Multifunction devices, electronic

| LED dual function displays | Universal with dual functions, 4 combinations (DC) | Codix 52U |

The Codix 52U is a voltage-powered dual function counter with 4 functions in one device:

Counter with 2 totalizing ranges, totalizer and timer, totalizer and frequency meter, timer with 2 time ranges.
For fast and slow count pulses, with 6-digit LED display for NPN, PNP input signals.

| DC 10 ... 30 V Power supply | 000000 DIN 48 x 24 DIN front bezel | -20°... +65°C Temperature range | IP65 High protection level | ProG Menu-driven programming | max. 60 kHz Pulse counter/ Totalizer | 1/sec 1/min Frequency meter/ tachometer | Timer | t / Hz HRA Frequency meter HRA |

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.
  - 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.
- 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.
- Timer specials: timer or hours-run meter with various Start/Stop measurements, time range settings in hours, minutes or seconds, with decimal point. Resolutions up to 1/1000 can be programmed.

Order code

6.52U . 012 . 3X0
                           a

a *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

LED dual function displays	Universal with dual functions, 4 combinations (DC)	**Codix 52U**

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]

Electrical characteristics

Power supply	10 ... 30 V DC, with integrated reverse polarity protection
Current consumption	max. 40 mA
EMC standards	EN 55011 class B, EN 61000-6-2, EN 61000-6-3 EN 61326-1
UL approval	file E128604

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 PN
Input resistance	approx. 5 kΩ
Counting frequency [1]	max. 60 kHz, can be damped to 30 Hz
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	$0 ... 0.2 \times U_B$ [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

Multifunction devices

1) Details see manual

Multifunction devices, electronic
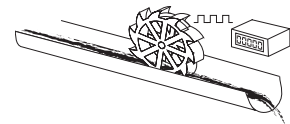
Applications for dual functions

- Pulse and frequency (speed)
  e.g. production data acquisition: total piece count and speed on OEM equipment, flow rate measuring systems – total flow and current flow
- 2 pulse counters
  Measurement of batch and total piece count or of daily production count and total count values
- Pulse and time (maintenance counter)
  Used in the lift industry as trip counters and hours-run meters and on production machines for piece and time counting, flow and time measurement, materials handling time and quantities
- 2 timers
  Measurement of total time and orderspecific times, maintenance intervals and total time, time of day and total time
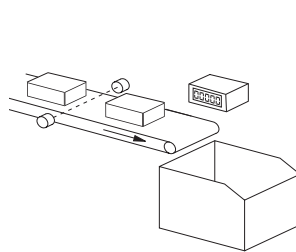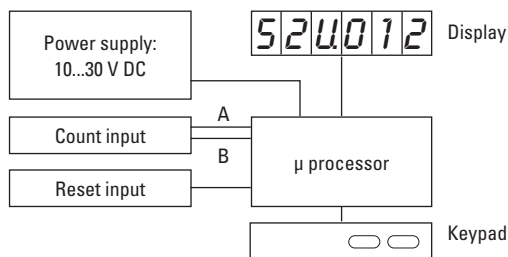
Piece count on conveyor and production speed
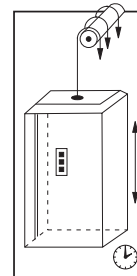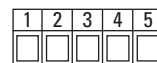
Trip counter and hours-run

Flow rate and total volume

Block diagram

Power supply: 10...30 V DC

Display

52U.012

A

Count input

B

Reset input

µ processor

Keypad

Terminal assignment

| 1 | 2 | 3 | 4 | 5 |

PIN	DC version
1	10 ... 30 V DC
2	0 V GND
3	INP A
4	INP B
5	Reset

Function of the inputs INP A, INP B

Counter with 2 totalizing ranges:
INP A: Dynamic count input counter 1 and counter 2
INP B: Inactive

Totalizer and timer::
INP A: Dynamic count input for totalizer
INP B: Start/Stop or gate input for timer

Totalizer and frequency meter:
INP A: Dynamic count input/frequency input
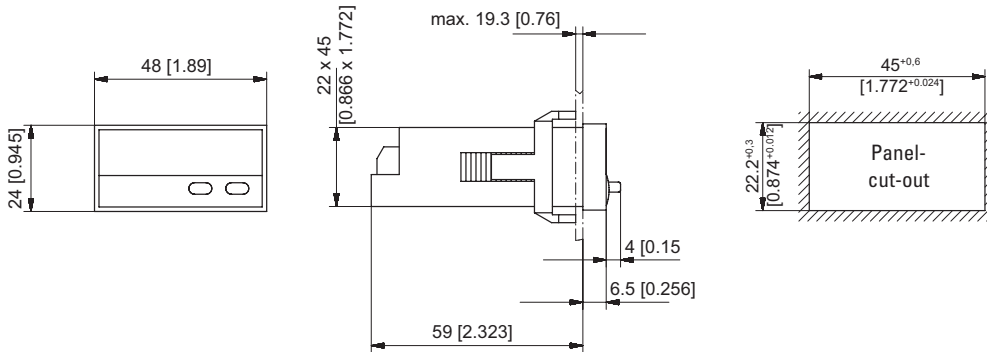INP B: Inactive

Timer with 2 time ranges:
INP A: Start input (depends on input type)
INP B: Start/Stop or gate input for timer (depends on input type)
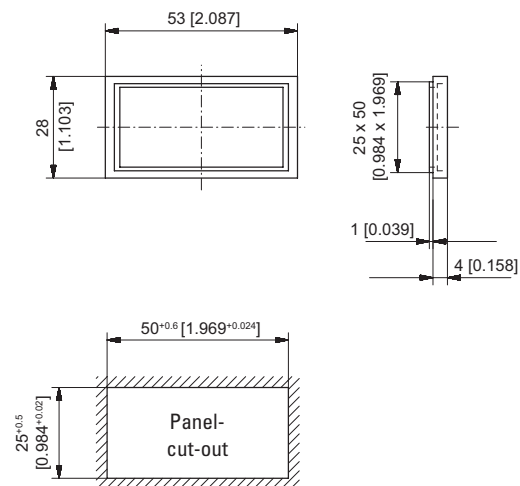
Kübler

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Dimensions

Dimensions in mm [inch]

max. 19.3 [0.76]

48 [1.89]

22 x 45 [0.866 x 1.772]

24 [0.945]

45 +0,6 [1.772 +0.024]

22.2 +0.3 [0.874 +0.02]

Panel-cut-out

4 [0.15]

6.5 [0.256]

59 [2.323]

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]

1

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

Multifunction devices