

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	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
Display:	2 line 2 x 6 digits LCD display LED Look: negative, red backlighting	Output 1	Mech. service life (switching cycles) 2×10^7 N° of switching cycles at 3 A/250 V AC 1×10^5 N° of switching cycles at 3 A/30 V DC 1×10^5 Relay closing contact, programmable as normally open (NO) or normally closed (NC)
Data retention:	min. 10 years, EEPROM	Output 2	Mech. service life (switching cycles) 20×10^6 N° of switching cycles at 3 A/250 V AC 5×10^4 N° of switching cycles at 3 A/30 V DC 5×10^4 Relay with changeover contact
Inputs:		Relay Reaction	Relay: appr. 7 ms Details see instruction manual
Count inputs:		Response time of the frequency counter:	100/600 ms, Details see instruction manual
Polarity of the inputs:	programmable for all inputs in common NPN/PNP	General:	
Input resistance:	5 kOhm	Count modes:	
Count frequency:	max. 55 kHz (details see manual)	Pulse counter:	cnt.dir, up.dn, up.up, quad, quad 2, quad 4, A/B, (A-B)/A x 100%
Monitoring/reset inputs:	MPI, lock, gate, reset	Frequency counter:	A, A-B, A+B, quad, A/B, (A-B)/A x 100%
Min pulse duration of the inputs:	10 ms/1 ms	Timer:	FrErun, Auto, InpA.InpB., InpB.InpB.
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 ... $0,2 \times U_B$ High: $0,6 \times U_B$... 30 V DC		
Pulse shape:	variable, Schmitt-Trigger characteristics		

Voltage supply for sensors:
 AC supply 24 V DC± 15%, 80 mA
 DC supply max. 80 mA, external
 voltage supply is connected through

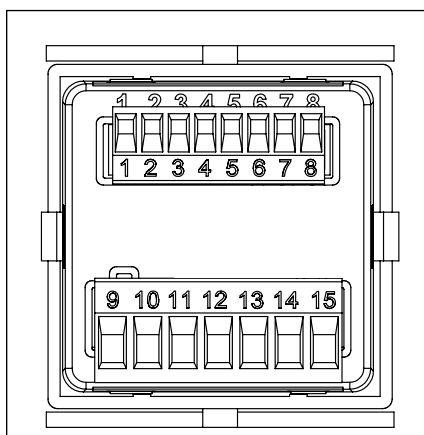
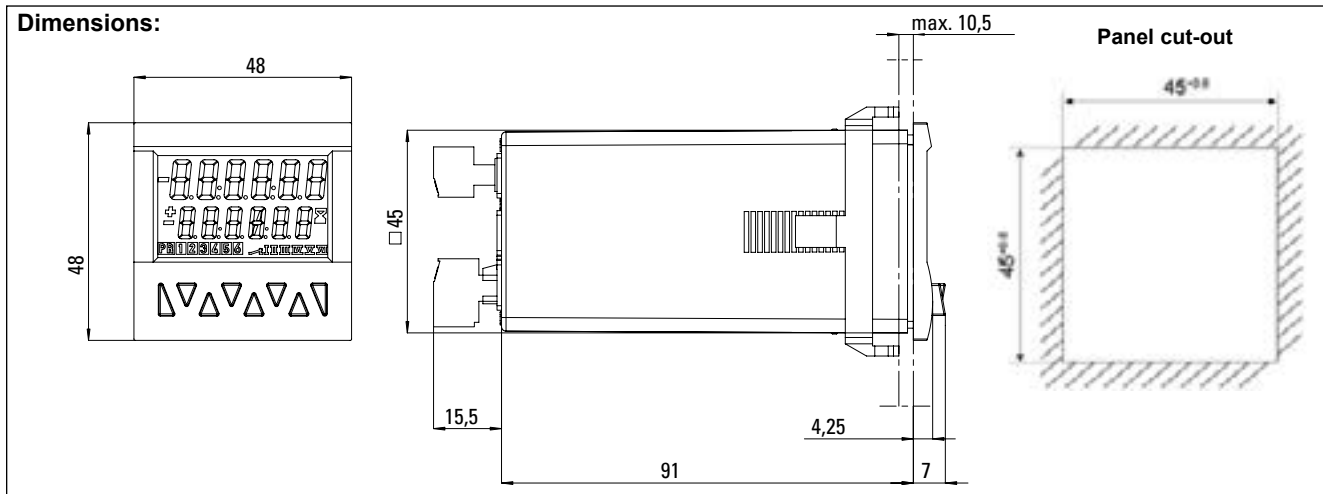
Operating temperature: -20 °C ... +65 °C
 Storage temperature: -25 °C ... +75 °C

