



# HEIDENHAIN



Product Information

## **EXE 100 Series**

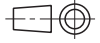
Interpolation and  
Digitizing Electronics

April 2007

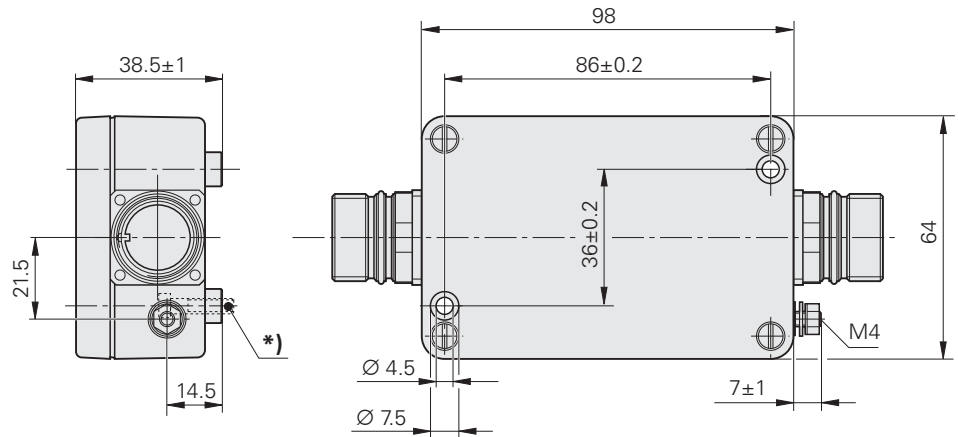
# EXE 100 Series

## Interpolation and digitizing electronics

- Input signals  $\sim 11 \mu\text{A}_{\text{pp}}$
- Output signals  $\square$  TTL



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

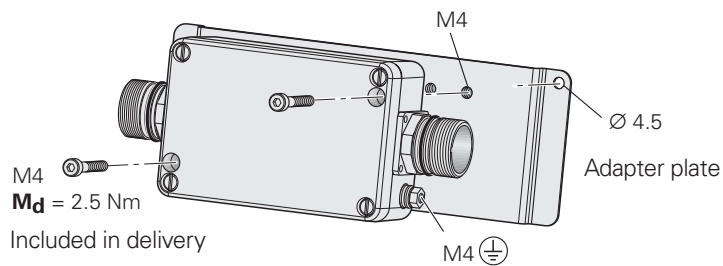
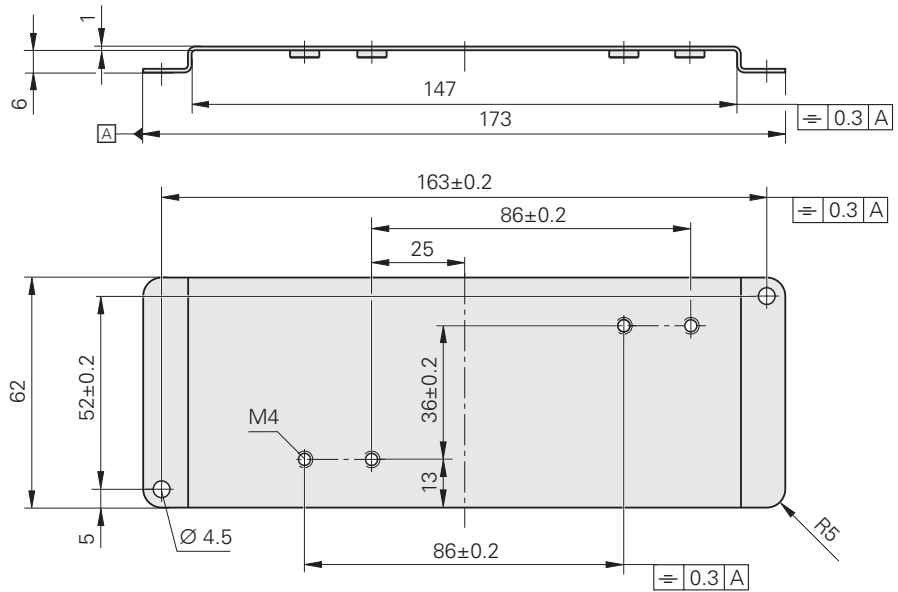


