

# Preset counters, electronic

**LED preset counters**      **Multifunctional – pulse, frequency, time – 65 kHz, 2 presets (AC+DC)**      **Codix 560**



With its automatic help texts, clearly and legibly displayed on 14 LED segments, the Codix 560 preset counter takes the user effortlessly through the programming. The large user-friendly front keys can be operated even when wearing gloves.

The 14 mm high LED display ensures easy reading even from a long distance and in poor lighting conditions.

Now available also with RS232/RS485 interface and MODBUS and CR/LF protocol



<b>DC</b> 10 ... 30 V Supply voltage	<b>AC</b> 10 ... 240 V Supply voltage	<b>-20...+65°C</b> Temperature range	<b>000000</b> DIN 96x48	<b>Prog</b> Menu-driven programming	<b>IP65</b> High protection level	<b>max. 65 kHz</b> High count frequency	<b>Multifunctional</b> Multifunctional	<b>t/Hz</b> Frequency display with HRA	<b>Position</b> Position display	<b>A..Z*</b> 14 segment LED
<b>Batch</b> Batch counter	<b>Σ</b> Total counter	<b>RS232/485</b> Optional interface								

### Multifunctional

- Counter, tachometer, timer and position display in one device.
- Can be used as preset counter, batch counter or total counter.
- 2 relays (change-over).
- Many different count modes.
- Scalable display.
- Set value, step or tracking preset.
- Multi-range supply voltage for AC or DC.
- Readable or configurable via RS232/485 interface via MODBUS or CR/LF protocol.
- Allows direct connection of a large display or printer.

### User-friendly

- Automatic help texts, displayed in German and English.
- 14-segment LED for improved text representation.
- Status display of the presets.
- 3 predefined parameters.
- Tracking presets eliminate the need for reprogramming of the pre-signal.
- Minimum installation depth.
- 4-stage RESET modes.
- 3-stage keypad locking.
- Suitable for installation in mosaic systems.

**Order code**      **6.560 . 010 . XXX**

**a** Supply voltage  
0 = 100 ... 240 V AC, ±10 % <sup>1)</sup>  
3 = 10 ... 30 V DC <sup>1)</sup>

**b** Input trigger levels  
0 = Standard level (HTL) <sup>1)</sup>  
A = 4...30 V DC level

**c** Interface (optional)  
0 = None <sup>1)</sup>  
5 = RS232 (MODBUS or CR/LF)  
7 = RS485 (MODBUS or CR/LF)

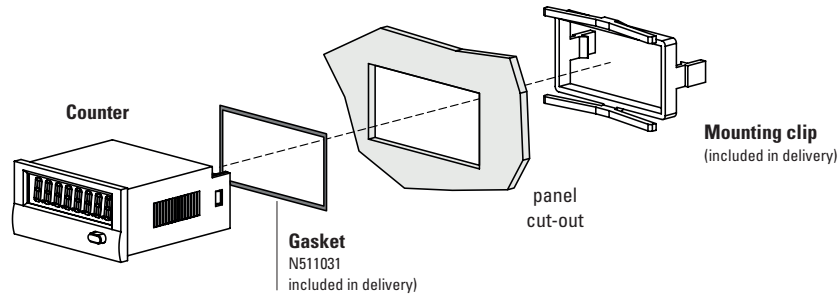
**Delivery specification**  
· Preset counter  
· Mounting clip  
· Instruction manual

1) Stock types

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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>

incl. in delivery

## Technical data

General technical data	
<b>Display</b>	6-digit red 14 segment LED display, 14 mm [0.55] high
<b>Operating temperature</b>	-20 °C ... +65 °C [-4 °F ... +149 °F] (non-condensing)
<b>Storage temperature</b>	-25 °C ... +75 °C [-13 °F ... +167 °F]
<b>Relative humidity</b> at +40 °C [+104 °F]	93 % (non-condensing)
<b>Altitude</b>	up to 2000 m [6562']

Mechanical characteristics	
<b>Protection</b>	IP65 (from the front)
<b>Weight</b>	approx. 180 g [6.35 oz]

Electrical characteristics		
<b>Supply voltage</b>	AC	100 ... 240 V AC, ±10 % max. 11 VA, 50/60 Hz
	DC	10 ... 30 V, max. 5.5 W
<b>External fuse protection</b>	230 V AC	T 0.1 A
	10 ... 30 V DC	T 0.25 A
<b>Data retention</b>		> 10 years, EEPROM
<b>Response time of the frequency meter</b>		100 / 600 ms (details s. instruction manual)
<b>Input modes</b>	pulse counters	count direction (cnt.dir), difference (up.dn), addition A+B (up.up), phase discriminator x1, x2, x4 (quad, quad x2, quad x4), ratio (A/B), ratio in % ((A-B)/A x 100 %)
	frequency meter	A, A-B, A+B quad, A/B, (A-B)/A x 100 %
	timer	4 start modes: FrErun, Auto, InpA.InpB., InpB.InpB.
<b>Sensor supply voltage</b>	AC supply	24 V DC ±15 %, 80 mA
	DC supply	max. 80 mA, external power supply is connected through
<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

