

## LED Timers – Codix 523

For use as a timer, hour meter or short-time meter

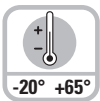
- Pulse width measurement (operating time)
- Time interval measurement (start/stop)



Power supply  
DC



Front bezel  
dimensions



Wide temper-  
ature range



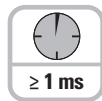
High IP  
protection  
rating



Menu-driven  
programming



Timer/ Hour  
Meter



Resolution

### Powerful

- **High accuracy**  
Thanks to quartz time base
- **Robust housing**  
IP 65 protection
- **LED display**  
Very bright, 8 mm high
- **Time base can be set individually**  
Hours, minutes or seconds – can be set even more precisely thanks to the max. 3 decimal places. Smallest attainable resolution: milliseconds
- **Fast start-up time**  
Detects incoming pulses just 16 ms after being switched on → so no pulses are lost with a simultaneous motor start-up



### User-friendly

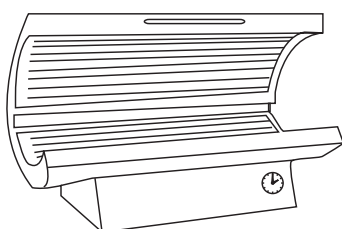
- **Big keys**  
Pressing either of the keys switches between displays  
Can also be operated when using gloves
- **Easy to programme**  
Easy menu-driven programming and operation  
Possibility to enter the programming mode during operation, with authentication query

### Universal

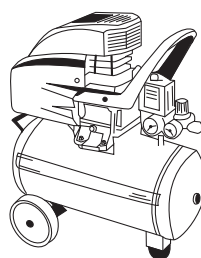
- **Individually programmable start/stop function**  
By means of 2 start/stop inputs, up to 4 different measuring principles can be achieved, e.g. active or passive pulse width measurement, time interval measurement with one input or with separate inputs
- **Manual or electrical reset**  
Tamper-proof, due to lockable reset function
- **User-programmable setpoint**  
Start time at which the time counting should begin
- **DC power supply**  
With sensor power supply
- **Inputs**  
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 for active time measurement

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

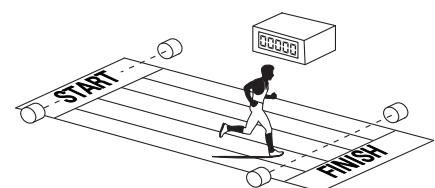
- Time measurements such as hours run recording on all machines and plant, e.g. compressors, solariums, special lights and lamps
- Accessories, OEM equipment or retrofitting to production machine
- Measurement of short times on processes and procedures, time recording (stop-watch function) at sporting 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

