

## Correct use

The EUCHNER handwheel is a universal pulse generator for manual shaft positioning.

The handwheel is primarily used for positioning NC-driven machine tools during set-up.

Handwheels are used as part of an overall higher-level control system.

Their use, installation and operation are permissible only in conformity with these Operating Instructions.

Correct use includes compliance with the relevant requirements for installation and operation, in particular

- ▶ EN 60204, electrical equipment of machines
- ▶ EN 12100, safety of machines, general design principles
- ▶ EN ISO 13849-1, safety-related parts of control systems

**! Safety precautions !**

EUCHNER HBA handwheels are permanently integrated into the HBA hand-held pendant station and in this state meet the EMC protection requirements according to EN 61000-6-2 and EN 61000-6-4.

HBA handwheels must not be used for residential applications, in business or commercial areas or in small businesses.

**!** Appropriate safety measures must be taken to prevent a malfunction of the handwheel which could cause danger to human beings or damage to operating equipment.

## Function

Depending on the type, 100 or 25 square wave pulses per revolution are available on the handwheel's output to the user.

A second phase-shifted output allows the connected control to detect the direction of movement.

The pulses are evaluated in the control.

The detent mechanism is magnetic and is therefore totally wear-free.

## Assembly

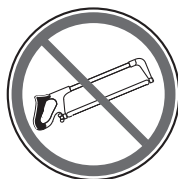
The handwheel is integrated permanently.



**Do not open the handwheels!**



**Do not hit the handwheels!**



**Do not use tools on the handwheels!**

## Electrical connection

The handwheel is already permanently connected within the hand-held pendant station HBA.

## Service and inspection

EUCHNER handwheels require no maintenance.

Handwheels may only be repaired by the manufacturer.

To clean the handwheels, only use solvent-free cleaning agents and a soft cloth.

## Disclaimer of liability

The company does not accept liability regarding the following cases:

- ▶ if the unit is not used for its intended purpose
- ▶ if the safety instructions are not followed
- ▶ if the units are tampered with

## Instructions for counting the handwheel pulses: HBA handwheel

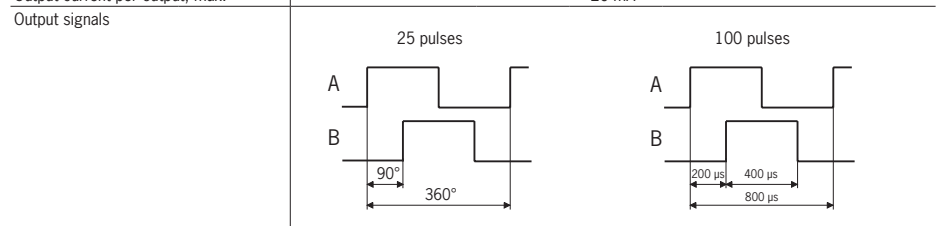
The following options are recommended for counting the handwheel pulses:

- ▶ suitable counter module
- ▶ phase discriminator

## Technical data HBA handwheel, type HKB

Parameters	Value	
Pulses per revolution	2 x 25 or 2 x 100	
Detent positions	100	
Housing material	Aluminium	
Weight	95 g	
Magnetic detent mechanism	0,04 ... 0.06 Nm	
Shaft loading, axial, max.	25 N	
Shaft loading, radial, max.	40 N	
Mechanical service life, min.	5 x 10 <sup>6</sup> U	
Operating temperature	0 °C ... +50 °C	
Storage temperature	-20 °C ... +50 °C	
Humidity, max.	80 % (condensation not permissible)	
Degree of protection to the front	In acc. with EN 60529 / IEC 529	IP 65
	In acc. with NEMA	250-12
Resistance to	Vibrations (3 axes)	DIN/IEC 68-2-6
	vibration Shock (3 axes)	DIN/IEC 68-2-27
EMC protection requirements in acc. with CE	EN 61000-6-2, EN 61000-6-4	

Output circuit Push-pull				
Output stage	G05	G12	G24	
Output signals	A, B			
Operating voltage U <sub>B</sub>	DC 5 V ± 5 %	DC 10 ... 30 V		
Operating current, no load, max.	80 mA			
Output specifications				
Output voltage	HIGH (1), min.	4.0 V / 0 mA	4.9 V / 0 mA	-
		3.4 V / 5 mA	3.9 V / 5 mA	-
		3.0 V / 20 mA	3.6 V / 20 mA	U <sub>B</sub> - 3 V / 20 mA
LOW (0), max.	1.3 V / 15 mA	1.3 V / 15 mA	3 V / 20 mA	
	Output current per output, max.			20 mA



Output circuit RS422		
Output stage	A05	A12
Output signals	A, /A, B, /B	
Operating voltage U <sub>B</sub>	DC 5 V ± 5 %	DC 10 ... 30 V
Operating current, no load, max.	80 mA	
Output specifications		
Output signals	In accordance with RS422A	

