

Pulse counters, electronic

LED pulse counters	6 count modes (DC)	Codix 521
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The Codix 521 is a voltage powered pulse counter / position display for fast and slow count pulses, with 6-digit LED display for NPN, PNP input signals.

Equipped with 4 count input modes: count direction, difference, addition, quadrature (phase discriminator) x1, x2 and x4.



DC 10 ... 30V	 DIN 48 x 24	 - 20° + 65°	 IP65	 Menu-driven programming	 max. 60 kHz	 POSITION	 1 2 1	 1 2 1	 1 3 4	 1 1 2 2 3 4
Power supply	DIN front bezel	Temperature range	High protection level	Menu-driven programming	Pulse counter/ Totalizer	Position display	Count with direction (DIR)	Differential count (up.dn)	Add/Add count (up.up)	Phase discriminator

Powerful

- Fast count input – input frequency max. 60 kHz.
- Robust housing – IP65 protected.
- Very bright LED display, 8 mm high.
- Position, difference, adding or count direction detection
 - programmable for positive (PNP) or OV (NPN) switching input pulses.
 - fast count input with an input frequency of max. 60 kHz, can be damped to 30 Hz for mechanical contacts.
- Short start-up time – detects input pulses just 16 msec after being switched on => no pulses are lost with a simultaneous motor start-up.

User-friendly

- Large keys – can also be operated when wearing gloves.
- Simple uniform menu-driven programming and operation – possible to enter the programming also during operation with a confirmation prompt.
- Individually programmable scaling: Multiplication and division factor (0.0001...99.9999), to display corresponding engineering units, e.g. position in 1/10 mm or packing units.
- 4 different count input modes: 2-channel count input for detecting count direction, difference or adding mode, quadrature with x1, x2 or x4 evaluation.
- Freely programmable setpoint.
- As an alternative to the HTL inputs, devices are available with a 4 ... 30 V DC input level, for use as parallel displays to PLCs.
- Optional output - as zero signal.

Order code	6.521 . 01 X . 3 X 0
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- a** Output
1 = optocoupler output
2 = no output ¹⁾
- b** Input switching level
0 = Standard (HTL) ¹⁾
A = 4 ... 30 V DC

- 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) Stock types.

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Accessories	Dimensions in mm [inch]	Order no.
Adapter front bezel, 72 x 36 [2.83 x 1.42]	for cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set black and silver anodised	162704 Set
Adapter front bezel, 48 x 48 [1.89 x 1.89]	for cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94] black	T008883
Adapter front bezel, 60 x 50 [2.36 x 1.97]	for cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94] black	N003001
Transparent cover, lockable, IP65	for cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	N003002
Sealing cover type K1, IP65	suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	G008301
Mounting frame with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	for snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94] chromated	G300004

Suitable gaskets, other accessories and installation examples for optional accessories can be found in chapter accessories or in the accessories section under: www.kuebler.com/accessories.

Technical data

General technical data	
Display	6 digits, red 7 segment LED display; 8 mm [0.32"] high
Data backup	EEPROM
Operating temperature	10 ... 26 V DC -20°C ... +65°C [-4°F ... +149°F] > 26 ... 30 V DC -20°C ... +55°C [-4°F ... +131°F] (non-condensing)
Storage temperature	-25°C ... +70°C [-13°F ... +158°F]

Inputs	
Polarity of inputs	programmable, NPN or PNP for all inputs
Input resistance	approx. 5 kΩ
Counting frequency	max. 60 kHz, can be damped to 30 Hz; for position display max. 25 kHz
Minimum pulse duration of the reset input	5 ms
Input switching level (HTL)	LOW 0 ... 0.2 x U _B (V DC) HIGH 0.6 x U _B ... 30 V DC
Input switching level at 4 ... 30 V DC	LOW 0 ... 2 V DC HIGH 4 ... 30 V DC

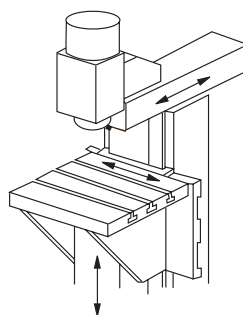
Electrical characteristics	
Power supply	10 ... 30 V DC, with reverse polarity protection
Current consumption	max. 55 mA
EMC standards	EN 55011 class B, EN 61000-6-2, EN 61000-6-3, EN 61326-1
UL approval	file E128604

Mechanical characteristics	
Housing	front panel mount 48x24 mm [1.89 x 0.94"] acc. to DIN 43700; RAL 7021, dark grey
Protection	IP65 (front side)
Weight	approx. 50 g [1.76 oz]
Vibration resistance acc. to EN 60068-2-6	10 ... 55 Hz / 1 mm [0.04"] / 30 min
Shock resistance acc. to EN 60068-2-27	100 G: 2 ms 10 G: 6 ms

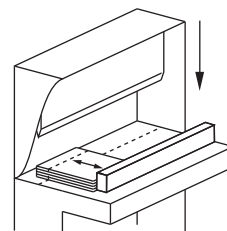
Outputs (optional)	
Optocoupler output	max. 30 V DC, 10 mA