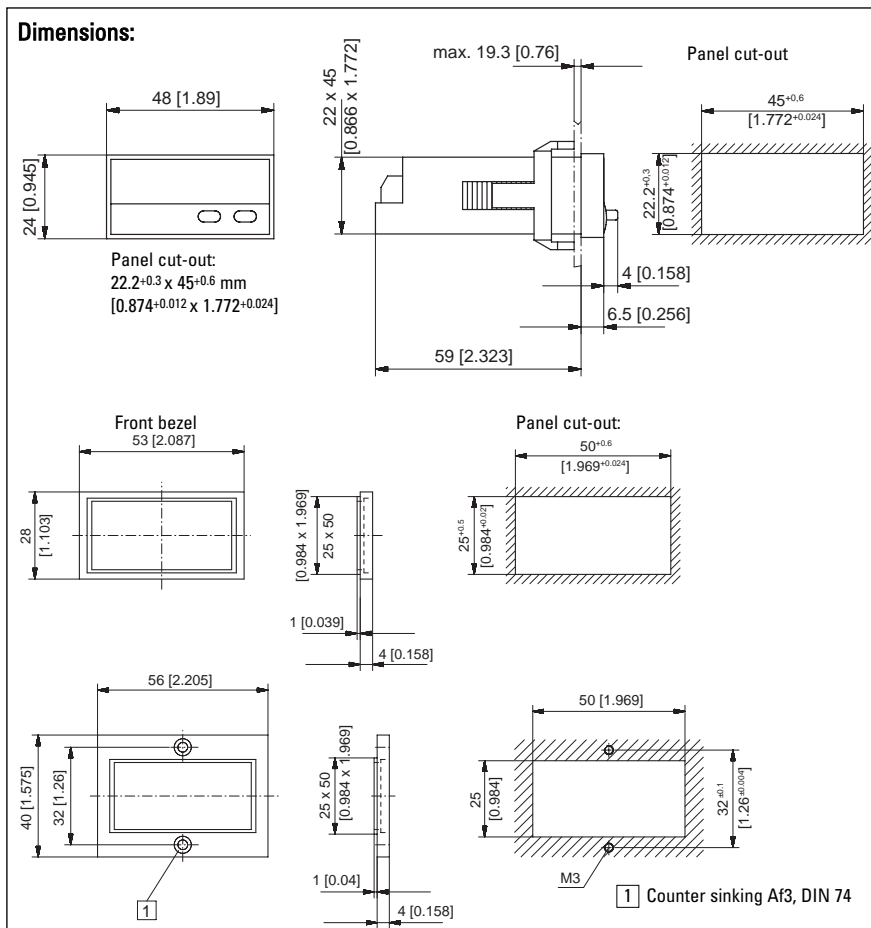
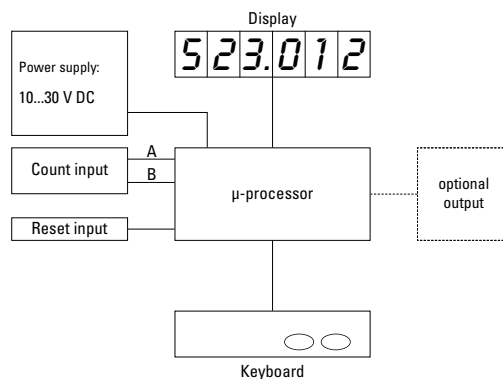
## LED Timers – Codix 523

### Technical data:

Supply voltage:	10 ... 30 V DC, with reverse polarity protection
Current consumption:	max. 55 mA
Display:	6-digit 7-segment red LED; 8 mm [0.315"] high
Data backup:	EEPROM
Housing:	dimension 48 x 24 mm [1.89 x 0.945"] according to DIN 43 700; RAL 7021, grey
Polarity of Inputs:	programmable, npn or pnp for all inputs
Input resistance:	approx. 5 kΩ
Resolution:	up to 0.001 s
Reset time:	5 ms

Level of inputs:	low: 0 ... 0.2 x U <sub>B</sub> high: 0.6 x U <sub>B</sub> ... 30 V DC
Level of inputs:	low: 0 ... 2 V DC 4 ... 30 V DC version high: 4 ... 30 V DC
Optocoupler output:	max. 30 V, 10 mA
Accuracy:	<50 ppm
Ambient temperature:	-20 ... +65 °C [4 ... 149 °F] at U <sub>B</sub> = 10 ... 26 V DC -20 ... +55 °C [4 ... 131 °F] at U <sub>B</sub> = >26 ... 30 V DC non condensing
Storage temperature:	-25 ... +70 °C [-13 ... 158 °F]
EMC:	Immunity to interference: EN55011 class B Emitted interference EN61000-6-2
Protection:	IP65 front side
Weight:	approx. 50 g [1.764 oz]

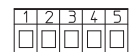
### Block diagram:



### Connections:

without optocoupler

- 1 10 ... 30 VDC
- 2 0 V GND
- 3 INP A
- 4 INP B
- 5 Reset



### Connections:

with optocoupler (npn)

- 1 10 ... 30 VDC
- 2 0 V GND
- 3 INP A
- 4 INP B
- 5 Reset
- 6 Emitter
- 7 Collector



### Delivery specification:

- 1 Digital display
- 1 Panel mounting clip
- 1 Bezel for screw mounting, panel cut out 50 x 25 mm [1.969 x 0.984"]
- 1 Bezel for clip mounting, panel cut out 50 x 25 mm [1.969 x 0.984"]
- 1 Gasket
- 1 Multilingual operating instruction

