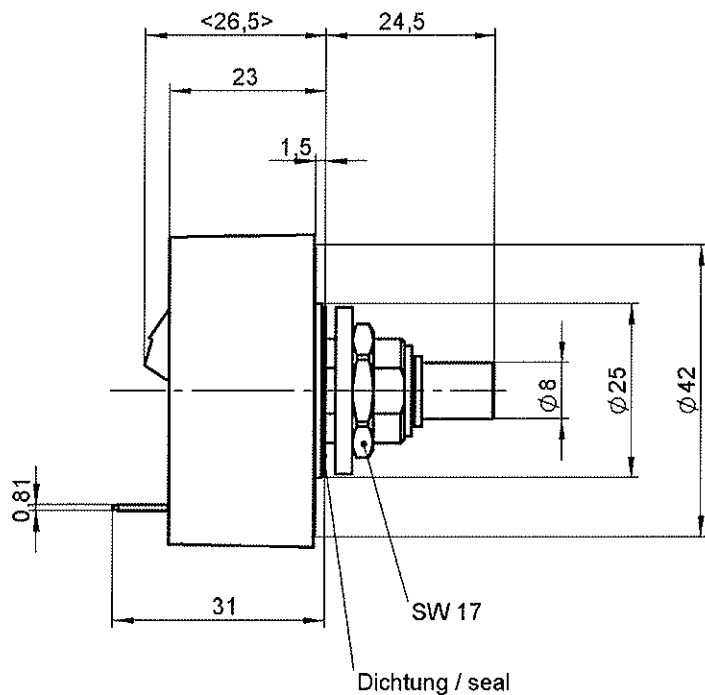
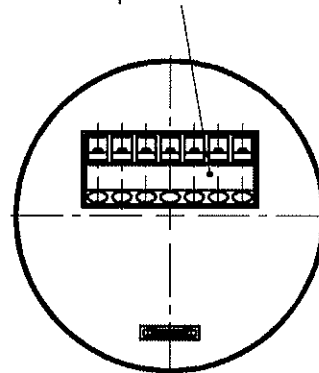


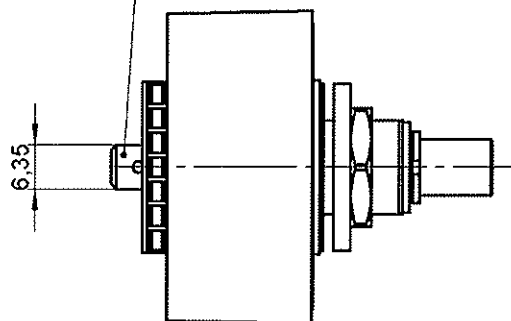
Technische Änderungen vorbehalten, alle Angaben ohne Gewähr / Subject to technical modifications; no responsibility is accepted for the accuracy of this information. © EUCHNER GmbH + Co. KG
 Maße in mm / Dimensions in mm



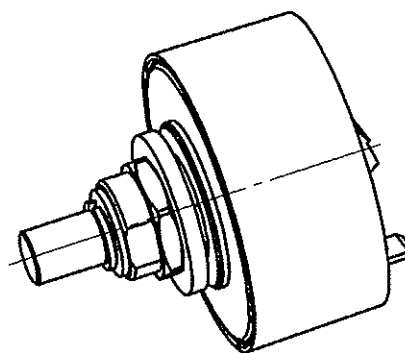
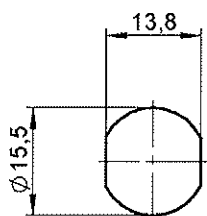
Schraubklemme 7-polig
screw-terminal 7-pin



Schirmanschluss / shield connection



Schalttafel Ausschnitt / panel cut out



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 handwheels HKB meet the EMC protection requirements according to EN 61000-6-2 and EN 61000-6-4.

Handwheels HKB 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.

Pushbutton function

By pressing the handwheel shaft in the axial direction, a pushbutton function is triggered. As a result the digital output OUT is set. This output can be evaluated using a downstream device. The handwheel pulses are not affected by the pushbutton function.

Assembly

 The unit may only be assembled by authorised personnel.



Do not open the handwheels!



Do not throw or drop the handwheels!



Do not hit the handwheels!



Do not use tools on the handwheels!

The handwheel is fitted by means of single-hole bushing mounting (M15).

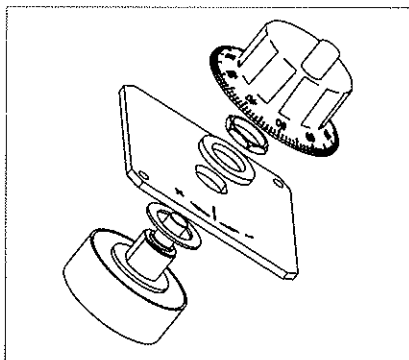



Fig. 1: Handwheel installation

Electrical connection


 Electrical connection may only be performed by authorised personnel trained in EMC with **the machine switched off** and in **de-energised** state.

