



**HEIDENHAIN**



Product Overview

## **Interface Electronics**

# Interface electronics

Interface electronics from HEIDENHAIN adapt the encoder signals to the interface of the subsequent electronics. They are used when the subsequent electronics cannot directly process the output signals from HEIDENHAIN encoders or when additional interpolation of the signals is necessary.

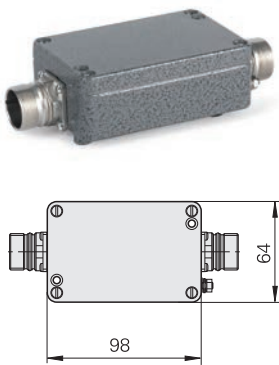
HEIDENHAIN interface electronics are available in various designs.

## Box design

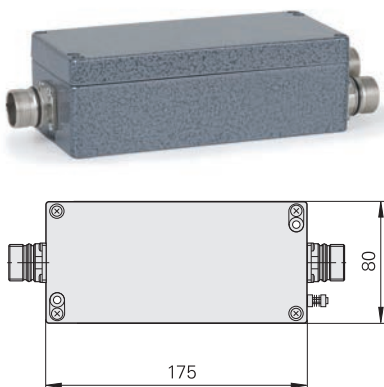
Due to their high IP65 rating, box-design interface electronics are well suited for harsh industrial environments, such as on machine tools. The inputs and outputs are equipped with robust M23 or M12 connecting elements. The sturdy cast-metal housing protects against mechanical damage and electronic interference.

The EXE/IBV 100 series differs from the EXE/IBV 600 series primarily in its more compact dimensions.

e.g., IBV 100 series



e.g., IBV 6000 series



Further electronics for signal adaptation can be found in the *Evaluation Electronics for Metrology Applications* brochure:

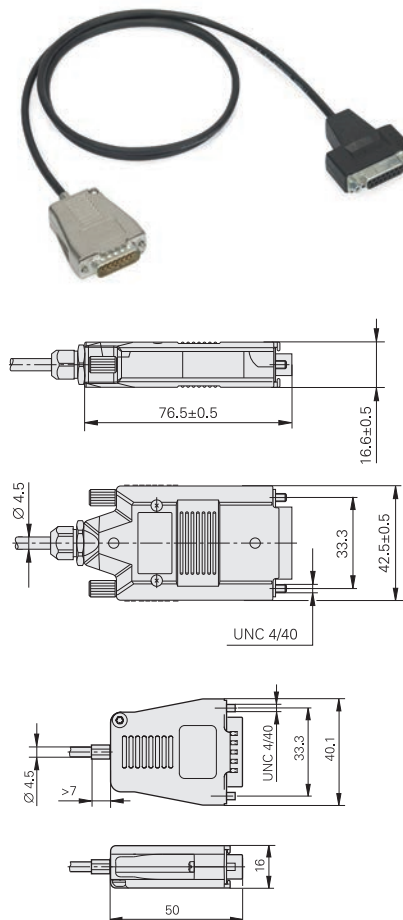
- EIB 700: with four inputs and Ethernet interface
- IK 220: PC counter card for two axes

## Plug design

The plug-design interface electronics are particularly space-saving: their elongated D-sub connector housing accommodates the complete interpolation and digitalization electronics, which are thereby protected from mechanical damage (IP40 rating) and electronic interference.

Relevant accessories allow for firm fastening of the connecting elements and permit multiple connectors to be stacked on top of each other.

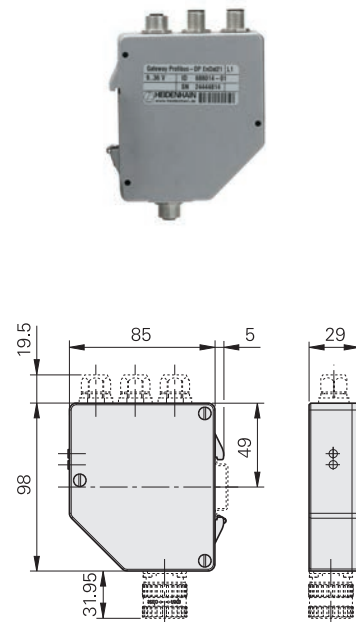
e.g., IBV 3000 series



## Top-hat rail design

The interface electronics for top-hat rail mounting are suitable for operation in an electrical cabinet, featuring convenient fastening onto a standard top-hat rail.

Gateway



### Input signals of the interface electronics

HEIDENHAIN interface electronics can be connected to encoders with 1 V<sub>PP</sub> sinusoidal signals (voltage signals) or 11 μA<sub>PP</sub> (current signals). Encoders with the EnDat or SSI serial interfaces can be connected to various interface electronics as well.

### Output signals of the interface electronics

Interface electronics are available with the following interfaces to the subsequent electronics:

- TTL square-wave pulse trains
- EnDat 2.2
- DRIVE-CLiQ
- Fanuc Serial Interface
- Mitsubishi high speed interface
- Yaskawa Serial Interface
- PROFIBUS
- PROFINET IO

