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Electromechanical and electronic totalising counters

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Electronic totalising counters, hour counters, chronometers 24 x 48, 6 or 8 digits, LCD

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Electromechanical and electronic totalising timers

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Electronic preselection and multifunction counters, 48 x 48, 6 digits, LCD or LED

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Function	Totalising counters					
						
Display type	Mechanical			LCD		
Font panel dimensions (h x w) in mm	20 x 30	31 x 41.5	50 x 60	24 x 48		
Number of display digits	6 digits	5 or 6 digits (depending on model)	6 or 6 digits (depending on model)	8 digits		
Maximum counting frequency	25 Hz	10 or 20 Hz (depending on model)	10 or 25 Hz (depending on model)	30 Hz or 7.5 kHz	40 Hz or 7.5 kHz	
Input type	Contact			Volt-free contact or transistor	Volt-free contact, transistor or voltage level	Voltage level
Output type	-					
Reset type	Without	Manual or without (depending on model)	Manual or without	Manual or transistor	Manual, volt-free contact or transistor	Manual or voltage level
Supply voltage	≡ 24 V	≡ 24 V, ≡ 48 V, ~ 115 V	≡ 24 V, ~ 115 V	Lithium battery		
Display capacity	0...999 999	0...99 999 or 0...9 999 999 (depending on model)	0...999 999 or 0...99 999 999 (depending on model)	0...99 999 999		
Time ranges	-					
Number of presets or partial count	-					
References	XBK T60000U00M	XBK T50000U00M XBK T70000U00M	XBK T60000U10M XBK T80000U00M	XBK T81030U33E	RC 87 610 340	RC 87 610 050
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Total/partial impulse counters	Preselection counters	Hour counters	Multifunction: - preselection, - tachometer, - chronometer, - totalising counter, - batch counter.
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	Mechanical	LCD		LCD or LED		
	75 x 60	48 x 48	24 x 48	48 x 48		
	5 digits	7 digits	8 digits	6 digits		
14 or 100 Hz	25 Hz	–	5 kHz or 2.5 kHz if counting on 2 inputs			
Volt-free contact, transistor or voltage level (depending on model)	Contact (20 VA / 220 V / 1A max)	Contact	Volt-free contact or transistor	Voltage level	Volt-free contact	Transistor or voltage
	Contact (volt free)	–	1 or 2 transistors and 1 or 2 changeover relays			
Manual and volt-free contact and transistor or voltage (depending on model)	Manual or Manual and electrical	Without	Transistor or manual with electrical interlocking facility	Manual or voltage level	Manual, volt-free contact or transistor	Manual, electrical or automatic
	≡ 24 V	~ 24 V, ~ 115 V, ~ 230 V	Lithium battery	≡ 24 V, ~ 115 V, ~ 230 V		
0...99 999 999 (0...999 999 for partial counting)	0...99 999	–	- 99 999...999 999			
		0...99 999.99 h	0...999 999.99 h	0...99 999.9 h 0...99 999.9 min 0...99 999.9 s 0...99 h 59 min 59 s		
	1	–	1 or 2			
RC 87 610 240 RC 87 610 250	XBK P50100●●0M	XBK H7000000●M	XBK H81000033E	RC 87 610 150	RC 87 610 440	XBK P6●●30G3●E
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Introduction

Counters, associated with detection products (photo-electric detectors, inductive sensors, limit switches, etc) or dialogue products (pushbuttons, selector switches, etc) can be used to provide an additional control system function: counting.

Functions

Counters complement the range of display units and operator dialogue terminals by offering simple display and entry functions. They are fully compatible with detection and human-machine interface products.

Technologies

The range is divided into two technologies:

- electromechanical, which is more suitable for slow counting applications of around 10 Hz,
- electronic (LCD or LED display) which is suitable for counting frequencies of around 1 kHz.

The Zelio count range covers all counting functions. There are various product families:

- **totalising counters,**
- **preselection counters,**
- **hour counters,**
- **tachometers,**
- **batch counters.**

Totalising counters

Totalising counters are used for counting events from electrical pulses or contacts. The value is displayed and updated in increments at each new pulse or contact. They are unidirectional.

Applications

■ In automatic mode

The totalising counter performs this function in conjunction with a photo-electric detector, inductive sensor or limit switch, which detects the passing of a part and translates this by adding one unit to the number of parts counted by the totalising counter.

■ In manual mode

The totalising counter performs this operation in conjunction with a pushbutton. Pressing the button adds one unit to the value displayed. This system can be used with a ticket dispenser or a manual assembly station.

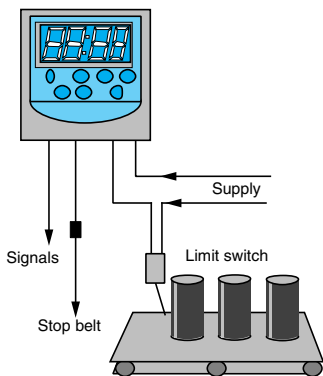
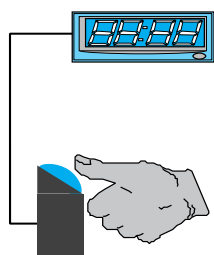
Preselection counters

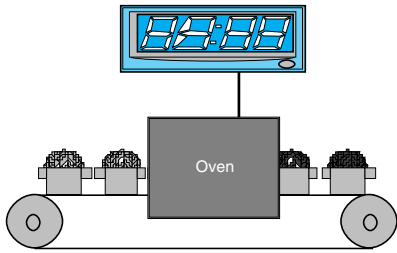
Preselection counters are used for counting events from electrical pulses or contacts. The value is displayed and updated by adding or subtracting at each new pulse. They allow manual entry of a preset value. When this preset value is reached, they send an electrical signal. They can be used for upcounting or downcounting.

Applications

Upcounting or downcounting the number of parts.

The preselection counter counts the number of parts in the same way as a totalising counter. When the selected value is reached, the preselection counter, in conjunction with various sensors, sends a signal to trigger actions such as stopping a machine or conveyor belt.



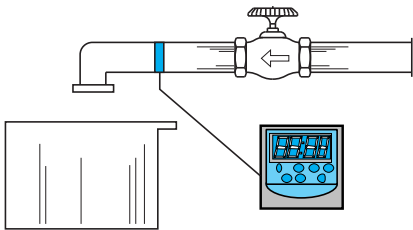


Hour counters

Hour counters (also called timers or chronometers) are used to count and display times in different formats and with different modes depending on the type of counter used.

