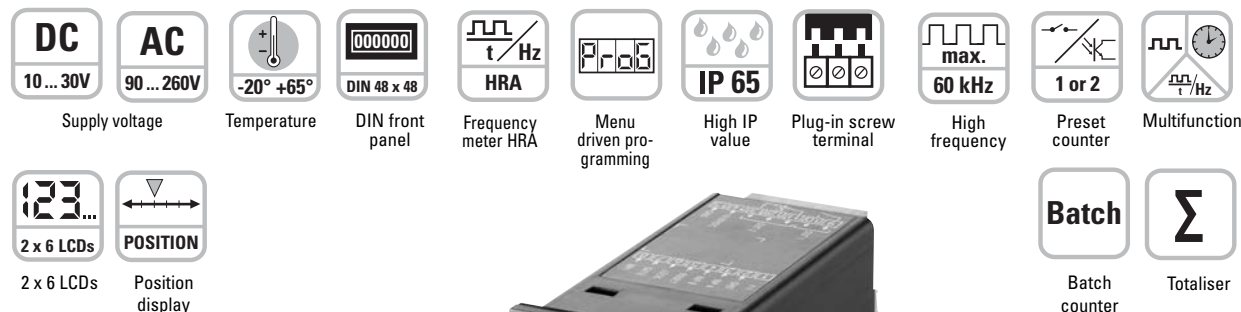


Counting Technology

Preset Counter **CODIX** 923/924

Universal Preset Counter **CODIX** 923 / 924



Multifunction:

- Counter, Tachometer and Timer – all in one device
- Can be used as preset counter, batch counter or totaliser (overall cumulative count)
- 1 or 2 presets (additional presets on request)
- Relay or optocoupler outputs
- Wide choice of count modes for pulse inputs, time or frequency
- Division factor, set value, averaging, start delay (Tachometer), step or tracking presets



Fast:

- Direct input of the presets via the front keys or the Teach-In input
- Fast installation thanks to plug-in screw terminals
- Max. count frequency 60 kHz

User-friendly:

- Simultaneous display of the actual value, presets, batch count or total count
- Annunciators for the displayed preset and for the output status
- 3 predefined settings for the most common parameter settings
- Direct entry into the programming
- Tracking presets eliminate the need for reprogramming of the pre-signal
- Minimum installation depth
- 4 stage RESET modes
- 3 stage key lockout

Technical data:

Supply voltage:	90 ... 260 V AC/max. 8 VA, 50/60 HZ, External fuse protection T 0,1 A 10 ... 30 V DC/max. 1,5 W External fuse protection T 0,2 A
Display:	2 line 6 digits LCD display LCD pos. (green) backlighting
Count inputs:	
Polarity of the inputs:	programmable for all inputs in common NPN/PNP
Input resistance:	5 k Ω
Count frequency:	max. 55 kHz (details see manual)
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
5 V-level	Low: 0 ... 2 V DC High: 3,5 ... 30 V DC
Switching level with DC-supply:	
HTL-level	Low: 0 ... 0,2 x U _B High: 0,6 x U _B ... 30 V DC
5 V-level	Low: 0 ... 2 V DC High: 3,5 ... 30 V DC
Pulse shape:	variable, Schmitt-Trigger characteristics
Output	Switching voltage max. 250 V AC/110 V DC Switching current max. 3 A AC/A DC

Output 1	Switching current min. 30 mA DC Switching capacity max. 750 VA/90 W Mech. service life (switching cycles) 2 x 10 ⁷ N° of switching cycles at 3 A/250 V AC 1 x 10 ⁶ N° of switching cycles at 3 A/30 V DC 1 x 10 ⁶ Relay closing contact, programmable as normally open (NO) or normally closed (NC)
Output 2	Mech. service life (switching cycles) 20 x 10 ⁶ N° of switching cycles at 3 A/250 V AC 5 x 10 ⁴ N° of switching cycles at 3 A/30 V DC 5 x 10 ⁴ Relay with changeover contact
or npn optocoupler:	switching power 30 V DC/10 mA U _{CESAT} at I _C = 10 mA: max. 2,0 V U _{CESAT} at I _C = 5 mA: max. 0,4 V
Reaction time of the outputs:	Relay: approx 7 ms Optocoupler: approx 1 ms, Details see instruction manual
Response time of the frequency counter:	100/600 ms, Details see instruction manual
Data retention:	min. 10 years, EEPROM
Count modes:	
Pulse counter::	cnt.dir, up.dn, up.up, quad, quad 2, quad4, A/B, (A-B)/A x 100%
Frequency counter:	A, A-B, A+B, quad, A/B, (A-B)/A x 100%
Timer:	FrErun, Auto, InpA.InpB., InpB.InpB.