# Preset counters, electronic

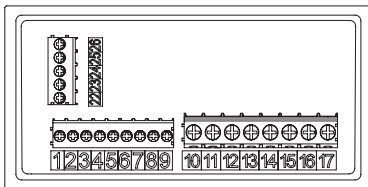
## LED preset counters **Multifunctional – pulse, frequency, time – 65 kHz, 2 presets (AC+DC) Codix 560**

Inputs	
<b>Count inputs</b>	A and B
<b>Polarity of the inputs</b>	programmable for all inputs in common, NPN/PNP
<b>Input resistance</b>	5 kΩ
<b>Count frequency</b>	pulse counters max. 55 kHz tachometers max. 65 kHz can be damped to 30 Hz (mechanical contacts) (details s. instruction manual)
<b>Control / Reset input</b>	MPI 1 and MPI 2, Lock, Gate, Reset
<b>Min pulse duration of the inputs</b>	10 ms / 1 ms
<b>Switching levels with AC supply</b>	HTL-level: LOW: 0 ... 4 V DC HIGH: 12 ... 30 V DC 4 ... 30 V DC: LOW: 0 ... 2 V DC HIGH: 3.5 ... 30 V DC
<b>Switching levels with DC supply</b>	HTL-level: LOW: 0 ... 0.2 x U <sub>B</sub> HIGH: 0.6 x U <sub>B</sub> ... 30 V DC 4 ... 30 V DC: LOW: 0 ... 2 V DC HIGH: 3.5 ... 30 V DC
<b>Pulse shape</b>	variable, Schmitt-Trigger characteristics

Outputs	
<b>Switching voltage</b>	max. 250 V AC / 150 V DC
<b>Switching current</b>	max. 3 A AC / DC min. 30 mA DC
<b>Switching capacity</b>	max. 750 VA / 90 W
<b>Output 1 + 2</b>	
mech. service life (switching cycles)	2 x 10 <sup>7</sup>
N° of switching cycles at 3 A / 250 V AC	5 x 10 <sup>4</sup>
N° of switching cycles at 3 A / 30 V DC	5 x 10 <sup>4</sup>
relay with changeover contact	
<b>Reaction time of the outputs (pulse / time)</b>	13 ms (details s. instruction manual)

Optional interface MODBUS and CR/LF	
<b>Count frequency</b>	max. 45 kHz (details s. instruction manual)
<b>Interface</b>	RS232, RS485
<b>Baud rate</b>	9600
<b>Device address</b>	1 ... 99, programmable

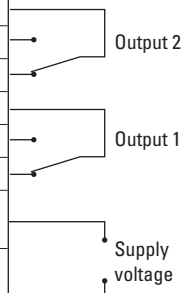
### Terminal assignment



Pin	RS232 (optional)	Pin	RS485 (optional)
22	GND	22	–
23	RXD	23	DO
24	TXD	24	DI
25	–	25	–
26	–	26	–

Pin	Signal and control inputs
1	INP A (Signal input A)
2	INP B (Signal input B)
3	RESET (Reset input)
4	LOCK (Keypad lock)
5	GATE (Gate input)
6	MPI 1 (User input 1)
7	MPI 2 (User input 2)
8	Sensor supply voltage AC: 24 V DC/80 mA DC: U <sub>B</sub> connected through
9	Shared connection for signal and control inputs GND (0 VDC)

Pin	Version with relay/optocoupler
10	Relay contact C.2
11	Relay contact N.O.2
12	Relay contact N.C.2
13	Relay contact C.1
14	Relay contact N.O.1
15	Relay contact N.C.1
16	AC: 100 ... 240 V AC, ±10 %, N~ DC: 10 ... 30 V DC
17	AC: 100 ... 240 V AC, ±10 %, L~ DC: GND (0 V DC)



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## Pulse counter

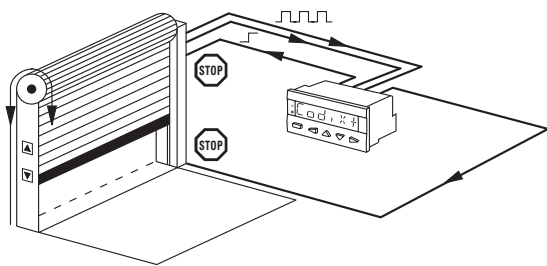
### Functions / count modes

- Count with direction mode
- Difference mode
- Quadrature mode quad / quad2 / quad4
- Add, Sub, automatic reset
- 2-input adding mode A+B
- Ratio measurement A/B
- Multi-range supply voltage for AC or DC
- Percentage difference measurement  $(A-B)/A \times 100\%$
- Batch counting
- Totalizer (Overall total)
- Multiplication and division factor (up to 99.9999)
- Set value
- Step or tracking preset

