Hour meters / timers, electronic

LED timers	h, min, sec or hh.mm.ss (DC)	Codix 523

The Codix 523 is an externally powered timer, hour meter or short-time meter with 4 start input types and individually adjustable time base.

The 6-digit LED display shows the NPN, PNP input signals used for pulse width or time interval measurement.

DC 10 ... 30 V	**000000** DIN 48 x 24	- 20° + 65°	**IP65**	**Prob**		**≥ 1 ms**
Power supply	DIN front bezel	Temperature range	High protection level	Menu-driven programming	Timer	Resolution

Powerful

- High accuracy thanks to quartz time base.
- Robust housing – IP65 protected.
- Very bright LED display, 8 mm high.
- Time base can be set individually
  - hours, minutes or seconds, the decimal point allows setting it even more accurately, up to max. 3 decimal places.
  - smallest achievable resolution: milliseconds.
  - time base hours (minutes and seconds as real-time display).
- Short start-up time – detects incoming pulses already 16 ms after having been switched on => no loss of pulses in case of a simultaneous motor start.
- Individually adjustable Start/Stop function
  2 Start/Stop inputs allow achieving 4 different measuring principles such as, for example, active or passive pulse width measurement, time interval measurement with one single input or with separate inputs.

User-friendly and universal

- Large keys – pressing either of the keys switches between displays (can also be operated wearing gloves).
- Programming
  - simple uniform menu-driven programming and operation.
  - possibility to enter the programming mode also during operation with an authentication query.
- Manual or electrical reset
  Tamper-proof thanks to lockable reset function.
- Freely programmable setpoint
  Start time at which time counting begins.
- As an alternative to the HTL inputs, devices with a 4 ... 30 V DC input level are available, for use as parallel displays for PLCs.
- Optional output: 1 Hz clock pulse in case of active time measurement.

Order code

6.523.01X.3X0
         ⓐ   ⓑ

ⓐ *Output*
1 = Optocoupler
2 = No output [1]

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

Delivery specification
· Timer
· Mounting clip
· Gasket
· Instruction manual, multilingual
· 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"]

[1] Stock types

LED timers	h, min, sec or hh.mm.ss (DC)	Codix 523

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 [0.31"] 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 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

Outputs (optional)

Output power optocoupler	max. 30 V, 10 mA

Electrical characteristics

| Power supply	10 ... 30 V DC, with integrated 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-Zulassung	File E128604

Inputs

Polarity of inputs		programmable, NPN or PNP for all inputs
Input resistance		approx. 5 kΩ
Resolution		up to 0.001 s
Minimum pulse duration of the reset input		5 ms
Input switching level standard version (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		< 50 ppm

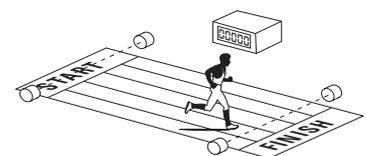## Applications for time and hour meters, short-time meters

- Time measurements such as hours run recording on all machines and plant, e.g. compressors, solariums, special lights and lamps
- Accessories, OEM equipment or retrofitting to production machine
- Measurement of short times on processes and procedures, time recording (stopwatch function) at sporting events
- Hours run recording for motor vehicles and time monitoring for rally vehicles
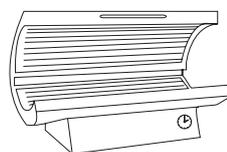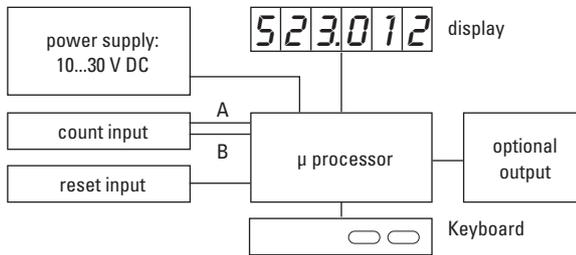
Hours run of UV lamps
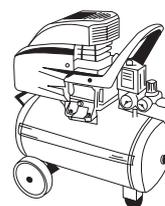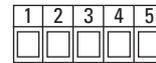
Operating hours

