Kübler

The Ready-to-go Control and Display Solution for Pulses, Time and Frequency

Your logo can be included free-of-charge for 100+ pcs.

RoHS

c UL us
in preparation

3 Jahre / years Gewährleistung / warranty
Made in Germany by Kübler

Universal Preset Counters
CODIX 923/924

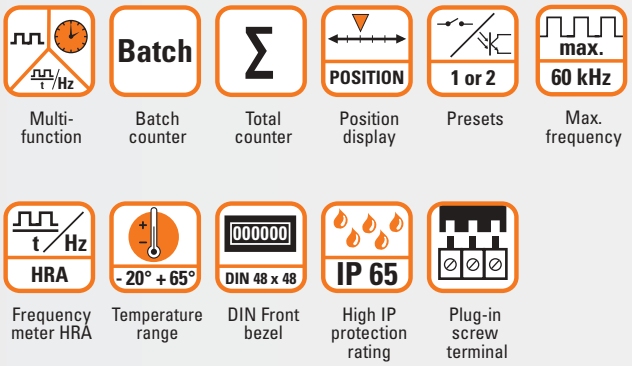
to display, measure and control pulses, time and frequency

- **Multifunction:** more than just a preset counter, customisable, expandable via modules
- **Expandable:** with control and monitoring functions specifically for OEMs
- **User-friendly:** solves control tasks including display without complex programming

pulses for automation

Preset Counters *CODIX* 923/924
More than just preset counters

Your control solution, ready-to-go · very easy to operate · direct display · expandable via module individual functionality.



Multifunction

More than just preset counters: the ***CODIX*** 923/924 are multi-talented and can handle the display, measurement and control of pulses (counter), frequencies (tacho) and time (timer) using numerous count functions and modes.

Open to many applications. The great advantage of the ***CODIX*** 923/924 preset counters: they offer a simple and cost-effective solution for many local standard control functions. It is not necessary to have in-depth programming knowledge when installing or using the product, which does away with the need for costly service engineers.

Can be used as:
- Preset counter for process control
- Batch counter for controlling lot sizes as a function of individual quantities
- Total counter (cumulative count) for process control as a function of the total count
- Monitoring device for time, frequency, position and pulses

Particular performance characteristics:
- Direct entry of the presets – either absolute or as tracking presets
- Teach-In function for error-free preset entry
- Frequency display with fast display refresh and high accuracy: HRA (High Rate Accuracy System)
- Many count modes and functions

Expandable

Numerous logic functions and preconfigured, selectable operating modes for a variety of applications, including for example positioning and batch counting, make the counter a real alternative to a PLC – and with the benefit of a display included.

The devices are so designed that they are expandable for OEM applications. Both hardware and software can be modified and expanded. PCB-board receptacles are provided in the counter for hardware upgrade purposes:
- Up to 10 inputs
- Up to 6 optocoupler outputs
- Up to 4 relay outputs
- Interface RS 232/485
- Individual functions

The software can be specifically customised to OEM applications. This includes the logic behaviour of the inputs and outputs (I/O functionality) or the whole display unit.

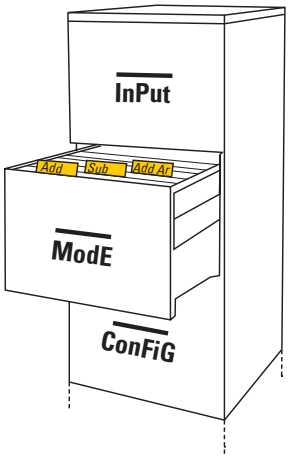
Expandable hardware:

Customisable software:

User-friendly

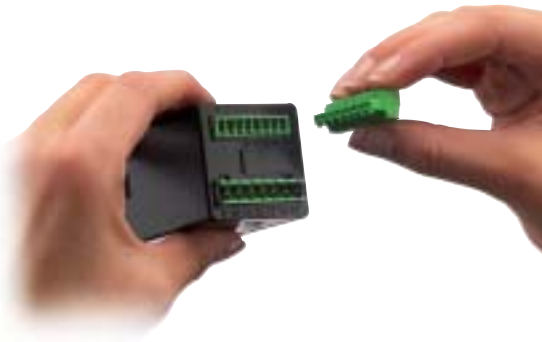
Fresh, modern design that further enhances your panel or equipment.

