

## 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 <sup>6</sup> 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

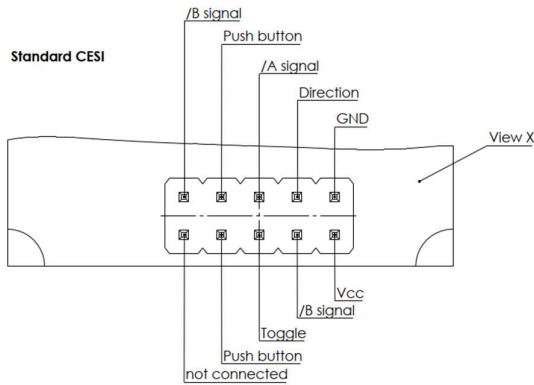
OPERATION VOLTAGE	5 VDC (version H, L, C) or 24 VDC (version G, V)
CURRENT CONSUMPTION	5V types: typ. 8 mA (H, L) 5V low power: typ. <1 mA (C) 24V types: typ. 12 mA (G, V)
CONTACT RATING SWITCH	pushbutton available for version L, V, C min. load 5 VDC, 1 mA / max. 24 VDC, 50 mA electrically isolated
INDICATOR 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; low signal ~ 0V / high signal ~ U <sub>B</sub> pushbutton switch (version L, V, C)
IMPULSES PER REVOLUTION	16 / 24 / 32
CONNECTOR	customizable or direct soldering via pin strip

## ENVIRONMENTAL CONDITIONS

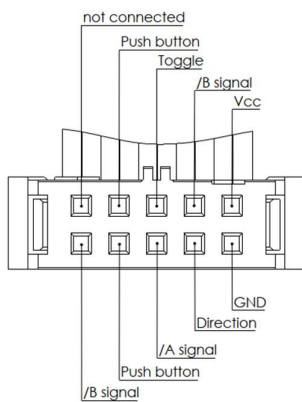
OPERATING TEMPERATURE	-20°C to +70°C
STORAGE TEMPERATURE	-25°C to +70°C
SOLDERING TIME AND TEMPERATURE	max. 5 s at 260°C

## DRAWINGS / OTHER INFORMATION

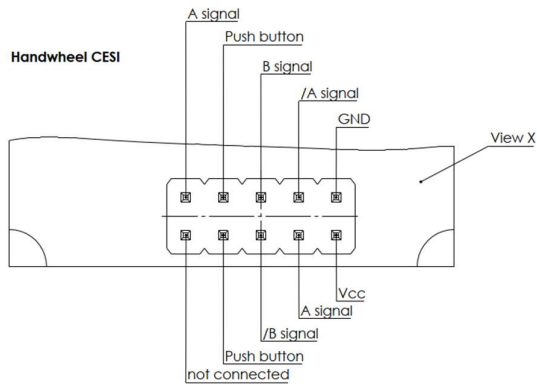
### PINOUT FOR STANDARD CESI WITH /A, /B, TOGGLE AND DIRECTION SIGNAL



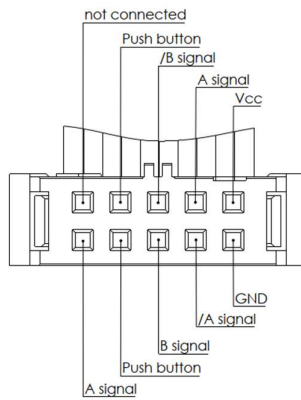
Cable PINOUT, if cable is additional ordered.



