Preset counters, electronic

LED preset counters	Multifunction – pulse, frequency, time – 60 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.

New: now available also with RS232/485 interface and MODBUS and CR/LF protocol

DC 10 ... 30V	**AC** 100 ... 240 V	- 20° + 65°	**000000** DIN 96 x 48	Prob	**IP65**	max. **65 kHz**		**HRA**	**POSITION**	A..Z **LEDs**
Power supply		Temperature range	DIN front bezel	Menu-driven programming	High protection level	High count frequency	Multifunction	Frequency display with HRA	Position display	14 segment LED
Batch	**Σ**	**RS** 232 485								
Batch counter	Total counter	Optional interface								

Multifunction

- 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 power supply 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 b c

ⓐ *Power supply*
0 = 100 ... 240 V AC, ± 10% [1]
3 = 10 ... 30 V DC [1]

ⓑ *Input trigger levels*
0 = Standard level (HTL) [1]
A = 4...30 V DC level

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

Delivery specification
- Preset counter
- Mounting clip
- Instruction manual

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 [3.78 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.

[1] Stock types

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Technical data

General technical data

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

Electrical characteristics

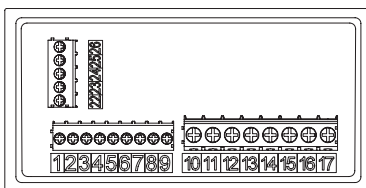|		
Power supply	AC	100 ... 240 V AC, ± 10% max. 11 VA, 50/60 Hz
	DC	10 ... 30 V, max. 5.5 W
External fuse protection	230 V AC	T 0.1 A
	10 ... 30 V DC	T 0.25 A
Data retention		> 10 years, EEPROM
Response time of the frequency meter		100 / 600 ms (details s. instruction manual)
Input modes	Pulse counters:	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 x100%)
	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.
Sensor power supply	AC supply	24 V DC± 15%, 80 mA
	DC supply	max. 80 mA, external power supply is connected through
EMC	Emitted interference	EN 55011 class B
	Immunity to interference	EN 61000-6-2
Device safety	Designed to	EN 61010 part 1
	Protection class	2
	Application area	Pollution level 2
UL approval		File No.: E128604

Mechanical data

Protection	IP65 (from the front)
Weight	approx. 180 g [6.35 oz]

Inputs

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

Outputs

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

Optional interface MODBUS and CR/LF

Count frequency	max. 45 kHz (details s. instruction manual)
Interface	RS232, RS485
Baud rate	9600
Device address	1 ... 99, programmable

Terminal assignment

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 power supply AC: 24 V DC/80 mA DC: U_B 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	Output 2
12	Relay contact N.C.2	
13	Relay contact C.1	
14	Relay contact N.O.1	Output 1
15	Relay contact N.C.1	
16	AC: 100 ... 240 V AC, ± 10%, N~ DC: 10 ... 30 V DC	Power supply
17	AC: 100 ... 240 V AC, ± 10%, L~ DC: GND (0 V DC)	

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

Pin	RS485 (optional)
22	–
23	DO
24	DI
25	–
26	–

# Preset counters, electronic

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 power supply for AC or DC

- Percentage difference measurement (A-B)/A x 100%
- Batch counting
- Totaliser (Overall total)
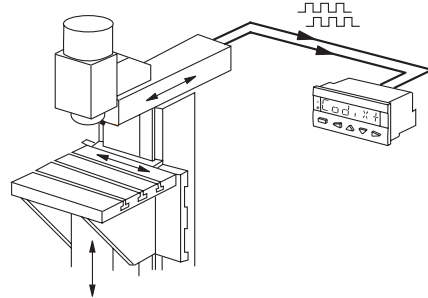- Multiplication and division factor (up to 99.9999)
- Set value
- Step or tracking preset

Application examples

CountDir + Add

Roller shutter door with automatic shut-off
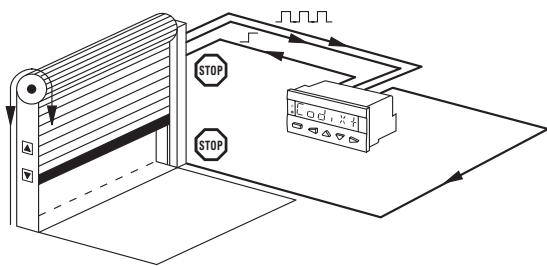
Quad + Add