Applications

- Duration of an oven heating time,
- Use of a machine, n time and in hours, in order to perform maintenance.

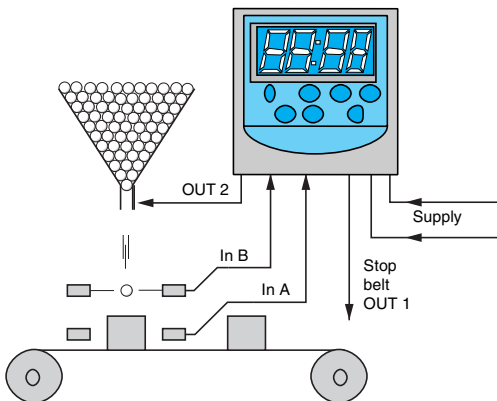


Tachometers

Tachometers are used for measuring speed (linear or rotary), rates (in minutes or hours) or flow (volumetric). The tachometer receives pulses at a frequency to be measured. A scale factor allows the required values to be displayed (speeds, rates, flows, etc.)

Applications

- Automatic control of conveyor belt speed,
- Flow measurement,



Batch counters

Batch counters are used for counting a number of parts per batch and counting a total number of batches; they send a signal each time the preset value is reached.

Example

On a packing line, 50 capsules are to be counted into containers and 10 containers placed into a carton.
 P1 : number of batches (10)
 P2 : number of capsules (50).

Example: packing 50 capsules per container and grouping 10 containers in cartons.

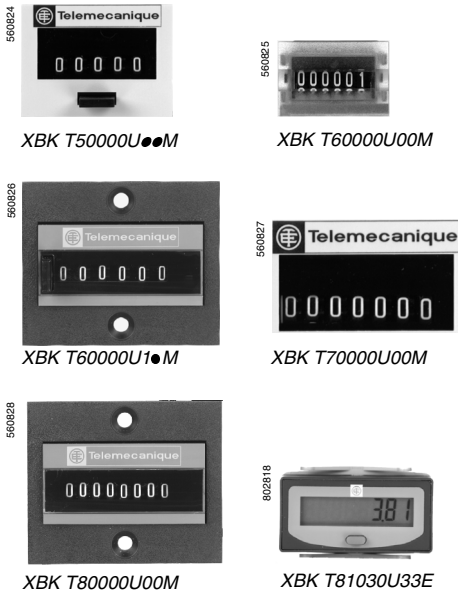
Zelio Count - counters

Electromechanical and electronic
totalising counters

Counter type		XBK T totalising counters	
Display type		Mechanical	Electronic LCD
Characteristics			
Function		Totalising counter with mechanical display	Totalising counter with LCD display
Supply voltage	V	$\overline{\text{---}} 24 \pm 10 \%$ $\overline{\text{---}} 48 \pm 10 \%$ $\sim 115 \pm 10 \%$	Lithium battery
Consumption	W/VA	XBK T50000U10M and XBK T50000U08M and XBK T70000U00M: 1.5 XBK T50000U11M and XBK T60000U10M and XBK T80000U00M: 2.5 XBK T60000U11M: 2.75 XBK T60000U00M: 0.155	–
Maximum counting frequency	Hz	10, 20, 25	30 or 7500
Backup capacity		Permanent	7 years
Number of digits		5, 6, 7 or 8	8
Display capacity		5 digits: 0...99 999 6 digits: 0...999 999 7 digits: 0...9 999 999 8 digits: 0...99 999 999	8 digits: 0...99 999 999
Digit height	mm	4	7
Counting mode		Adding	Adding (Input resistance: 50 Ω)
Reset type		Manual or without	Manual or transistor with Reset key locking facility
Inputs	Function	Counting	
	Type	Contact	Volt-free contact or transistor: PNP $\geq \overline{\text{---}} 5 \text{ V}$ or NPN $\leq \overline{\text{---}} 0.7 \text{ V}$
	Amplitude	V	$\pm \overline{\text{---}} 40 \text{ V max}$
Mechanical life (in millions of pulses)		10 except XBK T60000U10M and XBK T80000U00M : 200	–
Minimum pulse time	ms	–	15 at 30 Hz, 0.07 at 7.5 kHz
Environment			
Conforming to standards		EN 50081-2, EN 50082-2	EN 50081-2, EN 50082-2 EN 61010
Product certifications		cUR us except XBK T60000U00M	–
Temperature	Operation	$^{\circ}\text{C}$	- 10...+ 50 except XBK T60000U00M: - 10...+ 70
	Storage	$^{\circ}\text{C}$	- 20...+ 60 except XBK T60000U00M: - 40...+ 85
Degree of protection	Conforming to IEC/EN 60529	IP 40 except XBK T60000U00M: IP 65	IP 54
Vibration resistance	Conforming to IEC/EN 60068-2-6	5 gn (10 to 150 Hz)	1 gn (10 to 150 Hz)
Shock resistance	Conforming to IEC/EN 60068-2-27	30 gn (6 ms)	10 gn (18 ms)
Protection against electric shocks	Conforming to IEC/EN 60536	Class II	
Mounting and fixing		Flush-mounting	Flush-mounting housing, fixed by a clamp
Connection		By AMP lugs on a connection box	Screw terminal block

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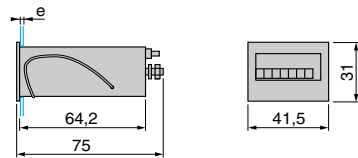
References



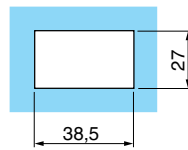
Supply voltage	Number of display digits	Maximum counting frequency	Reset type	Reference	Weight
V		Hz			kg
Counters with mechanical display					
= 24	5	20	Manual	XBK T50000U10M	0.100
	6	25	Without	XBK T60000U00M	0.030
		25	Manual	XBK T60000U10M	0.150
	7	20	Without	XBK T70000U00M	0.100
8	25	Without	XBK T80000U00M	0.150	
= 48	5	20	Without	XBK T50000U08M	0.100
	~ 115	5	10	Manual	XBK T50000U11M
~ 115	6	10	Manual	XBK T60000U11M	0.030
	Counters with LCD display				
Lithium battery	8	30 or 7500	Manual or transistor	XBK T81030U33E	0.050

