Preset Counter *CODIX* 923/924 with up to 6 presets

Universal Preset Counter *CODIX* 923 / 924

DC 10 ... 30V — Supply voltage
AC 90 ... 260V — Supply voltage
-20° +65° — Temperature
DIN 48 x 48 — DIN front panel
t/Hz HRA — Frequency meter HRA
Prog — Menu driven programming
IP 65 — High IP value
Plug-in screw terminal
max. 60 kHz — High frequency
1 to 6 — Preset counter
t/Hz — Multifunction
2 x 6 LCDs
POSITION — Position display
Multi-Colour
Batch — Batch counter
Σ — Totaliser

New with 4 and 6 presets

RoHS

Multifunction:

- **Counter, Tachometer and Timer – all in one device**
- **Can be used as preset counter, batch counter or totaliser (overall cumulative count)**
- **Presets: 923: 1, 924: 2, 924-4: 4, 924-6: 6**
- **Relay or optocoupler outputs**
- **Wide choice of count modes for pulse inputs, time or frequency**
- **Averaging, start delay (Tachometer)**
- **Scalable display with multiplikation and division factor, set value**
- **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**
- **Multicolour display for improved differentiation of the two values**

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 2 x 6 digits LCD display
	Standard:	positive green with optional backlighting
	LED Look:	negative, red backlighting
	Multicolour:	upper line negative, red backlighting lower line negative, red or green backlighting (programmable)
Inputs:		
Count inputs:		
Polarity of the inputs:		programmable for all inputs in common NPN/PNP
Input resistance:		5 kOhm
Count frequency:		max. 55 kHz (details see manual)
Monitoring/reset inputs:		MPI, 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
5 V-level	Low: 0 ... 2 V DC	High: 3,5 ... 30 V DC
Switching levels 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
	Switching current	min. 30 mA DC
	Switching capacity	max. 750 VA/90 W
Output 1	Mech. service life (switching cycles)	2 x 10^7
	N° of switching cycles at 3 A/250 V AC	1 x 10^5
	N° of switching cycles at 3 A/30 V DC	1 x 10^5
	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 IC = 10 mA:	max. 2,0 V
	U_{CESAT} at IC = 5 mA:	max. 0,4 V
Reaction time of the outputs:	Relay: appr. 7 ms Optocoupler: appr. 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	
General:		
Count modes:		
Pulse counter:	cnt.dir, up.dn, up.up, quad, quad 2, quad 4, 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.	

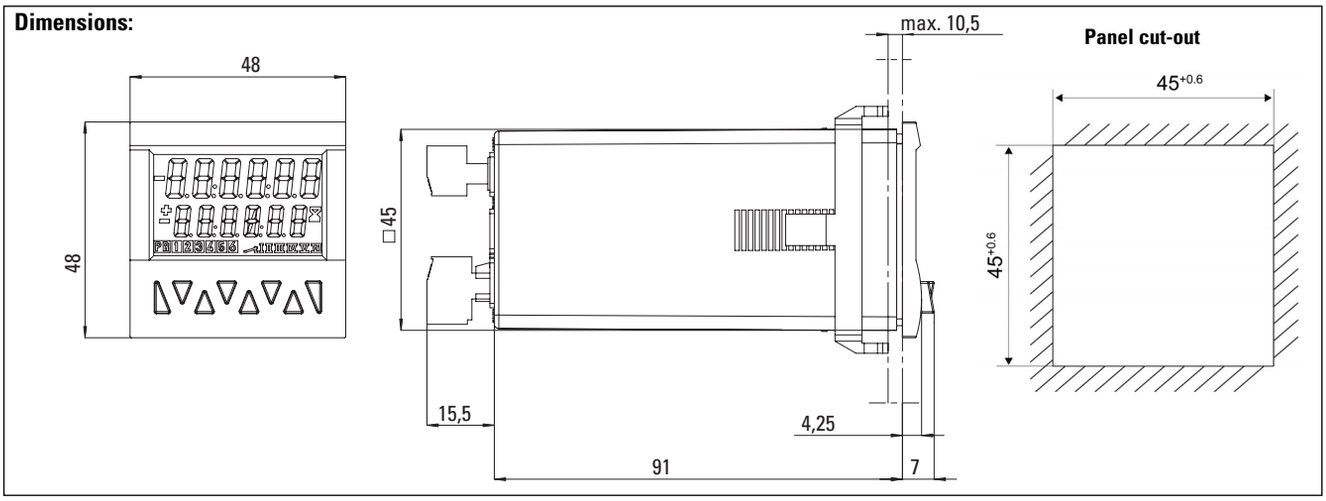
Universal Preset Counter *CODIX* 923 / 924

