Multifunction devices, electronic

LED dual function displays	6 count modes with tachometer (DC)	Codix 52P

The Codix 52P is a voltage-powered pulse counter/ position display with 4 different count input modes and separate tachometer.

With separate inputs, for fast and slow count pulses, with 6-digit LED display for NPN, PNP input signals.

DC 10 ... 30 V	**DIN 48x24**	-20°... +65°C	**IP65**	**ProG**	**max. 30 kHz**	**1/sec - 1/min**	**Position**	**t / Hz HRA**
Supply voltage	DIN front bezel	Temperature range	High protection level	Menu-driven programming	Pulse counter/ Totalizer	Frequency meter/ tachometer	Position display	Frequency meter HRA

Powerful

- Fast count and frequency input – input frequency max. 30 kHz (can be damped to 30 Hz for mechanical contacts).
- Robust housing – IP65 protected.
- Very bright LED display, 8 mm high, 6 digits.
- Very accurate precise frequency measurement principle (HRA-High Rate Accuracy System)
  Frequencies up to 38 Hz are calculated using time-interval (period duration) measurement. Frequencies > 38 Hz are calculated using a special time base (gate time) measurement. A very high accuracy of < 0.1 % is achieved, even with very short gate times. The resulting measurement is available after a max. of 50 ms.
- 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 and universal

- Large keys – can also be operated when wearing gloves.
- Programming:
  - Simple uniform menu-driven programming and operation.
  - Possible to enter the programming also during operation with a confirmation prompt.
  - Pressing the right key switches between displays.
- Individually programmable scaling:
  multiplication and division factor (0.0001…99.9999), to display corresponding engineering units, e.g. position in 1/10 mm and speed in RPM.
- Separate factors for frequency- and pulse counting.
- 4 different count input modes for the position display:
  2-channel input for detecting count direction, difference or adding mode, quadrature x1, x2 or x4. 1 separate input for rotary speed and speed, display in 1/min or 1/sec.
- Inputs: 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.

Order code

6.52P	.	0	1	2	.	3	X	0
								ⓐ

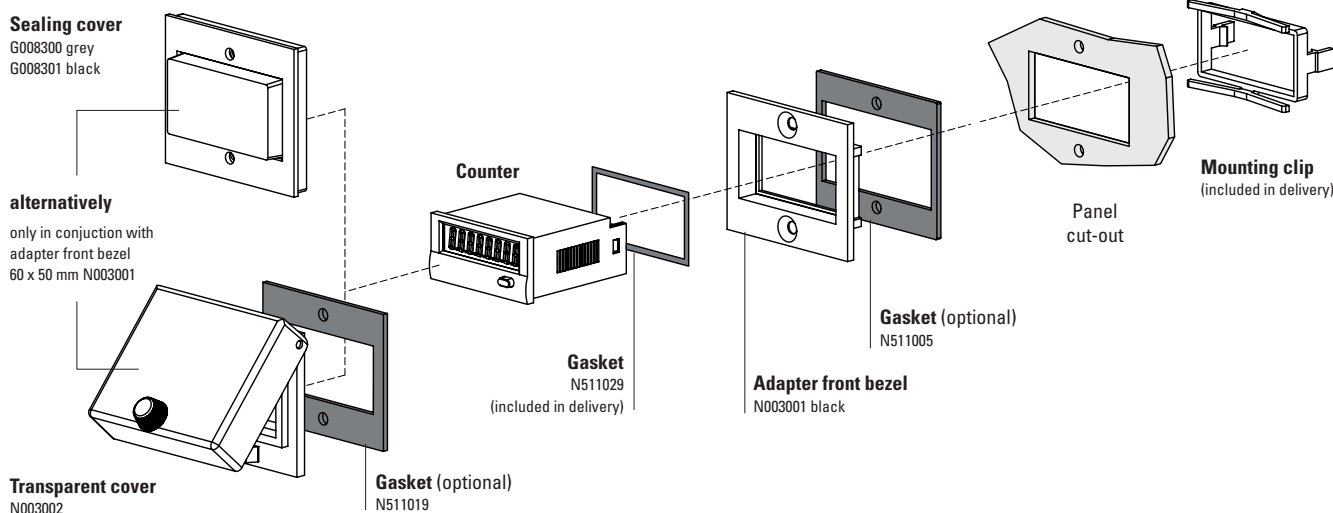**ⓐ** *Input switching level*
0 = Standard (HTL)
A = 4 … 30 V DC