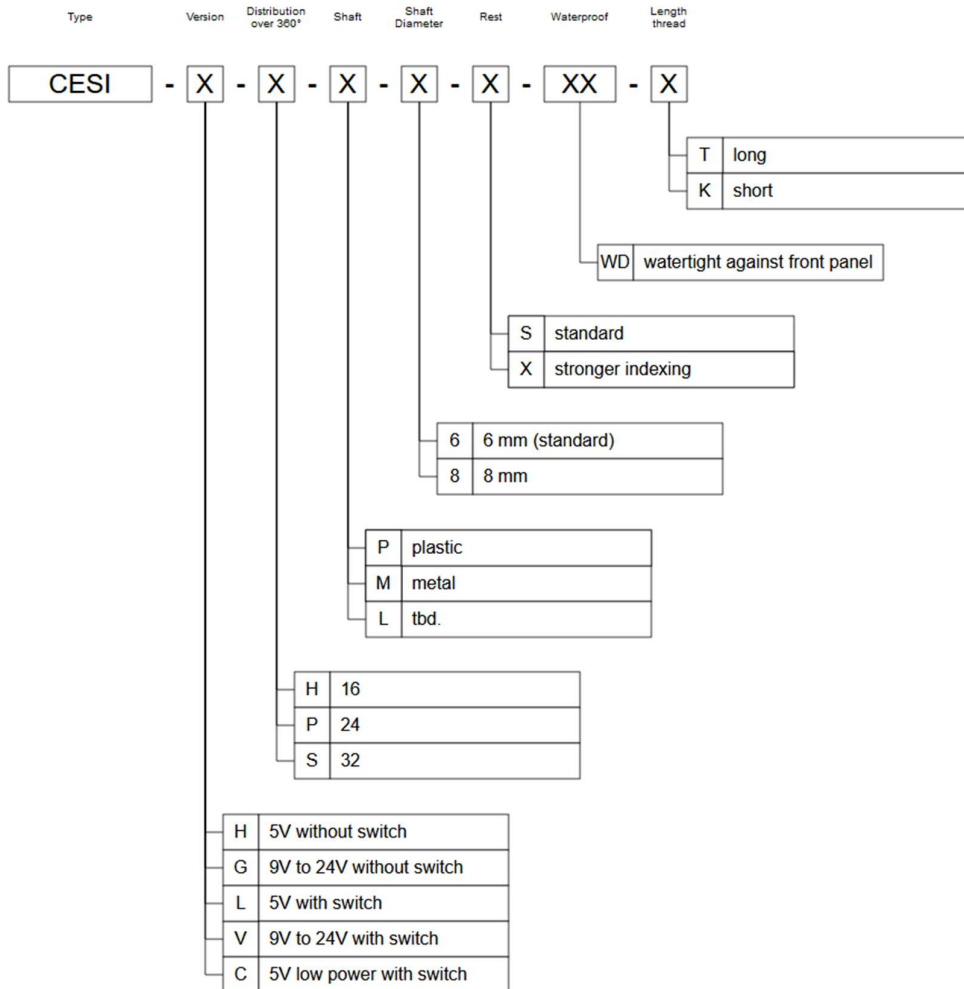
## PINOUT FOR HANDWHEEL CESI WITH A, B, /A AND /B SIGNAL



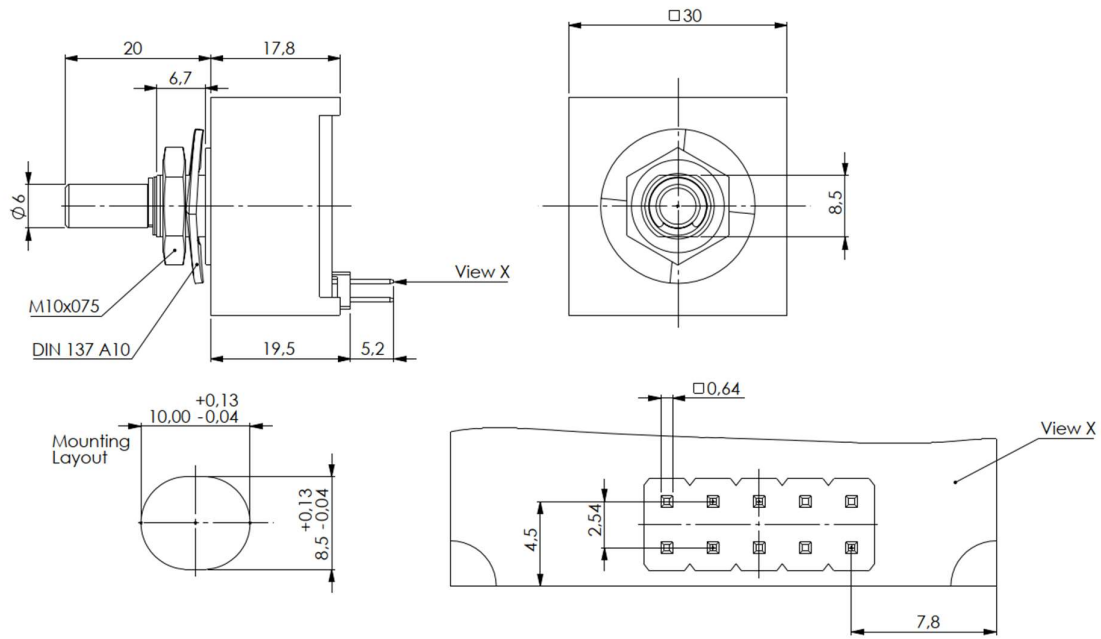
Cable PINOUT, if cable is additional ordered.