Simple filing-cabinet programming structure for fast entry of parameters. Quickly operational: after each parameter has been modified, it is possible to exit the programming by means of the reset key.



Convenient time-saving installation:

- Plug-in screw terminal connections with cage clamp terminals.
- IP 65 sealed front bezel as standard. Saves additional time & effort for protection when installing
- Minimal installation depth – will fit anywhere



Comprehensive, large display:
2 line, 2 x 6 digit LCD display with sign, leading zero suppression, giving a display range from -999 999 to +999 999.
Optional backlighting for good readability in all situations.

Easy-to-understand: thanks to the use of annunciators for the displayed preset and the status of both outputs, as well as the simultaneous display of the actual value and the presets or the auxiliary counters.

The compact decade key-pad: allows for a large display and enables simple direct entry of the presets.

Easy-to-operate without programming knowledge. Direct access to the programming mode for all count functions.
User-friendly, thanks to the simplified programming structure and alpha-numeric display of the parameters.

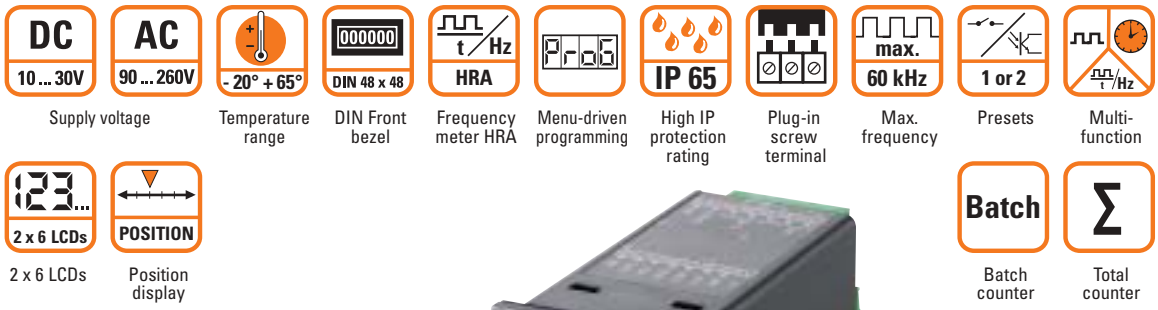
New: MPI input (multiple purpose input) with the functions: Display Hold, Set und Teach-In.

Three predefined settings: with parameter settings for the most common applications.

Preset via Teach-In input: for simple error-free entry of the preset. A reset key plus programming mode key are already integrated.

Preset counter electronic – the basic device

Universal Preset counter *CODIX* 923 / 924



Supply voltage | Temperature range | DIN Front bezel | Frequency meter HRA | Menu-driven programming | High IP protection rating | Plug-in screw terminal | Max. frequency | Presets | Multi-function

2 x 6 LCDs | Position display | Batch counter | Total counter

RoHS | cULus in preparation

Multifunction:

- **Counter, Tachometer and Timer – all in one device**
- **Can be used as preset counter, batch counter or total counter (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 input of the presets via the front keys or the Teach-In input**
- **Tracking presets avoid 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 2 x 6 digits LCD display LCD pos. (green) backlighting
Inputs:	
Count inputs:	
Polarity of the inputs:	programmable for all inputs in common NPN/PNP
Input resistance:	5 kΩ
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	
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.	
Response time of the frequency counter:	100/600 ms, Details see instruction manual	
Data retention:	min. 10 years, EEPROM	