## Application examples

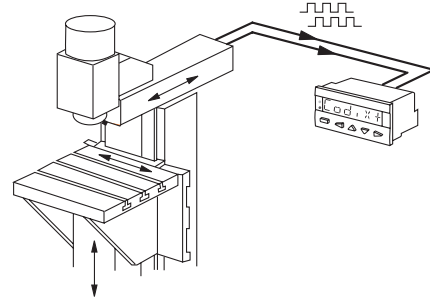
### CountDir + Add

Roller shutter door with automatic shut-off



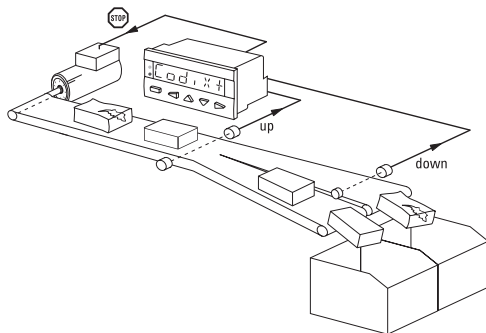
### Quad + Add

Running direction and position on milling machines, Limit switch monitoring



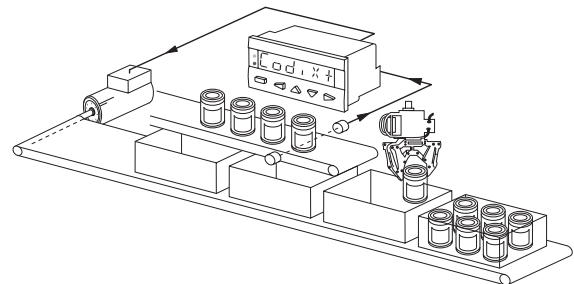
### UpDown + Add

Automatic subtraction of faulty or reject parts from the total piece count



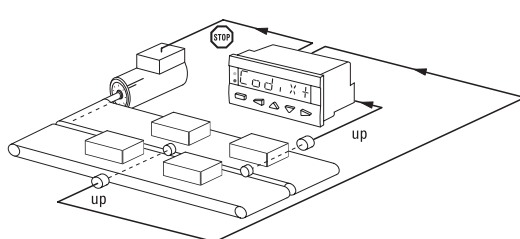
### CountDir + Batch

Logging of piece numbers and packing units plus control of replenishment of packing cartons



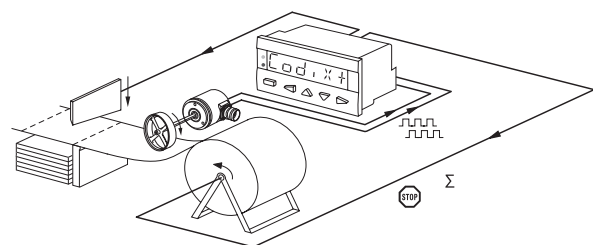
### UpUp + Add

Adding up of two parallel or staggered production lines



### Quad + Add tot

Cut-to-length with overall total count and control of the machine



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**Frequency meter (tachometer)**

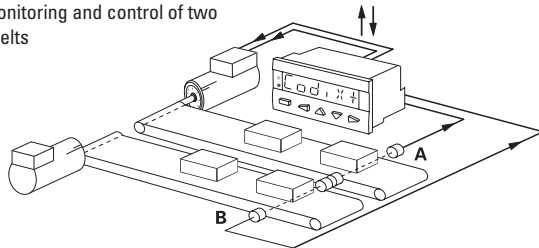
**Functions / count modes**

- A
- A – B
- A + B
- A / B
- $(A - B) / A \times 100\%$  (percentage display)
- Quad (phase discriminator with recognition of direction)
- Averaging
- Start delay
- 2nd tacho input
- Gate input
- Multiplication and division factor (up to 99.9999)

