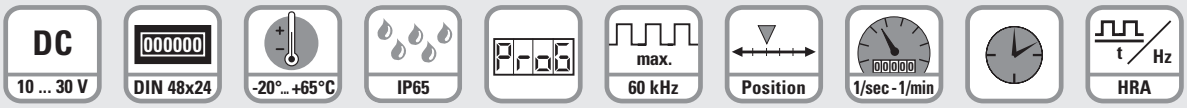
LED multifunction display | **Multifunctional – pulse, frequency, time (DC)** | **Codix 524**



The Codix 524 is a voltage-powered multifunction counter with 4 functions in one device:
Pulse, position, frequency and speed display, timer and short time meter for fast and slow counting pulses.

With 6-digit LED display for NPN / PNP input signals.



Powerful

- Fast count and frequency input – input frequency max. 60 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.
- 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.
- 4 different count input modes:
  2-channel count input for detecting count direction, difference or adding mode, quadrature with x1, x2 or x4 evaluation.
- Frequency measurement: display in 1/min or 1/sec.
- Time counting: pulse width or time interval measurement in hours, minutes or seconds, as well as real-time display.
- 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.
- Optional output: zero signal for position and count, zero speed monitoring, 1 Hz clock pulse for active time measurement.

Order code

6.524	.	01	X (a)	.	3	X (b)	0

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

(b) *Input switching level*
0 = Standard (HTL) [1)]
A = 4 ... 30 V DC

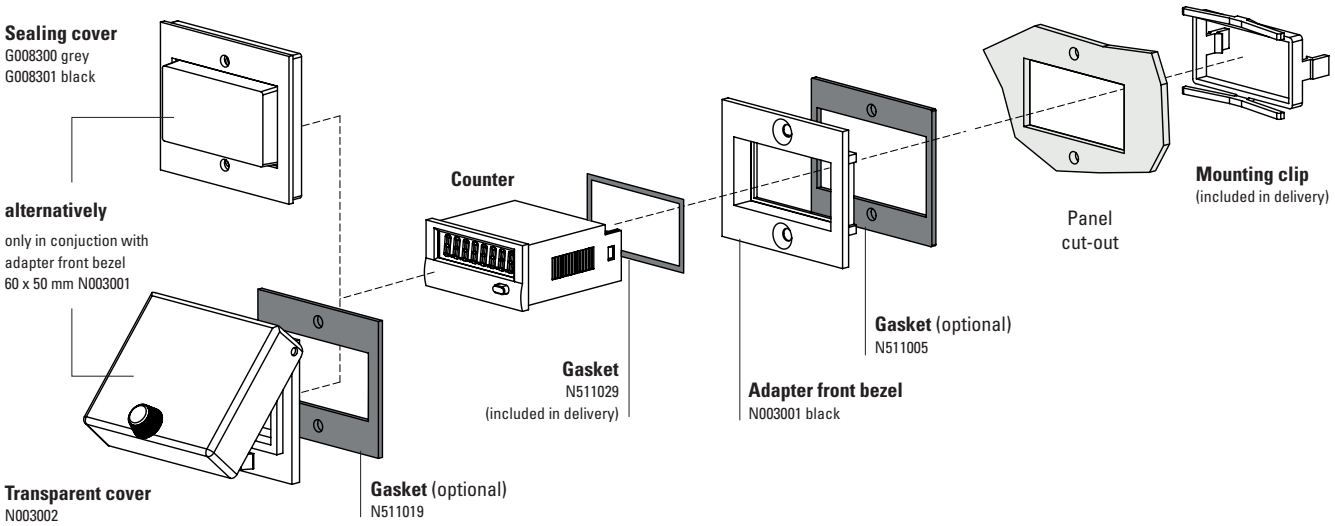
Delivery specification
- Counter
- Mounting clip
- Front bezel for screw mounting (T008181) 56 x 40 mm [2.20 x 1.57"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Front bezel for clip mounting (T008180) 53 x 28 mm [2.09 x 1.10"], panel cut-out 50 x 25 mm [1.97 x 0.98"]
- Gasket
- Instruction manual, multilingual

1) Stock types

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LED multifunction display | Multifunctional – pulse, frequency, time (DC) | Codix 524

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“] to cut-out 45 x 22.2 mm [1.77 x 0.94“]	grey black anthracite	**T008164** **T008165** **T008180**	**N511015**
		**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 anthracite	**T008161** **T008181**	**N511045**
		**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 transparent / black	**G008300** **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) 49 x 25 mm		**N511029** **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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LED multifunction display | **Multifunctional – pulse, frequency, time (DC)** | **Codix 524**

Technical data

General technical data

Display		6 digits, red 7 segment LED display; 8 mm 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 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, 10 mA

Inputs

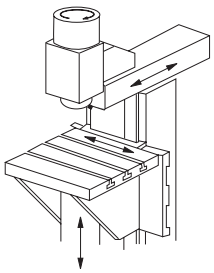
Polarity of inputs		programmable, NPN or PNP
Input resistance		approx. 5 kΩ
Counting frequency [1]		max. 60 kHz, can be damped to 30 Hz
	for position display	max. 25 kHz
Display range	timer	0.001 s ... 999999 h
	frequency meter	1/min or 1/sec
Minimum pulse duration of the reset input		5 ms
Input switching 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
Accuracy	tachometer	< 0.1 %
	timer	< 50 ppm

