

CESI



DESCRIPTION

Electronic impulse rotary encoder for a cost effective quick and simple adjustment of digital values. In special with wear-free magnetic detent and rest. The direction indication is guaranteed by two separate A/B outputs and an additional signal for right and left rotation.

CESI is in many different versions available, e.g. with 16, 24 or 32 pulses per revolution, a plastic or metal shaft and for direct soldering to printed circuits or for connection with a flat wire.

TECHNICAL DATA

CONSTRUCTION AND MECHANICAL DATA

DETENT ANGLE	22,5° / 15° / 11,25°	
DETENT GRADUATION PER REVOLUTION	16 / 24 / 32	
MOUNTING	central mounting	
PROTECTION CLASS	IP54 or IP65	
DETENT MECHANISM	magnetic	
DETENT TORQUE WITH INDEX	normal	watertight
16 DETENTS	ca. 0,70 Ncm	ca. 0,85 Ncm
24 DETENTS	ca. 0,60 Ncm	ca. 0,70 Ncm
32 DETENTS	ca. 0,45 Ncm	ca. 0,55 Ncm
BEARING	friction	
OPERATING FORCE SWITCH	2 to 8 N	
OPERATING PATH SWITCH	approx. 0,2 - 0,3 mm to activate	
FASTENING TORQUE MAX.	3,5 Nm	
MAX. LOAD ON SHAFT	axial: tbd. radial: tbd.	
LIFE EXPECTANCY	> 2 x 10 ⁶ turns	
REVOLUTION SPEED MAX.	1.000 rpm	
SHAFT LENGTH	customizable (standard a=20mm)	
SHAFT DESIGN	customizable (standard round)	
THREAD LENGTH	Version K: approx. 6,6 mm Version T: approx. 11,9 mm	
PUSHBUTTON / SWITCHING FUNCTION	available	
ROHS AND REACH	conform	

ELECTRICAL DATA

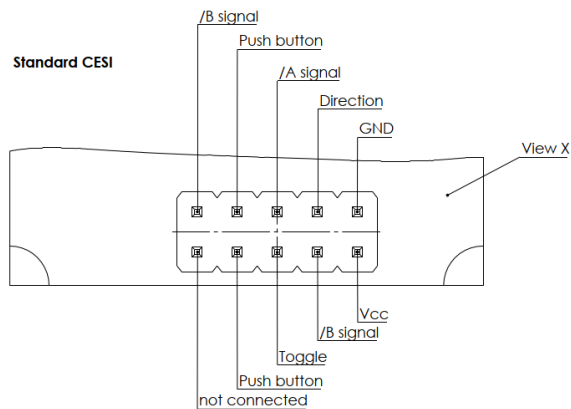
OPERATION VOLTAGE	5 VDC (version H, L, C) or 24 VDC (version G, V)
CURRENT CONSUMPTION	5V types: typ. 8 mA (H, L) 5V low power: typ. <1 mA (C) 24V types: typ. 12 mA (G, V)
CONTACT RATING SWITCH	pushbutton available for version L, V, C min. load 5 VDC, 1 mA / max. 24 VDC, 50 mA electrically isolated
INDICATOR OF REVOLUTION DIRECTION	two independent outputs (A/B signal) direction output
OUTPUT SIGNAL	/A, /B pulses + toggle + direction (standard) or handwheel signals A, B, /A, /B TTL compatible; lowsignal ~ 0V / highsignal ~ U _B pushbutton switch (version L, V, C)
IMPULSES PER REVOLUTION	16 / 24 / 32
CONNECTOR	customizable or direct soldering via pin strip

ENVIRONMENTAL CONDITIONS

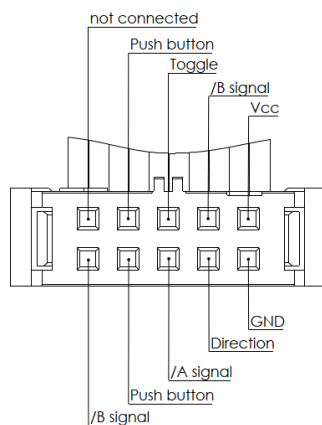
OPERATING TEMPERATURE	-20°C to +70°C
STORAGE TEMPERATURE	-25°C to +70°C
SOLDERING TIME AND TEMPERATURE	max. 5 s at 260°C

