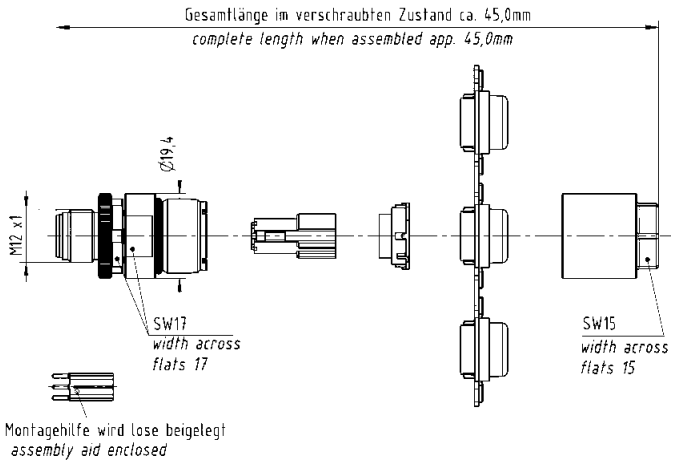
B-coding

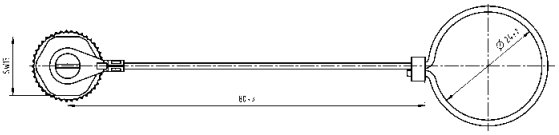
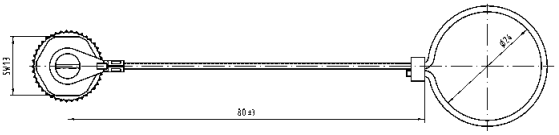
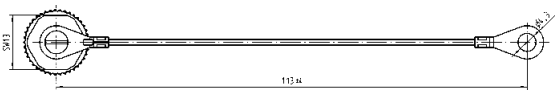


D-coding

Mating faces acc. to IEC 61076-2-101

RoHS

Identification	Part No.	Drawing	Dimensions in mm
M12-L Crimp INOX			
 Male, B-coding, straight version 5 poles	21 03 841 1535		
 Male, D-coding, straight version 4 poles	21 03 882 1435		

Identification	Part No.	Drawing	Dimensions in mm
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cord 	21 01 000 0033		
Cap metal M12 for IP65 / IP67 M12 metal cap for male side with cable clip 	21 01 000 0038		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cord 	21 01 000 0030		
Cap metal M12 for IP65 / IP67 M12 metal cap for female side with cable clip 	21 01 000 0031		

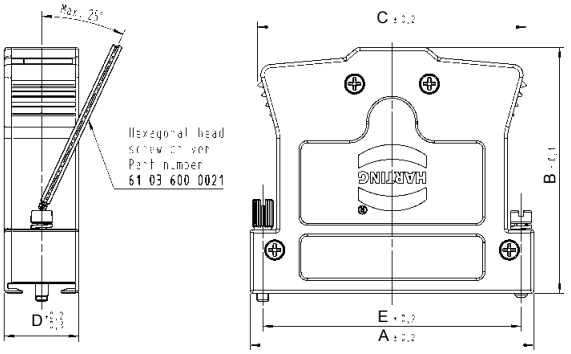
Full metal top entry hoods with different screw options

Identification	No. of contacts	Part No.
5° top entry hood with 3 cable entries		
with internal grounding block	37	61 03 001 . 118
	50	61 03 001 . 119
without internal grounding block	37	61 03 001 . 118 010
	50	61 03 001 . 119 010

Please insert digit for screw option

Knurled screw, thread 4-40 UNC ▶	0
Hexagonal screw, thread M3 with captive washer ▶	1
Hexagonal screw, thread 4-40 UNC with captive washer ▶	2
Knurled screw, thread M3 ▶	3

Drawing

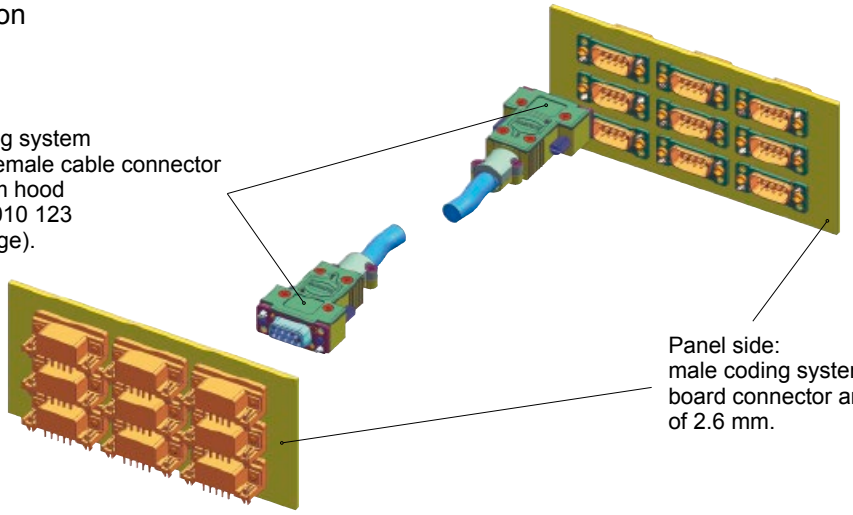


Dimensions in mm

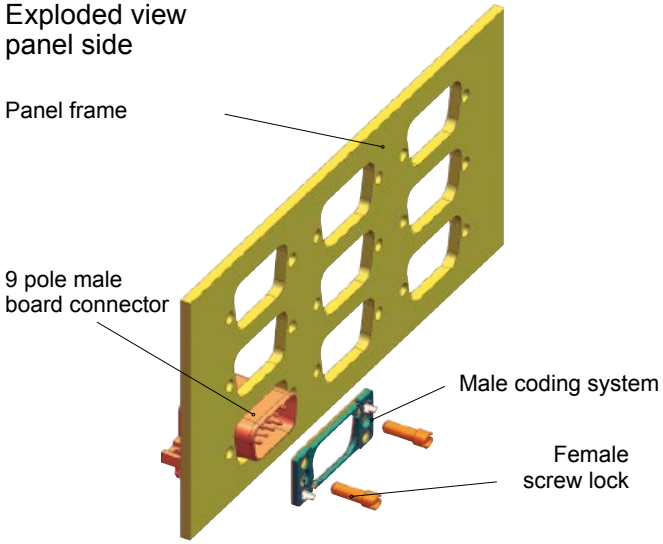
No. of contacts	A	B	C	D	E
37	69.5	52.0	58.2	14.8	63.5
50	67.1	58.0	63.6	17.6	61.1

Coding system

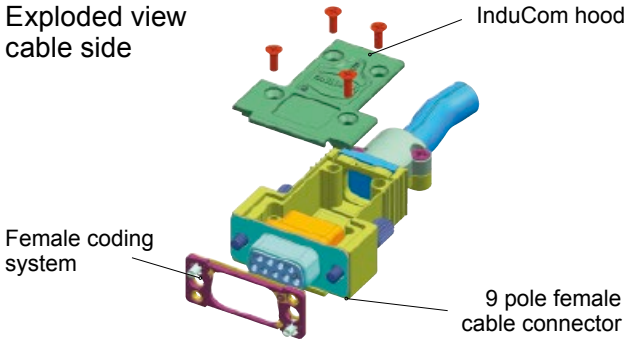
Example of application



Exploded view panel side

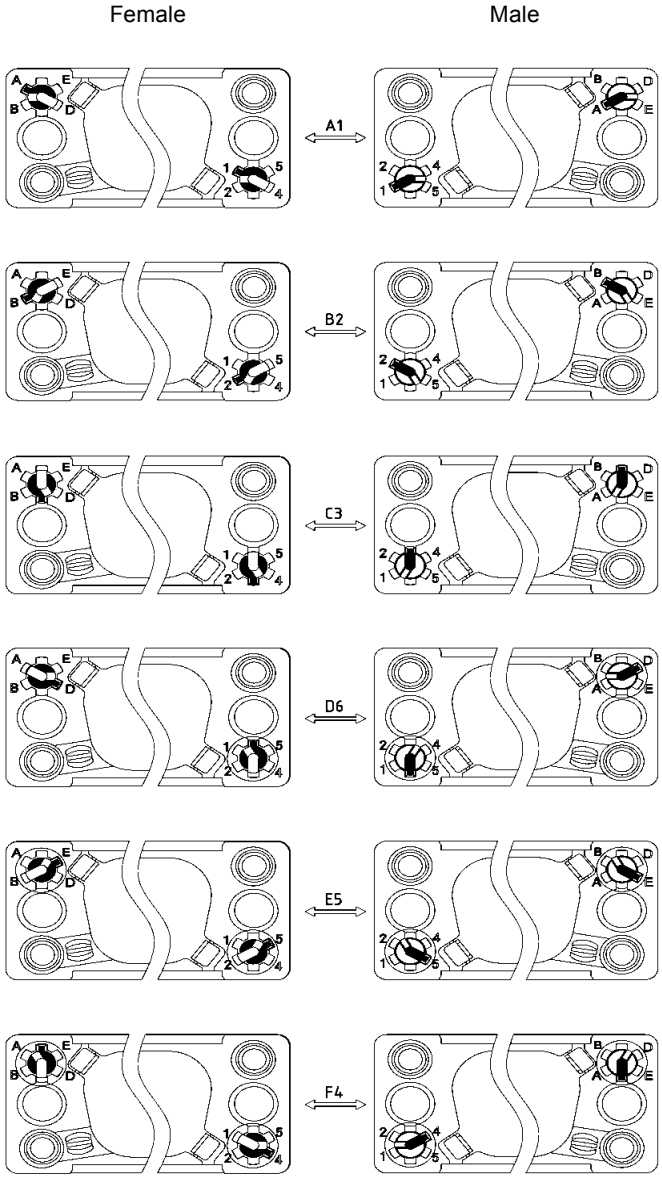


Exploded view cable side



Coding key details

Standard coding combinations



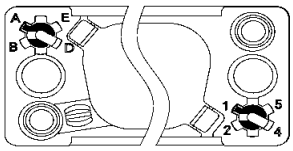
Accessories – coding system

Identification	Part No.	Panel thickness	Dimensions in mm

Coding[1]

