

924K

Multipurpose Device Counter, Rate Meter and Timer

Features

- Simultaneous display of the actual value, presets, batch count or total count
- 2 Relay outputs
- 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



Specifications

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 LED Look: negative, red backlighting		
Data retention:	min. 10 years, EEPROM		
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		
Switching levels with DC-supply:			
HTL-level	Low: 0 ... 0,2 x U _B High: 0,6 x U _B ... 30 V DC		
Pulse shape:	variable, Schmitt-Trigger characteristics		
Output:	Switching voltage	max. 250 V AC/110 VDC	
	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		
Relay Reaction	Relay: appr. 7 ms Details see instruction manual		
Response time of the frequency counter:	100/600 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.		

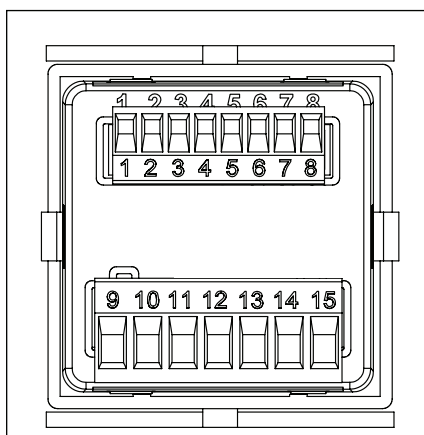
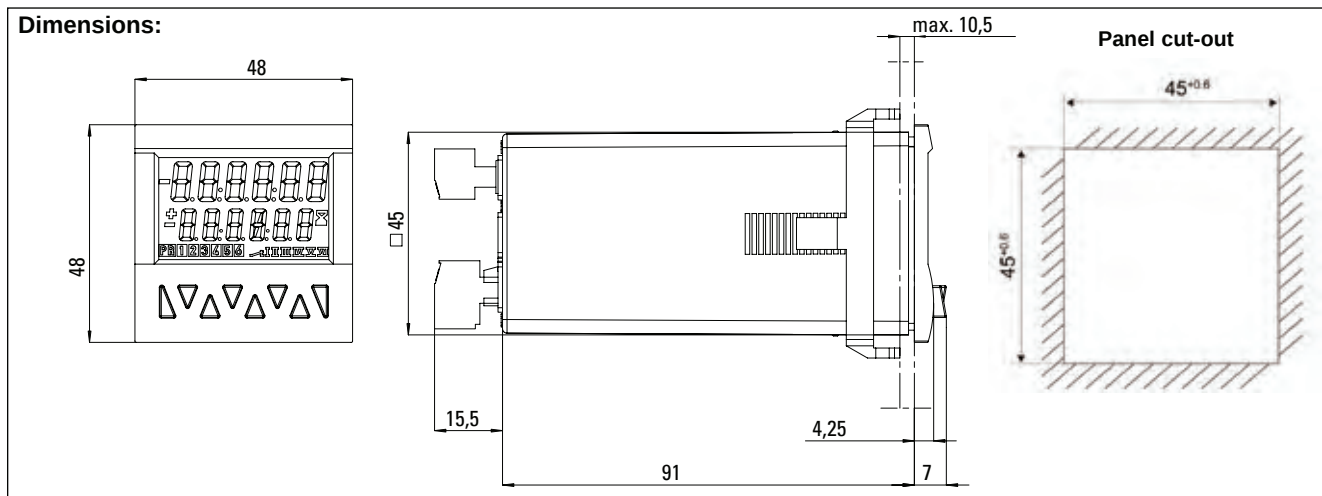
Voltage supply for sensors:

AC supply	24 V DC $\pm$ 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
Altitude:	2000 m

EMC:	Interference emissions EN55011 Class B
	Interference resistance EN 61000-6-2

Device safety:

Design to:	EN61010 Part 1
Protection:	Class: 2
Application area:	Soiling Level 2
UL (applied for):	File-N°.: E128604
Protection:	IP65 (front)
Weight:	approx. 125 g

Dimensions:

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)

Version with relays/optocouplers

- | | |
|-----------------------|------------------|
| 9 Relay contact C. | } Output 1 |
| 10 Relay contact N.O. | |
| 11 Relay contact C. | } Output 2 |
| 12 Relay contact N.O. | |
| 13 Relay contact N.C. | } Supply voltage |
| 14 AC: 90..260 VAC N~ | |
| DC: 10..30 VDC | |
| 15 AC: 90..260 VAC L~ | |
| DC: GND (0 VDC) | |

Ordering information:

EXAMPLE 924K A 0

Series

Operating Voltage

A = 90 to 260 VAC
B = 10 to 30 VDC

Outputs

0 = Relay(s)
1 = Opto Coupler(s)

Typical applications:

■ 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 $(A-B)/A \times 100\%$

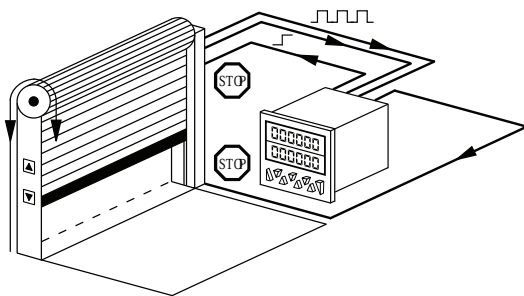
100%

- Batch counting
- Totaliser (Overall total)
- Multiplication and division factor (up to 99.999)
- Set value
- Step or tracking preset