### Order code:

6.523.01X.3X0

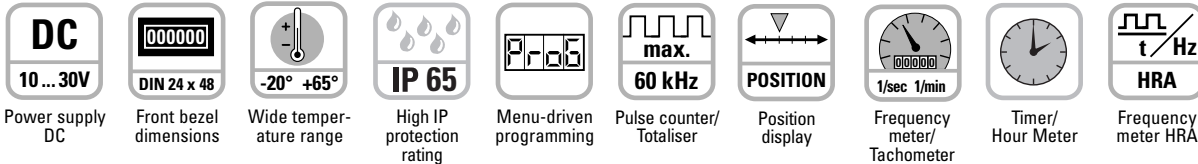
- Input switch level  
0 = Standard\*  
A = 4 ... 30 V DC
- Output  
1 = Optocoupler  
2 = No output\*

\* Standard stock model

## LED Multifunction Counters – Codix 524

programmable as:

- Pulse counter
- Position display
- Frequency / speed display
- Timer/ short time meter



### Powerful

- **Fast count input**  
Input frequency max. 60 kHz
- **Robust housing**  
IP 65 protection
- **LED display**  
Very bright, 8 mm high
- **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.
- **Fast start-up time**  
Detects incoming pulses just 16 ms after being switched on → so no pulses are lost with a simultaneous motor start-up



### User-friendly

- **Big keys**  
Can also be operated when using gloves
- **Easy to programme**  
Easy menu-driven programming and operation  
Possibility to enter the programming mode during operation, with authentication query

### Universal

- **Individually programmable scaling**  
Multiplication and division factor (0.0001 to 99.9999), to display corresponding engineering units, e.g. position in 1/10 mm and speed in RPM
- **4 different count input modes**  
2-channel input for detecting count direction, difference or adding mode, quadrature x1, x2 or x4
- **Frequency measurement**  
Display in 1/min or 1/sec
- **Time counting**  
Pulse width or time interval measurement in hours, minutes or seconds, as well as real-time display
- **DC power supply**
- **Inputs**  
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**  
Zero signal for position and count, zero-speed monitoring, 1 Hz clock pulse for active time measurement

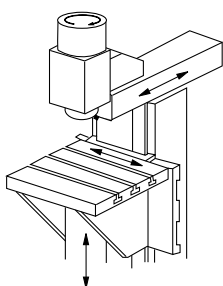
### Applications for Multi-function Display

- Counting tasks such as quantity and piece counting, measuring and recording of speed and of operating and processing times
- Piece counting or tool-life measurement on die cutters, presses, extruders, wood-working machines, drilling machines,

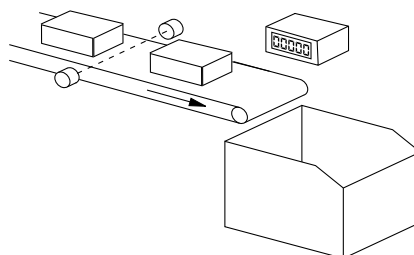
pick-and-place machines, guillotines, special-purpose vehicles etc.

- Positioning tasks on processing machines, such as sawing machines, milling machines, bending and folding machines, etc.

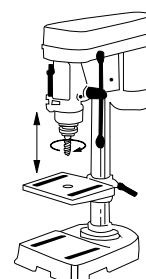
- Production data acquisition by means of piece counting (using difference or adding), or measurement of production times or production speeds
- Totalizing flow, quantity and other scaleable media, or display of current flow rates