Short time measurement > 1 ms

| LED timers | h, min, sec or hh.mm.ss (DC) | Codix 523 |

Block diagram

| power supply: 10...30 V DC |
| count input |
| reset input |

A
B

μ processor

display

523.012

optional output

Keyboard

Terminal assignment

| 1 | 2 | 3 | 4 | 5 |

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

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
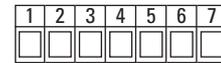
PIN	with optocoupler (NPN)
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	reset
6	emitter
7	collector

Dimensions

Dimensions in mm [inch]

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
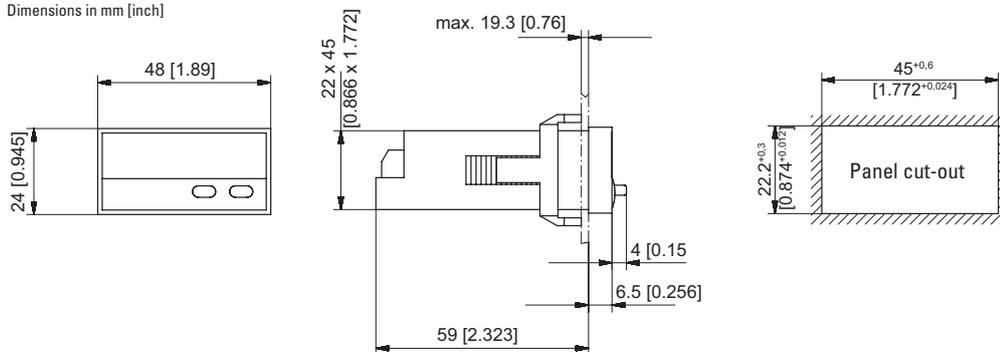
Front bezel for clip mounting (included in delivery)

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
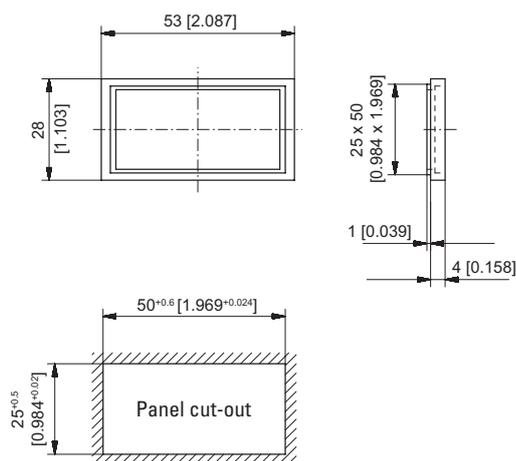
Front bezel for screw mounting (included in delivery)

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$^{+0.004}$]
M3
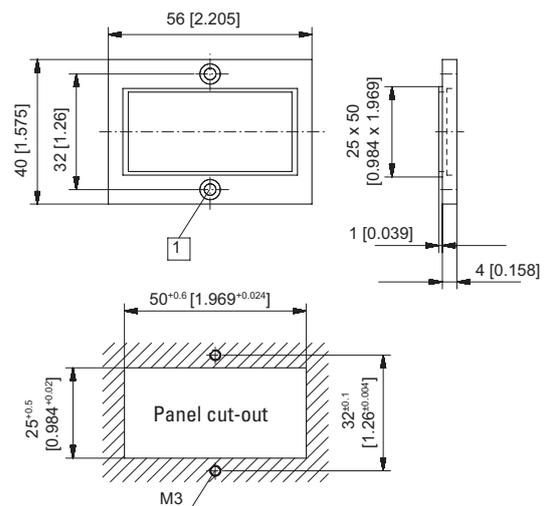
1 Countersinking Af3, DIN 74