HEIDENHAIN

Product Information

IBV 100 Series

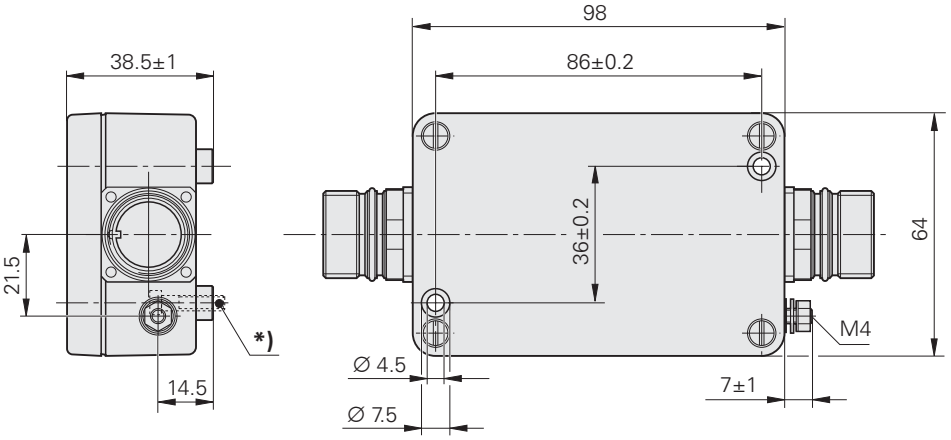
Interpolation and
Digitizing Electronics

April 2007

IBV 100 Series

Interpolation and digitizing electronics
- **Input signals ∿ 1 V_{PP}**
- **Output signals ⊓⊔ TTL**

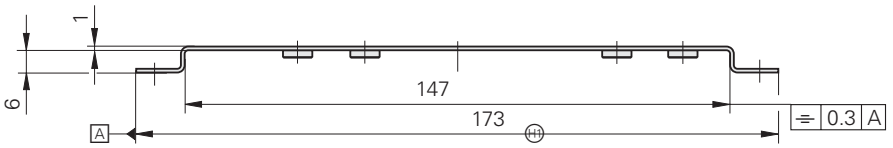
Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ±0.2 mm

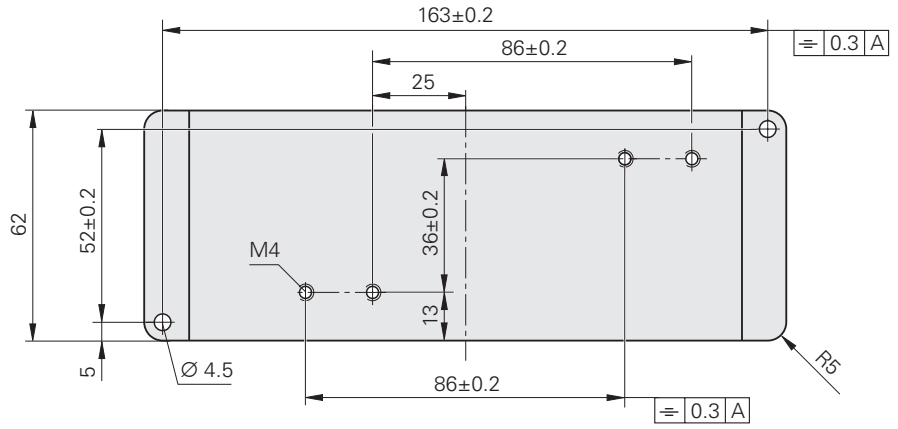


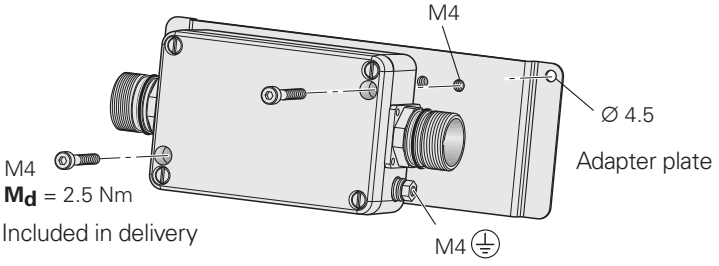
*) Two mounting screws
M4 x 16 ISO 4762/DIN 912