DRAWINGS / OTHER INFORMATION

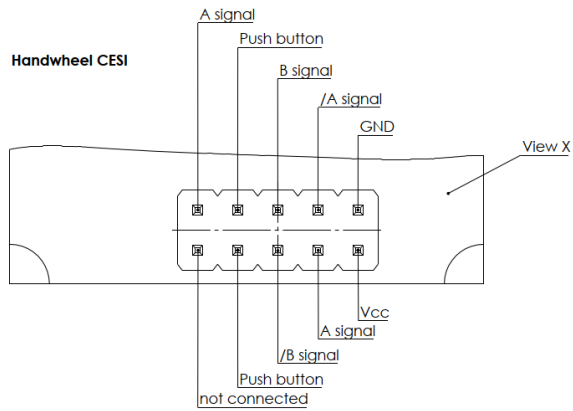
PINOUT FOR STANDARD CESI WITH /A, /B, TOGGLE AND DIRECTION SIGNAL



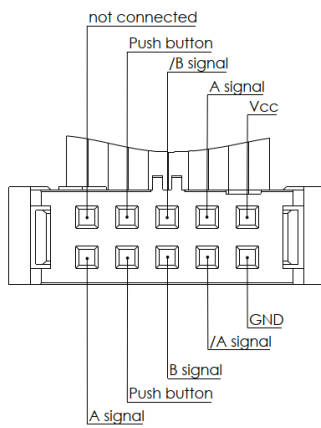
Cable PINOUT, if cable is additional ordered.



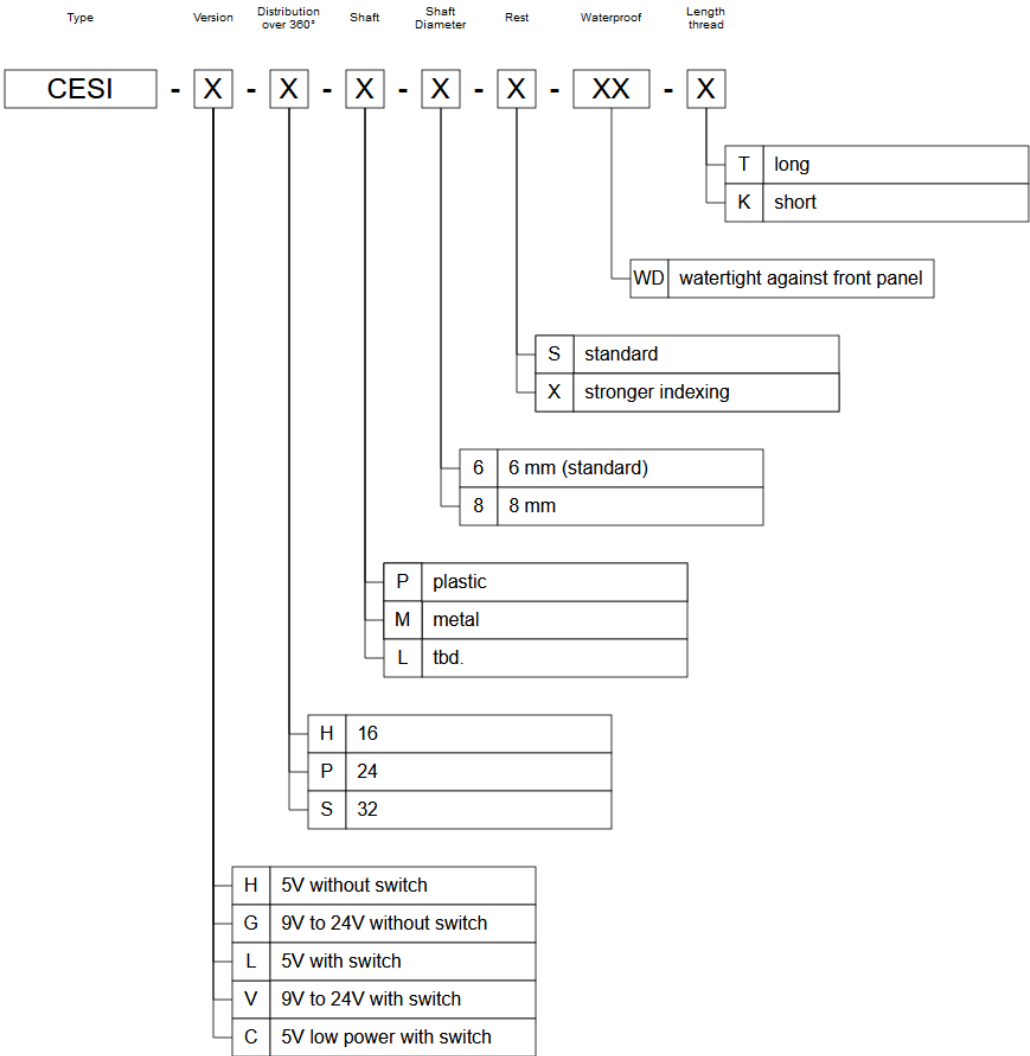
PINOUT FOR HANDWHEEL CESI WITH A, B, /A AND /B SIGNAL