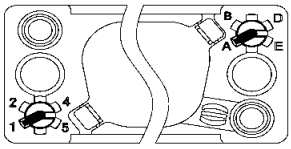
Female

09 67 002 9121 xx 1	2.40 - 2.60 mm[3]	
09 67 002 9121 xx 2	2.00 - 2.40 mm	
09 67 002 9121 xx 3	1.20 - 2.00 mm	
09 67 002 9121 xx 4	0.80 - 1.20 mm	



Male

09 67 002 9122 xx 1	2.40 - 2.60 mm[3]	
09 67 002 9122 xx 2	2.00 - 2.40 mm	
09 67 002 9122 xx 3	1.20 - 2.00 mm	
09 67 002 9122 xx 4	0.80 - 1.20 mm	



Insert digits for coding configuration, e. g. "C3"

36 coding configurations[2]

A1	B1	C1	D1	E1	F1
A2	**B2**	C2	D2	E2	F2
A3	B3	**C3**	D3	E3	F3
A4	B4	C4	D4	E4	**F4**
A5	B5	C5	D5	**E5**	F5
A6	B6	C6	**D6**	E6	F6

Depending on the panel thickness the suitable coding needs to be selected.

Female screw lock

Thread	
inner	outer
4 - 40 UNC	4 - 40 UNC
4 - 40 UNC	M3
M3	4 - 40 UNC
M3	M3

09 67 002 9123[3]
09 67 002 9124
09 67 002 9125
09 67 002 9126

2.00 - 2.60 mm

Thread	
4 - 40 UNC	4 - 40 UNC
4 - 40 UNC	M3
M3	4 - 40 UNC
M3	M3

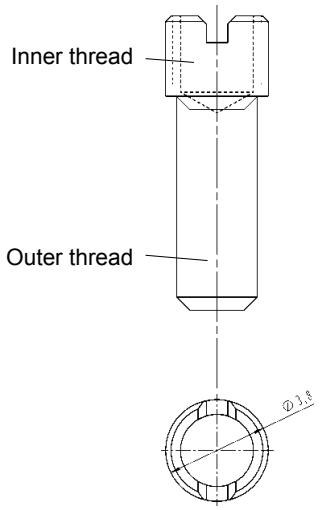
09 67 002 9129
09 67 002 9130
09 67 002 9131
09 67 002 9132

1.20 - 2.00 mm

Thread	
4 - 40 UNC	4 - 40 UNC
4 - 40 UNC	M3
M3	4 - 40 UNC
M3	M3

09 67 002 9133
09 67 002 9134
09 67 002 9135
09 67 002 9136

0.80 - 1.20 mm

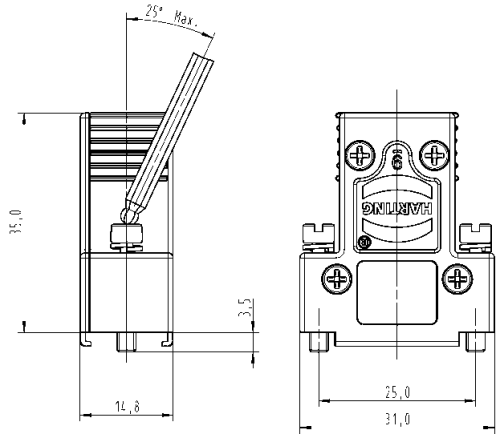


9 pole InduCom top entry hood for coding

61 03 001 . 010 123

Please insert digit for screw option

Hexagonal screw, thread M3 with captive washer ▶	1
Hexagonal screw, thread 4-40 UNC with captive washer ▶	2



[1] MOQ = 50 pieces
[2] Stock items (standard versions) in bold type
[3] Standard versions

Number of contacts

4–64

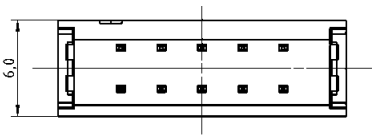
Pcb transition connector, 2 rows with strain relief clamp, low-profile with 5.5 mm height

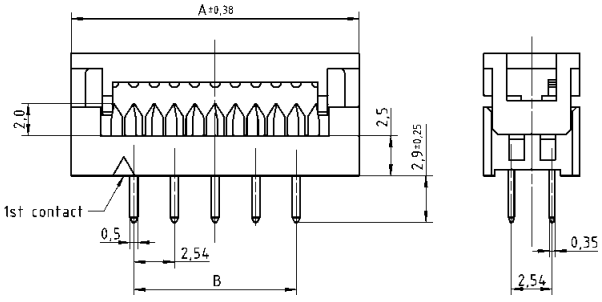
Identification	No. of contacts	Part No.
Pcb transition connector[1)] 2 rows with strain relief clamp Standard low-profile version	4	09 18 104 9623*
	6	09 18 106 9623*
	8	09 18 108 9623*
	10	09 18 110 9623*
	14	09 18 114 9623*
	16	09 18 116 9623*
	20	09 18 120 9623*
	24	09 18 124 9623*
	26	09 18 126 9623*
	30	09 18 130 9623*
	34	09 18 134 9623*
	40	09 18 140 9623
	50	09 18 150 9623*
	60	09 18 160 9623
	64	09 18 164 9623*
Pcb transition connector[1)] 2 rows with strain relief clamp Kinked low-profile version 2 kinked pins at each extremity	4	09 18 104 9423*
	6	09 18 106 9423*
	8	09 18 108 9423*
	10	09 18 110 9423*
	14	09 18 114 9423*
	16	09 18 116 9423*
	20	09 18 120 9423*
	24	09 18 124 9423*
	26	09 18 126 9423*
	30	09 18 130 9423*
	34	09 18 134 9423*
	40	09 18 140 9423
	50	09 18 150 9423*
	60	09 18 160 9423
	64	09 18 164 9423*
Board drillings		

Drawing

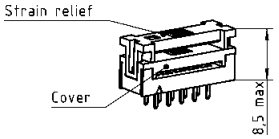
Dimensions in mm

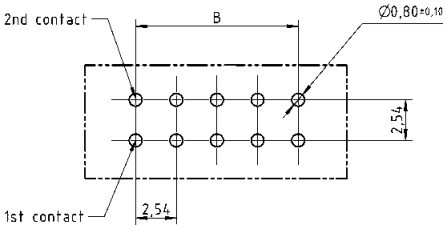
No. of contacts	A ±0.38	B ±0.10
4	10.38	2.54 x 1 = 2.54
6	12.92	2.54 x 2 = 5.08
8	15.46	2.54 x 3 = 7.62
10	18.00	2.54 x 4 = 10.16
14	23.08	2.54 x 6 = 15.24
16	25.62	2.54 x 7 = 17.78
20	30.74	2.54 x 9 = 22.86
24	35.78	2.54 x 11 = 27.94
26	38.32	2.54 x 12 = 30.48
30	43.40	2.54 x 14 = 35.56
34	48.48	2.54 x 16 = 40.64
40	56.10	2.54 x 19 = 48.26
50	68.80	2.54 x 24 = 60.96
60	81.50	2.54 x 29 = 73.66
64	86.58	2.54 x 31 = 78.74





Assembled cover with strain relief





* Available on request

[1)] Not released for halogen free flat cables

Number of contacts

4–64

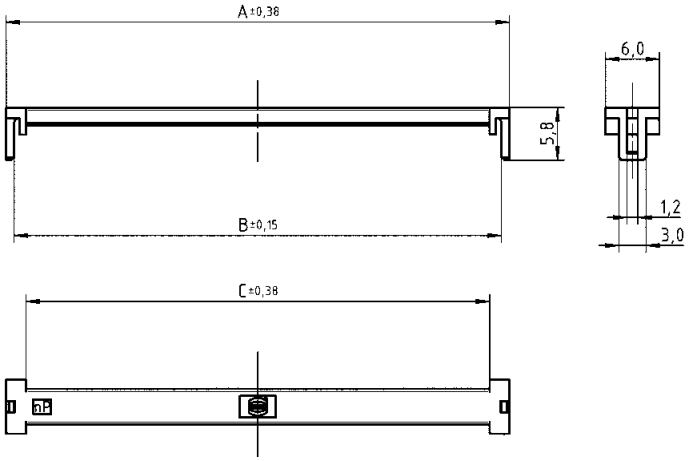
Strain relief clamp

Identification	No. of contacts	Part No.
Strain relief clamp	4	98 18 104 9002*
	6	98 18 106 9002*
	8	98 18 108 9002*
	10	98 18 110 9002*
	14	98 18 114 9002*
	16	98 18 116 9002*
	20	98 18 120 9002*
	24	98 18 124 9002*
	26	98 18 126 9002*
	30	98 18 130 9002*
	34	98 18 134 9002*
	40	98 18 140 9002
	50	98 18 150 9002*
	60	98 18 160 9002
	64	98 18 164 9002*