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

Adapter plate: ID 536452-01



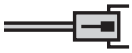
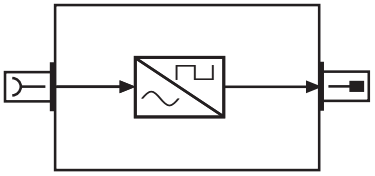




Specifications		IBV 101 IBV 102						
Input		∿ 1 V_{PP}						
Electrical connection		M23 flange socket (female) 12-pin						
Cable length		≤ 60 m for U_P > 4.9 V ≤ 30 m for $I_{Encoder}$ ≤ 120 mA						
Interpolation[1]		5-fold, 10-fold, 20-fold, 25-fold, 50-fold, 100-fold						
Input frequency[1] for interpolation		Nominal values[2]						
IBV 101	*5-fold*	200 kHz	200 kHz	133 kHz	100 kHz	80 kHz	50 kHz	25 kHz
	10-fold	**200 kHz**	100 kHz	66 kHz	50 kHz	40 kHz	25 kHz	12.5 kHz
IBV 102	*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
	50-fold	**40 kHz**	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[1]		⊓⊔ TTL (clocked)						
Electrical connection		M23 flange socket (male) 12-pin						
Cable length		≤ 100 m ($\overline{U_{aS}}$ ≤ 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[1]		Pulse width **90° elec.** or 270° elec.						
Fault indication[1]		Through **fault detection signal $\overline{U_{aS}}$** or also U_{a1}/U_{a2} high impedance						
Power supply		5 V ± 5%						
Current consumption[3]		*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^2 ≤ 300 m/s^2						
Degree of protection		IP 65						
Weight		Approx. 0.3 kg						

Bold: These preferred versions are available on short notice, please select when ordering
[1] Adjustable
[2] The actual input frequency can be up to 5% lower. Exceeding this limit results in failure
[3] Not including output load (80 mA with recommended input circuitry) or the current consumption of the encoder (see the corresponding brochure)

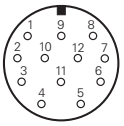
Electrical Connection

Connecting cable or adapter cable with M23 connector (male) 12-pin  **Cable** and **connector,** 12-pin See also HEIDENHAIN catalogs for linear encoders, angle encoders and rotary encoders as well as Product Information sheets for the respective encoders			**M23 connecting cable** 12-pin, Ø 8 mm
			**Complete** ID 298399-xx
			**With one connector** ID 309777-xx
		 [4(2x0.14mm^2) + (4x0.5 mm^2)]	**Cable only** ID 244957-01
			**Connector (female)** 12-pin ID 291697-05

IBV input – ∿ 1 V_{PP}

12-pin
M23 flange socket





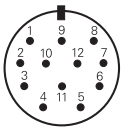
	Power supply				Incremental signals						Other signals		
	12	**2**	**10**	**11**	**5**	**6**	**8**	**1**	**3**	**4**	**7**	**9**	**/**
	U_P	**Sensor** U_P	**0 V**	**Sensor** 0 V	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**	**Vacant**	**Vacant**	**Vacant**
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Violet	/	Yellow

Shield on housing; **U_P** = power supply voltage
Sensor: The sensor line is connected internally with the corresponding power line.

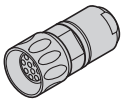
IBV output – ⊓⊔ TTL

12-pin
M23 flange socket





12-pin
M23 connector


	Power supply				Incremental signals						Other signals	
	12	**2**	**10**	**11**	**5**	**6**	**8**	**1**	**3**	**4**	**7**	**9**
	U_P	**Sensor** 5 V	**0 V**	**Sensor** 0 V	**U_{a1}**	**$\overline{U_{a1}}$**	**U_{a2}**	**$\overline{U_{a2}}$**	**U_{a0}**	**$\overline{U_{a0}}$**	**$\overline{U_{aS}}$**	**PWT-Testpin**
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Violet	Yellow

Shield on housing; **U_P** = 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*

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