Technical Data:

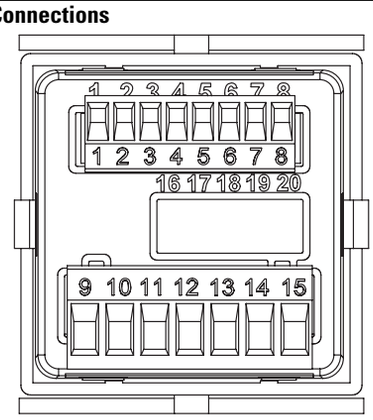
Voltage supply for sensors:	
AC supply	24 V DC± 15%, 80 mA
DC supply	max. 80 mA, external voltage supply is connected through
Operating temperature:	-20 °C ... +65 °C
Storage temperature:	-25 °C ... +75 °C

Humidity:	RH 93% at +40 °C, non-condensing
EMC:	CE compliant to EU directive 89/36/EWG
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
→ Output 1

11 Relay contact C./Emitter
12 Relay contact N.O./not assigned
13 Relay contact N.C./ Collector
→ Output 2

14 AC: 90..260 VAC N~
DC: 10..30 VDC
15 AC: 90..260 VAC L~
DC: GND (0 VDC)
→ Supply voltage

Delivery specification:
Preset counter
Mounting clip
Operating instructions

Order code:

6.92X.01XX.XX0

Number of presets
3 = 1 preset
4 = 2 preset

Outputs
0 = Relays
1 = Optocouplers (only 924)

LCD options
0 = no backlighting
1 = green backlighting
2 = LED look
negative, red backlighting
3 = Multicolour
negative red/green backlighting

Input trigger level
0 = Standard level (HTL)
A = Fixed level *

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

* Fixed level: Low 0 ... 2 V DC, High 4 ... 30 V DC

Options: Additional inputs, outputs or interfaces on request

Standard stock models:

6.923.0100.000	6.924.0100.000
6.923.0100.300	6.924.0100.300

Multifunction Preset Counters *CODIX* 924-4 (4 Presets)/ 924-6 (6 Presets)

Characteristics that differ from standard counters *CODIX* 923/924:

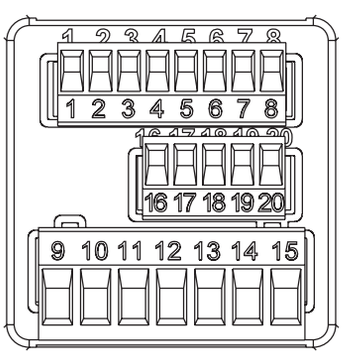
The preset counters 924-4 und 924-6 vary from the standard counters 923 and 924 as follows:
– Relay version: 924-4, 4 presets, 2 additional relays
– Optocoupler version: 924-6: 6 presets, 4 additional optocoupler outputs
– no tracking presets
– Presets 1 and 4 affect the batch or total counter. Presets 2,3,5 and 6 (Type: 924-6) or presets 2 and 3 (Type 924-4) affect the main counter. Preset 2 is the main preset; it triggers the automatic reset.
– Preset 2 is likewise the main preset for all further counting modes. The other presets are pre-signals.