Counting Technology

Preset Counter **CODIX** 923/924

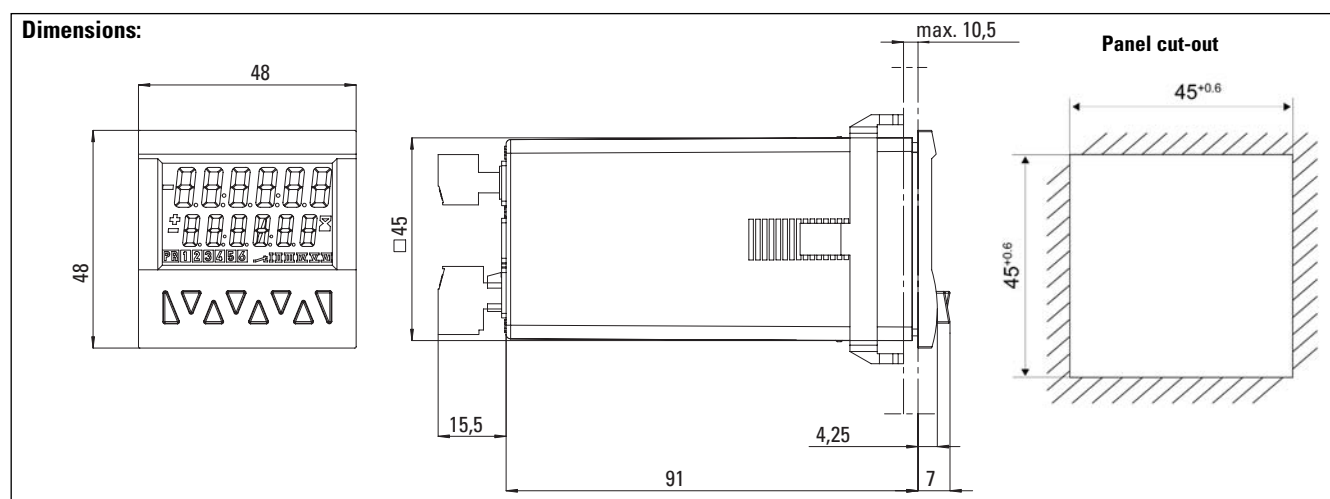


Technical Data:

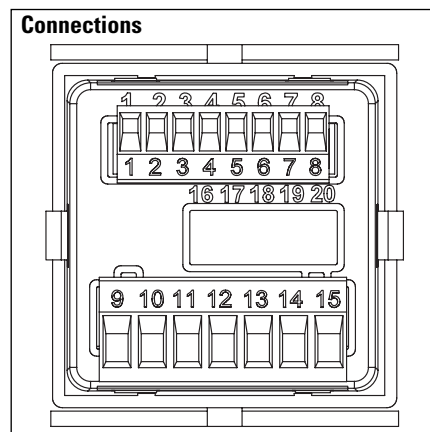
Voltage supply for sensors:	
AC supply	24 V DC± 15%, 80 mA
DC supply	max. 80 mA, external voltage supply is connected through
Operating temperature:	-20 °C ... +65 °C
Storage temperature:	-25 °C ... +75 °C

Humidity:	RH 93% at +40 °C, non-condensing
EMC:	CE compliant to EU directive 89/36/EEG
Standards:	EN 61 000-6-4/EN 55011 class B EN 61000-6-2
UL (applied for):	File-N°.: E128604
Protection:	IP65 (front)
Weight:	approx. 125 g

Dimensions:



Connections



Signal and control inputs

- 1 Sensor voltage supply
AC: 24 VDC/80 mA
DC: UB interconnected
- 2 GND (0 VDC)
- 3 INP A (Signal input A)
- 4 INP B (Signal input B)
- 5 RESET (Reset input)
- 6 LOCK (Key locking input)
- 7 GATE (Gate input)
- 8 MPI (User input)
- 16 ... 20:
Additional optional inputs or outputs or interfaces

Version with relays/optocouplers

- 9 Relay contact C./Collector
 - 10 Relay contact N.O./Emitter
 - 11 Relay contact C./Emitter
 - 12 Relay contact N.O./not assigned
 - 13 Relay contact N.C./ Collector
 - 14 AC: 90..260 VAC N~
DC: 10..30 VDC
 - 15 AC: 90..260 VAC L~
DC: GND (0 VDC)
- Output 1: 9, 10
Output 2: 11, 12
Supply voltage: 14, 15

Delivery specification:

Preset counter
Mounting clip
Operating instructions

6.92X.01XX.XX0

Order code:

Number of presets
3 = 1 preset
4 = 2 preset

Outputs
0 = Relays
1 = Optocouplers

LCD options
0 = no backlighting
1 = green backlighting

Input trigger level
0 = Standard level (HTL)
A = 5 V-level

Supply voltage
0 = 90–260 V/AC
3 = 10–30 V/DC

Options: Additional inputs or outputs or interfaces on request

Standard stock models:

6.923.0100.000 6.924.0100.000
6.923.0100.300 6.924.0100.300

Areas of application:

■ Pulse counter

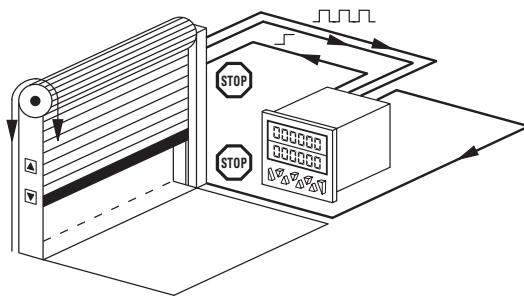
Functions/ Count modes

- 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
- Percentage difference measurement $(A-B)/A \times 100\%$
- Batch counting
- Totaliser (Overall total)
- Multiplication and division factor (up to 99.999)
- Set value
- Step or tracking preset

Application examples

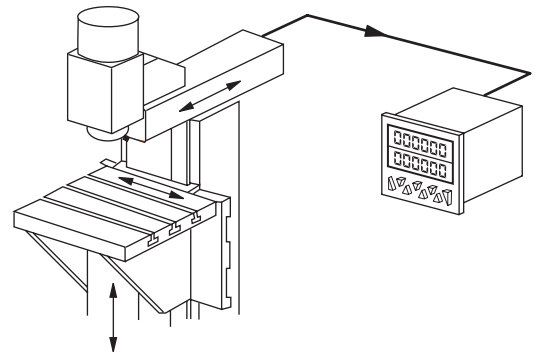
CountDir

Roller shutter door with automatic shutoff



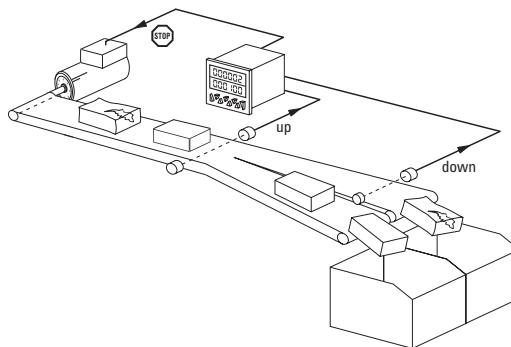
Quad

Running direction and position on milling machines



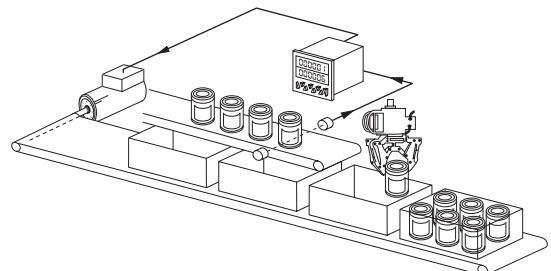
UpDown

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



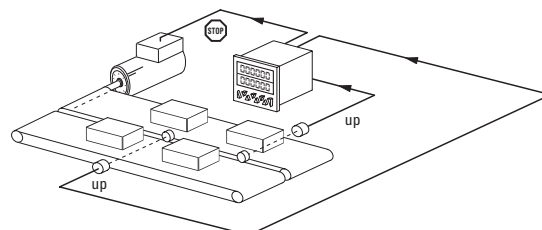
Batch

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



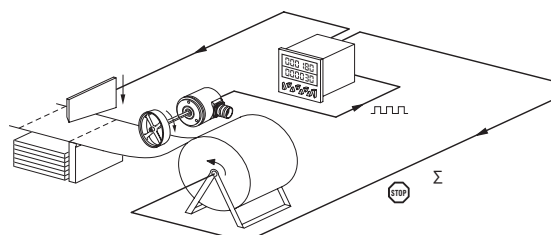
UpUp

Adding up of two parallel or staggered production lines



Add tot

Cut-to-length with overall total count



Areas of application:

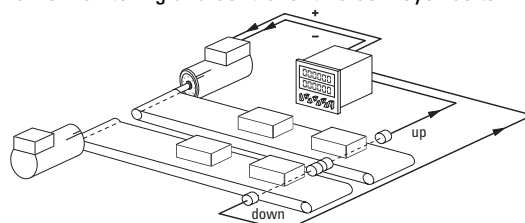
■ Frequency counter (Tachometer)