Dimensions

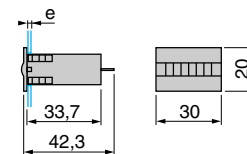
XBK T50000U00M, XBK T70000U00M



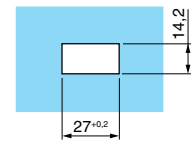
Flush-mounting



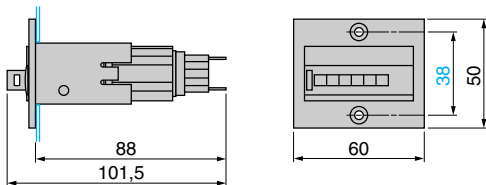
XBK T60000U00M



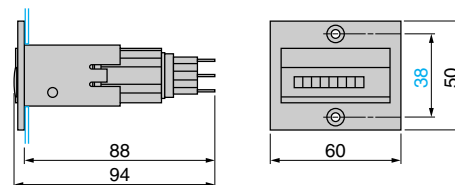
Flush-mounting



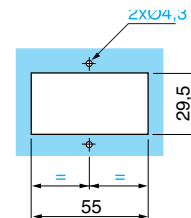
XBK T60000U10M



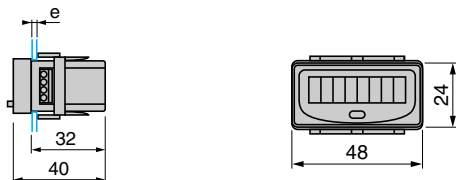
XBK T80000U00M



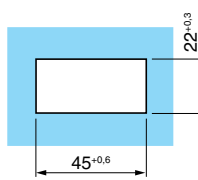
Common flush-mounting



XBK T81030U33E



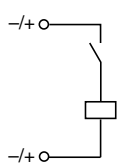
Flush-mounting



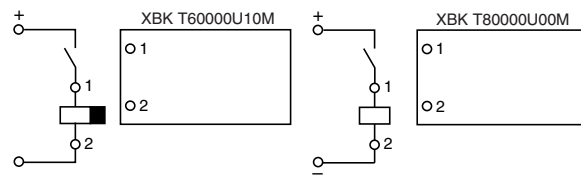
e: panel thickness, 1 mm < e < 2.5 mm

Schemes

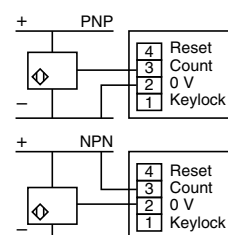
XBK T50000U00M, XBK T70000U00M



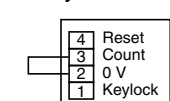
XBK T80000U00M, XBK T60000U10M



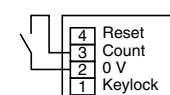
XBK T81030U33E



Reset key locking facility



Volt-free contact



Zelio Count - counters

Electronic totalising counters,
hour counters, chronometers,
24 x 48, 6 or 8 digits, LCD

Counter type		RC 87 610 340	RC 87 610 440
Technical characteristics			
Functions		Impulse counter	Hour counter/chronometer
Solid state input		Solid state	Solid state
Display		8 digit LCD	6 digit LCD
Digit height	mm	7	7
Counting capacity		0...99 999 999	–
Time ranges		–	0...99 999.9 h 0...99 999.9 min 0...99 999.9 s 0...99 h 59 min 59 s
Time base		–	Quartz (precision ± 50 ppm)
Possibility of reloading current value		–	Yes
Supply Life		8 years	5 years
1 lithium battery			
Input characteristics			
Volt-free contact		–	1 Start/Stop input 40 ms minimum (terminals 3-5) 1 Reset input 100 ms minimum (terminals 1-3) 1 Prog. input (terminals 3-4) 1 enable Reset input (terminals 1-2)
Slow input In.L Volt-free contact or transistor	Maximum counting frequency	Hz	40 max
	T OFF	ms	12 min
	T ON	ms	12 min
	Current output	µA	52 max
	Leakage current in OFF state	µA	0.2 max
	Residual voltage	V	0.4 max
Fast input In.H	NPN collector		–
	Maximum counting frequency	kHz	7 max
	T OFF	µs	70 min
	T ON	µs	70 min
	Level 0	V	≈ 0...1
	Level 1	V	≈ 4...30
	Current consumption	mA	6 max at ≈ 24 V
Reset to zero : Reset			Volt-free contact or transistor
	NPN open collector	ms	12 minimum 100 minimum
Enable reset			Front panel
Electromagnetic environment characteristics			
Radiated field	Conforming to IEC 1000-4-3		Level 3, 10 V/M, 26 MHz to 1 GHz
Fast transients	Conforming to IEC 1000-4-4		Level 3, 1 kV
Damped oscillatory wave	Conforming to IEC 255-4		Level 3, 1 kV
Electrostatic discharge	Conforming to IEC 1000-2-6		Level 3, 8 kV
Operating characteristics			
Conforming to standards			VDE 0110, IEC 664, 348, 255.4, 255.5, 801.2, 801.4
Product certifications			cULus, CSA
Material			Self-extinguishing
Connection by screw terminals on back of the device			5 terminals
Clamping capacity	mm ²		2 x 1.5
Fixing			By yoke
Degree of protection			IP 64
Temperature limits	Operation	°C	0...+ 55
	Storage	°C	- 25...+ 70

Zelio Count - counters

Electronic totalising counters,
hour counters, chronometers,
24 x 48, 6 or 8 digits, LCD

References

- 8 or 6 digits LCD display, digit height 7 mm
- Totalising counter:
 - 7 kHz and 40 Hz inputs
 - maximum counting capacity : 99 999 999 impulses
- Hour counter/chronometer:
 - start/stop inputs
 - 4 time ranges:
 - 99 999.9 hours - 99 999.9 min
 - 99 999.9 s - 99 h 59 min 59 s
- Powered by lithium battery:
 - reset from front panel or remote reset



RC 87 610 340

Totalising counters, LCD 24 x 48

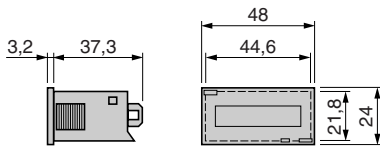
Description	Reference	Weight kg
Impulse counter	RC 87 610 340	0.060
Hour counter/chronometer	RC 87 610 440	0.060