Applications for position displays / totalizers

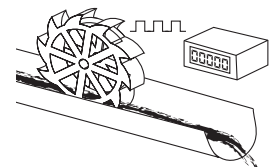
- Positioning tasks on processing machines, such as sawing machines, milling machines, bending and folding machines, etc.
- Production data acquisition by means of piece counting (using difference or adding)
- Totalizing flow, quantity and other scalable media
- Counting tasks such as quantity and piece counting
- Accessories, OEM equipment or retrofitting to production machines
- Piece counting on die cutters, presses, extruders, woodworking machines, drilling machines, pick-and-place machines, guillotines, special-purpose vehicles etc.



Position on milling machine



Position or quantity

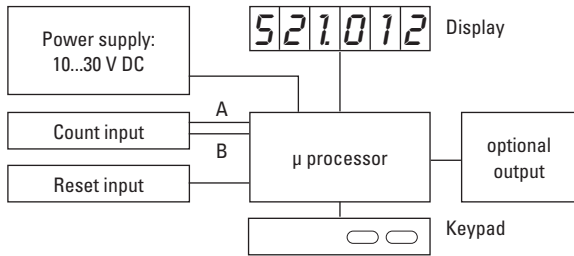


Flow rate

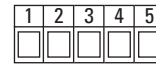
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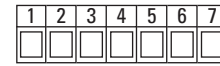
Block diagram



Terminal assignment



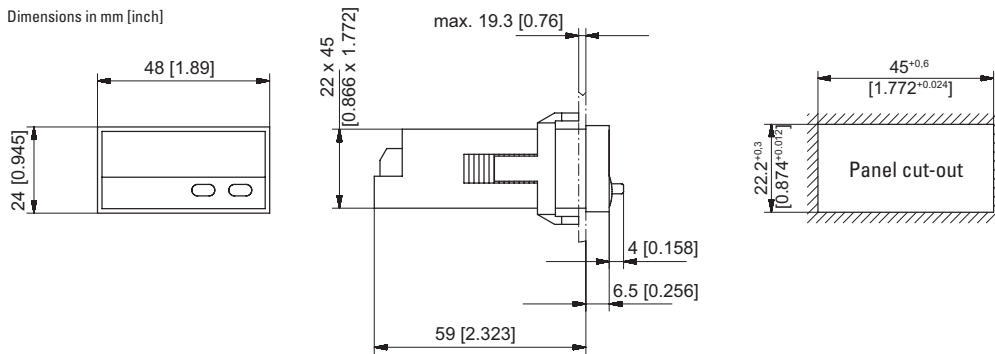
PIN	without optocoupler
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	Reset



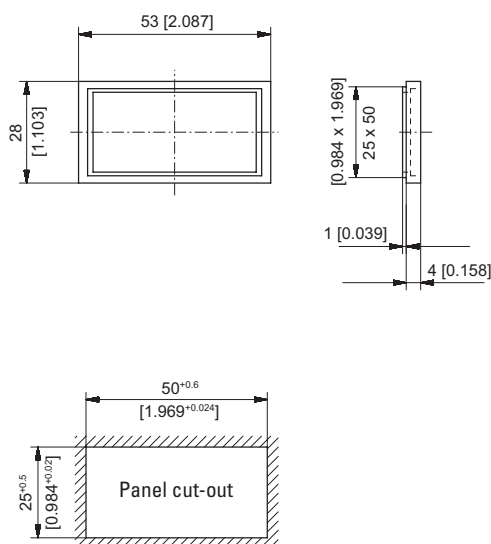
PIN	with optocoupler (NPN)
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	Reset
6	Emitter
7	Collector

Dimensions

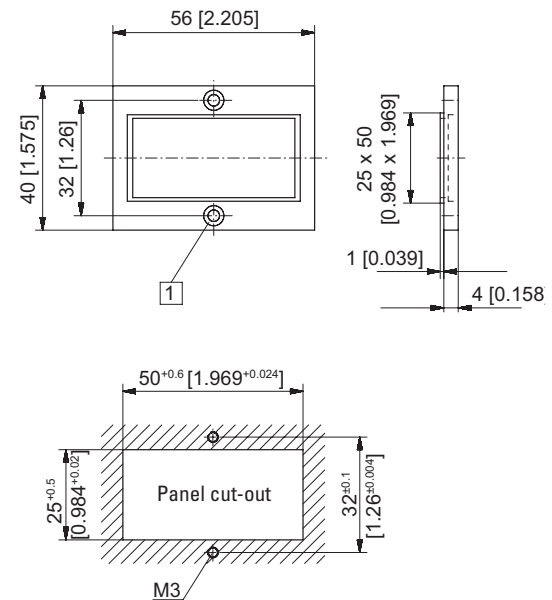
Dimensions in mm [inch]



Front bezel for clip mounting (included in delivery)



Front bezel for screw mounting (included in delivery)



1 Countersinking Af3, DIN 74