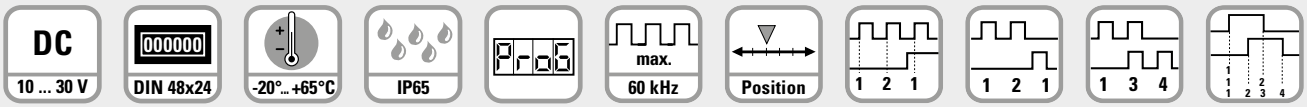
## LED pulse counters | 6 count modes (DC) | Codix 521




**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.**




### 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 (a) | . | 3 | X (b) | 0 |
|---|---|---|---|---|---|---|---|

(a) *Output*
1 = optocoupler output
2 = no output

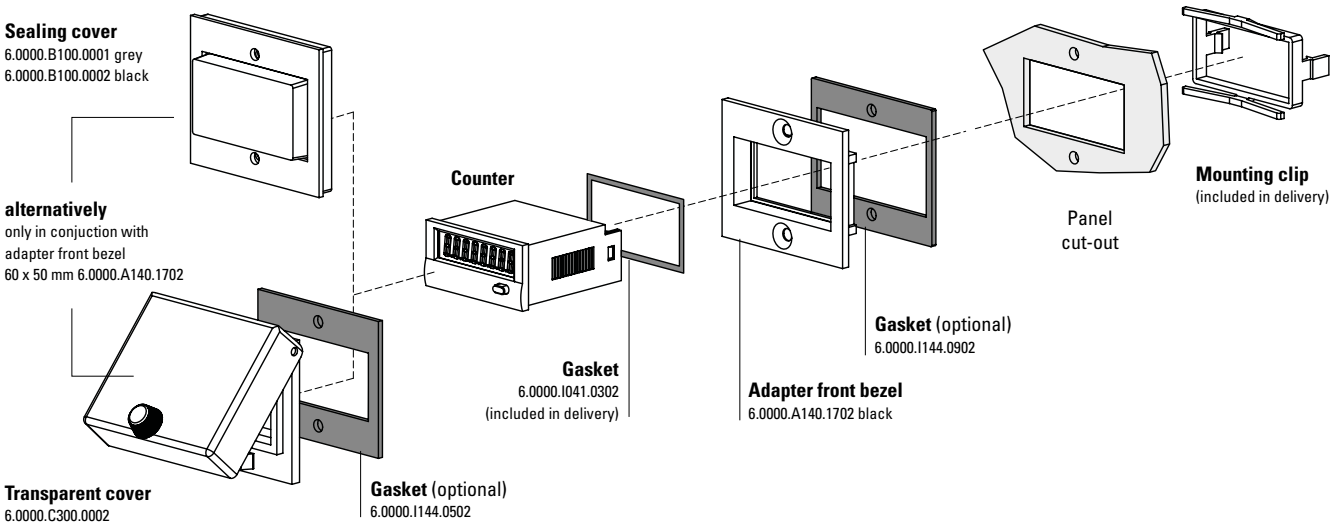
(b) *Input switching level*
0 = Standard (HTL)
A = 4 ... 30 V DC

*Delivery specification*
- Counter
- Mounting clip
- Front bezel for screw mounting (6.0000.A110.0503) 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 (6.0000.A080.0503) 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

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## LED pulse counters | 6 count modes (DC) | Codix 521