Drawing

Dimensions in mm

No. of contacts	A	B	C
4	10.38	8.58	5.98
6	12.92	11.12	8.52
8	15.46	13.66	11.06
10	18.00	16.20	13.60
14	23.08	21.28	18.68
16	25.62	23.82	21.22
20	30.70	28.90	26.30
24	35.78	33.98	31.38
26	38.32	36.52	33.92
30	43.40	41.60	39.00
34	48.48	46.68	44.08
40	56.10	54.30	51.70
50	68.80	67.00	64.40
60	81.50	79.70	77.10
64	86.58	84.78	82.18



* Available on request

HARTING RJ Industrial® PROFINET cabinet cord 4-pair

IP20 patch cable cat. 6

Advantages

- Universal use for PROFINET and Industrial Ethernet cabling in control cabinets
- Compact and space saving plug by HARTINGs Dual-Boot design
- Very robust locking lever protection and unlocking latch
- Reliable data transmission due to high EMC-immunity

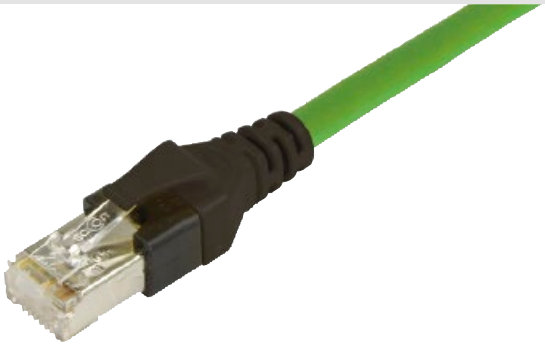
General

The new Cat. 6 S/FTP patch cable completes the HARTING cabling solutions for industrial applications.

It is specially designed for the use in electrical cabinets and fulfills the PROFINET requirements. The design leads to a high flexibility and the innovative two-piece molding features to a good handling and a robust bending protection.

The double screened cable is EMC-safe against the unavoidable emitters in electrical cabinets.

The cable jacket is out of PVC, which is flame retardant and RoHS conform.

Identification		Part No.	Drawing
PROFINET cabinet cord 4-pair			
	0.3 m	09 48 474 7766 003	
	0.5 m	09 48 474 7766 005	
	1.0 m	09 48 474 7766 010	
	1.5 m	09 48 474 7766 015	
	2.0 m	09 48 474 7766 020	
	3.0 m	09 48 474 7766 030	
	5.0 m	09 48 474 7766 050	

- RJ45 acc. to IEC 60603-7
- Boot black
- Locking lever protection and unlocking latch
- Cable: S/FTP AWG 26/7
- PVC cable, jacket green
- Wiring 1:1 TIA/EIA-568-B, 8-wire
- 100 % electrical tested

HARTING RJ Industrial® PROFINET cabinet cord 4-pair

Technical characteristics

Performance	Cat. 6 / Class E acc. to ISO/IEC 24 702 resp. ISO/IEC 11 801, Cat. 6 acc. to IEC 61 935-2 Cable: Cat. 6_A acc. to IEC 61 156-6
Mechanical characteristics	
Bending protection	
Locking lever protection	
Bending radius	Repeated bending radius ≥ 55 mm Single bending radius ≥ 30 mm
Lateral force	1000 N
Electrical characteristics	
Characteristic impedance	100 ± □5 Ohm
Loop resistance	≤ 290 Ohm / km
Delay skew	≤ 20 ns / 100 m
Wiring	1:1 TIA/EIA-568-B
Coupling attenuation	≥ 80 dB (segregation class d)
Environmental characteristics	
Protection class	IP20
Flame retardant	acc. to IEC 60 332-1-2
Thermal characteristics	
Operating temperature	- 20 °C … + 70 °C
Printing	“PROFINET Cabinet Cord 4-pair”
Packaging	One piece in poly-bag, labelled

HARTING RJ Industrial®
System cable, 4-wire, straight
RJ45 connection cable for control or distributor cabinets or within controllers

Technical characteristics

Cable types

Cable type	Type B	Type C
Cables	Copper, stranded, shielded	Copper, stranded, shielded, useable as trailing cable
Wire gauge	4 x AWG 22/7	4 x AWG 22/7
Sheath material	PVC	PUR
Operating temperature range	–40 °C … +70 °C	–40 °C … +70 °C
Application PROFINET	Green	Green
Application SERCOS III	Red	Red

Wiring	4-pole, 1:1 (RJ45 contacts 1/2 and 3/6)
Transmission performance	Category 5 / Class D up to 100 MHz according to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100 Mbit/s
Shielding	Fully shielded
Standard lengths	1.5 m / 3 m / 5 m / 7.5 m / 10 m / 20 m other lengths available on request
Advantages	Robust industrial design Multiport compatible PROFINET compliant

Identification	Part No. Profinet	Part No. SERCOS III*
HARTING RJ System cable, compact 4-wire		
Type B		
Length 0.5 m	09 48 686 8001 005	09 48 686 8006 005
Length 1.0 m	09 48 686 8001 010	09 48 686 8006 010
Length 1.5 m	09 48 686 8001 015	09 48 686 8006 015
Length 3.0 m	09 48 686 8001 030	09 48 686 8006 030
Length 5.0 m	09 48 686 8001 050	09 48 686 8006 050
Length 7.5 m	09 48 686 8001 075	09 48 686 8006 075
Length 10.0 m	09 48 686 8001 100	09 48 686 8006 100
Length 15.0 m	09 48 686 8001 150	09 48 686 8006 150
Length 20.0 m	09 48 686 8001 200	09 48 686 8006 200
HARTING RJ System cable, compact 4-wire		
Type C		
Length 0.5 m	09 48 686 8004 005	09 48 686 8007 005
Length 1.0 m	09 48 686 8004 010	09 48 686 8007 010
Length 1.5 m	09 48 686 8004 015	09 48 686 8007 015
Length 3.0 m	09 48 686 8004 030	09 48 686 8007 030
Length 5.0 m	09 48 686 8004 050	09 48 686 8007 050
Length 7.5 m	09 48 686 8004 075	09 48 686 8007 075
Length 10.0 m	09 48 686 8004 100	09 48 686 8007 100
Length 15.0 m	09 48 686 8004 150	09 48 686 8007 150
Length 20.0 m	09 48 686 8004 200	09 48 686 8007 200

* under preparation

HARTING Ha-VIS MVB data bus cable 120 Ω, 2 x 0.5 mm²

Ha-VIS data bus cable
2-wire, elastic

Advantages

- Halogen free
- Electron-beam cross-linked cable
- Improved fire performance
- High resistance to temperature
- Conform to MVB standard according IEC 61375-3-1

Applications

For fixed and moveable installation inside of rail vehicles and buses. For symmetrical signal and data transmission with impedance of 120 Ohm. Suitable for use in MVB (Multifunction Vehicle Bus) as part of the TCN (Train Communication Network). Especially designed for termination with HARTING D-Sub InduCom and Han-Quintax® and other railway-specific Han® connectors and housings.

Identification	Part No.
Ha-VIS data bus cable 2-wire, elastic	

Sheath material:
Elastomer, electron-beam cross-linked, COMP 603
Colour: black

Nominal voltage:	300 V
Testing voltage:	
Conductor/conductor	2 kV AC
Conductor/shielding	2 kV AC
Maximum conductor resistance at 20 °C:	< 40.1 mΩ / m
Impedance at 0.75 – 3 MHz:	120 Ω ± 12 Ω
Transfer impedance at 20 MHz:	≤ 20 mΩ / m
Attenuation:	
1 MHz:	≤ 12 dB / km
3 MHz:	≤ 17 dB / km
4 MHz:	≤ 22 dB / km

Maximum conductor temperature:

Fixed installed	-40 °C … +90 °C
Short circuit	+160 °C

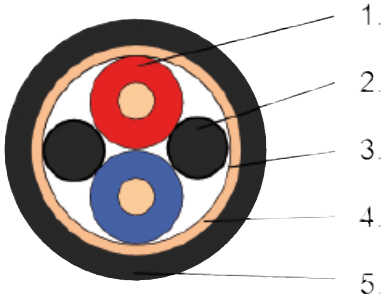
Minimum bending radius:

Fixed installed	> 6 x diameter

Cable sheath diameter: (Ø 7.9 ± 0.2) mm

Cable weight: 85 kg / km

500 m drum	09 45 600 0270



1. **Pair**
   Conductor: tinned copper strands 0.5 mm² according to VDE 0295 / IEC 60228 class 5 construction 16 x 0.20 mm, Ø 0.85 mm
   Insulation: Polyethylene (PE), cross-linked, Comp 655 Ø 2.85 mm
   Colours: red, blue
2. **Filler**
3. **Wrapping**
   Plastic tape
4. **Shielding**
   Aluminium-bonded polyester tape with tinned fine copper braid, Ø 6.5 mm
5. **Jacket**
   Elastomer electron-beam cross-linked Comp 603, Ø 7.9 mm
   Colour: black

Technical characteristics

Fire performance for rolling stock

DIN 5510 and according EN 50306-4, prEN 45545-2	**level of protection 1, 2, 3, 4**	
Vertical flame propagation for single cable	EN 60332-1-2	Char.hight > 50, < 540 mm
Vertical flame spread of bunched wires and cables	EN 50266-2-5	Carbonisation < 2.5 m
Smoke density	EN 61034-2	Light transmission > 70 %
Toxicity of combustion gases	EN 50305	ITC ≤ 3
Halogen free	EN 50267-2-1 EN 60684-2	HCl and Hbr < 0.5 % HF < 0.1 %
Corrosivity of combustion gases	EN 50267-2-2 EN 50267-2-2	pH > 4.3 Conductivity < 10 µS / mm

Approval according

- UL 1685, section 4, third edition 07/2010 vertical-tray fire propagation and smoke-release test
- UL 1685, section 12, FT4 / IEEE 1202 07/2010 vertical-tray fire propagation and smoke-release test

Material properties

Resistance to ozone	EN 50306-4 Volume concentration 200 x 10^{-6}	72 h / 40 °C, method B
Resistance to oil	EN 50306-4	72 h / 100 °C, IRM 902
Resistance to fuel	EN 50306-4	168 h / 70 °C, IRM 903
Low fireload	DIN 51900	
Other certification	GOST R (Russia)	

Printing

STUDERCABLES.COM SWITZERLAND
BETATRANS DATA C-flex 120 Ohm MVB
2 x 0.5 MM2 ST 307201 <production order no>

HARTING Ha-VIS WTB data bus cable 120 Ω, 2 x 0.75 mm²

Ha-VIS data bus cable
2-wire, elastic

Advantages

- Halogen free
- Electron-beam cross-linked cable
- Improved fire performance
- High resistance to temperature
- Conform to UIC 558 standard
- Conform to WTB standard according IEC 61375-2-1

Applications

For fixed and moveable installation inside of rail vehicles and buses. For symmetrical signal and data transmission with impedance of 120 Ohm. Suitable for use in WTB (Wire Train Bus) as part of the TCN (Train Communication Network) according UIC 558.
Especially designed for termination with HARTING D-Sub InduCom and Han-Quintax® and other railway- specific Han® connectors and housings.

Identification	Part No.
Ha-VIS data bus cable 2-wire, elastic	

Sheath material:
Elastomer, electron-beam cross-linked, COMP 603
Colour: black

Nominal voltage:	300 V
Testing voltage:	
Conductor/conductor	2 kV AC
Conductor/shielding	2 kV AC
Maximum conductor resistance at 20 °C:	< 26.7 mΩ / m
Capacitance at 1 MHz:	
Wire/wire:	< 65 pF / m
Wire/screen:	< 120 pF / m
Impedance at 0.75 – 3 MHz:	120 Ω ± 12 Ω
Transfer impedance at 30 MHz:	≤ 30 mΩ / m
Attenuation:	
1 MHz:	≤ 10 dB / km
4 MHz:	≤ 14 dB / km
5 MHz:	≤ 18 dB / km

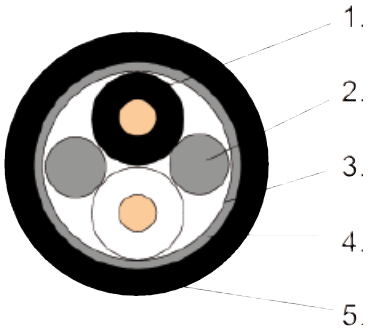
Maximum conductor temperature:	
Fixed installed	-40 °C … +90 °C
Short circuit	+160 °C

Minimum bending radius:	
Fixed installed	> 6 x diameter

Cable sheath diameter: (Ø 9.6 ± 0.2) mm

Cable weight: 114 kg / km

500 m drum	09 45 600 0280



1. **Pair**
   Conductor: tinned copper strands 0.75 mm² according to VDE 0295 / IEC 60228 class 5 construction 24 x 0.20 mm, Ø 1.1 mm
   Insulation: Polyethylene (PE), cross-linked, Comp 655 Ø 3.7 mm
   Colours: black, white
2. **Filler**
   Polyolefine copolymer
3. **Wrapping**
   Plastic tape
4. **Shielding**
   Aluminium-bonded polyester tape with tinned fine copper braid, Ø 8.2 mm
5. **Jacket**
   Elastomer electron-beam cross-linked Comp 603, Ø 9.6 mm
   Colour: black

Technical characteristics

Fire performance for rolling stock

DIN 5510-2 and according EN 50264-1	**level of protection 1, 2, 3, 4**	
Vertical flame propagation for single cable	EN 60332-1-2	Char.hight > 50, < 540 mm
Smoke density	EN 61034-2	Light transmission > 70 %
Toxicity of combustion gases	EN 50305	ITC ≤ 3
Halogen free	EN 50267-2-1 EN 60684-2	HCl and Hbr < 0.5 % HF < 0.1 %
Corrosivity of combustion gases	EN 50267-2-2 EN 50267-2-2	pH > 4.3 Conductivity < 10 µS / mm

Approval according

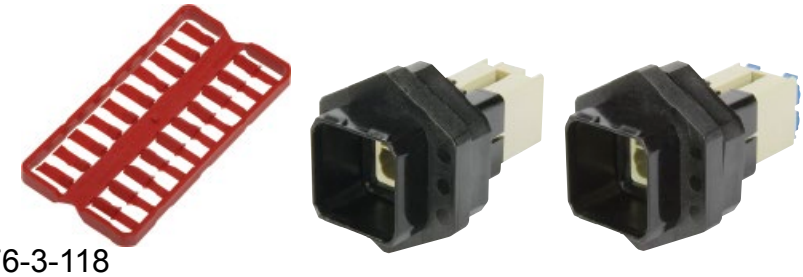
- UL 1685, section 4, third edition 07/2010 vertical-tray fire propagation and smoke-release test
- UL 1685, section 12, FT4 / IEEE 1202 07/2010 vertical-tray fire propagation and smoke-release test

Material properties

Resistance to ozone	EN 50306-4 Volume concentration 200 x 10^{-6}	72 h / 40 °C, method B
Resistance to oil	EN 50306-4	72 h / 100 °C, IRM 902
Resistance to fuel	EN 50306-4	168 h / 70 °C, IRM 903
Low fireload	DIN 51900	
Other certification:	GOST R (Russia)	

Printing

STUDERCABLES.COM SWITZERLAND
BETATRANS DATA C-flex 120 Ohm WTB
2 x 0.75 MM2 ST 308114 <production order no>



Han® PushPull, type acc. to IEC 61 076-3-118
Panel feed-through, 5-poles, 690 V, 16 A

Features

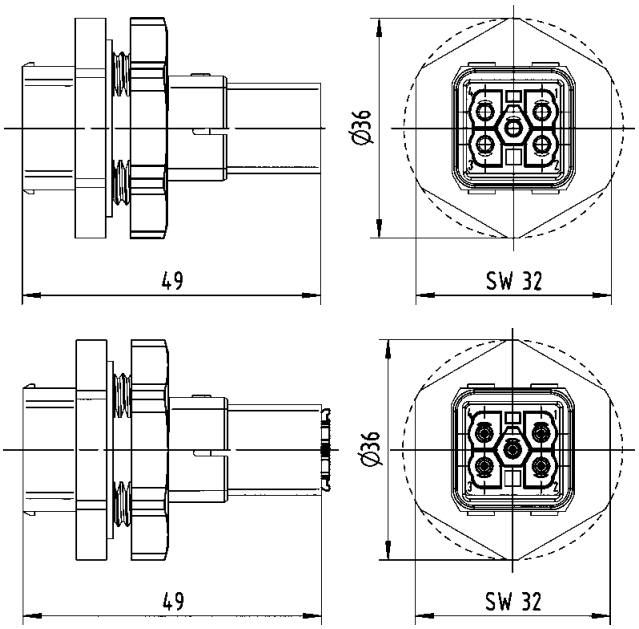
- HARTING PushPull technology
- Compact, space-saving design
- Touch-proof
- Panel feed-through: male
  - crimp termination
  - Han-Quick Lock® termination technology
- 4 times coding without contact loss
- NEW: Larger termination cross section for conductors 0.25 - 1.5 mm²