Humidity: RH 93% at +40 °C, non-condensing
 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



Signal and control inputs

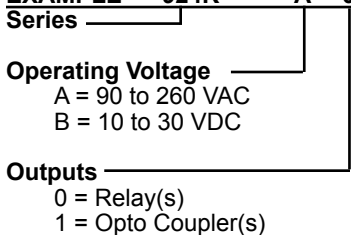
- 1 Sensor voltage supply
AC: 24 VDC/80 mA
DC: UB interconnected
- 2 GND (0 VDC)
- 3 INP A (Signal input A)
- 4 INP B (Signal input B)
- 5 RESET (Reset input)
- 6 LOCK (Key locking input)
- 7 GATE (Gate input)
- 8 MPI (User input)

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

Ordering information:

EXAMPLE 924K A 0



Typical applications:

■ Pulse counter

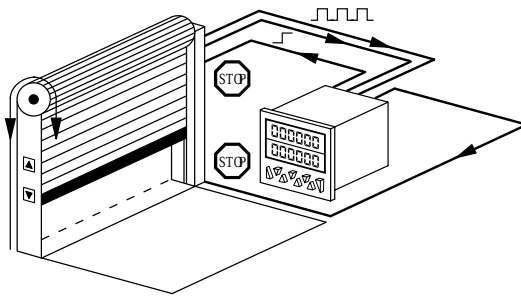
Functions/ Count modes

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

Application examples

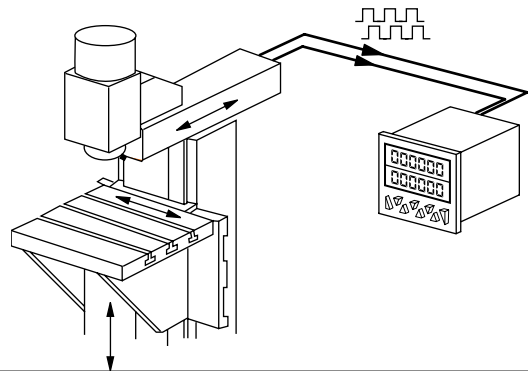
CountDir

Roller shutter door with automatic shutoff



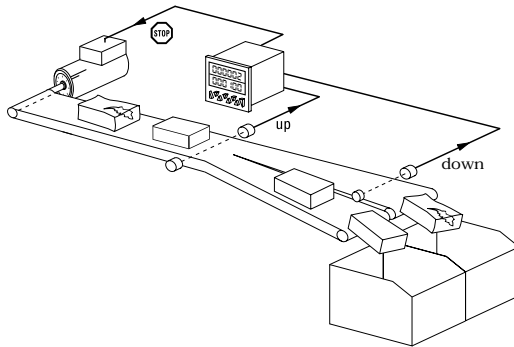
Quad

Running direction and position on milling machines



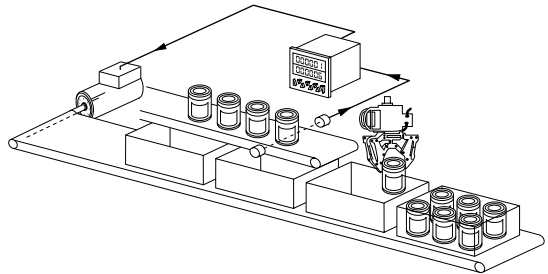
UpDown

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