Functions/ Count modes

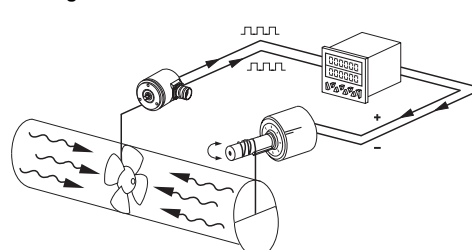
- A
- B
- A – B
- A + B
- A / B
- (A – B) / A x 100 % (percentage display)
- Quad (Phase discriminator with recognition of direction)
- Averaging
- Start delay
- 2nd tacho input
- Gate input
- Multiplication and division factor (up to 99.9999)

Application examples

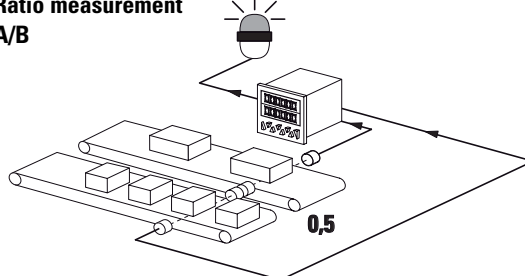
A – B
Synchro monitoring and control of two conveyor belts



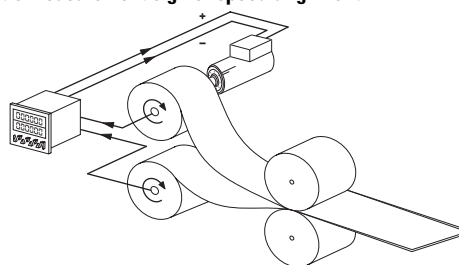
Speed regulation with indication of direction



**Ratio measurement
A/B**



Ratio measurement e.g. for speed alignment



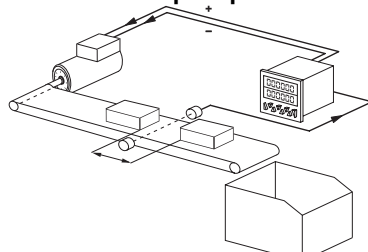
■ Time and hours-run meter (Timer)

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

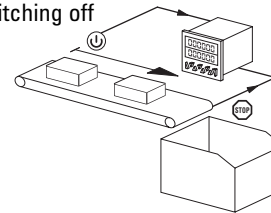
Application examples

Interval measurement InpB. InpB

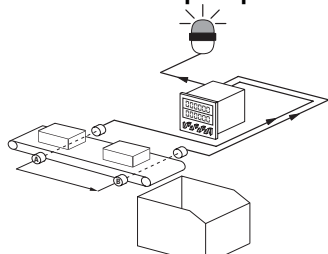


FrErUn

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

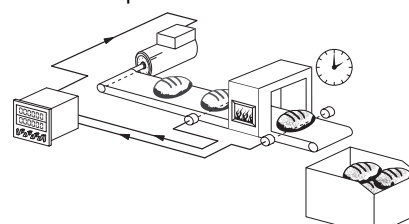


Run-time measurement InpA. InpB.



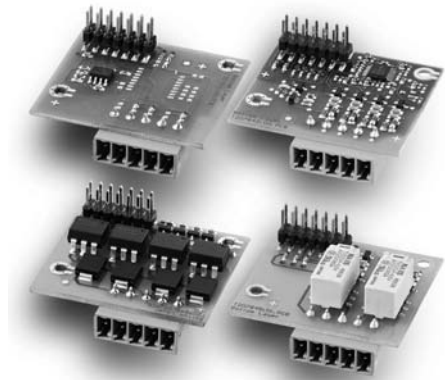
Auto

time-controlled production line



The technology platform for OEM applications:

Expandable



Expandable on request via modules:

- with up to 4 inputs
- 4 additional optocoupler outputs
- 2 additional relay outputs
- RS 232/485 communications interfaces

Application examples:

- Limit switch monitoring
- Special functions/PLC function
- Initiation of fixed program sequences
- Control of several processes
- Special protocols
- Print commands for logging

Customisable



Individual customisation of software to your application. For example:

- Separate inputs for total counter and preset counter
- Separate scaling of input A and B
- Programmable measuring period for the tachometer
- Measurement of rotary speeds based on time
- Processing time, measurement of time based on frequency

Please talk to us – we look forward to solving your individual requirements in a close dialogue with you