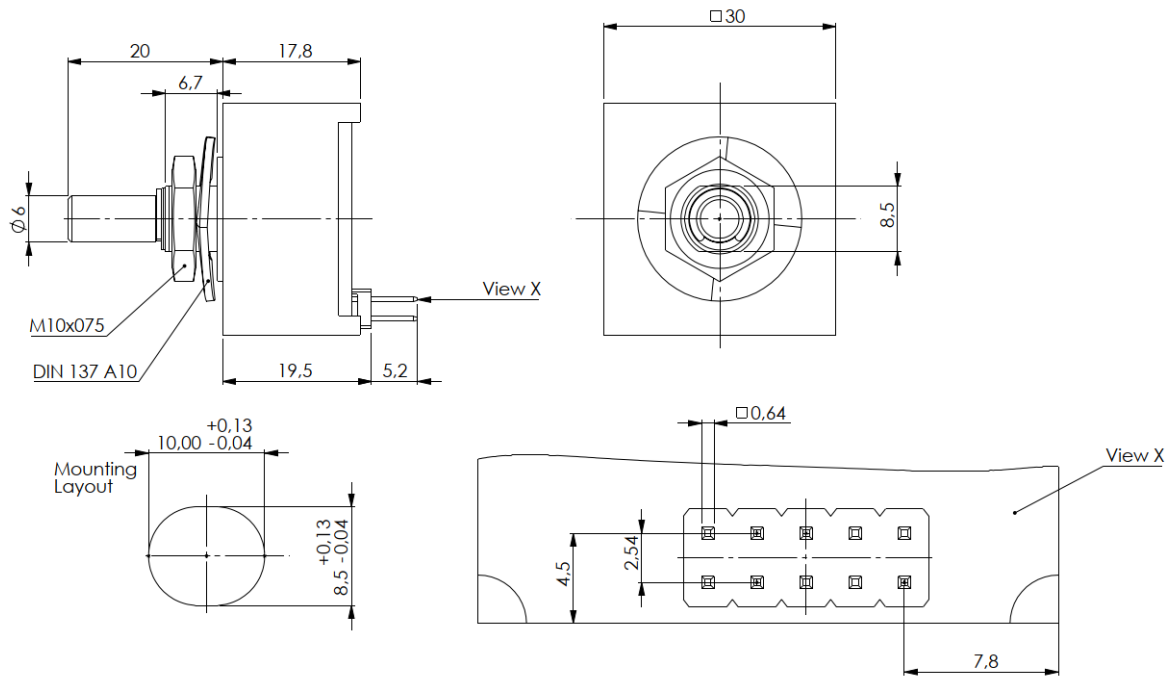
Cable PINOUT, if cable is additional ordered.