Accessories

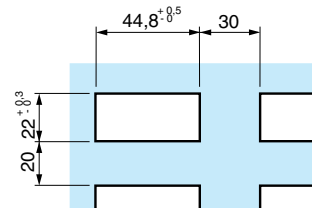
Description	Dimensions	Reference	Weight kg
Adaptors for panel cut-out	25 x 50 mm (dimensions 29 x 54 mm)	RC 26 546 829	0.006
	45 x 45 mm (dimensions 52 x 52 mm)	RC 26 546 830	0.008
	Ø 50 mm (dimensions Ø 73 mm)	RC 26 546 831	0.011

Dimensions

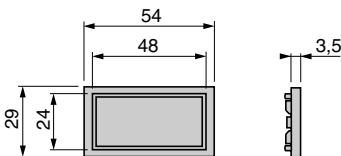
RC 87 610 440



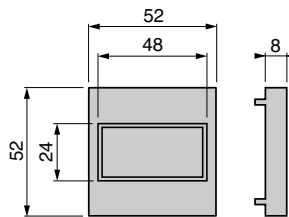
Panel cut-out



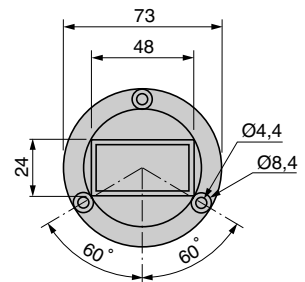
RC 26 546 829



RC 26 546 830

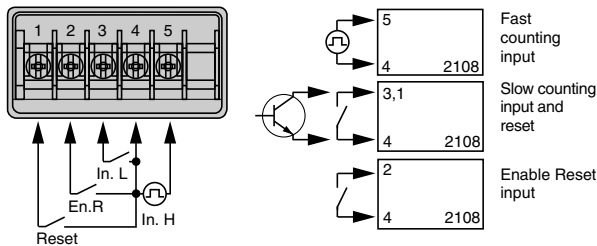


RC 26 546 831



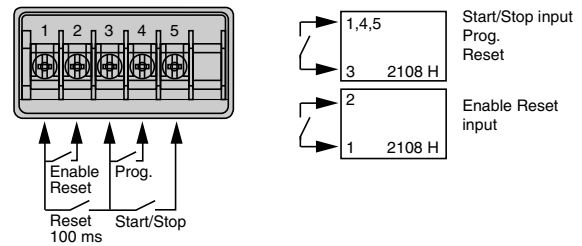
Schemes

RC 87 610 340



- Terminals**
- 1 - Reset input
 - 2 - Enable Reset
 - 3 - Slow counting
 - 4 - 0V
 - 5 - Fast counting

RC 87 610 440



- Terminals**
- 1 - Reset input
 - 2 - Enable Reset
 - 3 - Common
 - 4 - Prog.
 - 5 - Start/Stop

Technical characteristics			
Function			Impulse counter
Display			8 digit LCD
Digit height		mm	7
Counting capacity			0...99 999 999
Input characteristics			
Counter type			RC 87 610 050
Input type			1 slow counting input
Voltage	Terminals 4 - 5	V	~/ = 5...50
	Terminals 5 - 6	V	~ 48...240
Reset characteristics (1)			
Front panel	DIP switch n° 2 to OFF		Inhibited
	DIP switch n° 2 to ON		Enabled
Voltage	Terminals 2 - 3	V	~/ = 5...50
	Terminals 1 - 2	V	~ 48...240
Counting speed characteristics			
Counting speed (slow counting)		Hz	40
Slow counting (minimum impulse duration)	Low level	ms	12
	High level	ms	12
Input levels		V	= 4...30
Input impedance		kΩ	3.5 min
Supply characteristics			
2 alkaline batteries	Life		4 years
1 lithium battery	Life		8 years
			Supply can be switched off via DIP switch n° 1 located on the underside of the device
General characteristics			
Conforming to standards			VDE 0110, IEC 664, 348, 255.4, 255.5, 801.2, 801.4
Product certifications			cULus, CSA
Material			Self-extinguishing
Connection			By 6 screw terminals on back of the device
Clamping capacity		mm ²	2 x 1.5
Mounting method			By yoke
Front panel degree of protection			IP 66
Temperature limits	Operation	°C	-10...+ 55
	Storage	°C	-20...+ 70
Insulation resistance	Conforming to IEC 255.5	MΩ	100 (= 500 V)
Dielectric strength	Conforming to IEC 255.5		2000 V/50 Hz/1 min

(1) The reset is galvanically isolated from the counting input.

References

- LCD display, 8 digits, digit height 7 mm
- Powered by alkaline batteries or lithium battery
- Counting inputs : solid state ($\overline{\text{---}}$ 4...30 V) or voltage (up to $\overline{\text{---}}/\sim$ 240 V)
- Dimensions DIN - 24 x 48 mm
- Reset on front panel or external with inhibit facility



RC 87 610 050

Totalising counters, LCD 24 x 48

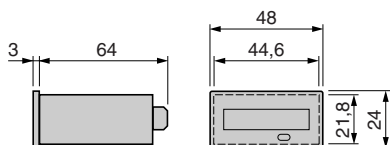
Description	Reference	Weight kg
Voltage input, lithium battery	RC 87 610 050	0.065

Accessories

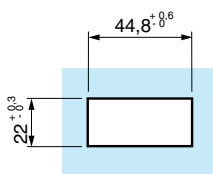
Description	Dimensions	Reference	Weight kg
Adaptors for panel cut-out	25 x 50 mm (dimensions 29 x 54 mm)	RC 26 546 829	0.002
	45 x 45 mm (dimensions 52 x 52 mm)	RC 26 546 830	0.008
	Ø 50 mm (dimensions Ø 73 mm)	RC 26 546 831	0.011

Dimensions

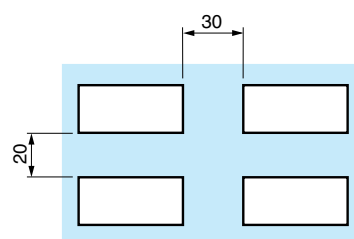
RC 87 610 050



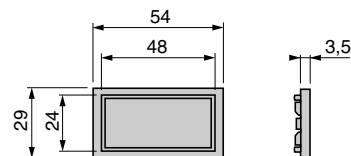
Panel cut-out
(Max. thickness 10 mm) 1 unit