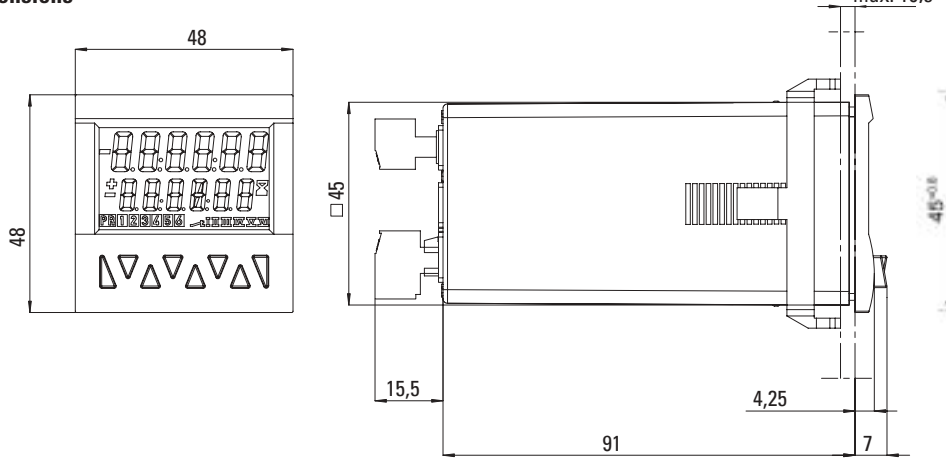
Preset counter electronic – the basic device

Technical Data:

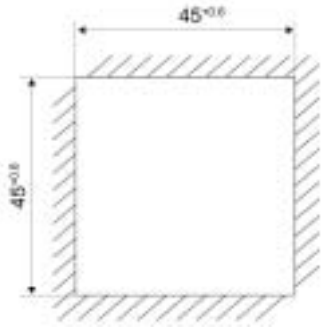
Voltage supply for sensors:	
AC supply	24 V DC± 15%, 80 mA
DC supply	max. 80 mA, external voltage supply is connected through
Operating temperature:	-20 °C...+65 °C
Storage temperature:	-25 ... +75 °C
Humidity:	RH 93% at +40 °C, non-condensing

EMC:	CE compliant to EU directive 89/36/EWG
Standards:	EN 61 000-6-4/EN 55 011 class B EN 61 000-6-2
UL (applied for):	File-N°.: E128604
Protection:	IP 65 (front)
Weight:	approx. 125 g

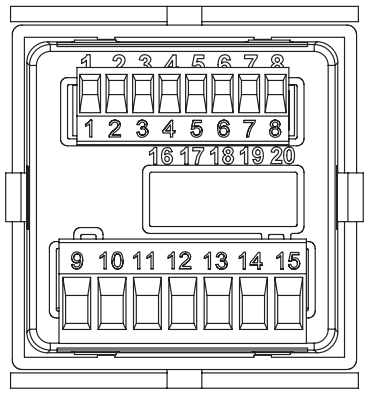
Dimensions



Panel cut-out



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

Delivery specification:
Preset counter
Mounting clip
Operating instructions

Order code:

6.92X.01XX.XX0

- Number of presets
  - 3 = 1 preset
  - 4 = 2 presets
- Outputs
  - 0 = Relays
  - 1 = Optocouplers
- LCD options
  - 0 = no backlighting
  - 1 = green backlighting
- Input trigger level
  - 0 = Standard level (HTL)
  - A = 5V-level
- Supply voltage
  - 0 = 90–260 V/AC
  - 3 = 10–30 V/DC

Options: Additional inputs or outputs or interfaces on request

Stock items: 6.923.0100.000 6.924.0100.000
6.923.0100.300 6.924.0100.300

Preset counter electronic – the basic device

Areas of application:

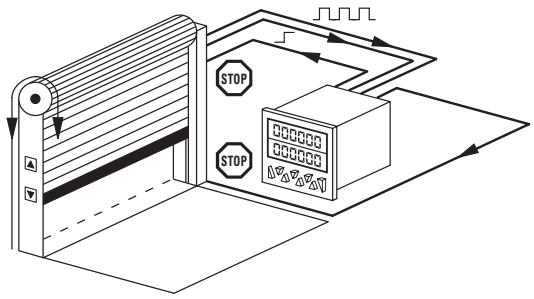
Pulse counter

Functions/ Count modes

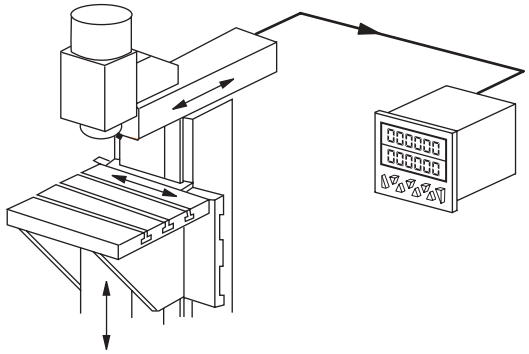
- Count with direction mode
- Difference mode
- Quadrature mode quad/quad2/quad4
- Add, Sub, automatic reset, batch counting
- 2-input adding mode A+B
- Ratio measurement A/B
- Percentage difference measurement (A-B)/A x 100%
- Totaliser (cumulative count)
- Multiplication and division factor (up to 99.9999)
- Set value
- Step or tracking preset

Application examples

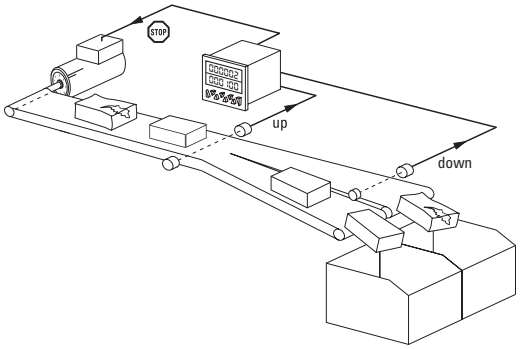
CountDir
Roller shutter door with automatic shutoff



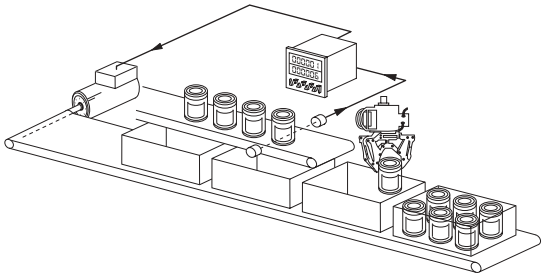
Quad
Running direction and position on milling machines



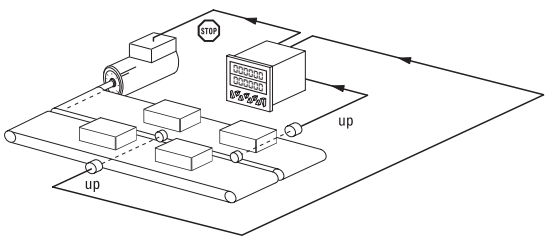
Updown
Automatic subtraction of faulty or reject parts from the total piece count



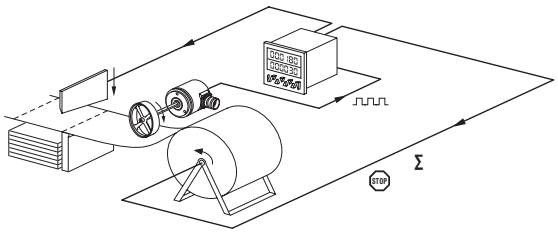
Batch
Logging of piece numbers and packing units plus control of replenishment of packing cartons



Upup
Adding up of two parallel or staggered production lines



Addtot
Cut-to-length with overall total count



Preset counter electronic – the basic device

Areas of application:

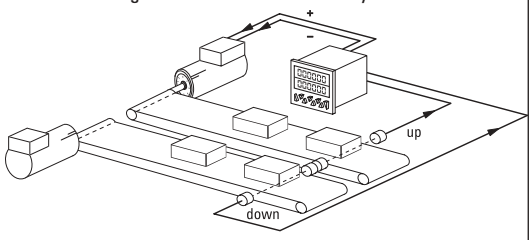
Frequency counter (Tachometer)