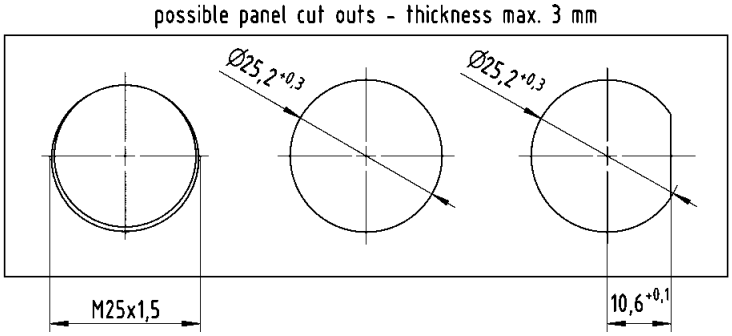
Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Mating face	acc. to IEC 61 076-3-118
Degree of protection	IP65 / IP67
Number of contacts	4 + PE
Electrical data acc. to DIN EN 61 984	16 A 690 V 4 kV 3
Termination cross section	0.25 – 2.5 mm²
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part No.
Han® PushPull Power 4/0 Panel feed-through M25 5-poles, 690 V / 16 A incl. bulkhead housing and male insert, circular panel cut out	
with crimp termination (Order crimp male contacts separately)	09 35 231 0332
with Han-Quick Lock® termination	
0.5 … 2.5 mm²	09 35 232 0332
0.25 … 1.5 mm²	09 35 234 0332
Coding element 10 pieces each for device and cable side enables 4 times coding without contact loss	09 35 000 6190

Drawing — Dimensions in mm





Han® PushPull SCRJ Metal

Available June 2014

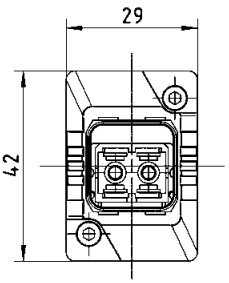
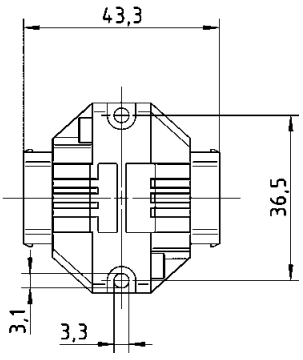
Han® PushPull SCRJ Genderchanger Metal

Features

- High degree of protection IP65 / IP67
- Robust metal housing
- Standard PROFINET component of the German automotive production
- Allows usage of different cable types (Type B, C) e.g. in robots application
- Extension of cords according to PROFINET guideline

Technical characteristics

Locking	PushPull technology
Degree of protection	IP65 / IP67 (mated)
Mating face	SCRJ acc. to IEC 61 754-24
Fibre types	POF, GOF, HCS
Number of contacts	2
Mating cycles	min. 750
Temperature range	-40 °C ... +70 °C
Housing material	Zinc die-cast, nickel-plated
Dimensions	43.3 x 42 x 29 mm (unmated)
Mounting	Wall mountable with 2 screws (type M3)

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull SCRJ Genderchanger metal	09 35 241 0501		

Han® PushPull Signal

Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
10-poles 50 V / 5 A

Features

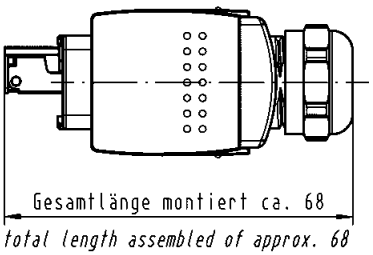
- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

Technical characteristics

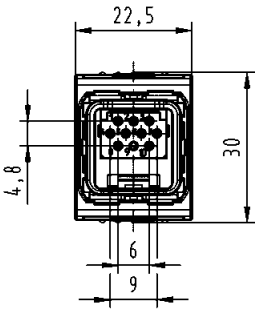
Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Degree of protection	IP65 / IP67
Mating face	acc. to IEC/PAS 61 076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61 984	5 A 50 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp
Conductor cross section	AWG 24 … 18; 0.25 … 0.82 mm²
Conductor diameter	max. 2.1 mm
Outer cable diameter	6.5 … 9.5 mm / 4 … 11 mm
Shielding	Fully shielded, 360° shielding contact
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V0

Identification	Part No.
Han® PushPull Signal	
Connector set 10-poles incl. metal housing and female insert 4 … 11 mm	09 35 261 0401
Connector set 10-poles incl. plastic housing and female insert 6.5 … 9.5 mm	09 35 261 0421
Order D-Sub crimp female contacts separately	
D-Sub crimp contacts for cable side	
female, turned AWG 24-20; 0.25 - 0.52 mm²	09 67 000 8476[1)]
female, turned AWG 22-18; 0.33 - 0.82 mm²	09 67 000 3476[1)]
female, stamped AWG 24-20; 0.25 - 0.56 mm²	09 67 000 8278[2)]

Drawing



Dimensions in mm



[1)] To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531
[2)] To be used with crimp tool 09 99 000 0175.

Han® PushPull Signal

Han® PushPull, type acc. to IEC 61 076-3-117 variant 14
10-poles 50 V / 5 A

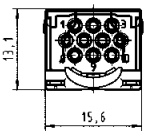
Features

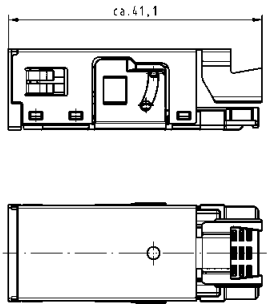
- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

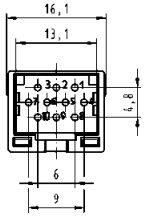
Technical characteristics

Locking	PushPull technology acc. to IEC 61 076-3-117 variant 14
Degree of protection	IP65 / IP67
Mating face	acc. to IEC/PAS 61 076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61 984	5 A 50 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp or solder
Conductor cross section	AWG 24 … 18; 0.25 … 0.82 mm²
Conductor diameter	max. 2.1 mm
Outer cable diameter	6.5 … 9.5 mm / 4 … 11 mm
Shielding	Fully shielded, 360° shielding contact
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black Zinc die-cast, nickel-plated
Flammability acc. to UL 94	V0

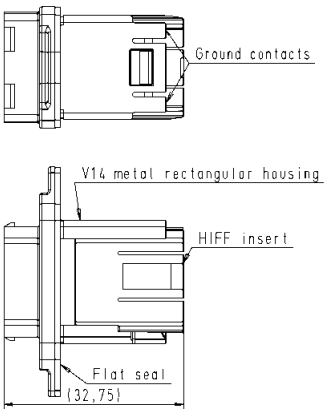
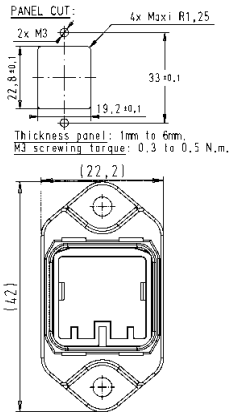
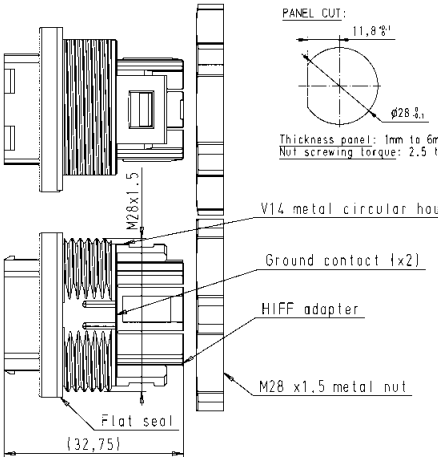
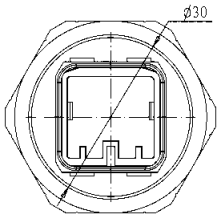
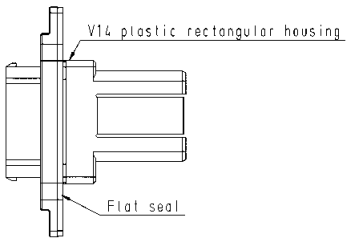
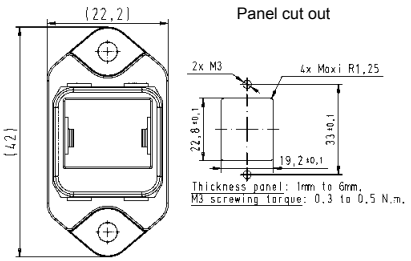
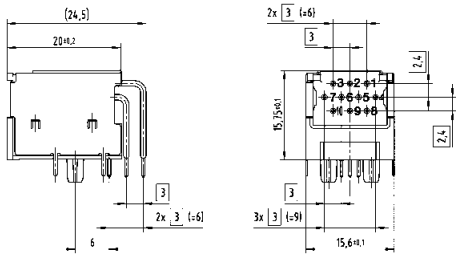
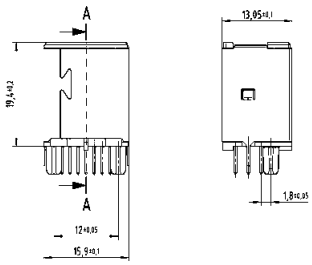
Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull Signal Insert			
for panel feed-through HIFF, 10-poles incl. male insert	09 45 545 9010		
Order D-Sub crimp male contacts separately			
D-Sub crimp contacts for device side			
male, turned AWG 24-20; 0.25-0.52 mm²	09 67 000 8576[1)]		
male, turned AWG 22-18; 0.33-0.82 mm²	09 67 000 3576[1)]		
male, stamped AWG 24-20; 0.25-0.56 mm²	09 67 000 8178[2)]		







[1)] To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531
[2)] To be used with crimp tool 09 99 000 0175.

