

# Position displays

**LCD position displays**      **Phase discriminator (quadrature) x1 and x2 evaluation**      **Codix 133**



The Codix 133 is a simple battery-powered position display with a phase discriminator (quadrature) counting input. NPN and PNP pulses can be shown on the 8-digit LCD display that is also available with optional backlighting.



Battery powered	Type of input	Phase discriminator	Pulse voltage 4 ... 30 V	Max. count frequency 6 kHz	Temperature range -10°... +60°C	High protection level	DIN front bezel	LCD display	Lockable reset

### Powerful

- High quality 8-digit LCD display with 8 mm high figures with optional backlighting.
- Counting modes include phase discriminator (quadrature) counting (also with pulse doubling) for connection to incremental encoders.
- Battery life approx. 8 years.
- Count frequency max. 6 kHz.
- High protection level IP65.

### Simple

- Screw terminals, RM 5 mm.
- Reset key can be enabled via "Reset Enable" input.
- For positive or negative counting edge, depending on version.

**Order code**      **6.133 . 012 . 8XX**

**a** Backlighting  
5 = without  
6 = with

**b** Count input (input type: NPN/PNP<sup>2)</sup>)

Input type	INP A			INP B				
0 = Quad/Quad2 <sup>1)</sup>	0 ... 0.7 V DC	channel A	NPN	3 kHz	0 ... 0.7 V DC	channel B	NPN	3 kHz
1 = Quad/Quad2 <sup>1)</sup>	4 ... 30 V DC	channel A	PNP	6 kHz	4 ... 30 V DC	channel B	PNP	6 kHz

#### Delivery specification

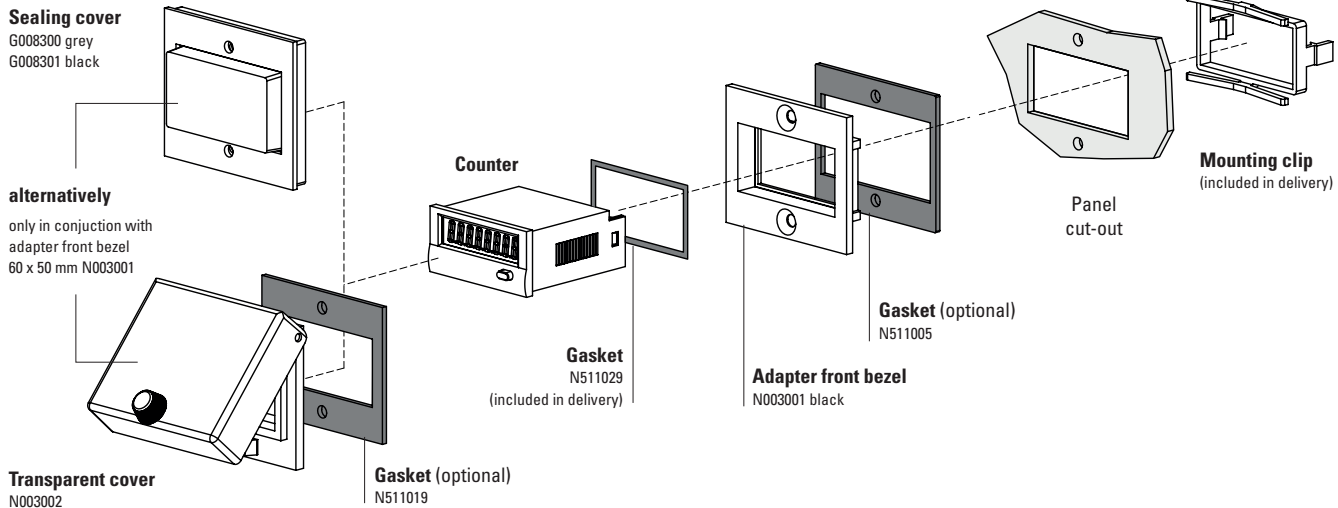
- Counter
- Mounting clip
- Front bezel for screw mounting (T008181) 56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Front bezel for clip mounting (T008180) 53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Gasket
- Instruction manual, multilingual

1) Phase discriminator for incremental encoders with x1 / x2 evaluation

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### Accessories / Mounting examples