Functions/ Count modes

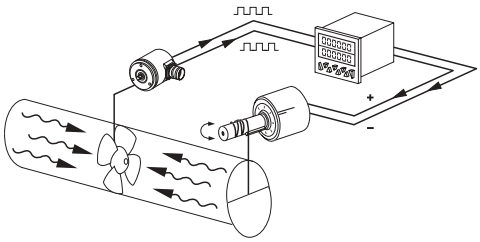
- A
- B
- A – B
- A + B
- A / B
- (A – B) / A x 100 % (percentage display)
- Quad (Phase discriminator with recognition of direction)
- Averaging
- Start delay
- 2nd tacho input
- Gate input
- Multiplication and division factor (up to 99.9999)

Application examples

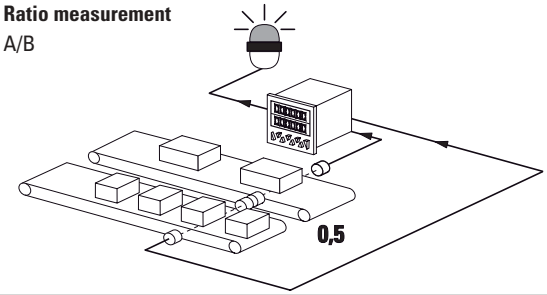
A – B
Synchro monitoring and control of two conveyor belts



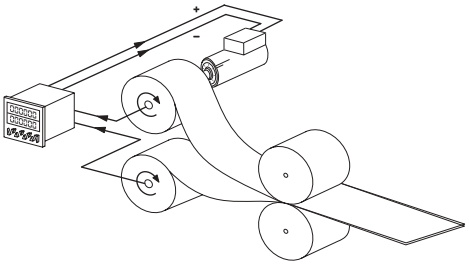
Speed regulation with indication of direction



Ratio measurement
A/B



Ratio measurement e.g. for speed alignment



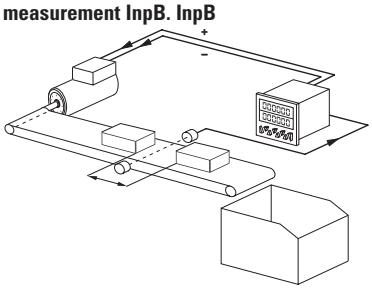
Time and hours-run meter (Timer)

Functions/ Count modes

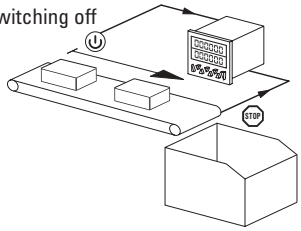
- FrErun (Control via gate input)
- Auto (Start via Reset, Stop at preset)
- InpB.InpB (Start with first edge at InpB., Stop with second edge InpB.)
- InpA. InpB (Start with InpA., Stop with InpB.)
- Totaliser (Overall total)
- Batch counting
- Set value
- Step or tracking preset

Application examples

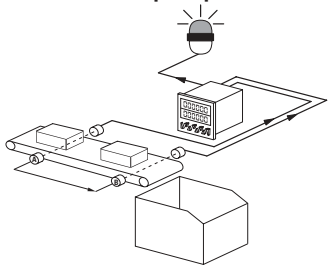
Interval measurement InpB. InpB



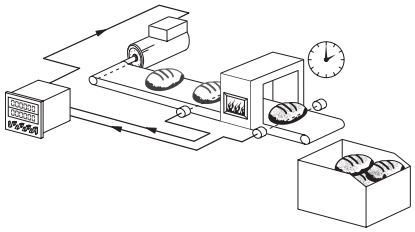
FrErun
Measurement of overall time from switching on the conveyor belt till switching off



Run-time measurement InpA. InpB.



Auto
time-controlled production line



Universal Preset counter CODIX 923/924 for OEM

A technology platform for individual applications and special designs

Expandable hardware:

Expandable on request via modules:
- 4 additional inputs
- or 4 additional optocoupler outputs
- or 2 additional relay outputs
- or RS 232/485 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 software:

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

Typically a simple OEM customisation is worthwhile for annual quantites of 20-50 pcs.
We would be happy to solve this task for you quickly, professionally and economically.
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pulses for automation

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