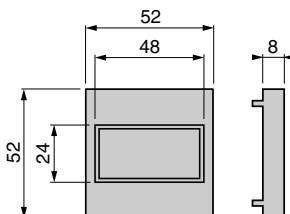
4 units



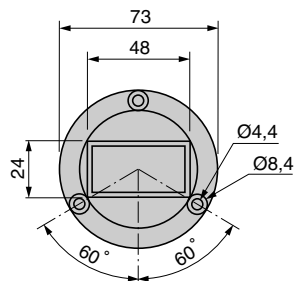
RC 26 546 829



RC 26 546 830

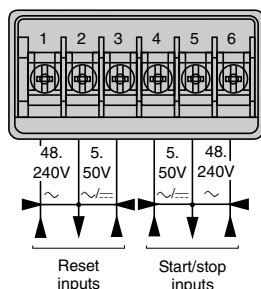


RC 26 546 831



Schemes (other schemes on page 5/23)

RC 87 610 050



Terminals

- 1 - Reset \sim 48...240 V
- 2 - 0 V reset
- 3 - Reset $\overline{\text{---}}/\sim$ 5...50 V
- 4 - $\overline{\text{---}}/\sim$ 5...50 V
- 5 - 0 V
- 6 - \sim 48...240 V

Technical characteristics

Function		Impulse counter
Display		8 digit LCD
Digit height	mm	7
Counting capacity		0...99 999 999

Input characteristics

Counter type		RC 87 610 240	RC 87 610 250
Input type		1 counting input by volt-free contact or NPN or PNP open-collector transistor (terminals 3 - 4)	1 galvanically isolated counting input
Minimum time closed	ms	40	-
Voltage	Terminals 4 - 5	V	~ / ≡ 5...50
	Terminals 5 - 6	V	~ 48...240

Reset to zero characteristics (1)

Front panel		Partial counter always enabled	
External (total counter)		Volt-free contact or NPN or PNP open-collector transistor (terminals 1 - 2)	
Minimum time closed	ms	40	40
Voltage	Terminals 2 - 3	V	~ / ≡ 5...50
	Terminals 1 - 2	V	~ 48...240

Counting input characteristics

Counting speed (selectable with DIP switch n° 4)	Hz	14 or 100	14
Slow counting (minimum impulse duration)	Low level	ms	35
	High level	ms	35
Fast counting (minimum impulse duration)	Low level	ms	5
	High level	ms	5

Supply characteristics

1 lithium battery	Life	5 years
		Supply can be switched off via DIP switch n° 3 located on the underside of the device

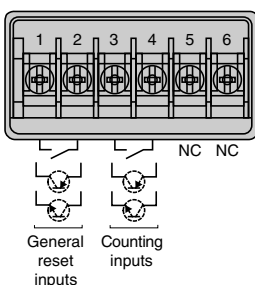
General characteristics

Conforming to standards		VDE 0110, IEC 664, IEC 48, IEC 255.4, IEC 255.5, IEC 801.2, IEC 801.4	
Product certifications		cULus, CSA	
Material		Self-extinguishing	
Connection		By 6 screw terminals on back of the device	
Clamping capacity	mm ²	2 x 1.5	
Fixing		By yoke	
Front panel degree of protection		IP 66	
Temperatures	Operation	°C	- 10...+ 55
	Storage	°C	- 20...+ 70

(1) The reset is galvanically isolated from the counting input.

Schemes (other schemes on pages 5/22 and 5/23)

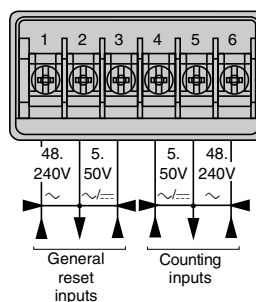
RC 87 610 240



Terminals

- 1 - General reset input
- 2 - General reset common
- 3 - Count common
- 4 - Counting
- 5 - Not connected
- 6 - Not connected

RC 87 610 250



Terminals

- 1 - Reset ~ 48...240 V
- 2 - General reset common
- 3 - Reset ~ / ≡ 5...50 V
- 4 - ~ / ≡ 5...50 V
- 5 - Count common
- 6 - ~ 48...240 V

References

- Partial or total count display
- Counting capacity :
 - partial : 0...999 999
 - total : 0...99 999 999
- Counting inputs and reset inputs :
 - RC 87 610 240 : solid state
 - RC 87 610 250 : voltage
- Decimal point
- Integral module for voltage inputs ($\sim / \equiv 5...50 V$, $\sim 48...240 V$)
- Powered by lithium battery. Life : 5 years
- Front panel reset for "partial" count
- Front panel or electrical reset for total count
- Accessories for panel cut-out 25 x 50, 45 x 45, $\varnothing 50$



RC 87 610 240

Total/partial impulse counters, LCD 24 x 48

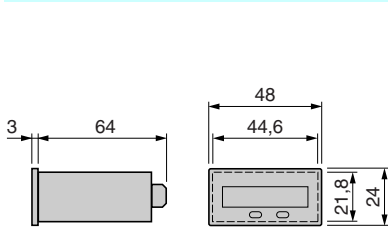
Description	Reference	Weight kg
Solid state input	RC 87 610 240	0.060
Voltage input	RC 87 610 250	0.065

Accessories

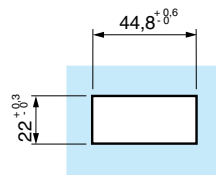
Description	Dimensions	Reference	Weight kg
Adaptors for panel cut-out	25 x 50 mm (dimensions 29 x 54 mm)	RC 26 546 829	0.002
	45 x 45 mm (dimensions 52 x 52 mm)	RC 26 546 830	0.008
	$\varnothing 50$ mm (dimensions $\varnothing 73$ mm)	RC 26 546 831	0.011

Dimensions

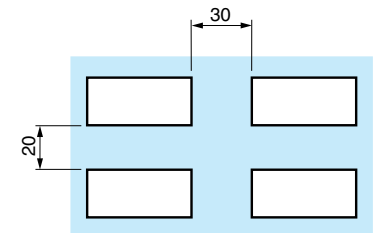
RC 87 610 200



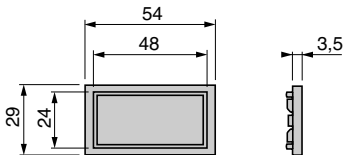
Panel cut-out
(Max. thickness 10mm) 1 unit