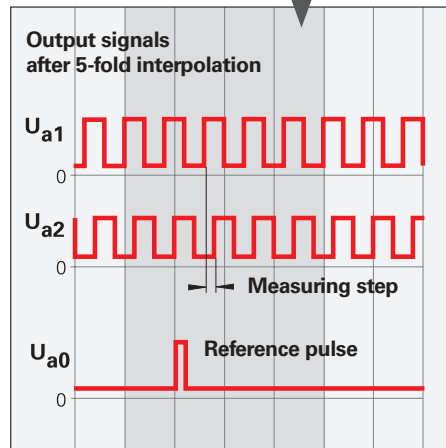
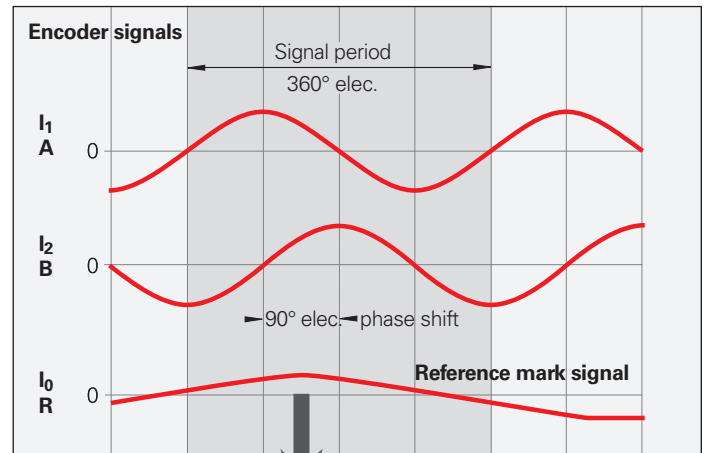
### Interpolation of the sinusoidal input signals

The sinusoidal encoder signals are not merely converted but are also interpolated within the interface electronics. This permits finer measuring steps and, as a result, higher control quality and superior positioning behavior.

### Position value generation

Some interface electronics feature an integrated counting function. Starting from the last set reference point, an absolute position value is generated and output to the subsequent electronics when the reference mark is traversed.

### Example with 5-fold interpolation



Detailed descriptions of all available interfaces, as well as general electrical information, can be found in the *Interfaces of HEIDENHAIN Encoders* brochure.

# Selection guide

Outputs		Inputs		Design – Degree of protection	Interpolation <sup>1)</sup> or subdivision	Model
Interface	Quantity	Interface	Quantity			
□TTL	1	~ 1 V <sub>PP</sub>	1	Box design – IP65	5/10-fold	<b>IBV 101</b>
					20/25/50/100-fold	<b>IBV 102</b>
					Without interpolation	<b>IBV 600</b>
					25/50/100/200/400-fold	<b>IBV 660B</b>
		Plug design – IP40	5/10-fold	<b>IBV 3171</b>		
			20/25/50/100-fold	<b>IBV 3271</b>		
		~ 11 μA <sub>PP</sub>	1	Box design – IP65	5/10-fold	<b>EXE 101</b>
					20/25/50/100-fold	<b>EXE 102</b>
□TTL/ ~ 1 V <sub>PP</sub> Adjustable	2	~ 1 V <sub>PP</sub>	1	Box design – IP65	2-fold	<b>IBV 6072</b>
					5/10-fold	<b>IBV 6172</b>
					5/10-fold and 20/25/50/100-fold	<b>IBV 6272</b>
EnDat 2.2	1	~ 1 V <sub>PP</sub>	1	Box design – IP65	≤ 16384-fold subdivision	<b>EIB 192</b>
				Plug design – IP40	≤ 16384-fold subdivision	<b>EIB 392</b>
			2	Box design – IP65	≤ 16384-fold subdivision	<b>EIB 1512</b>
DRIVE-CLiQ	1	EnDat 2.2	1	Box design – IP65	–	<b>EIB 2391 S</b>
				Cable design – IP65	–	<b>EIB 3392 S</b>
Fanuc Serial Interface	1	~ 1 V <sub>PP</sub>	1	Box design – IP65	≤ 16384-fold subdivision	<b>EIB 192F</b>
				Plug design – IP40	≤ 16384-fold subdivision	<b>EIB 392F</b>
			2	Box design – IP65	≤ 16384-fold subdivision	<b>EIB 1592F</b>
Mitsubishi high speed interface	1	~ 1 V <sub>PP</sub>	1	Box design – IP65	≤ 16384-fold subdivision	<b>EIB 192M</b>
				Plug design – IP40	≤ 16384-fold subdivision	<b>EIB 392M</b>
			2	Box design – IP65	≤ 16384-fold subdivision	<b>EIB 1592M</b>
Yaskawa Serial Interface	1	EnDat 2.2	1	Plug design – IP40	–	<b>EIB 3391Y</b>
PROFIBUS DP	1	EnDat 2.2	1	Top-hat rail design	–	<b>PROFIBUS Gateway</b>
PROFINET IO	1	EnDat 2.2	1	Top-hat rail design	–	<b>PROFINET Gateway</b>

<sup>1)</sup> Switchable

# Further information

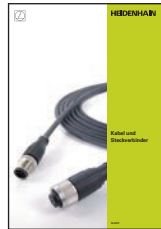
For detailed information, mounting instructions, specifications, and precise dimensions, please refer to our brochures and Product Information documents, or visit us on the Internet at [www.heidenhain.de](http://www.heidenhain.de).

Detailed descriptions of all available interfaces, as well as general electrical information, can be found in the *Interfaces of HEIDENHAIN Encoders* brochure.

Further signal adaptation electronics can be found in the *Evaluation Electronics for Metrology Applications* brochure.



Brochure  
**Interfaces of  
HEIDENHAIN Encoders**



Brochure  
**Cables and Connectors**



Brochure  
**Evaluation Electronics for  
Metrology Applications**



Product Information  
**IBV 3171/IBV 3271**



Product Information  
**EIB 192**



Product Information  
**EIB 392**



Product Information  
**EIB 1500 Series**



Product Information  
**EIB 2391 S**



Product Information  
**EIB 3392 S**



Product Information  
**EIB 3391 Y**



Product Information  
**EXE 100 Series**



Product Information  
**IBV 100 Series**



Product Information  
**IBV 600 Series**



Product Information  
**IBV 6000 Series**



Product Information  
**PROFIBUS DP Gateway**



Product Information  
**PROFINET IO Gateway**

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