Running direction and position on milling machines, Limit switch monitoring

UpDown + Add

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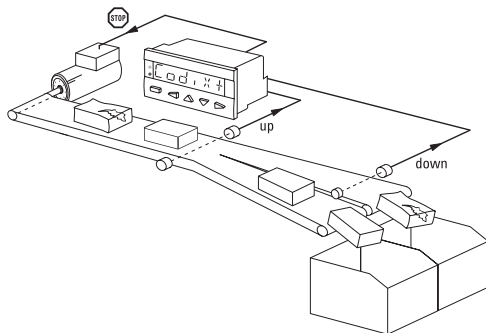
CountDir + Batch

Logging of piece numbers and packing units plus control of replenishment of packing cartons
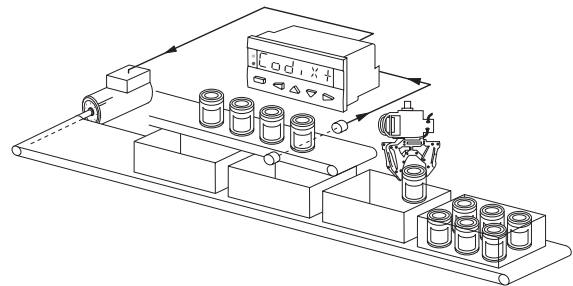
UpUp + Add

Adding up of two parallel or staggered production lines
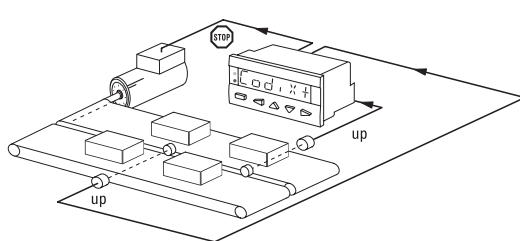
Quad + Add tot

Cut-to-length with overall total count and control of the machine
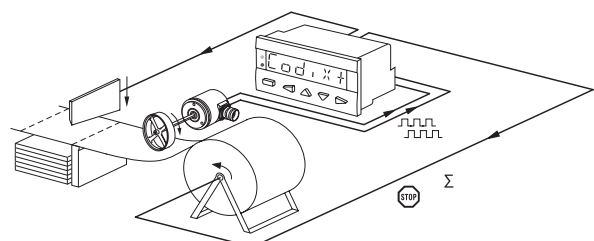
Preset counters, electronic

Frequency meter (tachometer)

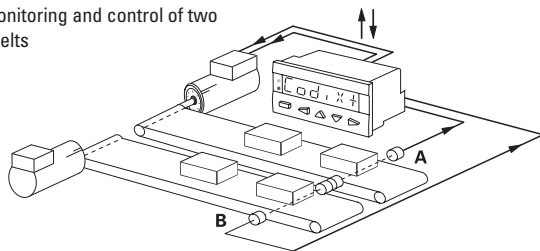**Functions / count modes**
- A
- A – B
- A + B
- A / B
- (A – B) / A x 100 % (percentage display)
- Quad (phase discriminator with recognition of direction)

- Averaging
- Start delay
- 2nd tacho input
- Gate input
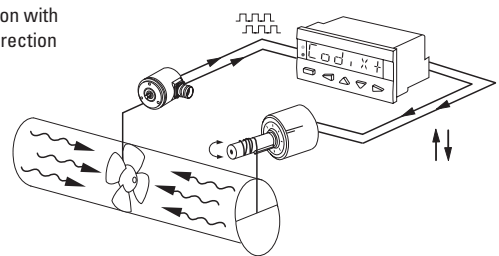- Multiplication and division factor (up to 99.9999)

