

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



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

## Advantages

- Wide input range for world-wide use
- Wide operating temperature range and mechanical stability for highest demands
- Can be used directly in industrial and railway environments
- Compact design and high power density
- Proof against sustained short-circuit, overloads and no-load operation
- International approvals

## General

The DC/DC converters of the product family Ha-VIS pCon 7000 are designed for the decentralised supply of power to control units, Ethernet and other automation components in industrial areas and harsh environments.

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

As a result the devices can be installed without problems in any factory in the world; in production cells or machines or on walls.

The converters maintenance free, vacuum potted and prepared for the use in devices with Protection Class II.

The converters have to be mounted on a heat-dissipating surface for cooling.

## Identification

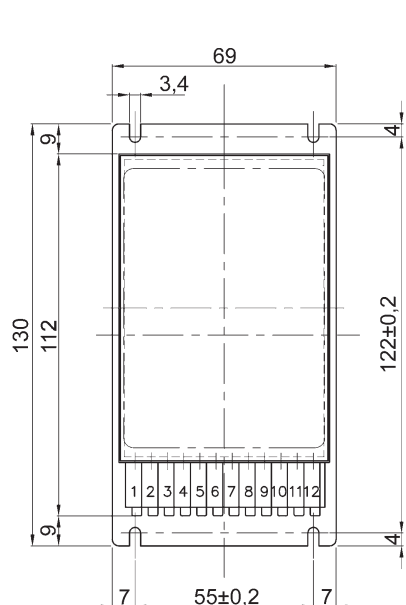
Ha-VIS pCon 7060DC-110/24

DC/DC converter  
110 V DC / 24 V DC

## Part number

20 80 300 3025

## Drawing



## Dimensions in mm

All data given are in line with the actual state of art and therefore not binding.  
HARTING reserves the right to modify designs without giving the relevant reasons.

## Technical characteristics

### Input

Nominal input voltage	43.2 ... 154 V DC (wide range input)
Nominal input current (without load)	50 mA
Switching frequency	approx. 70 kHz
Efficiency	> 85 %
Input filter	LC filter
Transientenschutz	1.8 kV / 5/50 $\mu$ s
Reverse polarity protection	cross diode with external fuse

### Output

Output voltage	24 V DC (fixed adjusted $\pm$ 2 % accuracy)
Output current	2.5 A
Max. output power	60 W
Back feeding protection	$\leq$ 35 V DC (t = 2 s at the same polarity)
Ripple	$\leq$ 1 % $U_{out}$ p-p ( $U_{in}$ = min)
Noise	$\leq$ 2 % $U_{out}$ ( $U_{in}$ = min, bandwidth: 20 MHz)
Line regulation	$\leq$ 0.5 % $U_{in}$ ( $U_{in}$ = min/max)
Load regulation	$\leq$ 2 % $U_{out}$ ( $I_{out}$ = 10 ... 90 ... 10 %)
Short-circuit current	105 ... 130 %
Short-circuit protection	continuous
Transient response time at $I_{out}$ = nominal	
- ohmic load	$\leq$ 20 ms
- halogenous load	$\leq$ 200 ms
Starting time	$\leq$ 200 ms (at $I_{out}$ = nom.)
Inductive load	< 23 mH (at $I_{out}$ = nom.)
Temperature coefficient	0.01 %/K
No load characteristics	no ground load
Parallel operation	without decouple diode (resistance adjustment) (Y-connection of defined output leads with same length; exact adjustment of the voutput voltage necessary)

## Technical characteristics

### General Data

MTBF	> 1.400.000 hours (according to SN 29 500, $T_A = +50\text{ °C}$ )
Insulation co-ordination	
primary - secondary	2.0 kV AC
primary - hood/housing	2.0 kV AC
secondary - hood/housing	1.0 kV AC
Insulation resistance	> 500 M $\Omega$
Cooling	mounting on heat sink with $R_{th} < 2.5\text{ K/W}$ , thermal coupling with Al base plate
Fuse	5.0 AT
Termination	via terminal block with spring clamps 0.5 ... 1.5 mm <sup>2</sup>
Mounting / Removal	The DC/DC converter can be assembled directly on a panel using the appropriate accessories. The device must be mounted in a way that the convection work unresisted.  Disconnect all cables before starting removal!

### Design features

Housing	Robust plastig housing
Material base plate	aluminium
Dimensions (W x H x D)	69 x 130 x 30 mm
Weight	approx. 400 g
Degree of protection acc. to DIN 60 529	IP 20
Class of protection	II (no earth connection necessary)

### Environmental conditions

Operating temperature (max. at base plate)	-40 °C ... +70 °C -40 °C ... +85 °C for $t \leq 10\text{ min.}$ according to EN 50 155
Storage temperature	-55 °C ... +85 °C
Surface temperature	max. 96 °C

## Technical characteristics

### Mechanical stability

Shock assay IEC 61 373 Category 1, Class B  
(Half sinus shock 50 m/s<sup>2</sup>, 30 ms)

### Product standards

Cold EN 60 068-2-1  
 Dry heat EN 60 068-2-2  
 Salt mist EN 60 068-2-11  
 Change of temperature EN 60 068-2-14  
 Damp heat EN 60 068-2-30

### Rail standards

Electrical safety EN 50 155  
 Radiated voltage EN 50 121-3-2  
 Radiated interference EN 50 121-3-2  
 Interference immunity EN 50 121-3-2  
 Interference immunity ESD EN 61 000-4-2  
 Interference immunity HF EN 61 000-4-3  
 Interference immunity Burst EN 61 000-4-4  
 Interference immunity Surge EN 61 000-4-5  
 Voltage fluctuations EN 50 155  
 HF-fields, conducted disturbances EN 61 000-4-6

### EMC standards

Electrical safety EN 60 950-1  
 Radiated voltage EN 61 000-6-3  
 Radiated interference EN 61 000-6-3  
 Interference immunity EN 61 000-6-2  
 Interference immunity ESD EN 61 000-4-2  
 Interference immunity HF EN 61 000-4-3  
 Interference immunity Burst EN 61 000-4-4  
 Interference immunity Surge EN 61 000-4-5  
 HF-fields, conducted disturbances EN 61 000-4-6

### Approvals

Conforms to EMC guideline 89/336/EEC and low voltage directive 73/23/EEC