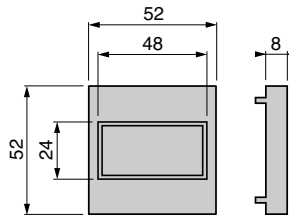
4 units



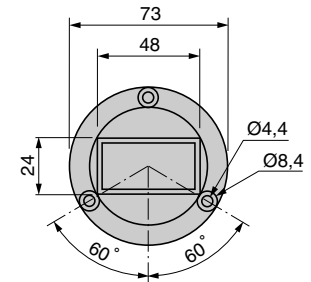
RC 26 546 829



RC 26 546 830



RC 26 546 831



Counter type		XBK P5 preset counters
Display type		Mechanical
Characteristics		
Function		Preset counters
Supply voltage	V	$\bar{\text{---}} 24 \pm 10 \%$
Consumption	W	2.5
Maximum counting frequency	Hz	25
Number of digits		5
Display capacity		0 to 99 999
Digit height	mm	4
Number of presets		1
Preset display		Adding (continuous) or subtracting (non continuous)
Counting mode		Adding or subtracting
Reset		Adding from zero or subtracting from the preset value
Reset type		Manual or manual and electrical
Type of input signals		Contact (20 VA/220 V/1 A max)
Output type		Contact (volt-free)
Connection		By AMP lugs on a connection box
Environment		
Conforming to standards		EN 50081-2 and EN 50082-2, EN 61010
Product certifications		XBK P5●●●D●●M : CSA (pending) XBK P5●●●U●●M : UL/CSA (pending)
Temperature	Operation	°C - 10...+ 50
	Storage	°C - 40...+ 85
Degree of protection	Conforming to IEC 60529	IP 40
Vibration resistance	Conforming to IEC 60068-2-6	5 gn (10 to 150 Hz)
Shock resistance	Conforming to IEC 60068-2-27	30 gn (6 ms)
Protection against electric shocks	Conforming to IEC 60536	Class II
Mounting and fixing		Removable and flush-mounting Fixing by screws on front panel

5

References



XBK P50100D●0M

Supply voltage	Number of display digits	Counting frequency	Number of presets	Reset type	Reference	Weight
V		Hz				kg
Subtracting preset counters with mechanical display						
24	5	25	1	Manual	XBK P50100D10M	0.200

Manual and electrical **XBK P50100D20M** 0.240



XBK P50100U●0M

Adding preset counters with mechanical display						
24	5	25	1	Manual	XBK P50100U10M	0.200

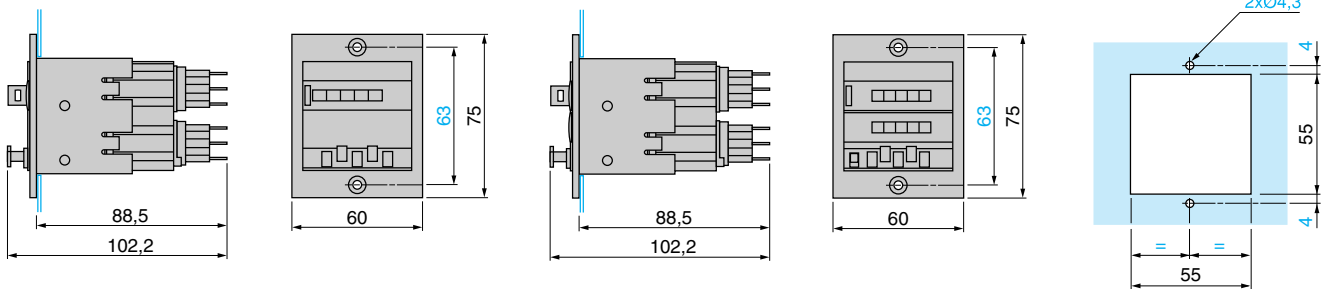
Manual and electrical **XBK P50100U20M** 0.240

Dimensions

XBK P50100D●0M

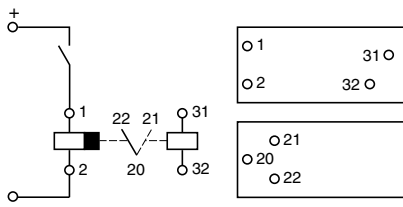
XBK P50100U●0M

Common flush-mounting



Schemes

XBK P50100D●0M, XBK P50100U●0M



Zelio Count - counters

Electromechanical and electronic
totalising timers

Timer type		XBK H totalising timers	
Display type		Mechanical	Electronic LCD
Characteristics			
Function		Totalising timer with mechanical display	Totalising timer with LCD display
Supply voltage	V	$\sim 24 \pm 10\% 50 \text{ Hz}$ $\sim 115 \pm 10\% 50 \text{ Hz}$ $\sim 230 \pm 10\% 50 \text{ Hz}$	Lithium battery
Consumption	VA	XBK H70000001M: 0.56 XBK H70000002M: 1 XBK H70000004M: 0.08	–
Backup capacity		Permanent	7 years
Number of digits		7	8
Precision of display		0 to 99 999.99 h	0 to 999 999.99 h
Digit height	mm	5	7
Counting mode		Adding 1/100 of an hour	
Reset type		Without	Manual or transistor with Reset key locking facility
Inputs	Function	Enable	
	Type	Contact	Transistor: PNP $\geq 5 \text{ V}$ or NPN $\leq 0.7 \text{ V}$
	Amplitude	V	–
Environment			
Conforming to standards		EN 50081-2, EN 50082-2, VDE 0435	EN 50081-2, EN 50082-2, EN 61010
Product certifications		UR recognized	–
Temperature	Operation	°C	- 10...+ 50
	Storage	°C	- 25...+ 70
Degree of protection	Conforming to IEC/EN 60529	IP 65	IP 54
Vibration resistance	Conforming to IEC/EN 60068-2-6	3 gn (10 to 150 Hz)	1 gn (10 to 150 Hz)
Shock resistance	Conforming to IEC/EN 60068-2-27	30 gn (11 ms)	10 gn (18 ms)
Protection against electric shocks	Conforming to IEC/EN 60536	Class II	
Mounting and fixing		Flush-mounting unit fixed by a self-locking clamp	
Connection		Screw terminal block	