Identification	Part No.	Drawing	Dimensions in mm
Han® PushPull Signal panel feed-through HIFF to hold the 10-poles insert			
Metal rectangular	09 35 012 0311		
Metal circular	09 35 012 0312		
Plastic rectangular	09 35 012 0331		
Han® PushPull Signal solder jack angled	09 35 002 6001		
Han® PushPull Signal solder jack straight suitable housings, bulkhead mounting	09 35 002 6002		
Metal	09 35 002 0303		
Plastic	09 35 002 0323		

Available March 2014

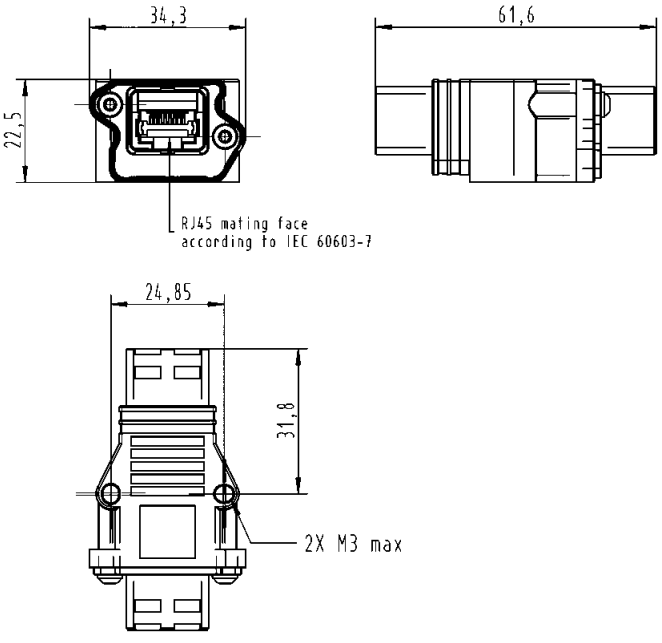
HARTING PushPull RJ45 – bulkhead

Advantages

- Small, space-saving PushPull Interfaces in IP65 / IP67
- Easy connection of PushPull RJ45 system cords
- Screwable with 2 x M3 screws

Technical characteristics

Locking	PushPull Technology acc. to IEC 61 076-3-106 variant 4
Number of contacts	8
Transmission category	Cat. 6, performance class E_A, suitable for 1/10 Gigabit Ethernet
Transmission rate	10/100 Mbit/s / 1/10 Gbit/s
Shielding	fully shielded, 360° shielding contact
Mating cycles	min. 750
Degree of protection	IP65 / IP67
Temperature range	-40 °C … +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0
	UL approval (E102079)

Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull RJ45 – bulkhead	09 45 345 1560		

HARTING PushPull Signal

HARTING PushPull, type acc. to IEC 61 076-3-106 variant 4
10-poles 50 V / 5 A

Features

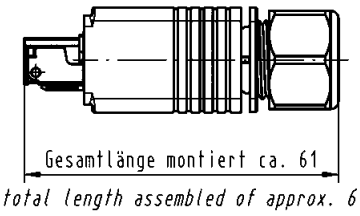
- HARTING PushPull technology
- For the transmission of analog, low voltage and bus signals
- Fully shielded
- 10 contacts
- Touch-proof
- Easy and fast cable installation

Technical characteristics

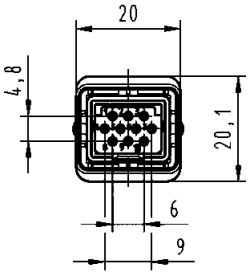
Locking	PushPull technology acc. to IEC 61 076-3-106 variant 4
Degree of protection	IP65 / IP67
Mating face	acc. to IEC/PAS 61076-3-11x
Number of contacts	10
Electrical data acc. to DIN EN 61984	5 A 50 V 1.5 kV 3
Contact resistance	10 mΩ
Termination	Crimp or solder
Conductor cross section	AWG 24 … 18; 0.25 … 0.82 mm²
Conductor diameter	max. 2.1 mm
Outer cable diameter	4.9 … 8.6 mm
Shielding	Fully shielded, 360° shielding contact
Mating cycles	min. 500
Temperature range	-40 °C ... +70 °C
Housing material	Plastic, black
Flammability acc. to UL 94	V0

Identification	Part No.
HARTING PushPull Signal	
Connector set 10-poles incl. plastic housing and female insert	09 45 145 9010
Order D-Sub crimp female contacts separately	
D-Sub crimp contacts for cable side	
female, turned AWG 24-20; 0.25 - 0.52 mm²	09 67 000 8476[1)]
female, turned AWG 22-18; 0.33 - 0.82 mm²	09 67 000 3476[1)]
female, stamped AWG 24-20; 0.25 - 0.56 mm²	09 67 000 8278[2)]

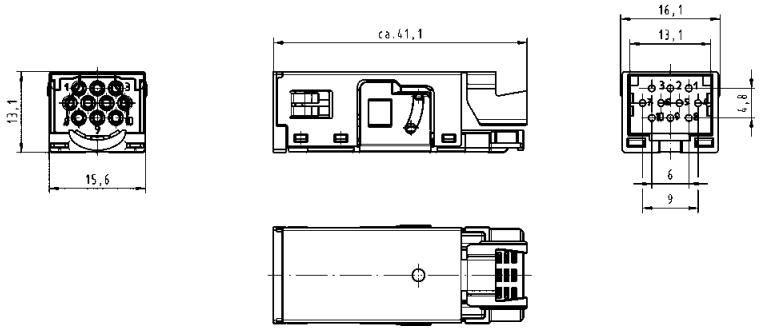
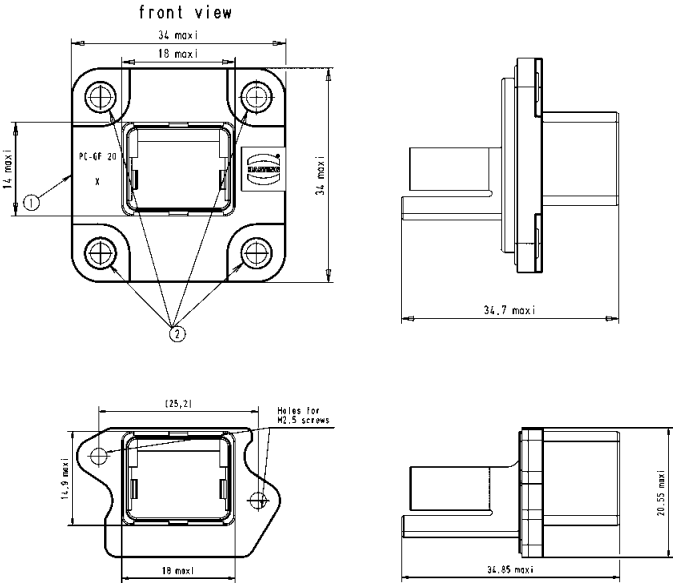
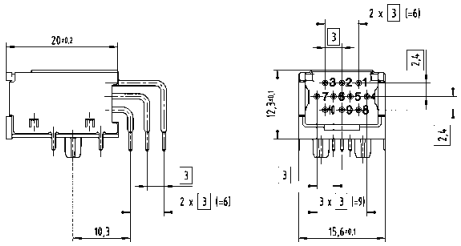
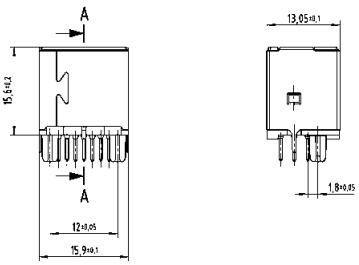
Drawing



Dimensions in mm



[1)] To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531
[2)] To be used with crimp tool 09 99 000 0175.

Identification	Part No.	Drawing	Dimensions in mm
HARTING PushPull Signal			
Insert for panel feed-through HIFF, 10-poles incl. male insert	09 45 545 9010		
Order D-Sub crimp male contacts separately			
D-Sub crimp contacts for device side			
male, turned AWG 24-20; 0.25-0.52 mm²	09 67 000 8576[1)]		
male, turned AWG 22-18; 0.33-0.82 mm²	09 67 000 3576[1)]		
male, stamped AWG 24-20; 0.25-0.56 mm²	09 67 000 8178[2)]		
HARTING PushPull			
suitable housing, bulkhead mounting, plastic			
EasyInstall	09 45 545 0032		
Compact	09 45 545 0028		
HARTING PushPull Signal solder jack angled	09 45 545 9011		
suitable housings, bulkhead mounting			
with fixing clip	09 45 545 0029		
without fixing clip	09 45 545 0033		
HARTING PushPull Signal solder jack straight	09 45 545 9012		
suitable housing, bulkhead mounting	09 45 545 0027		

[1)] To be used with crimp tool 09 99 000 0501. Suitable locator: 09 99 000 0531
[2)] To be used with crimp tool 09 99 000 0175.

