

# Multifunction devices, electronic

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



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.

<b>DC</b> 10 ... 30 V	<b>AC</b> 10 ... 240 V	<b>000000</b> DIN 96x48	<b>-20°...+65°C</b> Temperature range	<b>IP65</b> High protection level	<b>Plug-in screw terminal</b>	<b>max. 60 kHz</b> Pulse counter/ Totalizer	<b>1/sec - 1/min</b> Frequency meter/ tachometer	<b>Timer</b>	<b>t / Hz</b> Frequency meter HRA
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### 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 supply voltage.
- 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 . 01 2 . XX 0**

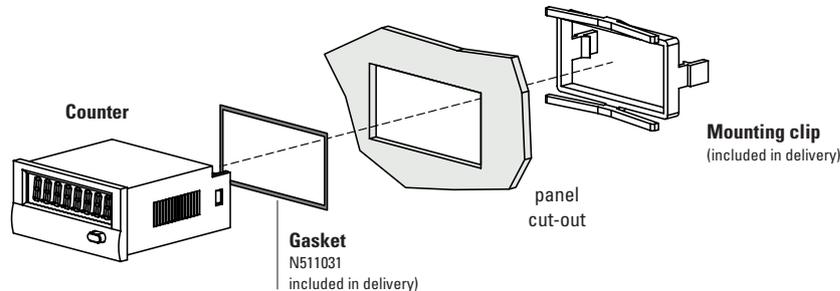
- a** Supply voltage  
 0 = 100 ... 240 V AC, ±10 %  
 3 = 10 ... 30 V DC
- b** Input switching level  
 0 = Standard (HTL)  
 A = 4 ... 30 V DC

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

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**Accessories / Mounting examples**



		Type / size	Description		Order no.	
<b>Gasket counter</b>			96 x 49 mm [3.78 x 1.93"]		<b>N511031</b>	
<b>Mounting frame</b>		<b>cut-out</b> 92 x 45 mm [3.62 x 1.77"]	for snap-on mounting on 35 mm [1.38"] top-hat DIN rail	grey	<b>G300005</b>	–
<b>Screw terminal</b> (Replacement part)			1 ... 7, pitch 3.81 1 ... 2, pitch 5.08	7 pin 2 pin	<b>N100387</b> <b>N100133</b>	
<b>incl. in delivery</b>						

**Technical data**

General technical data		
<b>Display</b>		6 digit, red 7 segment LED display; 14 mm [0.55"] high
<b>Data backup</b>		EEPROM
<b>Operating temperature</b>	10 ... 26 V DC	-20 °C ... +65 °C [-4 °F ... +149 °F] (non-condensing)
<b>Storage temperature</b>		-25 °C ... +70 °C [-13 °F ... +158 °F]
<b>Relative humidity</b>		< 85 % (non-condensing)
<b>Altitude</b>		up to 2000 m [6562']

Electrical characteristics		
<b>Supply voltage</b>		10 ... 30 V DC, with reverse polarity protection 100 ... 240 V AC, ±10 %
<b>Current consumption</b>		max. 50 mA, 8 VA
<b>EMC standards</b>		EN 55011 class B, EN 61000-6-2, EN 61000-6-3
<b>Device safety</b>	designed to protection class application area	EN 61010 part 1 2 pollution level 2
<b>UL approval</b>		file E128604

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

Inputs		
<b>Polarity of inputs</b>		programmable, NPN or PNP for all inputs
<b>Input resistance</b>		approx. 5 kΩ
<b>Counting frequency<sup>1)</sup></b>		max. 60 kHz, can be damped to 30 Hz
<b>Display range</b>	timer	0.001 s ... 999999 h
	frequency meter	1/min or 1/sec
<b>Minimum pulse duration of the reset input</b>		5 ms
<b>Input switching level standard version (HTL)</b>		
DC supply voltage	LOW	0 ... 0.2 x U <sub>B</sub> [V DC]
	HIGH	0.6 x U <sub>B</sub> ... 30 V DC
AC supply voltage	LOW	0 ... 4 V DC
	HIGH	12 ... 30 V DC
<b>Input switching level at 4 ... 30 V DC</b>		
	LOW	0 ... 2 V DC
	HIGH	4 ... 30 V DC
<b>Accuracy</b>		
	frequency meter / tachometer	< 0.1 %
	timer	< 50 ppm

Outputs	
<b>Sensor supply voltage (AC version)</b>	24 V DC ±15 %/100 mA

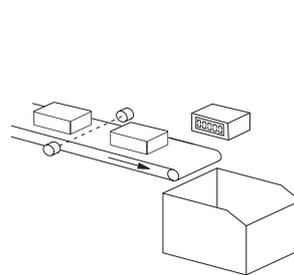
1) Details see manual

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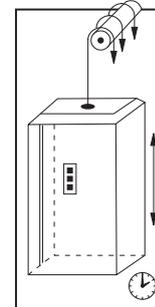
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### Applications for dual functions

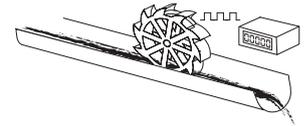
- Pulse and frequency (speed)  
e.g. production data acquisition: total piece count and speed on OEM equipment, flow rate measuring systems – total flow and current flow
- 2 pulse counters  
Measurement of batch and total piece count or of daily production count and total count values
- Pulse and time (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

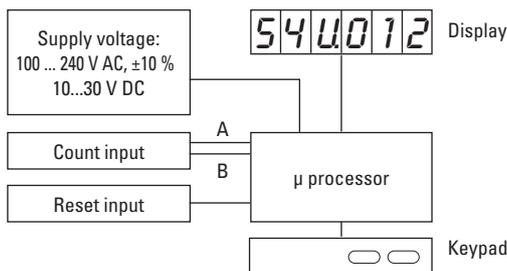


Trip counter and hours-run

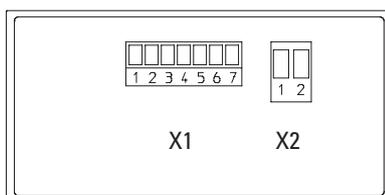


Flow rate and total volume

### Block diagram



### Terminal assignment



#### 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)

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## Dimensions

Dimensions in mm [inch]