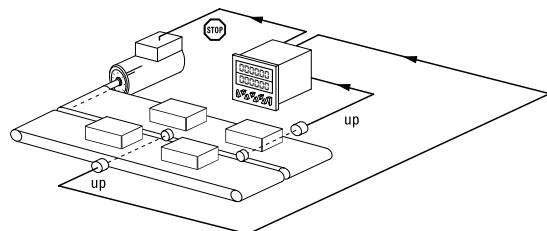
Batch

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



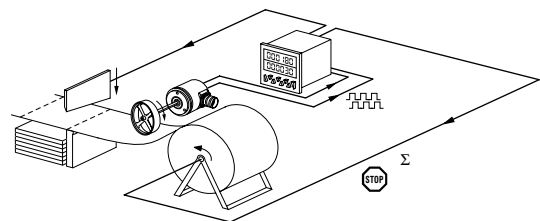
UpUp

Adding up of two parallel or staggered production lines



Add tot

Cut-to-length with overall total count

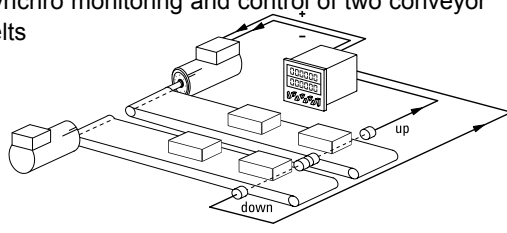
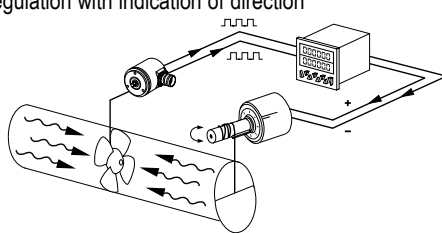
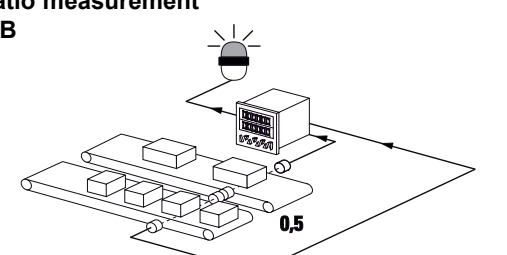
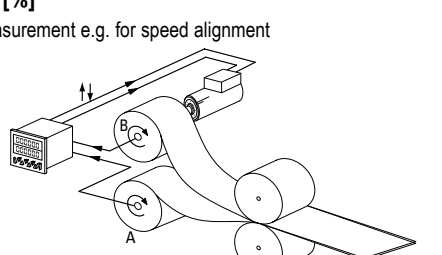


Areas of application:

■ Frequency counter (Tachometer)

Functions/ Count modes

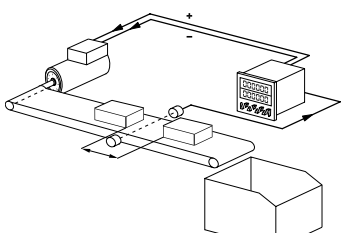
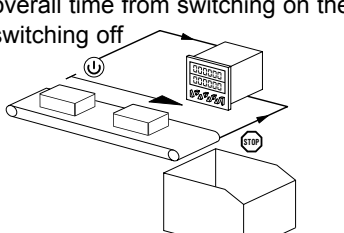
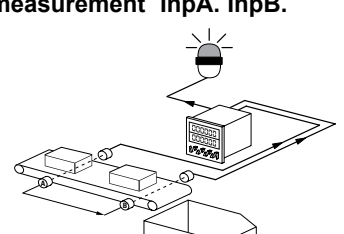
- A
- B
- A — B
- A + B
- A / B
- (A — B) / A x 100 % (percentage display)
- Quad (Phase discriminator with recognition of direction)
- Averaging
- Start delay
- 2nd tacho input
- Gate input
- Multiplication and division factor (up to 99.9999)

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 