		Type / size	Description		Order no.	suitable gasket
<b>Adapter front bezel</b>		<b>53 x 28 mm</b> [2.09 x 1.10"]	for cut-out 50 x 25 mm [1.97 x 0.98"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	black anthracite	<b>T008165</b> <b>T008180</b>	<b>N511015</b>
		<b>56 x 40 mm</b> [2.20 x 1.57"]	for cut-out 50 x 25 mm [1.97 x 0.98"] to cut-out 45 x 22.2 mm [1.77 x 0.94"] screw mounting	black anthracite	<b>T008161</b> <b>T008181</b>	<b>N511045</b>
		<b>72 x 36 mm</b> [2.83 x 1.42"]	for cut-out 68 x 33 mm [2.68 x 1.30"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	black and silver anodised as set	<b>162704Set</b>	–
		<b>60 x 50 mm</b> [2.36 x 1.97"]	for cut-out 54 x 29 mm [2.13 x 1.14"] to cut-out 45 x 22.2 mm [1.77 x 0.94"] screw mounting	black	<b>N003001</b>	<b>N511005</b>
		<b>48 x 48 mm</b> [1.89 x 1.89"]	for cut-out 45 x 45 mm [1.77 x 1.77"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	black	<b>T008883</b>	–
<b>Sealing cover IP65</b>		<b>K1</b>	only in conjunction with adapter front bezel 60 x 50 mm N003001	transparent / grey transparent / black	<b>G008300</b> <b>G008301</b>	–
<b>Transparent cover IP65</b>		<b>1 Dv</b> (mounted on bezel)	cover lockable, for cut-out 54 x 29 mm [2.13 x 1.14"], only in conjunction with adapter front bezel 60 x 50 mm N003001	transparent / black	<b>N003002</b>	<b>N511019</b>
<b>Gasket counter</b>			48 x 24 mm (for installation in adapter front bezel) 49 x 25 mm		<b>N511029</b> <b>N511034</b>	
<b>Mounting frame</b>		<b>cut-out</b> <b>50 x 25 mm</b> [1.97 x 0.98"]	via adapter T008180 for snap-on mounting on 35 mm [1.38"] top-hat DIN rail	chromated	<b>G300004</b>	–
<b>Enclosure blind</b>		<b>48 x 24 mm</b> [1.89 x 0.94"]	for cut-out 45 x 22.2 mm [1.77 x 0.94"] and cut-out 50 x 25 mm [1.97 x 0.98"]	anthracite	<b>G003836</b>	–

incl. in delivery

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### Technical data

General technical data	
Display	LCD, 8 digits, 8 mm [0.32"] high
Backlighting	external electrical source 24 V DC $\pm 20\%$ , 50 mA
Modes	phase discriminator x1 or x2 evaluation selectable
Display range	-9999999 ... 99999999, with overflow display
Reset	manual and electrical
Working temperature	-10 °C ... +55 °C [+14 °F ... +131 °F] (non-condensing)
Operating temperature	-10 °C ... +60 °C [+14 °F ... +140 °F] (non-condensing)
Storage temperature	-20 °C ... +70 °C [-4 °F ... +158 °F]
Relative humidity	< 85 % (non-condensing)
Altitude	up to 2000 m [6562']

Electrical characteristics	
Supply voltage	internal lithium battery approx. 8 years at 20 °C [68 °F]

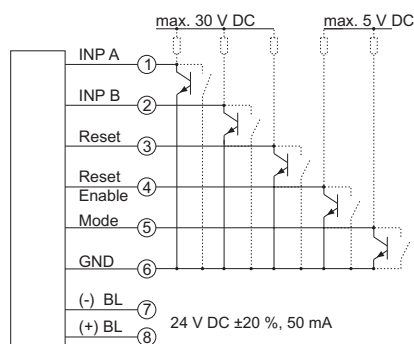
Mechanical characteristics	
Housing	dark grey RAL 7021
Protection	IP65 (front side)
Weight	approx. 50 g [1.76 oz]

Counting inputs	
<b>Fast counting input</b>	max. 6 kHz (PNP), 3 kHz (NPN)
Switching level NPN	LOW 0 ... 0.7 V HIGH 3 ... 30 V DC
Switching level PNP	LOW 0 ... 0.7 V HIGH 4 ... 30 V DC
Switching	x1 or x2 evaluation can be set via the mode input
<b>Switching (mode)</b>	Open Collector NPN (switching at 0 V DC)
Switching level NPN	LOW 0 ... 0.7 V HIGH 3 ... 5 V DC
<b>Reset input</b>	
Minimum pulse time	DC 50 ms high voltage 16 ms
Contact input DC – NPN	LOW 0 ... 0.7 V HIGH 3 ... 30 V DC
<b>Electrical reset key locking</b>	Open Collector NPN (switching at 0 V DC)
Switching level – NPN	LOW 0 ... 0.7 V HIGH 3 ... 5 V DC