Position or rotary speed on milling machine



Piece count on conveyor or production speed



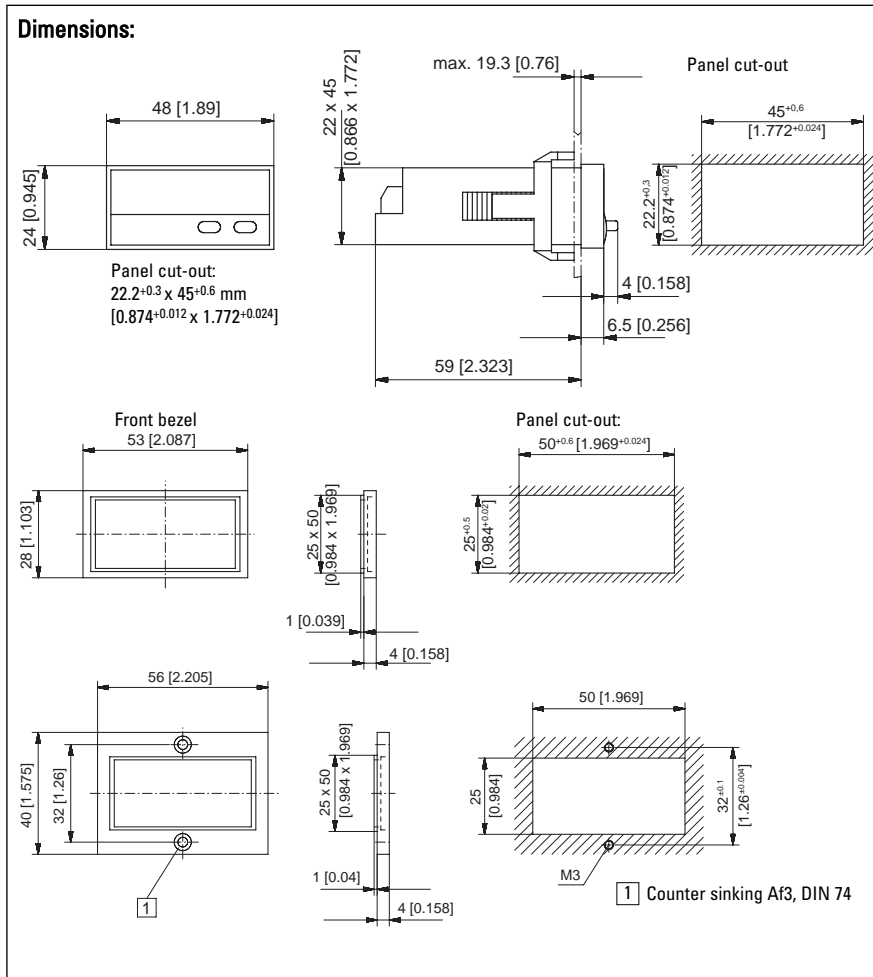
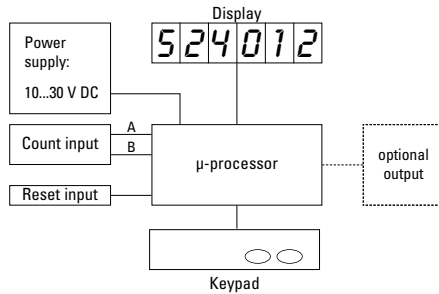
Drilling machine head, speed or drilling depth

## LED Multifunction Counters – Codix 524

### Technical data:

Supply voltage:	10 ... 30 V DC, with reverse polarity protection	Level of inputs:	low: 0 ... 0.2 x U <sub>B</sub> [V DC] high: 0.6 x U <sub>B</sub> ... 30 V DC
Current consumption:	max. 55 mA	Level of inputs:	low: 0 ... 2 V DC high: 4 ... 30 V DC
Display:	6 digit red 7-segment LED; 8 mm [0.315"] high	Optocoupler output:	max. 30 V, 10 mA
Data backup:	EEPROM	Accuracy:	tachometer: <0.1 % timer: 50 ppm
Housing:	dimension 48 x 24 mm [1.89 x 0.945"] according to DIN 43 700; RAL 7021, grey	EMC:	Emitted interference: EN55011 Class B Immunity to interference: EN61000-6-2
Polarity of inputs:	programmable, npn or pnp for all inputs	Ambient temperature:	-20 ... +65 °C [4 ... 149 °F] at U <sub>B</sub> = 10 ... 26 V DC (non condensing) -20 ... +55 °C [4 ... 131 °F] at U <sub>B</sub> = >26 ... 30 V DC
Input resistance:	approx. 5 kΩ	Storage temperature:	-25 ... +70 °C [-13 ... 158 °F]
Counting frequency:	60 kHz, can be damped to 30 Hz	Protection:	IP 65 front side
Display range timer:	0.001 s ... 999999 h	Weight:	approx. 50 g [1.764 oz]
Reset time:	5 ms		

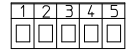
### Block diagram:



### Connections:

without optocoupler

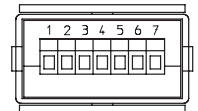
- 1 10 ... 30 V DC
- 2 0 V GND
- 3 INP A
- 4 INP B
- 5 Reset



### Connections:

with optocoupler

- 1 10 ... 30 V DC
- 2 0 V GND
- 3 INP A
- 4 INP B
- 5 RESET
- 6 Emitter
- 7 Collector



### Delivery specifications:

- 1 Digital display
- 1 Panel mounting clip
- 1 Bezel for screw mounting, panel cut out 50 x 25 mm [1.969 x 0.984"]
- 1 Bezel for clip mounting, panel cut out 50 x 25 mm [1.969 x 0.984"]
- 1 Gasket
- 1 Multilingual operating instruction

### Order code:

6.524.01X.3X0

Input switch level

0 = Standard\*

A = 4 ... 30 V DC level

Output

1 = Optocoupler output\*

2 = No output\*

\* standard stock model

## Universal with dual functions **CODIX 52U**

**4 dual functions in one device**  
 > solves all applications where 2 different values must be displayed simultaneously.