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

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Accessories / Mounting examples

Sealing cover
G008300 grey
G008301 black

alternatively

only in conjuction with
adapter front bezel
60 x 50 mm N003001

Transparent cover
N003002

Counter

Gasket
N511029
(included in delivery)

Gasket (optional)
N511019

Gasket (optional)
N511005

Adapter front bezel
N003001 black

**Panel
cut-out**

Mounting clip
(included in delivery)

		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"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	grey	T008164		N511015
				black	T008165		
				anthracite	T008180		
		56 x 40 mm [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	T008161		N511045
				anthracite	T008181		
		72 x 36 mm [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	162704Set		–
		60 x 50 mm [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	N003001		N511005
		48 x 48 mm [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	T008883		–
Sealing cover IP65		**K1**	only in conjuction with adapter front bezel 60 x 50 mm N003001	transparent / grey	G008300		–
				transparent / black	G008301		
Transparent cover IP65		**1 Dv** (mounted on bezel)	cover lockable, for cut-out 54 x 29 mm [2.13 x 1.14"], only in conjuction with adapter front bezel 60 x 50 mm N003001	transparent / black	N003002		N511019
Gasket counter			48 x 24 mm (for installation in adapter front bezel)		N511029		
			49 x 25 mm		N511034		
Mounting frame		**cut-out 50 x 25 mm [1.97 x 0.98"]**	via adapter T008180 for snap-on mounting on 35 mm [1.38"] top-hat DIN rail	chromated	G300004		–
Enclosure blind		**48 x 24 mm [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	G003836		–

incl. in delivery

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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 integrated reverse polarity protection
Current consumption	max. 40 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 10 G: 6 ms

Inputs

Polarity of inputs		programmable, NPN or PNP for all inputs
Input resistance		approx. 5 kΩ
Counting frequency [1]		max. 30 kHz, can be damped to 30 Hz
Display range	tachometer	1/min or 1/sec
Minimum pulse duration of the reset input		5 ms
Input switching level (HTL)	LOW	$0 ... 0.2 \times U_B$ [V DC]
	HIGH	$0.6 \times U_B ... 30$ V DC
Input switching level at 4 ... 30 V DC	LOW	0 ... 2 V DC
	HIGH	4 ... 30 V DC
Accuracy		< 0.1 % frequency meter, tachometer

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 frequency and position display / totalizer

Position and rotary speed applications, e.g.

- OEM equipment or retrofitting to drilling machines
- OEM equipment on flow measuring plant, e.g. total flow and current flow
- Total piece count and pieces per minute, where the pulse counting occurs in the add/subtract mode, in order to deduct reject parts
- Production data acquisition: total piece count and production speed, or absolute distance traversed and current speed
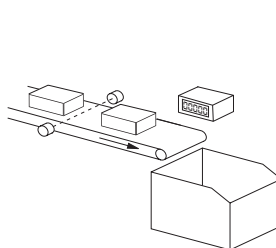
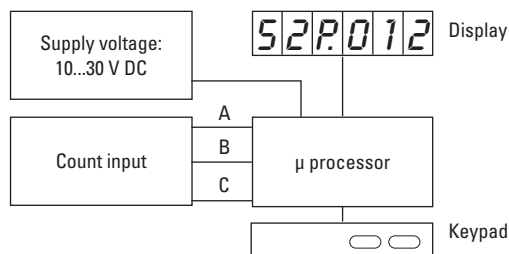Piece count on conveyor and production speed
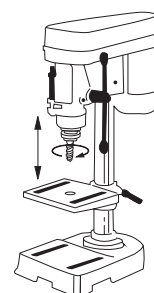
Rotary speed and drilling depth
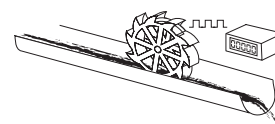
Flow rate and total volume

