Frequency displays / tachometers

Kübler

| LED frequency displays | Measuring range 1/min or 1/sec HRA-measurement (DC) | Codix 522 |

The Codix 522 is a simple voltage powered frequency display / tachometer.

Display in 1/min or 1/sec, freely scalable, for fast and slow count pulses, with 6-digit LED display for NPN, PNP input signals, with fast HRA measurement system (High Rate Accuracy).

DC 10 … 30 V	DIN 48 x 24	-20°… +65°C	IP65	ProG	1/sec 1/min	HRA
Power supply	DIN front bezel	Temperature range	High protection level	Menu-driven programming	Frequency display/ Tachometer	Frequency display with HRA

Powerful

- Very bright LED display, 8 mm high.
- Fast count input – input frequency max. 60 kHz.
- Robust housing – IP65 protected.
- 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.

User-friendly and universal

- 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 to 99.9999), to display corresponding engineering units, e.g. frequency in Hz and speed in RPM.
- Programmable decimal point, can be set from 0.0 to 0.000 (this determines the resolution).
- Programmable delay until 0 is displayed.
- Display in 1/min or 1/sec.
- As an alternative to the HTL inputs, devices with a 4 … 30 V DC input level are available.
- Optional output for zero-speed monitoring.

| Order code | 6.522 . 01 X . 3 X 0 |

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

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

Delivery specification
- Pulse 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

LED frequency displays	Measuring range 1/min or 1/sec HRA-measurement (DC)	Codix 522

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]

Mechanical characteristics

|	
Housing	front panel mount 8 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

Outputs (optional)

Optocoupler output	max. 30 V DC, 10 mA

Electrical characteristics

Power supply	10 ... 30 V DC, with integrated reverse polarity protection
Current consumption	max. 50 mA
EMC standards	EN 55011 class B, EN 61000-6-2, EN 61000-6-3 EN 61326-1
UL approval	file E128604

Inputs

|	
Polarity of inputs	programmable, NPN or PNP
Input resistance	approx. 5 kΩ
Counting frequency	max. 60 kHz, can be damped to 30 Hz
Measurement principle / Accuracy	Gate and/or time interval (period duration) measure ment, with high accuracy <0.1 % (HRA)
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

Applications for speed and frequency displays

- Rotary speed applications, e.g. OEM equipment or retrofitting to drilling machines
- OEM equipment for flow rate measuring, e.g. current flow rate; production data such as volume/time
- Speed applications on motors, turbines, machines; feed-rate measurement
- Recording of production rates
- Frequency measurement
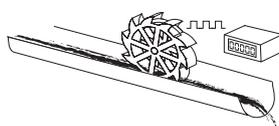
Mass flow rate

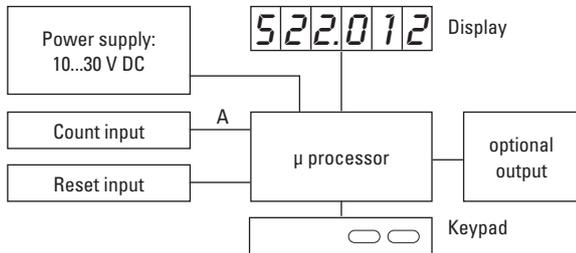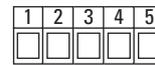Drilling machine head, rotary speed
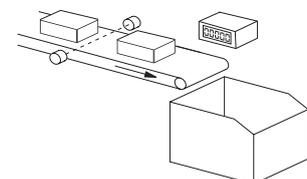
Production rate

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Block diagram

| Power supply: 10...30 V DC |
| Count input | A |
| Reset input |

522.012 Display

µ processor

optional output

Keypad

Terminal assignment

| 1 | 2 | 3 | 4 | 5 |

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

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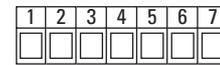
PIN	with optocoupler (NPN)
1	10 ... 30 V DC
2	0 V GND
3	INP
4	–
5	–
6	Emitter
7	Collector

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 [0.158]
6.5 [0.256]
59 [2.323]

45$^{+0,6}$ [1.772$^{+0.024}$]
22.2$^{+0,3}$ [0.874$^{+0.02}$]
Panel cut-out
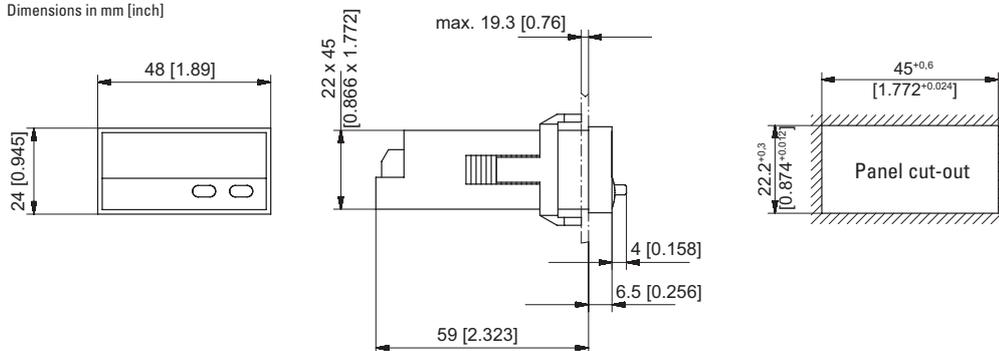
Front bezel for clip mounting (included in delivery)

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
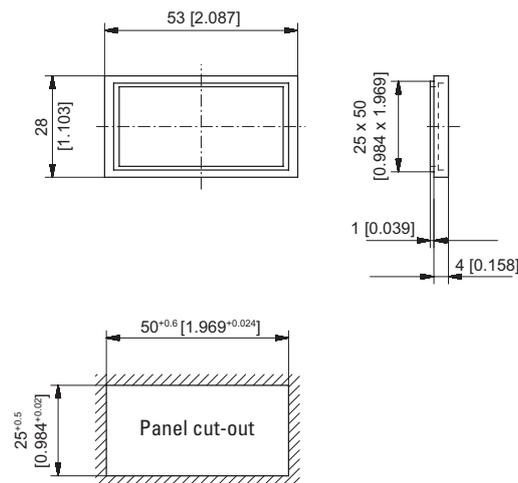
Front bezel for screw mounting (included in delivery)

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
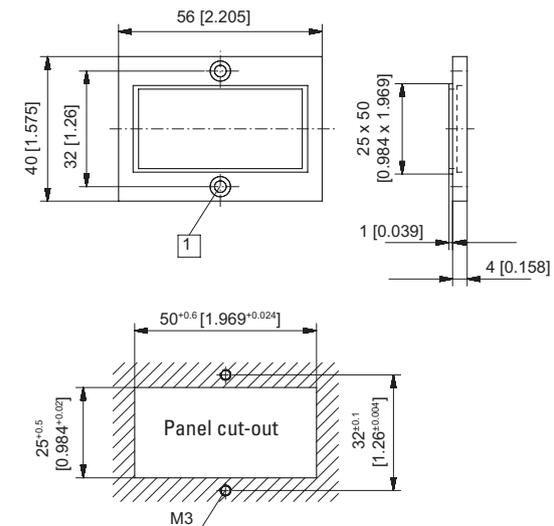
1 Countersinking Af3, DIN 74