Approvals

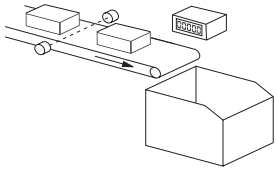
UL compliant in accordance with	File no. E128604
CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
UKCA compliant in accordance with	
EMC Regulations	S.I. 2016/1091
RoHS Regulations	S.I. 2012/3032

Applications for multifunction display

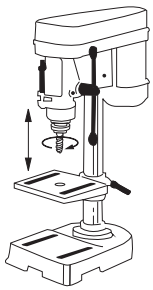
- Counting tasks such as quantity and piece counting, measuring and recording of speed and of operating and processing times
- Piece counting or tool-life measurement on die cutters, presses, extruders, woodworking machines, drilling machines, pick-and-place machines, guillotines, special-purpose vehicles etc.
- 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), or measurement of production times or production speeds
- Totalizing flow, quantity and other scaleable media, or display of current flow rates



Position or rotary speed on milling machine



Piece count on conveyor or production speed



Drilling machine head, speed or drilling depth

1) Details see manual

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Functions

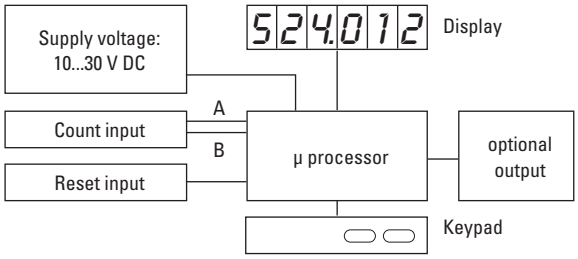
Pulse counter:
Various counting modes such as count direction, difference, addition, phase discriminator

Position display:
Phase discriminator with simple, double or quadruple evaluation

Frequency and speed display:
Pulses per minute or per second scaleable, with HRA measurement

Hour meters and short-time meters:
Various programmable time ranges with different ways of measuring

Block diagram



Terminal assignment



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



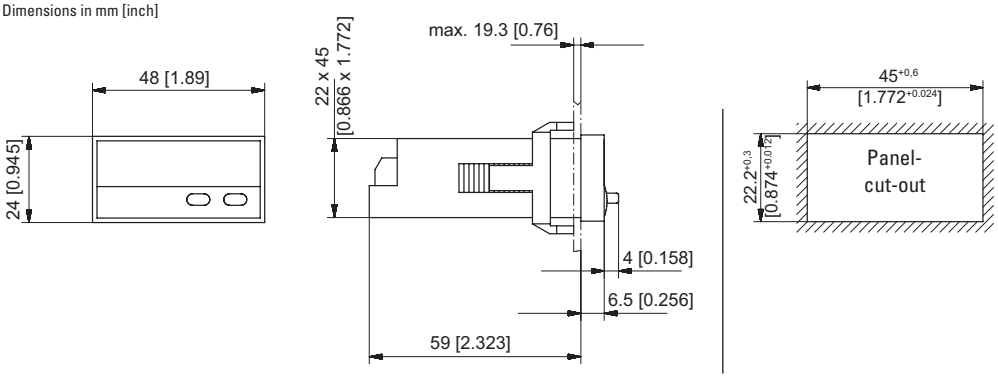
PIN	with optocoupler (NPN)
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	Reset / Set
6	Emitter
7	Collector

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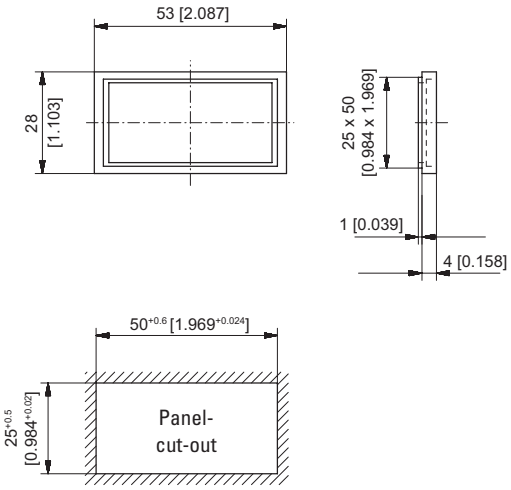
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Dimensions

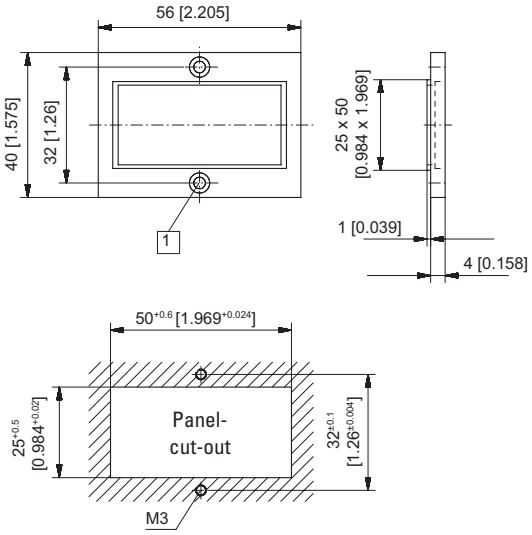
Dimensions in mm [inch]



Front bezel for clip mounting (included in delivery)



Front bezel for screw mounting (included in delivery)



1 Countersinking Af3, DIN 74

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