The machine must be safeguarded against reactivation.

If connected incorrectly, the handwheel may be damaged.

Observe electrical characteristics and the pin assignments (see technical data)

- ▶ Always screen connecting leads.
- ▶ Ground the screen at the end of the lead at a central grounding point, e.g. in the distribution board or in the control cabinet, over a large surface, with low resistance and with low inductance.
- ▶ Connect the screen on the handwheel using a tab connector.
- ▶ Do not install connecting leads in the immediate vicinity of interference sources.
- ▶ When installing connections, the operator must ensure compliance with the EMC safety requirements.

Authorisation according to : operation with power supply of UL-class 2 only, housing type UL-type 1.

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 electrically connected by unauthorised personnel
- ▶ if the units are tampered with

Instructions for counting the handwheel pulses: Handwheel HKB

The following options are recommended for counting the handwheel pulses:

- ▶ suitable counter module
- ▶ phase discriminator

Technical data

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 life, min.		5 x 10 ⁶ revolutions	
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 accordance with EN 60529 / IEC 529	IP 65	
	In accordance with NEMA	250-12	
EMC protection requirements in acc. with CE		EN 61000-6-2, EN 61000-6-4	
Pushbutton function			
Mechanical life, min.		1 x 10 ⁶ actuations	
Actuating travel		0,3 ... 0,7 mm	
Specification output OUT		Output stage	
	A05 / G05		A12 / G12 / G24
Operating voltage U _e	DC 5 V ± 5 %		DC 10 ... 30 V
Output voltage	HIGH (I), min.	4,0 V / 0 mA	
		3,4 V / 5 mA	
		3,0 V / 20 mA	
LOW (O), max.	1,3 V / 15 mA		U _e - 3 V / 20 mA
			3 V / 20 mA

Output circuit

Push-pull

Output stage	G05	G12	G24	
Output signals	A, B			
Operating voltage U _e	DC 5 V ± 5 %	DC 10 ... 30 V		
Operating current, no load, max.	80 mA			
Output specifications				
Output voltage	HIGH (I), 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 _e - 3 V / 20 mA
LOW (O), max.	1,3 V / 15 mA	1,3 V / 15 mA	3 V / 20 mA	
Output current per output, max.	20 mA			
Output signals				

Pin assignment

Screw terminal 7-pole
Wire cross-section
0,08² ... 1,5²
(AWG 22 ... 16)
Tightening torque
max. 0,25 Nm
It is necessary to use
copper conductors with
temperature resistance
of 75 °C



Output circuit

RS422

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

Pin assignment

Screw terminal 7-pole
Wire cross-section
0,08² ... 1,5²
(AWG 22 ... 16)
Tightening torque
max. 0,25 Nm
It is necessary to use
copper conductors with
temperature resistance
of 75 °C

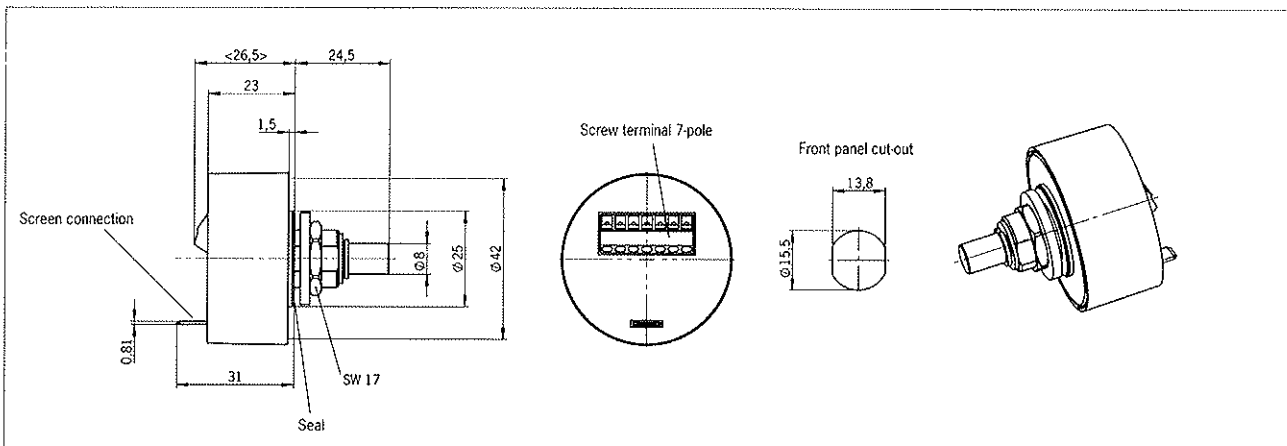
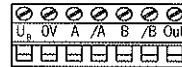


Fig. 2: Dimension drawing of handwheel HKB with pushbutton function