Technical Data:

Addendum *CODIX* 924-4		
Output 3, Relay with closing contact		
Switching voltage	max. 125 V AC/ 110 V DC	
Switching current	max. 1 A AC/ 1 A DC	
	min. 1 mA AC/DC	
Switching capacity	max. 62,5 VA/ 30 W	
Mech. service life (switching cycles)		$5x10^7$
N° of switching cycles at 0.5A/125 VAC		$1x10^5$
N° of switching cycles at 1 A/30 V DC		$1x10^5$
Output 4, Relay with changeover contact		
Switching voltage	max. 125 VAC/ 110 VDC	
Switching current	max. 1 A AC/ 1 A DC	
	min. 1 mA AC/DC	
Switching capacity	max. 62,5 VA/ 30 W	
Mech. service life (switching cycles)		$5x10^7$
N° of switching cycles at 1 A/110 V AC		$1x10^5$
Reaction time of the outputs: Relay (only impulse and time counter)		< 7 ms
Max. count frequency:		50 kHz

Addendum *CODIX* 924-6	
Output 1 to 6, NPN optocoupler	
Switching capacity:	30 VDC/10 mA
UCESAT at IC = 10 mA:	max. 2,0 V
UCESAT at IC = 5 mA:	max. 0,4 V
Output 3, 4, 5 and 6 with common emitter	
Reaction time of the outputs, optocoupler: (only impulse and time counter)	
Add/Sub/	< 1 ms
with autorepeat	< 1 ms
A/B ; (A-B)/A	< 23 ms
Max. count frequency:	50 kHz

Connections



924-4		**924-6**	
16 Relay contact N.C.4	Output 4	16 Common Emitter	Output 3 to 6
17 Relay contact C.4	Output 4	17 Collector 6	Output 6
18 Relay contact N.O.4	Output 4	18 Collector 5	Output 5
19 Relay contact N.O.3	Output 3	19 Collector 4	Output 4
20 Relay contact C.3	Output 3	20 Collector 3	Output 3

Order code:

CODIX 924-**4**
90 ... 260 V AC: 6.924.010X.**0**0C
10 ... 30 V DC: 6.924.010X.**3**0C

CODIX 924-**6**
90 ... 260 V AC: 6.924.011X.**0**0B
10 ... 30 V DC: 6.924.011X.**3**0B

LCD version
0 = no backlighting
1 = green backlighting
2 = LED Look
negative red backlighting
3 = Multicolour
negative red/ green backlighting

Areas of application:

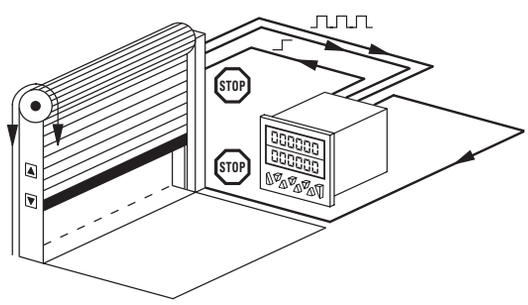
Pulse counter

Functions/ Count modes

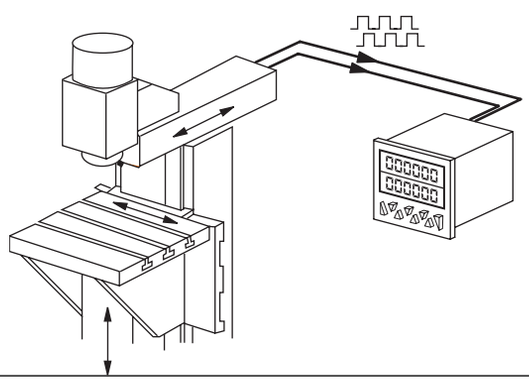
- Count with direction mode
- Difference mode
- Quadrature mode quad/quad2/quad4
- Add, Sub, automatic reset
- 2-input adding mode A+B
- Ratio measurement A/B
- Percentage difference measurement (A-B)/A x 100%
- Batch counting
- Totaliser (Overall total)
- Multiplication and division factor (up to 99.999)
- Set value
- Step or tracking preset