## Application examples

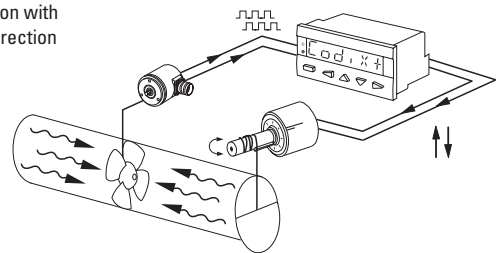
### A – B

Synchro monitoring and control of two conveyor belts



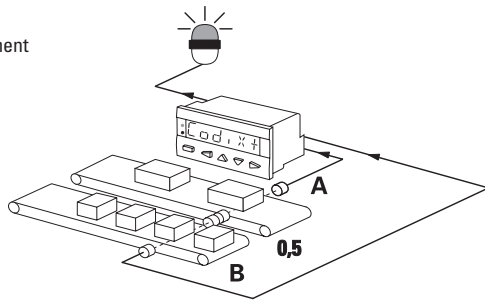
### Quad

Speed regulation with indication of direction



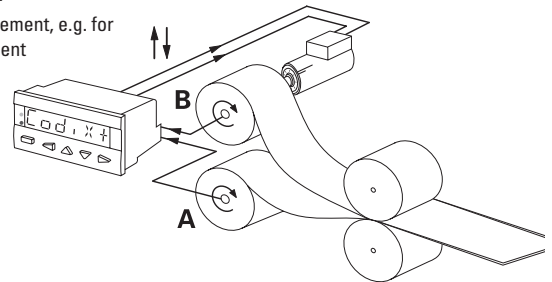
### A/B

Ratio measurement



### (A-B)/A [%]

Ratio measurement, e.g. for speed alignment



**Time and hours-run meter (timer)**

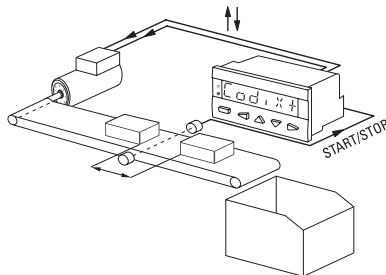
**Functions / count modes**

- FrErUn (control via gate input)
- Auto (start via reset, stop at preset)
- InpB.InpB (start with first edge at InpB., stop with second edge InpB.)
- InpA. InpB (start with InpA., stop with InpB.)
- Totalizer (overall total)
- Batch counting
- Set value
- Step or tracking preset

## Application examples

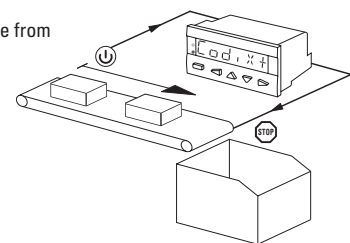
### InpB. InpB

Interval measurement



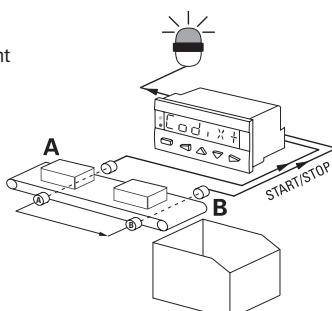
### FrErUn

Measurement of overall time from switching on the conveyor belt till switching off



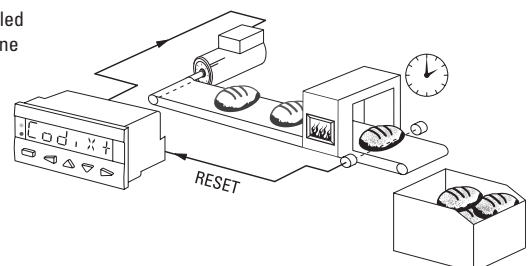
### InpA. InpB

Run-time measurement



### Auto

Time-controlled production line



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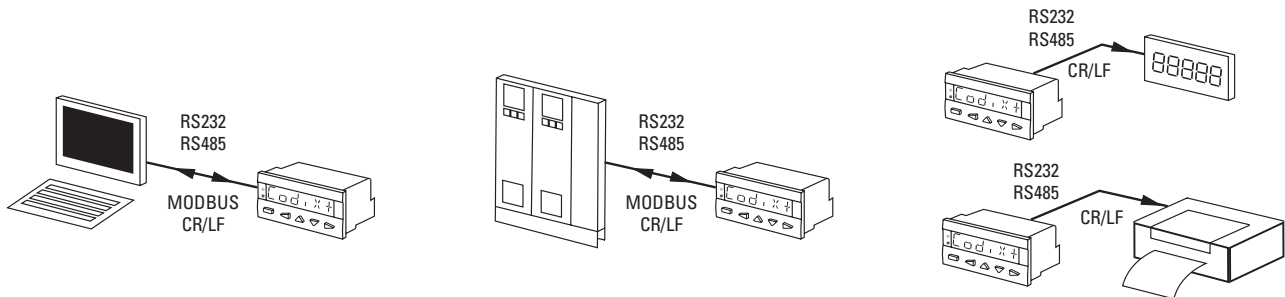
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## RS232 / RS485 interface (optional)

For connecting the counter to a PC, a PLC, a large display or a printer – for reading-out data or configuring the device.



## Dimensions

Dimensions in mm [inch]