### Accessories / Mounting examples




| | | Type / size | Description | | Order no. | suitable gasket |
|---|---|---|---|---|---|---|
| **Adapter front bezel** |  | **53 x 28 mm [2.09 x 1.10"]** | for cut-out 50 x 25 mm [1.97 x 0.98"]<br>to cut-out 45 x 22.2 mm [1.77 x 0.94"] | black<br>anthracite | **6.0000.A080.0502**<br>6.0000.A080.0503 | **6.0000.I082.0502** |
| |  | **56 x 40 mm [2.20 x 1.57"]** | for cut-out 50 x 25 mm [1.97 x 0.98"]<br>to cut-out 45 x 22.2 mm [1.77 x 0.94"]<br>screw mounting | black<br>anthracite | **6.0000.A110.0502**<br>6.0000.A110.0503 | **6.0000.I113.0502** |
| |  | **72 x 36 mm [2.83 x 1.42"]** | for cut-out 68 x 33 mm [2.68 x 1.30"]<br>to cut-out 45 x 22.2 mm [1.77 x 0.94"] | black and silver anodised as set | **6.0000.A210.1802** | – |
| |  | **60 x 50 mm [2.36 x 1.97"]** | for cut-out 54 x 29 mm [2.13 x 1.14"]<br>to cut-out 45 x 22.2 mm [1.77 x 0.94"]<br>screw mounting | black | **6.0000.A140.1702** | **6.0000.I144.0902** |
| |  | **48 x 48 mm [1.89 x 1.89"]** | for cut-out 45 x 45 mm [1.77 x 1.77"]<br>to cut-out 45 x 22.2 mm [1.77 x 0.94"] | black | **6.0000.A040.0402** | – |
| **Sealing cover IP65** |  | **K1** | only in conjuction with adapter front bezel<br>60 x 50 mm 6.0000.A140.1702 | transparent / grey<br>transparent / black | **6.0000.B100.0001**<br>**6.0000.B100.0002** | – |
| **Transparent cover IP65** |  | **1 Dv** (mounted on bezel) | cover lockable,<br>for cut-out 54 x 29 mm [2.13 x 1.14"],<br>only in conjuction with adapter front bezel<br>60 x 50 mm 6.0000.A140.1702 | transparent / black | **6.0000.C300.0002** | **6.0000.I144.0502** |
| **Gasket counter** | | | 48 x 24 mm (for installation in adapter front bezel)<br>49 x 25 mm | | 6.0000.I041.0302<br>6.0000.I063.0302 | |
| **Mounting frame** |  | **cut-out 50 x 25 mm [1.97 x 0.98"]** | via adapter 6.0000.A080.0503<br>for snap-on mounting on<br>35 mm [1.38"] top-hat DIN rail | chromated | **6.0000.F300.0006** | – |
| **Enclosure blind** |  | **48 x 24 mm [1.89 x 0.94"]** | for cut-out 45 x 22.2 mm [1.77 x 0.94"]<br>and cut-out 50 x 25 mm [1.97 x 0.98"] | anthracite | **6.0000.H100.0003** | – |

incl. in delivery


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## LED pulse counters | 6 count modes (DC) | Codix 521

## 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] |

### Electrical characteristics

| | |
|---|---|
| **Supply voltage** | 10 ... 30 V DC, with reverse polarity protection |
| **Current consumption** | max. 55 mA |

### Mechanical characteristics

| | |
|---|---|
| **Housing** | front panel mount 48 x 24 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<br>10 G: 6 ms |

### Inputs

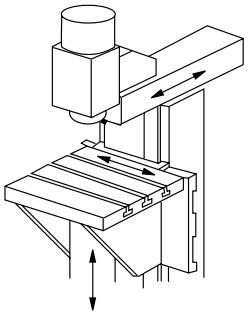
| | | |
|---|---|---|
| **Polarity of inputs** | | programmable, NPN or PNP for all inputs |
| **Input resistance** | | approx. 5 kΩ |
| **Counting frequency** | | max. 60 kHz, can be damped to 30 Hz; for position display max. 25 kHz |
| **Minimum pulse duration of the reset input** | | 5 ms |
| **Input 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 |

### Approvals

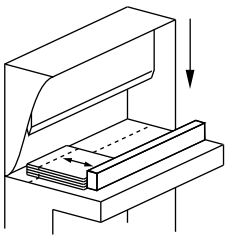
| | |
|---|---|
| **UL compliant** in accordance with | File no. E128604 |
| **CE compliant** in accordance with | |
| EMC Directive | 2014/30/EU |
| RoHS Directive | 2011/65/EU |

### Applications for position displays / totalizers

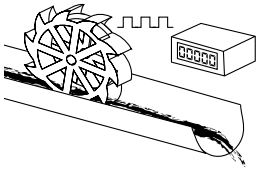
- Positioning tasks on processing machines, such as sawing machines, milling machines, bending and folding machines, etc.
- Production data acquisition by means of piece counting (using difference or adding)
- Totalizing flow, quantity and other scalable media
- Counting tasks such as quantity and piece 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