5

References



XBK H7000000M

Supply voltage	Number of display digits	Mains supply frequency	Reset type	Reference	Weight
V		Hz			kg
Timers with mechanical display					
~ 24	7	50	Without	XBK H70000004M	0.060
~ 115	7	50	Without	XBK H70000001M	0.060
~ 230	7	50	Without	XBK H70000002M	0.060



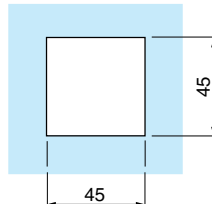
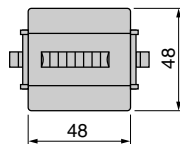
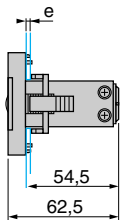
XBK-H81000033E

Supply voltage	Number of display digits	Display mode	Reset type	Reference	Weight
V					kg
Timers with LCD display					
Lithium battery	8	1/100 of an hour	Manual or transistor	XBK H81000033E	0.050

Dimensions

XBK H7000000M

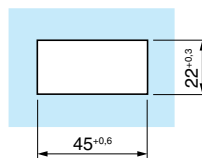
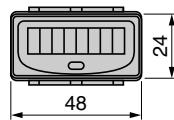
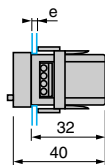
Flush-mounting



e: panel thickness, 1 mm < e < 2.5 mm

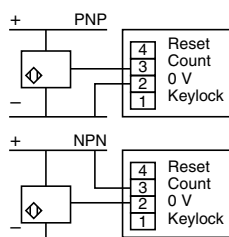
XBK H81000033E

Flush-mounting

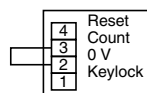


Schemes

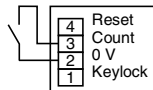
XBK H81000033E



Reset key locking facility



Volt-free contact



Technical characteristics

Function		Hour counter
Display		6 digit LCD
Digit height	mm	7
Time ranges		0...99 999.9 h 0...99 999.9 min 0...99 999.9 s 0...99 h 59 min 59 s
Time base		Quartz (precision ± 50 ppm)
Possibility of reloading current value		Yes

Input characteristics

Counter type		RC 87 610 150	
Input type		1 start/stop input	
Voltage	Terminals 4 - 5	V	~ / ≡ 5...50
	Terminals 5 - 6	V	~ 48...240 - 50/60 Hz
Minimum impulse time	~	ms	50
	≡	ms	35

Reset characteristics (1)

Front panel	DIP switch n° 2 to OFF		Inhibited
	DIP switch n° 2 to ON		Enabled
Minimum impulse time		ms	100
Voltage	Terminals 2 - 3	V	~ / ≡ 5...50
	Terminals 1 - 2	V	~ 48...240 - 50/60 Hz

Supply characteristics

1 lithium battery	Life		5 years
			Supply can be switched off via DIP switch n° 1 located on the underside of the device

General characteristics

Conforming to standards		VDE 0110, IEC 664, 348, 55.4, 255.5, 801.2, 801.4	
Product certifications		cULus, CSA	
Material		Self-extinguishing	
Temperature limits	Operation	°C	-10...+ 55
	Storage	°C	-20...+ 70
Front panel degree of protection		IP 66	
Mounting method		By yoke	
Connection		By 6 screw terminals on back of the device	
Clamping capacity	mm ²		2 x 1.5

(1) The reset is galvanically isolated from the counting input.

References

- Counting inputs and reset inputs : solid state or voltage
- Integral module for voltage inputs (~ or = 5...50 V, ~ 48...240 V)
- 4 time ranges :
 - 99 999.9 h - 99 999.9 min
 - 99 999.9 s - 99 h 59 min 59 s
- Possibility of reloading current value
- Powered by lithium battery. Life 5 years
- Reset on front panel or external with inhibit facility

Hour counters, LCD 24 x 48

Description	Reference	Weight kg
Solid state input	RC 87 610 150	0,065

Accessories

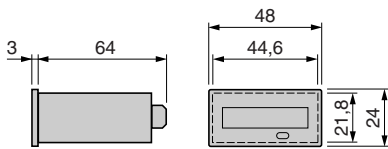
Description	Dimensions	Reference	Weight kg
Adaptors for panel cut-out	25 x 50 mm (dimensions 29 x 54 mm)	RC 26 546 829	0.002
	45 x 45 mm (dimensions 52 x 52 mm)	RC 26 546 830	0.008
	Ø 50 mm (dimensions Ø 73 mm)	RC 26 546 831	0.011



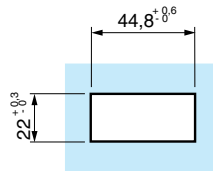
RC 87 610 150

Dimensions

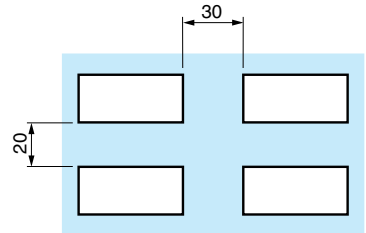
RC 87 610 150



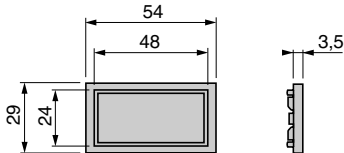
Panel cut-out
(Max. thickness 10 mm) 1 unit



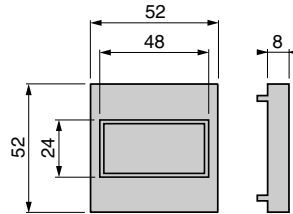
4 units



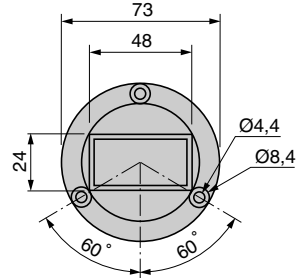
RC 26 546 829



RC 26 546 830

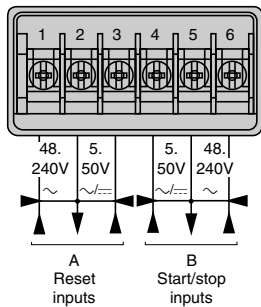


RC 26 546 831



Schemes (other schemes on page 5/23)

RC 87 610 150



Terminals

- 1 - Reset ~ 48...240 V
- 2 - Reset common
- 3 - Reset ~/= 5...50 V
- 4 - ~/= 5...50 V
- 5 - Start/stop common
- 6 - ~ 48...240 V