Approvals	
<b>UL compliant</b> in accordance with	File no. E128604
<b>CE compliant</b> in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
Low Voltage Directive	2014/35/EU

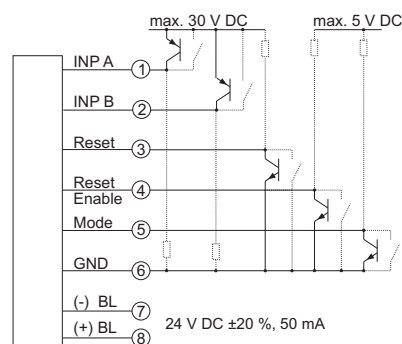
### Terminal assignment

DC type: 6.133.012.8x0



BL = backlighting

DC type: 6.133.012.8x1

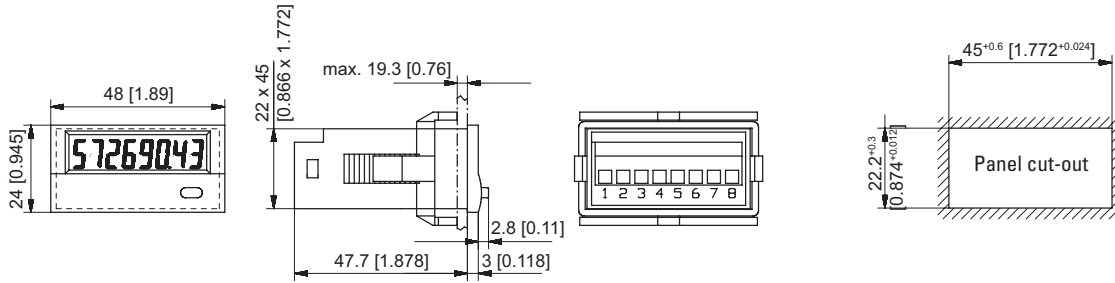


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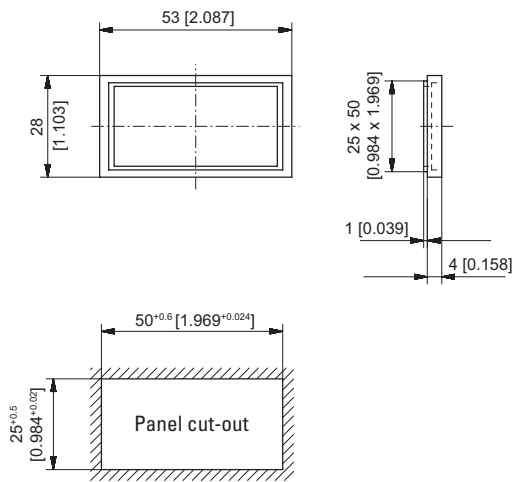
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### Dimensions

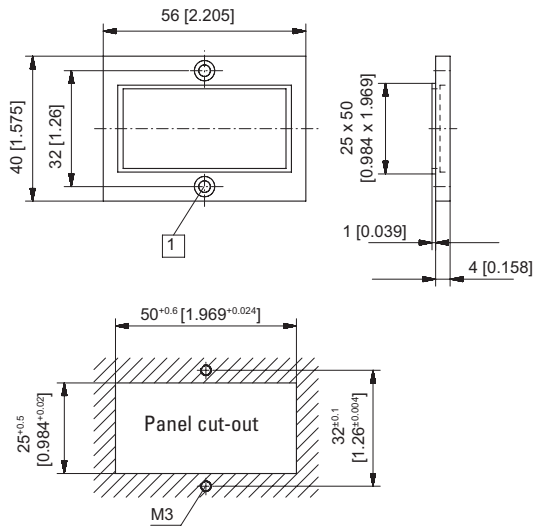
Dimensions in mm [inch]



### Front bezel for clip mounting (included in delivery)



### Front bezel for screw mounting (included in delivery)



1 Countersinking Af3, DIN 74