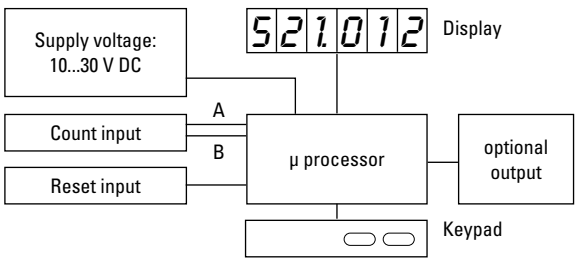


Position or quantity

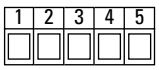


Flow rate

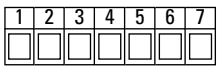
### Block diagram




### Terminal assignment




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



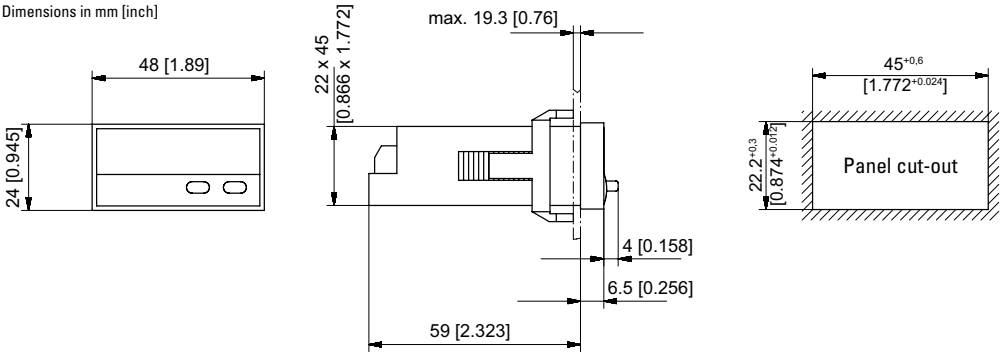

| PIN | with optocoupler (NPN) |
|---|---|
| 1 | 10 ... 30 V DC |
| 2 | 0 V GND |
| 3 | INP A |
| 4 | INP B |
| 5 | Reset |
| 6 | Emitter |
| 7 | Collector |

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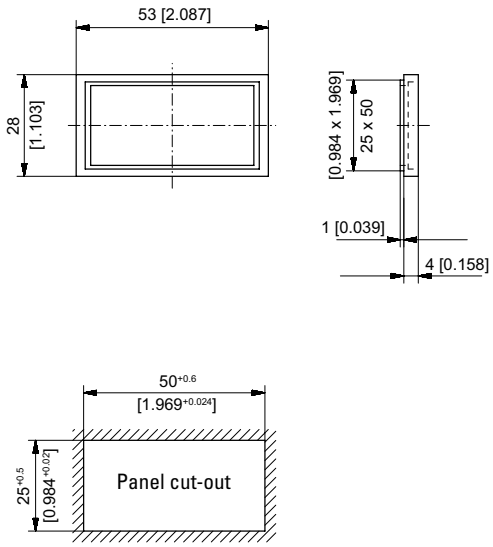
**LED pulse counters** | **6 count modes (DC)** | **Codix 521**

## Dimensions

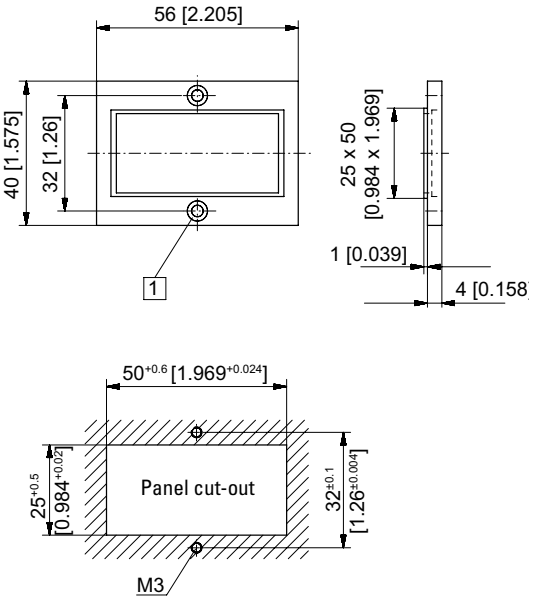
Dimensions in mm [inch]




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




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




1 Countersinking Af3, DIN 74


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