The Codix 54U is a voltage-powered dual function counter with 4 functions in one device:

Counter with 2 totalising ranges, totaliser and timer, totaliser and frequency meter, timer with 2 time ranges.

For fast and slow count pulses, with 6-digit LED display for NPN, PNP input signals.

**Powerful**

- Fast count and frequency input – input frequency max. 60 kHz
- 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 X X 0

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

- 3 pin screw terminal RM 3.81 1 ... 7: N100387
- 2 pin screw terminal RM 5.08 1 ... 2: N100133

**Accessories**

- 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]

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Dimensions in mm [inch]</th>
<th>Order-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting frame</td>
<td></td>
<td>grey G300005</td>
</tr>
</tbody>
</table>

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.
LED dual function displays

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 ... +60°C [4°F ... +140°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**: EN 55011 class B
- **Device safety**: EN 61010 part 1

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**: 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 x U_B [V DC]
    - HIGH: 0.6 x 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

Block diagram

![Block diagram](image)

1) Details see manual

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Function of the inputs INP A, INP B

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

Totaliser and timer:
- INP A: Dynamic count input for totaliser
- INP B: Start/Stop or gate input for timer, totaliser and frequency meter

Totaliser 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)

Terminal assignment

<table>
<thead>
<tr>
<th>PIN</th>
<th>AC version</th>
<th>DC version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>n.c.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>n.c.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Reset</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>INP B</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>INP A</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>GND out</td>
<td>n.c.</td>
</tr>
<tr>
<td>7</td>
<td>+24 V out</td>
<td>n.c.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PIN</th>
<th>AC version</th>
<th>DC version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 ... 240 V AC, ±10%</td>
<td>0 V DC (GND)</td>
</tr>
<tr>
<td>2</td>
<td>100 ... 240 V AC, ±10%</td>
<td>10 ... 30 V DC</td>
</tr>
</tbody>
</table>

Dimensions

Dimensions in mm [inch]

Panel-cut-out

Max. 19 [0.748]

LED dual function displays

Universal with dual functions, 4 combinations (AC+DC)

Codix 54U