- Counter with 2 totalizing ranges
- Totaliser and time counter
- Totaliser and frequency counter
- Timer with 2 time ranges

10 ... 30V	DIN 24 x 48	-10° +50°	IP 65	max.	60 kHz	1/sec 1/min	Timer/ Hour Meter	t / Hz HRA
Power supply DC	Front bezel dimensions	Wide temperature range	High IP protection rating	Menu-driven programming	Pulse counter/ Totaliser	Frequency meter/ Tachometer		Frequency meter HRA

### Powerful

- **Fast count input**  
Input frequency max. 60 kHz
- **Robust housing**  
IP 65 protection
- **LED display**  
Very bright, 8 mm high
- **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.
- **Fast start-up time**  
Detects incoming pulses just 16 ms after being switched on – so no pulses are lost with a simultaneous motor start-up



### User-friendly

- **Big keys**  
Can also be operated when using gloves
- **Easy to programme**  
Easy menu-driven programming and operation  
Possibility to enter the programming mode during operation, with authentication query  
Pressing the right key switches between displays

### Universal

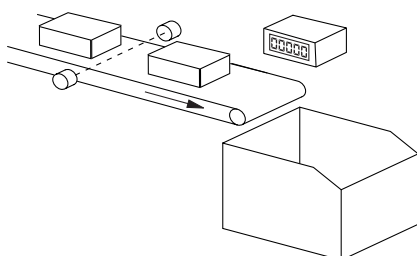
- **Individually programmable scaling**  
Multiplication and division factor (0.0001 to 99.9999), to display corresponding engineering units, e.g. position in 1/10 mm and speed in RPM
- **Separate factors for frequency- and pulse counting**
- **DC power supply**
- **Inputs**  
As an alternative to the HTL inputs, devices with a 5 VDC input trigger 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

### Applications for dual functions

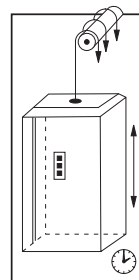
- **Pulse and frequency (speed)**  
e.g. production data acquisition: total piece count and speed on OEM equipment, flow rate measuring systems – total flow and current flow
- **2 pulse counters**  
Measurement of batch and total piece count or of daily production count and total count values

- **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

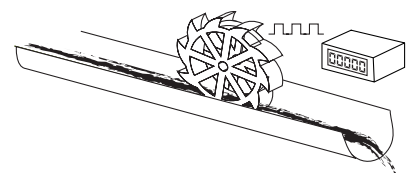
- **2 timers**  
Measurement of total time and order-specific times, maintenance intervals and total time, time of day and total time.