Application examples

A – B
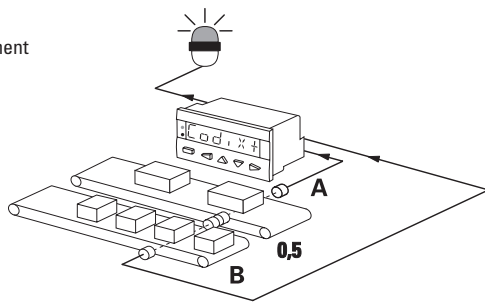
Synchro monitoring and control of two conveyor belts
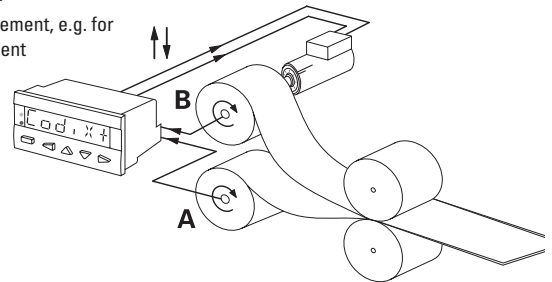
Quad

Speed regulation with indication of direction

A/B

Ratio measurement

(A-B)/A [%]

Ratio measurement, e.g. for speed alignment
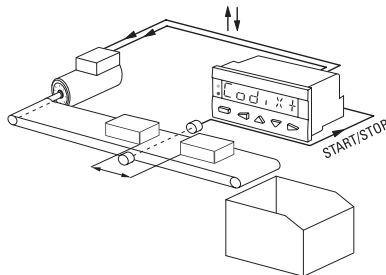
Time and hours-run meter (timer)

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.)

- Totaliser (overall total)
- Batch counting
- Set value
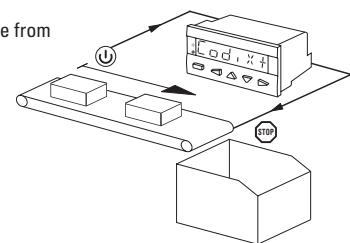- Step or tracking preset

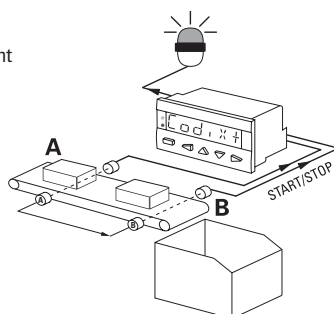## Application examples

InpB. InpB

Interval measurement

FrErun

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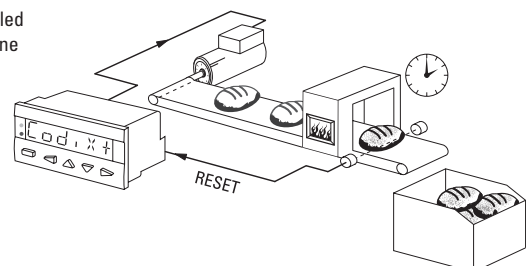
InpA. InpB

Run-time measurement

Auto

Time-controlled production line

Preset counters
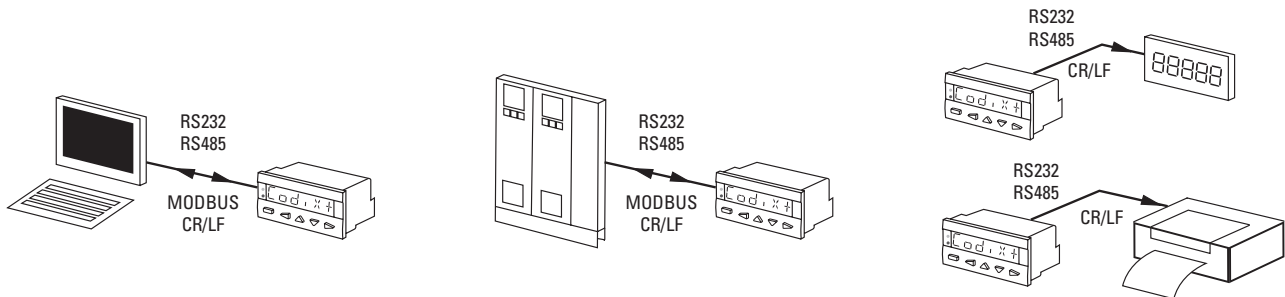
Preset counters, electronic

LED preset counters | Multifunction – pulse, frequency, time – 60 kHz, 2 presets (AC+DC) | Codix 560

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]

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