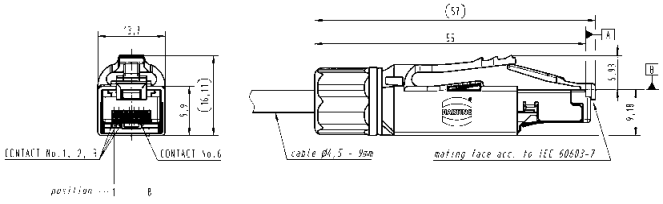
HARTING RJ Industrial® EtherRail® RJ45 connector set, 4-poles

Advantages

- RJ45 Ethernet-Data connector suitable for industry
- Field-assembly with *HARAX*® quick termination in IDC technology
- Compact design
- Ergonomically unlocking clip
- Less weight assures shock- and vibration resisting connection
- Category of transmission Cat. 5
- Suitable for solid and stranded wires
- Suitable for PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at)
- Optimized version for Ha-VIS EtherRail® Ethernet cable, Shielded Star Quad Cable, AWG 22/19 ultra-flexible, according Cat. 5 cabling standard (ISO/IEC 11 801), part numbers 09 45 600 0188, 09 45 600 0138, 09 45 600 0148 and 09 45 600 0158

Technical characteristics

Connector type	RJ45 connector acc. to IEC 60 603-7
Number of contacts	4
Transmission category	Category 5, class D
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100 Mbit/s
Shielding	fully shielded, 360° shielding contact
Mounting	Field-assembly
Cable termination	with IDC-contacts, without tools
Connectable cables	
- Conductor cross section	AWG 27 … AWG 22 (solid / stranded)
- Conductor diameter	max. 2 mm (incl. insulation)
- Cable diameter	4.5 ... 9 mm
Mating cycles	min. 750
Degree of protection	IP20
Temperature range	-40 °C … +70 °C
Housing material	Polyamide, UL 94-V0
Colour	black

Identification	Part No.	Drawing	Dimensions in mm
HARTING RJ Industrial® EtherRail® RJ45 connector set, 4-poles straight version	09 45 151 1122		

Identification	Colour	Part No.
Colour clips for colour coding the HARTING RJ Industrial® EtherRail® RJ45 connector If required the colour clips can be equipped with an RFID-chip for automatic patch cable-ID recognition and storage.	White	09 45 850 0001
	Grey	09 45 850 0002
	Yellow	09 45 850 0003
	Magenta	09 45 850 0005
	Red	09 45 850 0007
	Blue	09 45 850 0008
	Green	09 45 850 0009
	Brown	09 45 850 0010

HARTING RJ Industrial® Gigalink, 8-poles

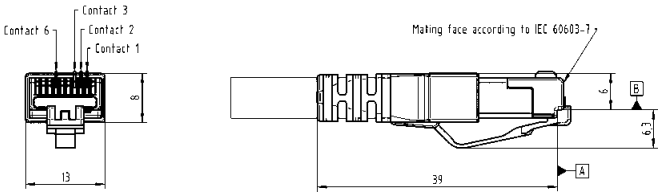
HARTING RJ Industrial® PN Compact connector set, 4-poles

Advantages

- RJ45 Ethernet-Data connector suitable for industry
- Field-assembly with piercing contacts
- Compact design
- Less weight assures shock- and vibration resisting connection
- Category of transmission Cat. 5
- Suitable for PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at)

Technical characteristics

Connector type	RJ45 connector acc. to IEC 60 603-7
Number of contacts	4
Transmission performance	Category 5 / Class D up to 100 MHz acc. to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100 Mbit/s
Shielding	fully shielded, 360° shielding contact
Mounting	Field-assembly
Cable termination	with piercing contacts
Connectable cables	
- Conductor cross section	AWG 24/7 … AWG 22/7 (stranded)
- Conductor diameter	max. 1.6 mm (incl. insulation)
- Cable diameter	4.5 ... 7.5 mm
Mating cycles	min. 750
Degree of protection	IP20
Temperature range	-40 °C … +70 °C
Housing material	PA, UL 94-V0
Colour	green
	UL approval (E102079)

Identification	Part No.	Drawing	Dimensions in mm
HARTING RJ Industrial® PN Compact connector set, 4-poles			
Compact version	09 45 151 1130[1)]		
Assembly tool	09 45 800 0530		

[1)] Packaging with 100 sets

HARTING RJ Industrial® RJ45 jacks

Advantages

- Compact design
- Excellent EMC behaviour due to integrated transformers and filters for 10/100 Mbit or 1 Gbit Ethernet
- Versions from 10/100 Mbit up to 10 Gbit Ethernet resp. Cat. 5

Technical characteristics

Mating face	RJ45 acc. to IEC 60603-7
Number of contacts	8
Degree of protection	IP20
Mating cycles	min. 750
Temperature range	-40 °C … +85 °C

Identification	Part No.	Drawing	Dimensions in mm
Components device side			
RJ45 jack Cat. 5			
with bicolour LED	09 45 551 1119		
without LED	09 45 551 1120		
RJ45 jack with transformer			
10/100 Mbit with bicolour LED	09 45 551 1140		
10/100 Mbit with LED green/yellow	09 45 551 1142		
1 Gbit with bicolour LED	09 45 551 1141		
1 Gbit with LED green / yellow	09 45 551 1143		

HARTING RJ Industrial® 10G

HARTING RJ Industrial® cable jack

Advantages

- Compact and robust design
- 360° shielding
- Category of transmission Cat. 6_A
- Suitable for solid and stranded wires
- Field-assembly with *HARAX*® quick termination in IDC technology
- Keystone form factor – usable for DIN-rail outlet 09 45 851 0000 and a wide range of typical patch panels and wall outlets
- Suitable for PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at)

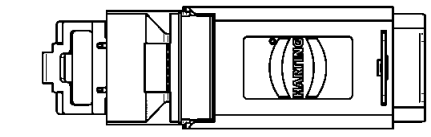
Technical characteristics

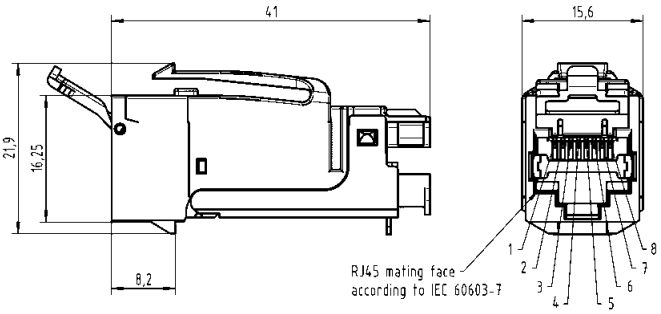
Connector type	RJ45 connector acc. to IEC 60 603-7
Number of contacts	8
Transmission category	Category 6_A, class E_A, suitable for 1/10 Gigabit Ethernet
Transmission performance	Category 6_A / Class E_A up to 500 MHz acc. to ISO/IEC 11 801:2002, EN 50 173-1
Transmission rate	10/100 Mbit/s and 1/10 Gbit/s
Shielding	fully shielded, 360° shielding contact
Mounting	Field-assembly
Cable termination	with IDC-contacts, without tools
Connectable cables	
- Conductor cross section	AWG 27 … AWG 24 (solid/stranded)[1] AWG 24 … AWG 22 (solid/stranded)[2]
- Conductor diameter	max. 1.6 mm (incl. insulation)[1] max. 1.2 mm (incl. insulation)[2]
- Cable diameter	5 ... 9 mm
Mating cycles	min. 750
Degree of protection	IP 20
Temperature range	-40 °C … +70 °C
Housing material	Zinc die-cast, nickel-plated

Identification	Part No.
HARTING RJ Industrial® 10G cable jack, 8-poles	
AWG 28 … 24	09 45 545 1563
AWG 24 … 22	09 45 545 1564
HARTING RJ Industrial® PN cable jack, 4-poles, Cat. 5	
AWG 24 … 22	09 45 545 1122
Unlocking tool for opening of the HARTING RJ Industrial® cable jacks	20 82 000 9916