ORDERING CODE

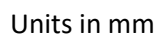


CESI DRAWING WITH THREAD LENGTH VERSION K



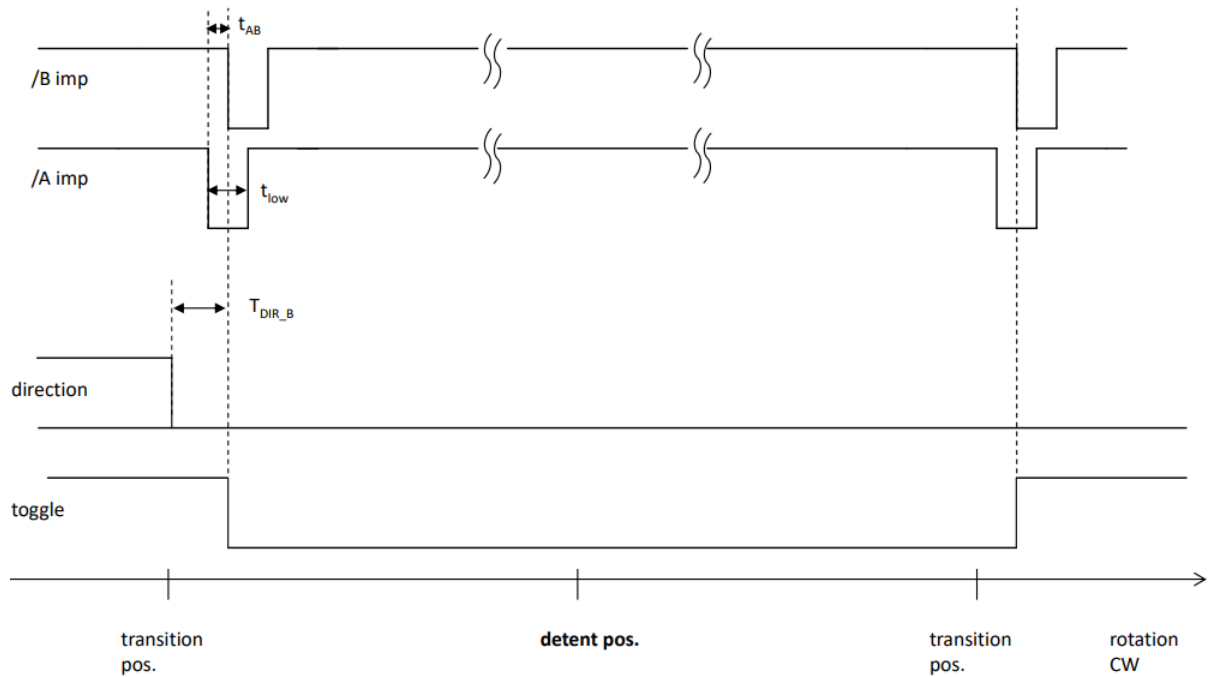
Units in mm

a utility model or



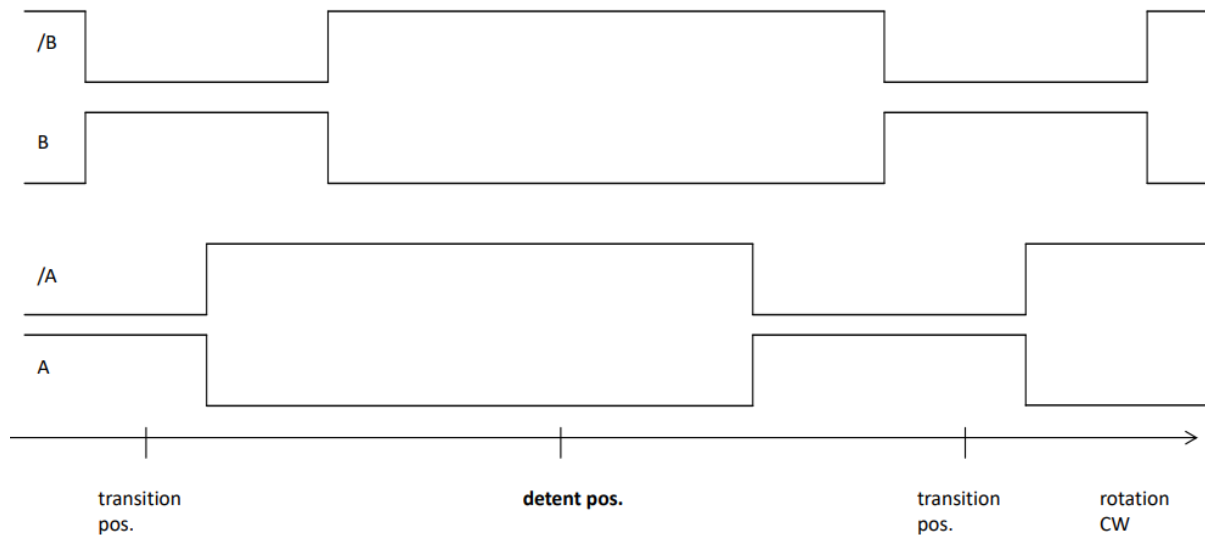
OUTPUT SIGNALS

CESI STANDARD



SYMBOL	CHARACTERISTIC	VALUE
t_{low}	Duration of low status of $/A_{imp}$ and $/B_{imp}$	$380 \mu s \pm 10\%$
t_{AB}	Delay $/A_{imp} \rightarrow /B_{imp}$ (CW) Delay $/B_{imp} \rightarrow /A_{imp}$ (CCW)	$190 \mu s \pm 10\%$
t_{DIR_B}	Delay direction $\rightarrow$ falling edge of $/B_{imp}$	$380 \mu s \pm 10\%$

CESI HANDWHEEL



SAFETY AND WARNING NOTES

The components are solely for use by technically qualified, professional electronics experts who are familiar to the dangers and application risks associated with handling electrical mechanical components, systems and subsystems. User assumes all responsibility and liability for proper and safe handling and use and agrees with the restrictions and disclaimer at the end of this document.

DISCLAIMER

The information contained in this document is for general guidance only. The user is responsible for determining the suitability of the technical information referred herein for his application. On delivery of the component, EBE is only obliged to implement those properties set out and agreed upon in this document. Further properties are not included. No guarantee is given. The component has been designed for installation in our customer's products. Manufacturer of the resulting product and consequent liability according to the Product Liability Act lies with the customer. Warranty is limited to below mentioned extent.