1) Details see manual

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Block diagram

Supply voltage: 10...30 V DC

Count input

A
B
C

µ processor

Display

52P.012

Keypad

Terminal assignment

| 1 | 2 | 3 | 4 | 5 |

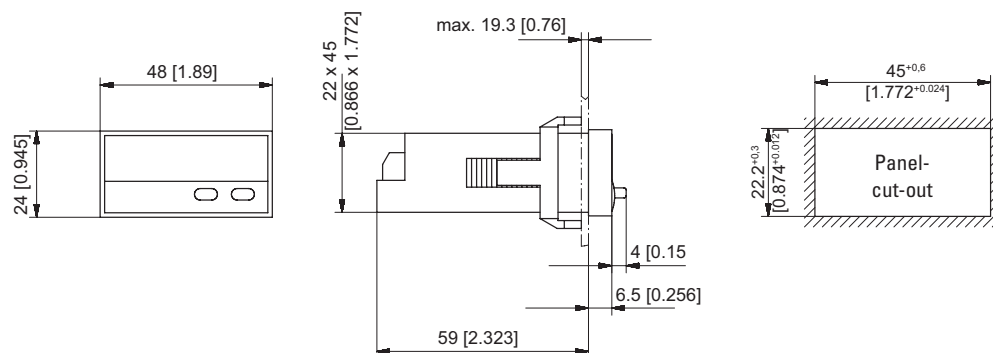| PIN	DC version
1	10 ... 30 V DC
2	0 V GND
3	INP A (count)
4	INP B (count)
5	INP C (frequency)

Function of the inputs INP A, INP B, INP C

INP A and INP B:
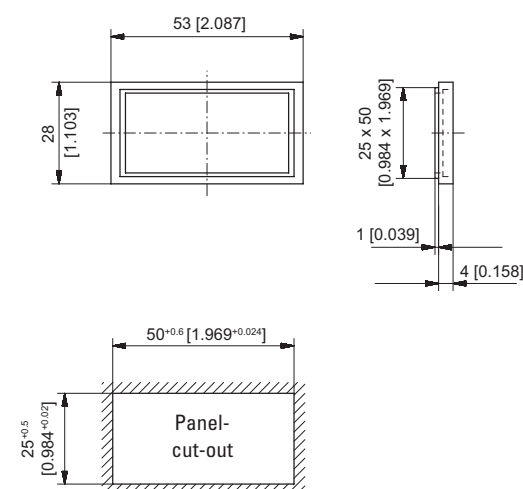Two channel pulse input with 6 different count modes
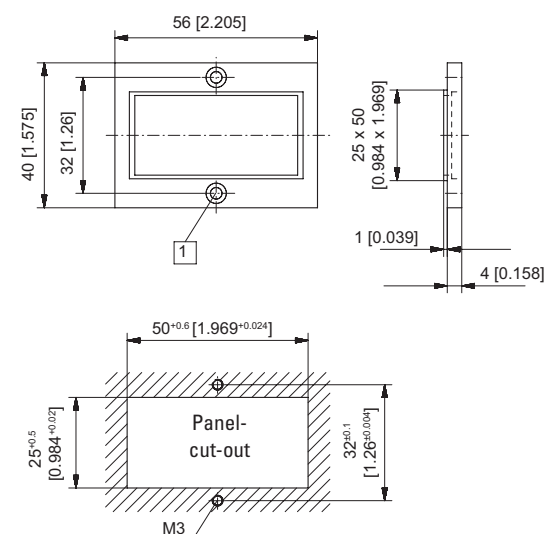
INP C:
Frequency input, single channel

Dimensions

Dimensions in mm [inch]

48 [1.89]
24 [0.945]
22 x 45 [0.866 x 1.772]
max. 19.3 [0.76]
4 [0.15]
6.5 [0.256]
59 [2.323]

45$^{+0,6}$ [1.772$^{+0.024}$]
22.2$^{+0,3}$ [0.874$^{+0.012}$]
Panel-cut-out

Front bezel for clip mounting (included in delivery)

53 [2.087]
28 [1.103]
25 x 50 [0.984 x 1.969]
1 [0.039]
4 [0.158]

50$^{+0,6}$ [1.969$^{+0.024}$]
25$^{+0,5}$ [0.984$^{+0.02}$]
Panel-cut-out

Front bezel for screw mounting (included in delivery)

56 [2.205]
40 [1.575]
32 [1.26]
25 x 50 [0.984 x 1.969]
1 [0.039]
4 [0.158]

50$^{+0,6}$ [1.969$^{+0.024}$]
25$^{+0,5}$ [0.984$^{+0.02}$]
32$^{+0,1}$ [1.26$^{+0.004}$]
Panel-cut-out
M3

1 Countersinking Af3, DIN 74