Piece count on conveyor and production speed



Trip counter and hours-run



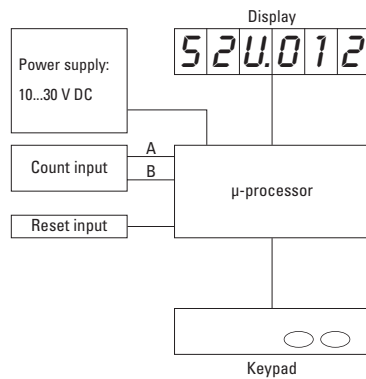
Flow rate and total volume

## Universal with dual functions **CODIX 52U**

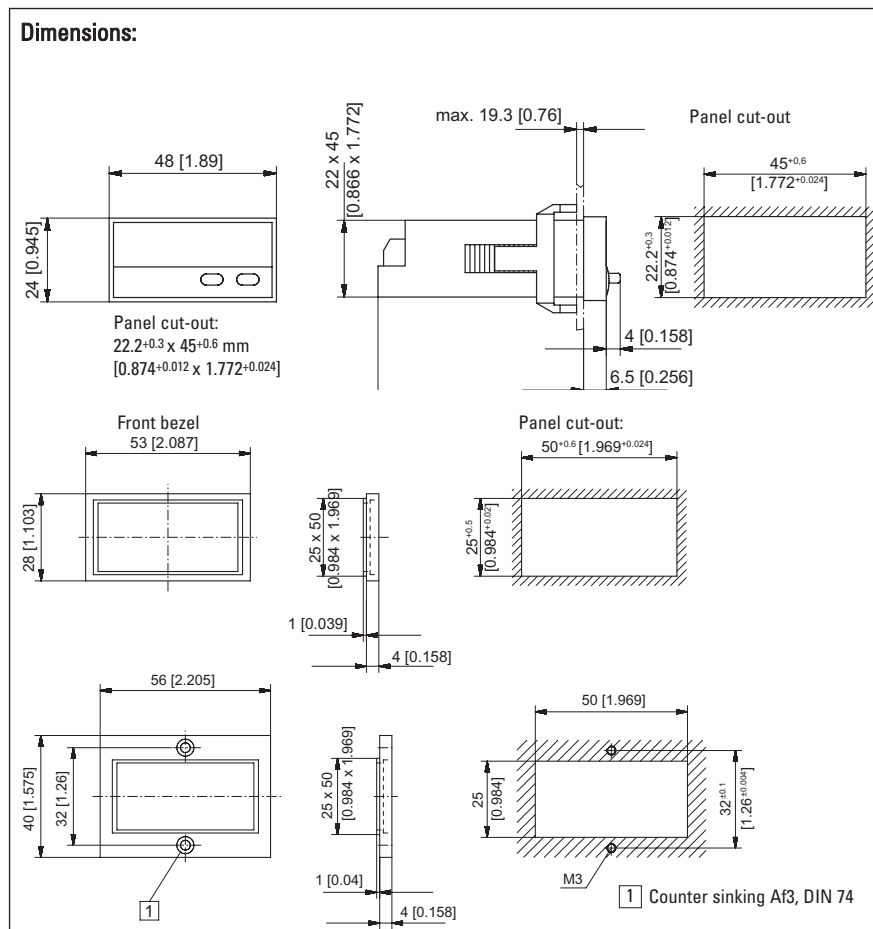
### Technical data:

Supply voltage:	10 ... 30 V DC, with reverse polarity protection	Level of inputs:	Low: 0 ... 0.2 x U <sub>B</sub> [V DC] High: 0.6 x U <sub>B</sub> ... 30 V DC
Current consumption:	max. 40 mA	Level of inputs: 5 V version	Low: 0 ... 2 V DC High: 4 ... 30 V DC
Display:	6-digit red 7-segment LED; 8 mm [0.315"] high	Optocoupler output:	Max. 30 V, 10 mA
Data backup:	EEPROM	Accuracy:	<0.1 % (Frequency display, tachometer)
Housing:	dimension 48 x 24 mm [1.89 x 0.945"] according to DIN 43 700; RAL 7021, grey	EMC:	according to EC EMC directive 89/36/EWG
Polarity of inputs:	programmable, npn or pnp for all inputs	Immunity to interference:	EN 61000-6-4/EN 55011 class B
Input resistance:	approx. 5 kΩ	Emitted interference:	EN 61000-6-2
Display range:	0.001 s ... 999999 h	Ambient temperature:	-10 ... +50 °C [14 ... 122 °F]
Reset time:	5 ms	Storage temperature:	-25 ... +70 °C [-13 ... 158 °F]
		Protection:	IP 65 front side
		Weight:	approx. 50 g [1.764 oz]

### Block diagram:



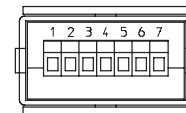
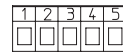
### Dimensions:



### Connections:

without optocoupler

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



### Delivery specifications:

- 1 Digital display
- 1 Panel mounting clip
- 1 Bezel for screw mounting, panel cut out 50 x 25 mm [ 1.969 x 0.984"]
- 1 Bezel for clip mounting, panel cut out 50 x 25 mm [1.969 x 0.984"]
- 1 Seal
- 1 Multilingual operating instructions

### Order code:

6.52U.012.3X0

Input switch level  
0 = Standard\*  
A = 5 V

\* standard stock model