Application examples

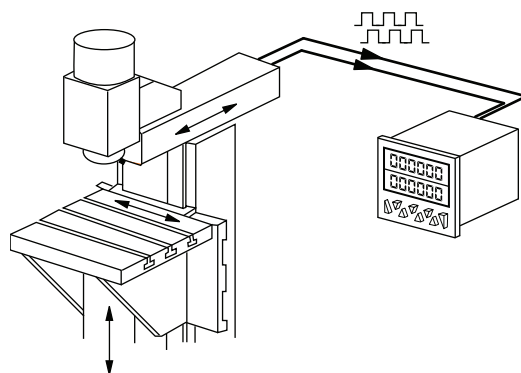
CountDir

Roller shutter door with automatic shutoff



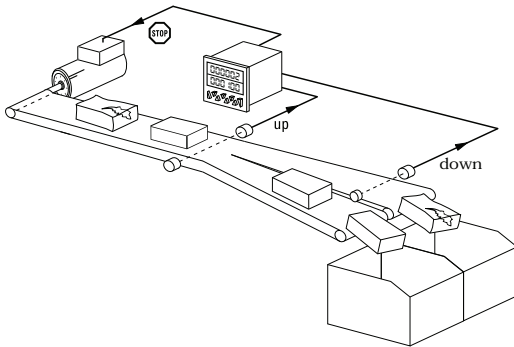
Quad

Running direction and position on milling machines



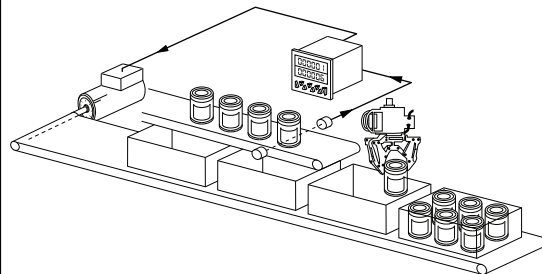
UpDown

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



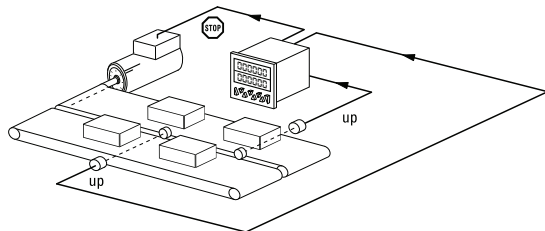
Batch

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



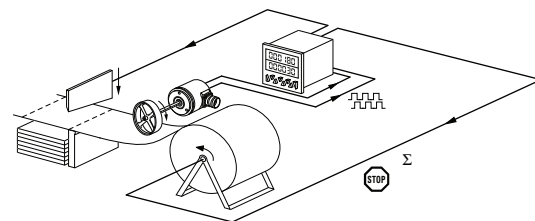
UpUp

Adding up of two parallel or staggered production lines



Add tot

Cut-to-length with overall total count



Areas of application:

■ Frequency counter (Tachometer)

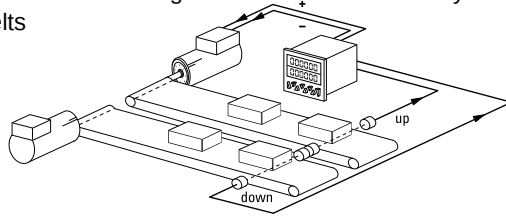
Functions/ Count modes

- 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

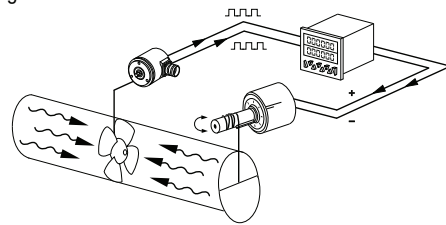
A — B

Synchro monitoring and control of two conveyor belts

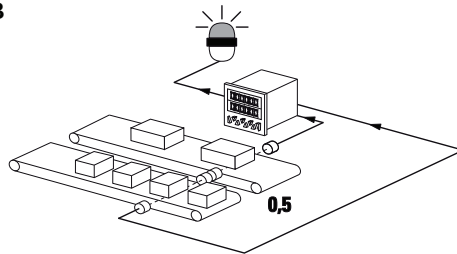


Quad

Speed regulation with indication of direction

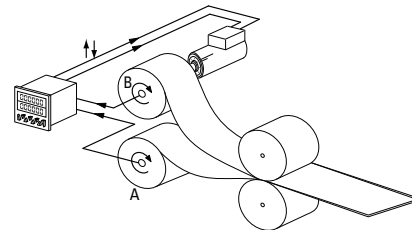


Ratio measurement A/B



(A-B)/A [%]

Ratio measurement e.g. for speed alignment



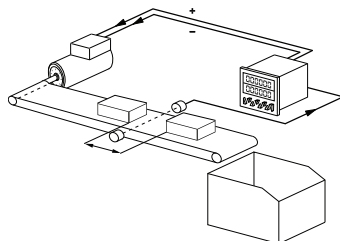
■ Time and hours-run meter (Timer)

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

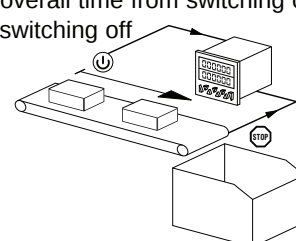
Application examples

Interval measurement InpB. InpB

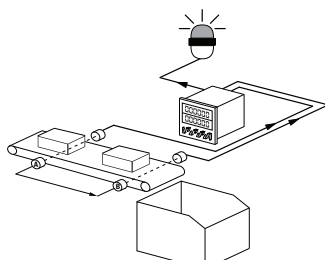


FrErun

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



Run-time measurement InpA. InpB.



Auto

time-controlled production line