Application examples

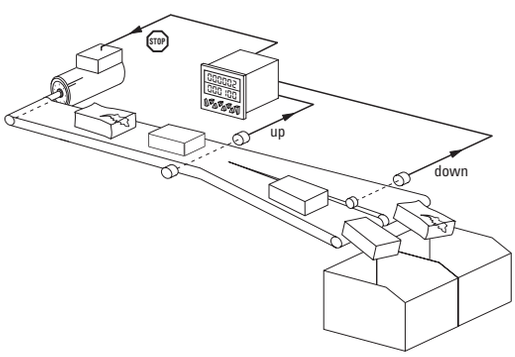
CountDir
Roller shutter door with automatic shutoff



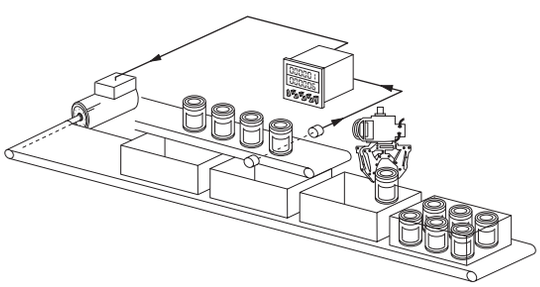
Quad
Running direction and position on milling machines



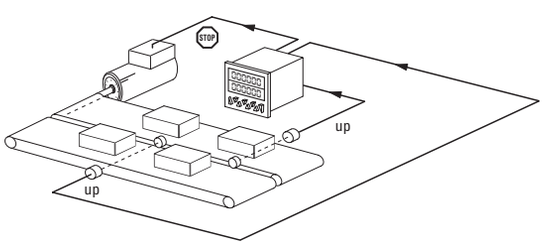
UpDown
Automatic subtraction of faulty or reject parts from the total piece count



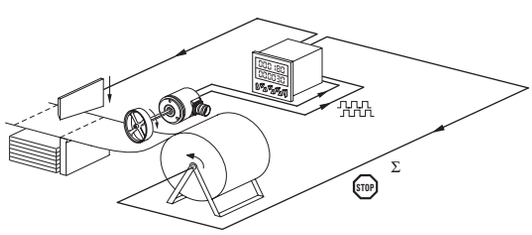
Batch
Logging of piece numbers and packing units plus control of replenishment of packing cartons



UpUp
Adding up of two parallel or staggered production lines



Add tot
Cut-to-length with overall total count



Areas of application:

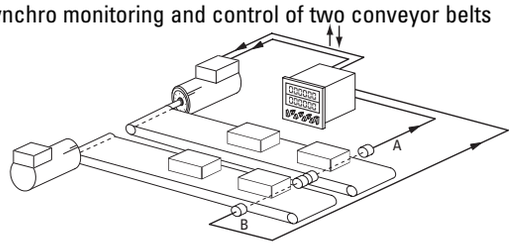
Frequency counter (Tachometer)

Functions/ Count modes

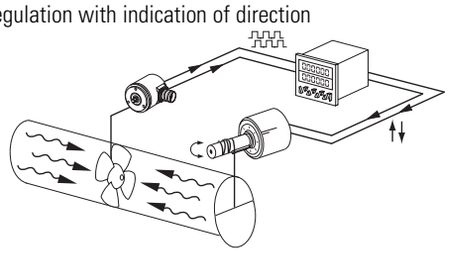
- A
- B
- A – B
- A + B
- A / B
- (A – B) / A x 100 % (percentage display)
- Quad (Phase discriminator with recognition of direction)
- Averaging
- Start delay
- 2nd tacho input
- Gate input
- Multiplication and division factor (up to 99.9999)

Application examples

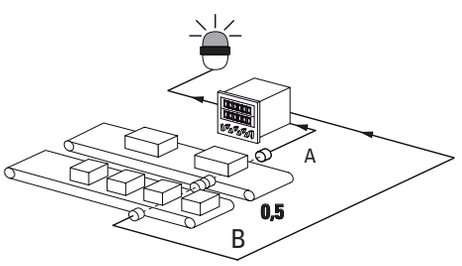
A – B
Synchro monitoring and control of two conveyor belts