\*) Two mounting screws  
M4 x 16 ISO 4762/DIN 912

### Accessories:

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

Adapter plate: ID 536452-01



Specifications	EXE 101 EXE 102							
Input	~ 11 $\mu$ A <sub>PP</sub>							
Electrical connection	M23 flange socket (female) 9-pin							
Cable length	≤ 30 m for I <sub>Encoder</sub> ≤ 120 mA							
Interpolation <sup>1)</sup>	<b>5-fold</b> , 10-fold, 20-fold, 25-fold, 50-fold, 100-fold							
Input frequency <sup>1)</sup> for interpolation	Nominal values <sup>2)</sup>							
<b>EXE 101</b> 5-fold	100 kHz	100 kHz	100 kHz	100 kHz	80 kHz	50 kHz	25 kHz	
	10-fold	100 kHz	<b>100 kHz</b>	66 kHz	50 kHz	40 kHz	<b>25 kHz</b>	12.5 kHz
<b>EXE 102</b>	20-fold	60 kHz	50 kHz	33 kHz	25 kHz	20 kHz	12.5 kHz	6.25 kHz
	25-fold	60 kHz	40 kHz	26 kHz	20 kHz	16 kHz	<b>10 kHz</b>	5 kHz
	50-fold	40 kHz	20 kHz	13 kHz	10 kHz	8 kHz	<b>5 kHz</b>	2.5 kHz
	100-fold	20 kHz	10 kHz	6.6 kHz	5 kHz	4 kHz	2.5 kHz	1.25 kHz
Output	□ TTL (clocked)							
Electrical connection	M23 flange socket (male) 12-pin							
Cable length	≤ 100 m ( $\overline{U_{aS}}$ ≤ 50 m)							
Edge separation <i>a</i>	≥ 0.100 $\mu$ s	≥ 0.220 $\mu$ s	≥ 0.345 $\mu$ s	≥ 0.465 $\mu$ s	≥ 0.585 $\mu$ s	≥ 0.950 $\mu$ s	≥ 1.925 $\mu$ s	
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, in addition, U <sub>a1</sub> /U <sub>a2</sub> high impedance							
Power supply	5 V ± 5%							
Current consumption <sup>3)</sup>	EXE 101: ≤ 120 mA EXE 102: ≤ 140 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							


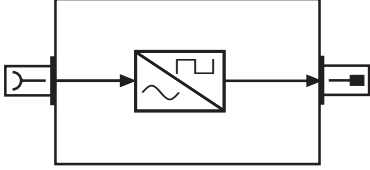



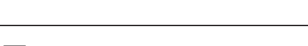

**Bold:** These preferred versions are available on short notice, please select when ordering

<sup>1)</sup> Adjustable



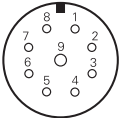


<sup>2)</sup> The actual input frequency can be up to 5% lower. Exceeding this limit results in failure

<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), 9-pin</b>  <b>Cable and connector, 9-pin</b> See HEIDENHAIN catalogs for digital readout and length gauges 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> [4(2x0.14mm <sup>2</sup> ) + (4x0.5 mm <sup>2</sup> )] ID 244957-01
			<b>Connector (female) 12-pin</b> ID 291697-05



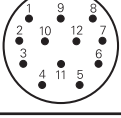


## EXE input – $\sim$ 11 $\mu$ App

<b>9-pin M23 flange socket</b>   	Power supply		Chassis	9	Incremental signals					
	3	4	External shield	Internal shield	1	2	5	6	7	8
	$U_p$	0V	–	White/Brown	$I_{1+}$	$I_{1-}$	$I_{2+}$	$I_{2-}$	$I_{0+}$	$I_{0-}$
	Brown	White	–	White/Brown	Green	Yellow	Blue	Red	Gray	Pink

$U_p$  = power supply voltage  
 Vacant pins or wires must not be used!

**Shield** on housing  
 Color assignment applies only to extension cable.

## EXE 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
	$U_p$	Sensor 5V	0V	Sensor 0V	$U_{a1}$	$\overline{U}_{a1}$	$U_{a2}$	$\overline{U}_{a2}$	$U_{a0}$	$\overline{U}_{a0}$	$\overline{U}_{aS}$	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*