Drawing

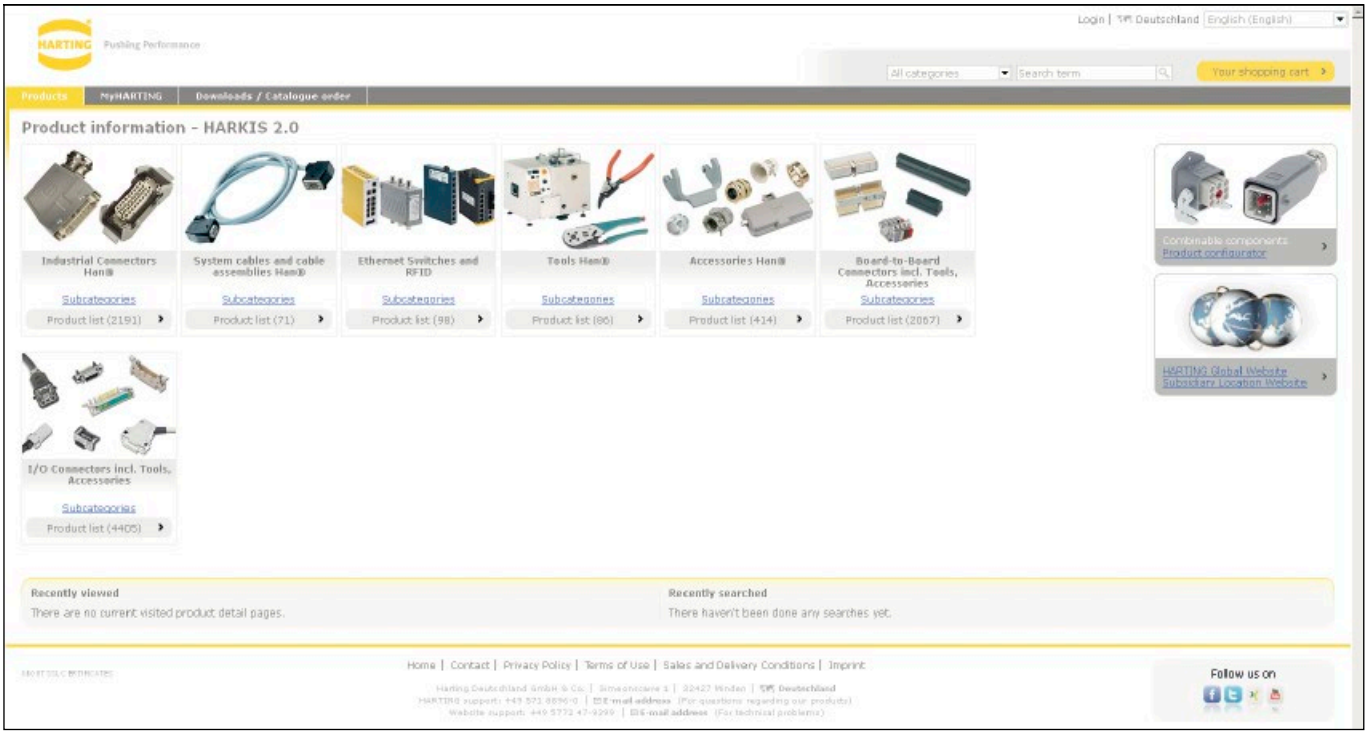
Dimensions in mm





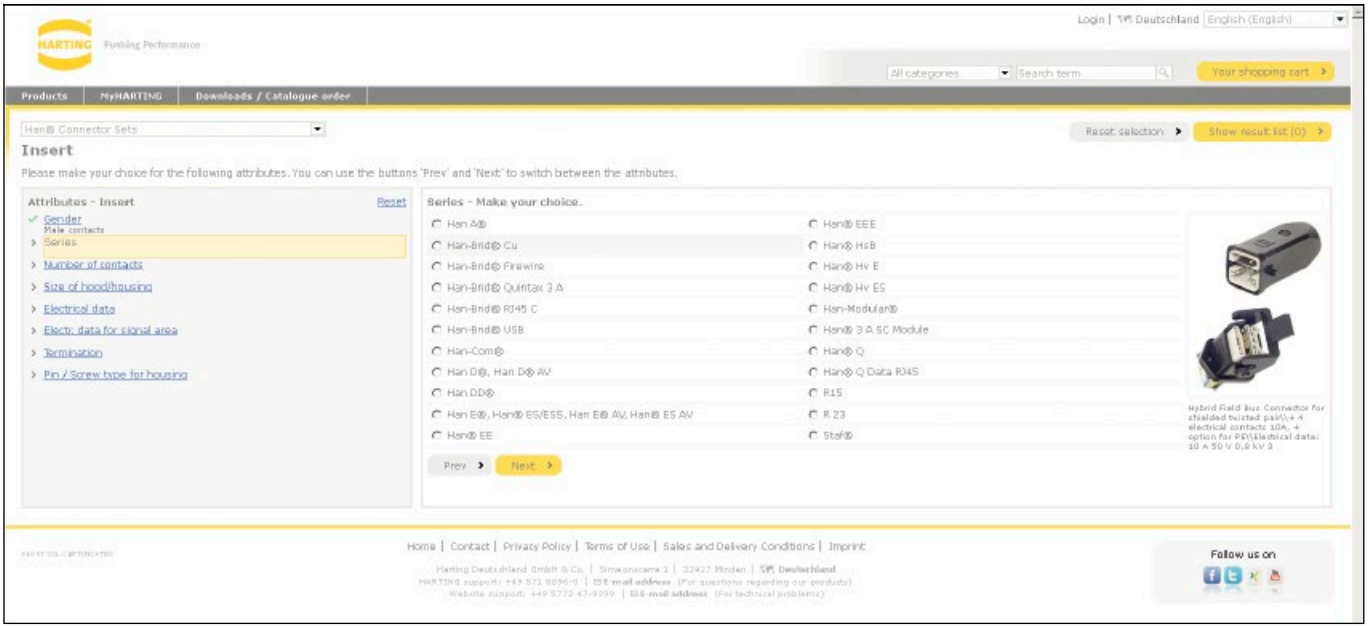
[1] For part number 09 45 545 1564
[2] For part number 09 45 545 1563 and 09 45 545 1122

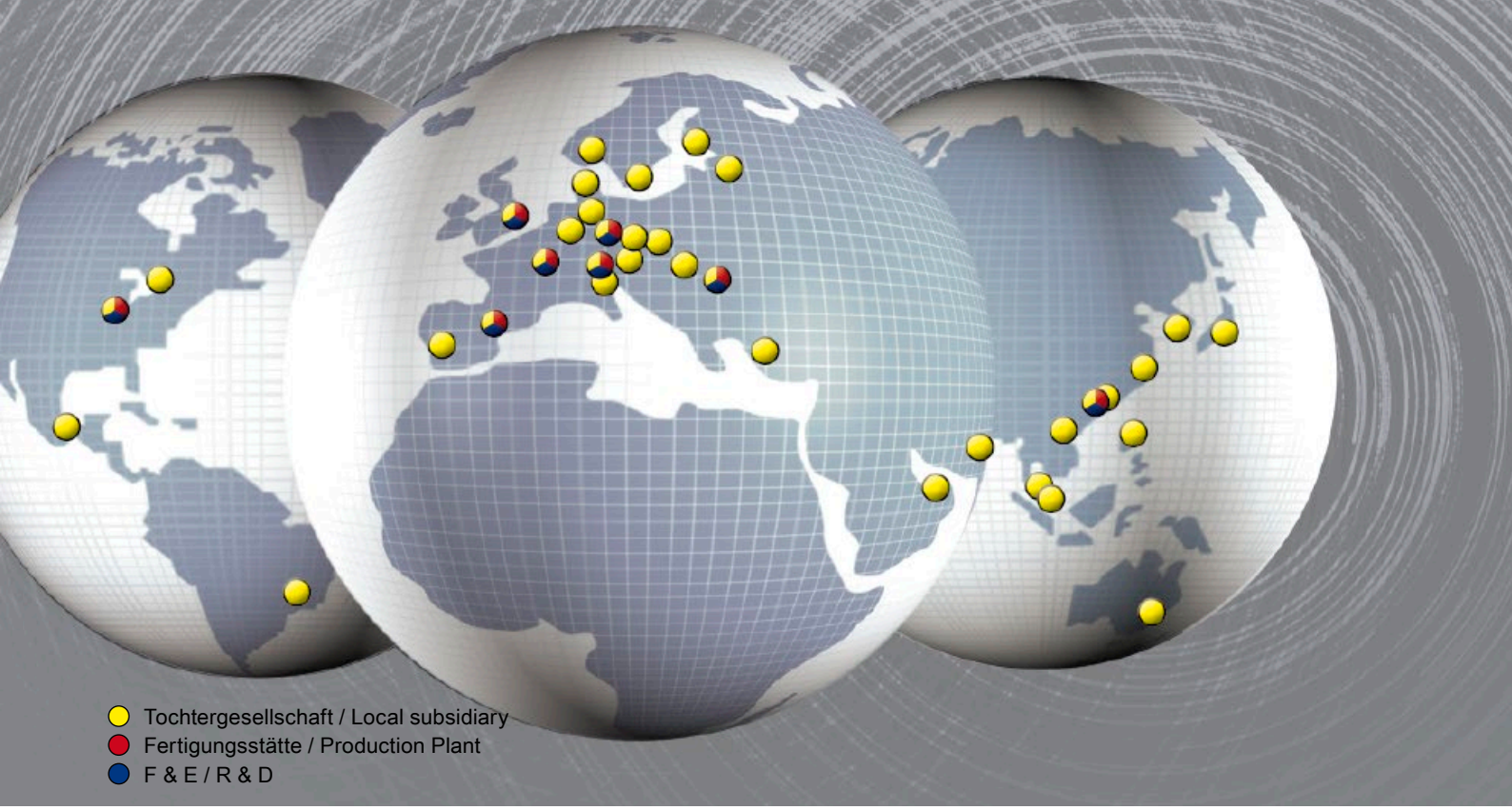
You can find the **HARTING eCatalogue** at **www.HARTING.com**.



The **HARTING eCatalogue** is an electronic catalogue with a product configurator. Here you can choose a connector according to your requirements. Afterwards you are able to send your inquiry directly to a HARTING sales partner. The drawings to every single part are available in PDF format. The parts are downloadable in 2D format (DXF) and 3D format (IGES, STEP). The 3D models can be viewed with a VRML-viewer.

Product configurator





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