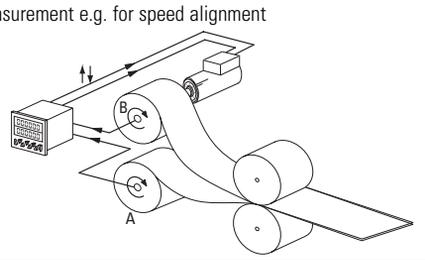
Quad
Speed regulation with indication of direction



Ratio measurement A/B



(A-B)/A [%]
Ratio measurement e.g. for speed alignment



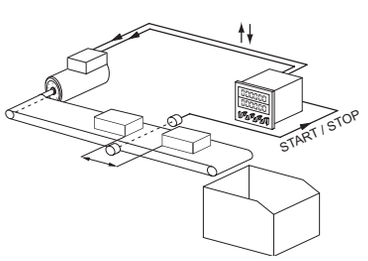
Time and hours-run meter (Timer)

Functions/ Count modes

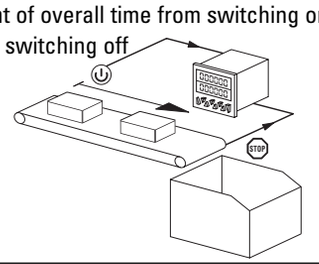
- FrErun (Control via gate input)
- Auto (Start via Reset, Stop at preset)
- **InpB.InpB (Start with first edge at InpB., Stop with second edge InpB.)**
- InpA. InpB (Start with InpA., Stop with InpB.)
- Totaliser (Overall total)
- Batch counting
- Set value
- Step or tracking preset

Application examples

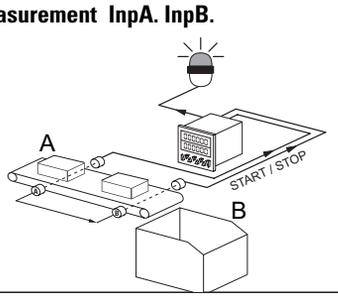
Interval measurement InpB. InpB



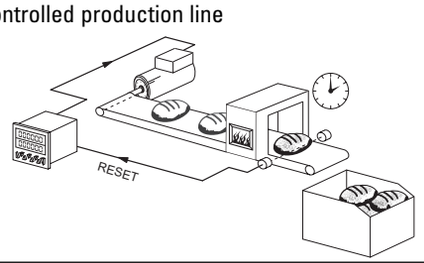
FrErun
Measurement of overall time from switching on the conveyor belt till switching off



Run-time measurement InpA. InpB.



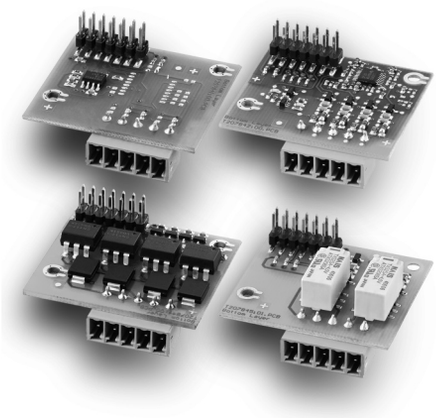
Auto
time-controlled production line



Preset Counter *CODIX* 923/924 with up to 6 presets

The technology platform for OEM applications:

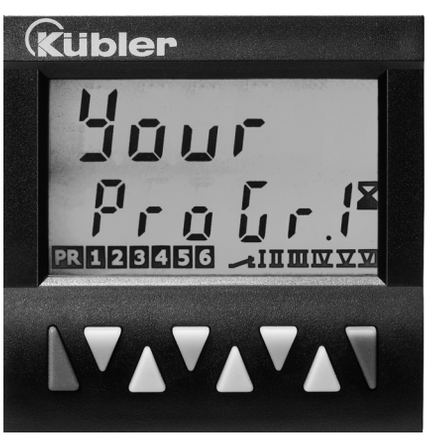
Expandable



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
- With the Multicolour version, the display colour changes when reaching the preset, or blinking display with all versions

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