



# HEIDENHAIN



Product Information

## **IBV 100 Series**

Interpolation and  
Digitizing Electronics

April 2007

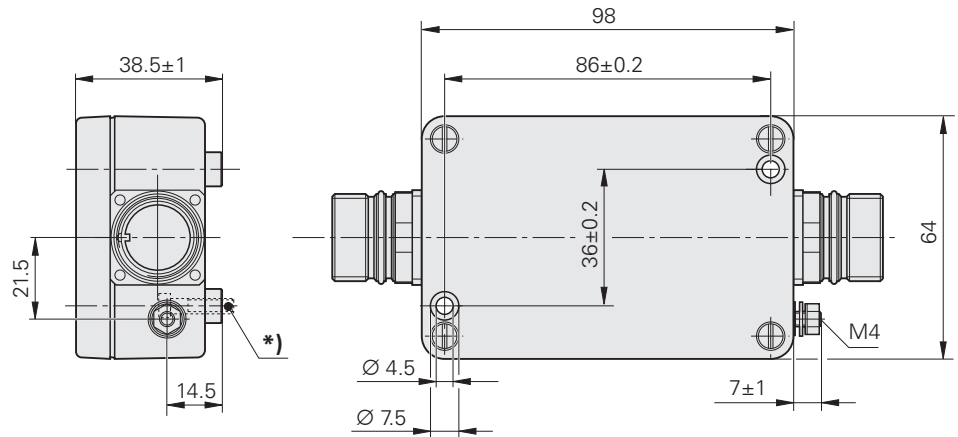
# IBV 100 Series

## Interpolation and digitizing electronics

- Input signals  $\sim 1V_{PP}$
- Output signals  $\square$  TTL



Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm:  $\pm 0.2$  mm

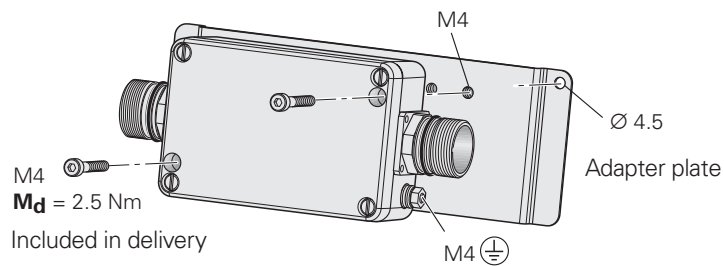
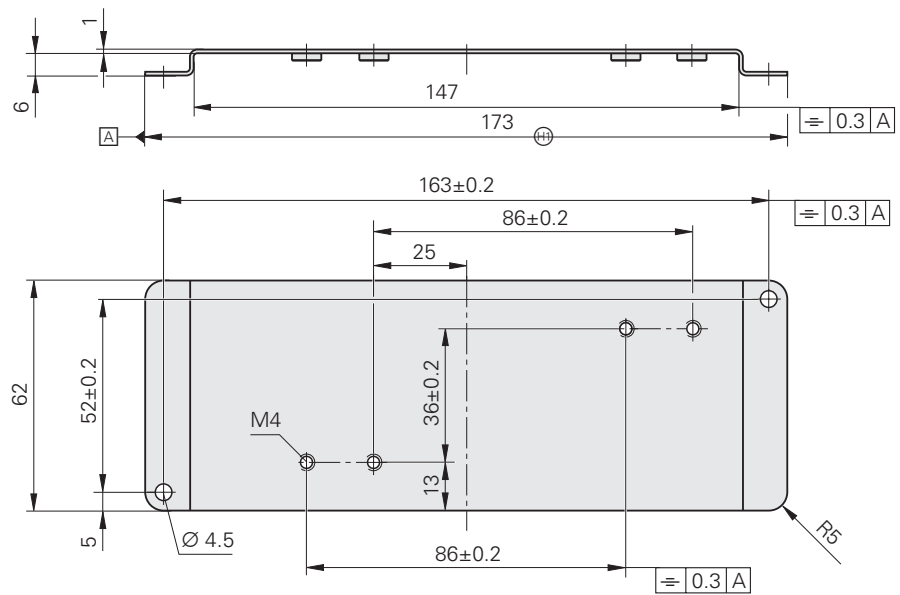


\*) Two mounting screws  
M4 x 16 ISO 4762/DIN 912

### Accessories:

An adapter plate is available for mounting on existing holes for the IBV 6xx/EXE 6xx:

Adapter plate: ID 536452-01



Specifications	IBV 101 IBV 102							
Input	~ 1 V <sub>PP</sub>							
Electrical connection	M23 flange socket (female) 12-pin							
Cable length	≤ 60 m for U <sub>P</sub> > 4.9 V ≤ 30 m for I <sub>Encoder</sub> ≤ 120 mA							
Interpolation <sup>1)</sup>	5-fold, 10-fold, 20-fold, 25-fold, 50-fold, 100-fold							
Input frequency <sup>1)</sup> for interpolation	Nominal values <sup>2)</sup>							
<b>IBV 101</b> 5-fold	200 kHz	200 kHz	133 kHz	100 kHz	80 kHz	50 kHz	25 kHz	
	<b>10-fold</b> <b>200 kHz</b>	100 kHz	66 kHz	50 kHz	40 kHz	25 kHz	12.5 kHz	
<b>IBV 102</b> 20-fold	100 kHz	50 kHz	33 kHz	25 kHz	20 kHz	12.5 kHz	6.25 kHz	
	25-fold	80 kHz	40 kHz	26 kHz	20 kHz	16 kHz	10 kHz	5 kHz
	<b>50-fold</b> <b>40 kHz</b>	20 kHz	13 kHz	10 kHz	8 kHz	5 kHz	2.5 kHz	
	100-fold	20 kHz	10 kHz	6.6 kHz	5 kHz	4 kHz	2.5 kHz	1.25 kHz
Output <sup>1)</sup>	□ TTL (clocked)							
Electrical connection	M23 flange socket (male) 12-pin							
Cable length	≤ 100 m ( $\overline{U_{AS}} \leq 50$ m)							
Edge separation a	≥ 0.100 μs	≥ 0.220 μs	≥ 0.345 μs	≥ 0.465 μs	≥ 0.585 μs	≥ 0.950 μs	≥ 1.925 μs	
Reference mark signal <sup>1)</sup>	Pulse width <b>90° elec.</b> or 270° elec.							
Fault indication <sup>1)</sup>	Through <b>fault detection signal <math>\overline{U_{AS}}</math></b> or also U <sub>a1</sub> /U <sub>a2</sub> high impedance							
Power supply	5 V ± 5%							
Current consumption <sup>3)</sup>	IBV 101: ≤ 120 mA IBV 102: ≤ 130 mA							
Operating temperature Storage temperature	0 °C to 70 °C -30 °C to 80 °C							
Vibration 50 to 2000 Hz Shock 11 ms	≤ 100 m/s <sup>2</sup> ≤ 300 m/s <sup>2</sup>							
Degree of protection	IP 65							
Weight	Approx. 0.3 kg							


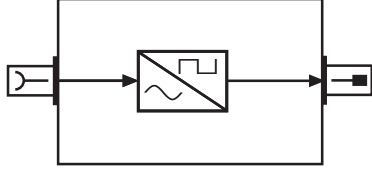


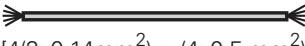


**Bold:** These preferred versions are available on short notice, please select when ordering

<sup>1)</sup> Adjustable






<sup>2)</sup> The actual input frequency can be up to 5% lower. Exceeding this limit results in failure

<sup>3)</sup> Not including output load (80 mA with recommended input circuitry) or the current consumption of the encoder (see the corresponding brochure)

# Electrical Connection

<b>Connecting cable or adapter cable with M23 connector (male) 12-pin</b>  <b>Cable and connector, 12-pin</b> See also HEIDENHAIN catalogs for linear encoders, angle encoders and rotary encoders as well as Product Information sheets for the respective encoders			<b>M23 connecting cable</b> 12-pin, Ø 8 mm
			<b>Complete</b> ID 298399-xx
			<b>With one connector</b> ID 309777-xx
			<b>Cable only</b> ID 244957-01
			<b>Connector (female) 12-pin</b> ID 291697-05



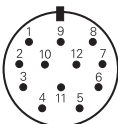


## IBV input – $\sim$ 1 V<sub>PP</sub>

<b>12-pin M23 flange socket</b>   	Power supply				Incremental signals						Other signals		
	12	2	10	11	5	6	8	1	3	4	7	9	/
	U <sub>P</sub>	Sensor U <sub>P</sub>	0V	Sensor 0V	A+	A-	B+	B-	R+	R-	Vacant	Vacant	Vacant
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Violet	/	Yellow

**Shield** on housing; **U<sub>P</sub>** = power supply voltage

**Sensor:** The sensor line is connected internally with the corresponding power line.

## IBV output – $\square$ TTL

<b>12-pin M23 flange socket</b>   	Power supply				Incremental signals						Other signals	
	12	2	10	11	5	6	8	1	3	4	7	9
	U <sub>P</sub>	Sensor 5V	0V	Sensor 0V	U <sub>a1</sub>	$\overline{U}_{a1}$	U <sub>a2</sub>	$\overline{U}_{a2}$	U <sub>a0</sub>	$\overline{U}_{a0}$	$\overline{U}_{aS}$	PWT-Testpin
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Violet	Yellow

**Shield** on housing; **U<sub>P</sub>** = power supply voltage

**Sensor:** The sensor line is connected internally with the corresponding power line

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For more information

- Product overview: *Interface Electronics*