## ORDERING CODE

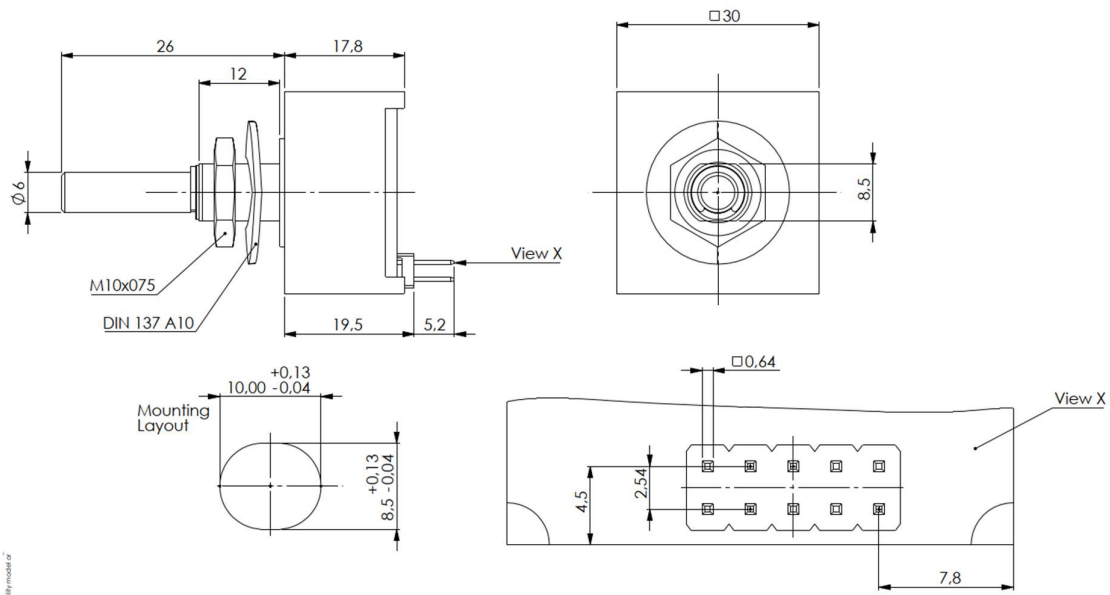


CESI DRAWING WITH THREAD LENGTH VERSION K



Units in mm

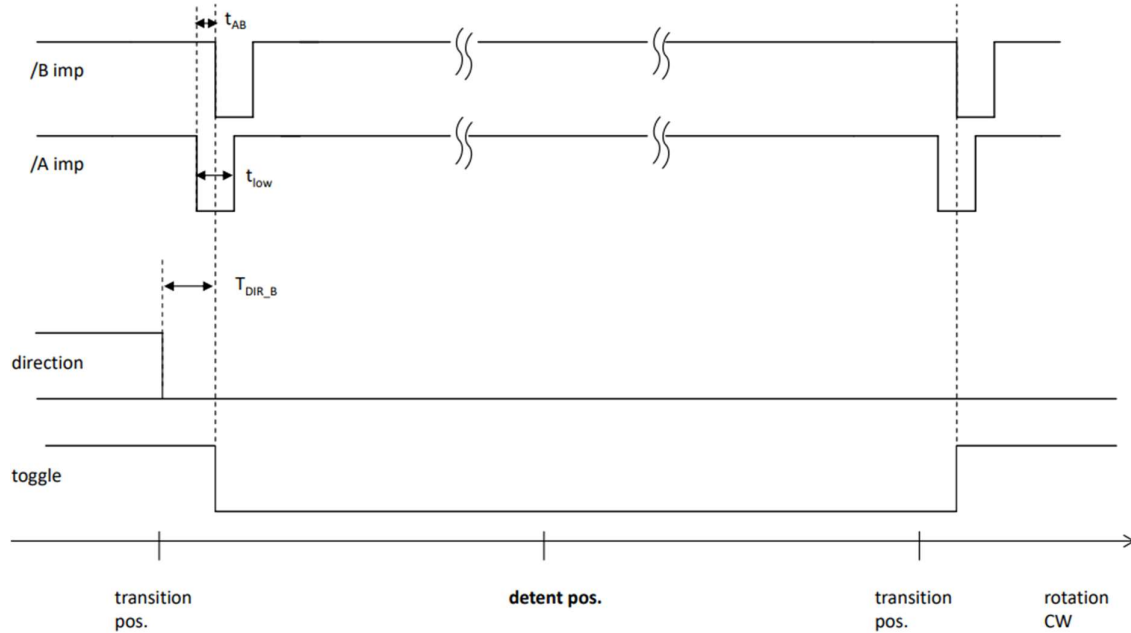
## CESI DRAWING WITH THREAD LENGTH VERSION L



Units in mm

## OUTPUT SIGNALS

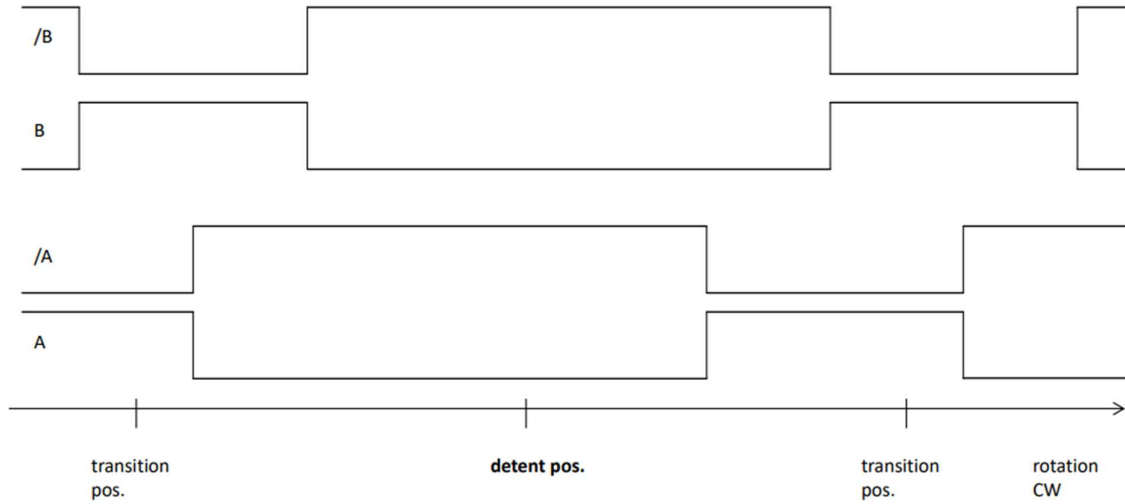
### CESI STANDARD



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



## 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 to herein for his application. On delivery of the component, EBE is only obliged to implement those properties set out and agreed upon in this technical data sheet. 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.

## REVISION

REVISION	DATE	DESCRIPTION
1.0	05.05.2023	Initial Data Sheet CESI