Kübler

Multifunction devices, electronic

The Codix 54U 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	AC	000000				Prob	max.	1/sec 1/min		t/Hz
10 … 30V	100 … 240 V	DIN 96 x 48	-20°… +65°C	IP65			60 kHz			HRA
Power supply		DIN front bezel	Temperature range	High protection level	Plug-in screw terminal	Menu-driven programming	Pulse counter/ Totalizer	Frequency meter/ tachometer	Timer	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, 14 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.
- AC or DC power supply.
- Inputs: as an alternative to the HTL inputs, devices with a 5 V DC input level are available, for use as parallel displays for 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

6.54U . 012 . XX0
         a b

a *Power supply*
0 = 100 … 240 V AC, ±10 %
3 = 10 … 30 V DC

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

Delivery specification
· Digital display
· Mounting clip
· Gasket
· 2 plug-in screw terminals
· Instruction manual, multilingual

Replacement parts
7 pin screw terminal RM 3.81 1 … 7: N100387
2 pin screw terminal RM 5.08 1 … 2: N100133

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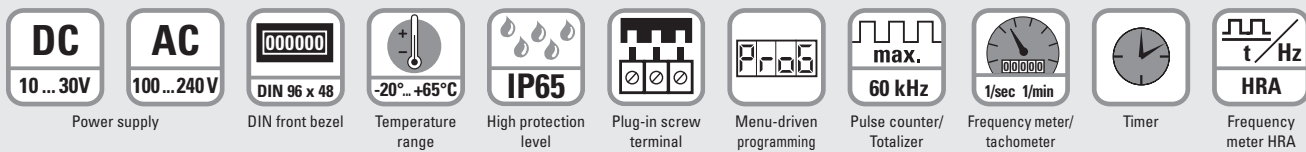| LED dual function displays	Universal with dual functions, 4 combinations (AC+DC)	Codix 54U

Accessories	Dimensions in mm [inch]		Order no.
Mounting frame with cut-out 92 x 45 [3.62 x 1.77]	for snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 96 x 48 [3.74 x 1.89]	grey	**G300005**

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.

Technical data

General technical data

Display	6 digit, red 7 segment LED display; 14 mm [0.55"] high
Data backup	EEPROM
Operating temperature 10 ... 26 V DC	-20°C ... +65°C [-4°F ... +149°F] (non-condensing)
Storage temperature	-25°C ... +70°C [-13°F ... +158°F]
Altitude	up to 2000 m [6562']

Electrical characteristics

Power supply	10 ... 30 V DC, with reverse polarity protection 100 ... 240 V AC, ±10 %
Current consumption	max. 50 mA, 6 VA
EMC standards	EN 55011 class B, EN 61000-6-2, EN 61000-6-3
Device safety designed to	EN 61010 part 1
protection class	2
application area	pollution level 2
UL approval	file E128604

Mechanical characteristics

Housing	front panel mount 96 x 48 mm [3.74 x 1.89"] acc. to DIN 43700; RAL 7021, dark grey
Protection	IP65 (front side)
Weight	approx. 150 g [5.29 oz]

Inputs

Polarity of inputs	programmable, NPN or PNP for all inputs
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 standard version (HTL)

DC power supply	LOW	$0 ... 0.2 \times U_B$ [V DC]
	HIGH	$0.6 \times U_B ... 30$ V DC
AC power supply	LOW	0 ... 4 V DC
	HIGH	12 ... 30 V DC

Input switching level at 4 ... 30 V DC

	LOW	0 ... 2 V DC
	HIGH	4 ... 30 V DC

Accuracy

|	
frequency meter / tachometer	< 0.1 %
timer	< 50 ppm

Outputs

Sensor power supply (AC version)	24 V DC ±15 %/100 mA

## 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
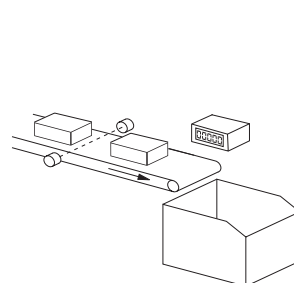
Piece count on conveyor and production speed
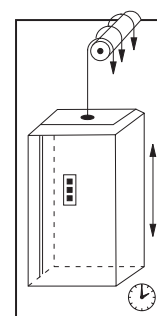
Trip counter and hours-run
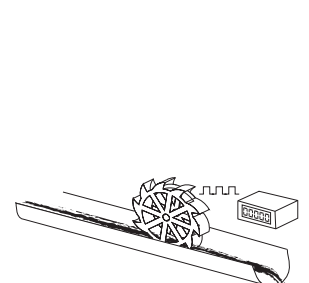
Flow rate and total volume
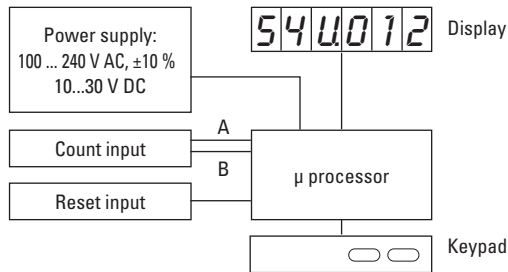
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1) Details see manual

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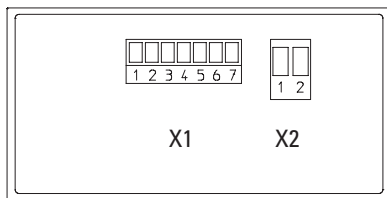
| LED dual function displays | Universal with dual functions, 4 combinations (AC+DC) | Codix 54U |

Block diagram

Power supply:
100 ... 240 V AC, ±10 %
10...30 V DC

Count input

Reset input

A

B

µ processor

Display

Keypad

Terminal assignment

X1   X2

Connection X1

PIN	AC version	DC version
1	n.c.	
2	n.c.	
3	Reset	
4	INP B	
5	INP A	
6	GND out	n.c.
7	+24 V out	n.c.

Connection X2

PIN	AC version	DC version
1	100 ... 240 V AC, ±10 %	0 V DC (GND)
2	100 ... 240 V AC, ±10 %	10 ... 30 V DC

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)

Dimensions

Dimensions in mm [inch]

96 [3.78]

48 [1.89]

max. 19 [0.748]

44.9 x 91.9 [1.768 x 3.619]

15.5 [0.61]

4 [0.158]

6.5 [0.256]

67.1 [2.642]

Panel-cut-out

45 +0.6 [1.772 +0.024]

92 +0.8 [3.622 +0.032]