The component is not intended for installation in end products for medical, life-saving, or safety-related applications. The use of the component is also not permitted and expressly prohibited in vehicles of any kind (including trailers and watercraft), as a component in aerospace products (including radio transmitter for aerospace purposes), or in offshore structures.

User assumes all responsibility and liability to determine whether the component is subject to any applicable international, federal, state, or local laws and regulations related to user's handling and use of the component and, if applicable, user assumes all responsibility and liability for compliance in all respects with such laws and regulations.

Disclaimer for improper use

The manufacturer accepts no liability for damage resulting from improper, inappropriate, or non-compliant use of the component. Any liability for direct or indirect damage, consequential damage or loss resulting from improper use is excluded. The Customer (user) is obliged to use the component exclusively in accordance with the instructions and information given in this document.

The limitation of liability described above does not apply in the case of mandatory statutory liability such as under the German Product Liability Act (Produkthaftungsgesetz) or in the case that a guarantee is given or in the case of willful deceit or fraudulent misrepresentation or with regard to claims for an injury of the life or limb or health or in the case of intentional or grossly negligent breach of fundamental contractual duties ("wesentliche Vertragspflichten").

REVISION

REVISION	DATE	DESCRIPTION
1.1	07.05.2026	Update legal notices
1.0	05.05.2023	Initial Data Sheet CESI