Zelio Count - counters

Electronic preselection and multifunction counters, 48 x 48, 6 digits, LCD or LED

Counter type		Preselection XBK P6	
Display type		LCD or LED	
Characteristics			
Functions	Multifunction		Preselection counters, tachometer, chronometer, totalising counter, batch counter.
Supply voltage		V	--- 24 or ~ 230 ± 10 % or ~ 115 ± 10 %
Sensor supply voltage			--- 12 to 24 (50 mA max) for XBK P6●●30G32E or XBK P6●●30G31E
Consumption			150 mA --- 24 V, 50mA ~ 230 V or ~ 115 V
Maximum counting frequency		Hz	5000 (2500 for bi-directional counting)
Number of digits			6
Display capacity			- 99 9999 to 999 999
Digit height		mm	7.6 (LED) or 9 (LCD)
Number of presets			1 or 2
Preset display			Non continuous
Counting mode			5 programmable modes : - single counter input, - single counter with phase discriminator, - differential inputs, - summing inputs, - counting direction inputs. (Counter input resistance 5 kΩ)
Reset			2 modes : reset to zero and reset to preset value
Reset type			Manual, electrical and automatic
Output type			Relay,changeover (response time 5 ms) : --- 5 V < U _c < --- 30 V ~ 5 V < U _c < ~ 250 V 10 mA < I < 1 A Transistor PNP : --- 12...24 V, 10 mA max
Minimum duration of counting pulse		ms	17 at 30 Hz 0.1 at 5 KHz
Environment			
Conforming to standards			EN 50081-2 and EN 50082-2, EN 61010
Product certifications			cURus
Temperature	Operation	°C	- 0...+ 50
	Storage	°C	- 20...+ 70
Degree of protection	Conforming to IEC 60529		IP 65
Vibration resistance	Conforming to IEC 60068-2-6		1 gn (10 to 150 Hz)
Shock resistance	Conforming to IEC 60068-2-27		10 gn (18 ms)
Protection against electric shocks	Conforming to IEC 60536		Class II
Mounting and fixing			Flush-mounting unit and fixing by a self-locking clamp with setscrews
Connection			Screw terminal block

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References



XBK P6130G30E



XBK P6230G30E

Supply voltage	Number of display digits	Counting frequency	Number of presets	Reference	Weight
V		kHz			kg

Manual, electrical and automatic reset

Preselection counters with LCD display

= 24	6	5	1	XBK P61130G30E	0.150
			2	XBK P61230G30E	0.150
~ 115	6	5	1	XBK P61130G31E	0.250
			2	XBK P61230G31E	0.250
~ 230	6	5	1	XBK P61130G32E	0.250
			2	XBK P61230G32E	0.250

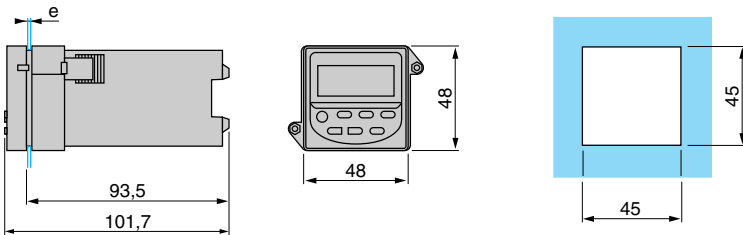
Preselection counters with LED display

= 24	6	5	1	XBK P62130G30E	0.150
			2	XBK P62230G30E	0.150
~ 230	6	5	1	XBK P62130G32E	0.250
			2	XBK P62230G32E	0.250

Dimensions

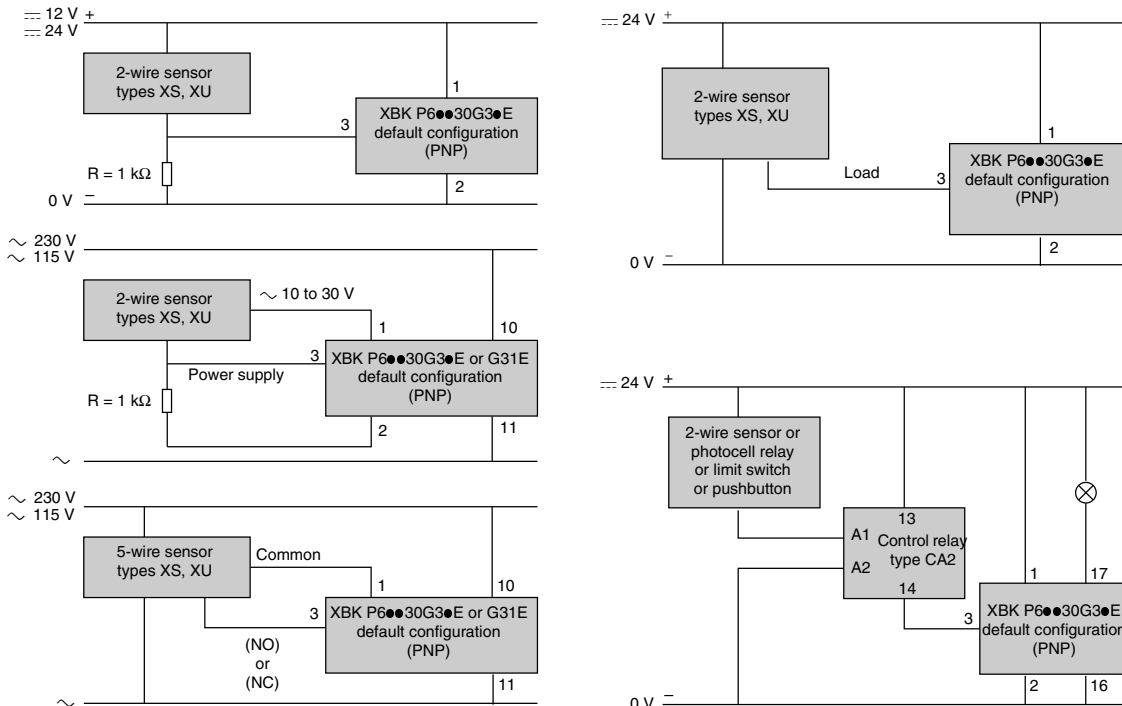
XBK P630G30E

Flush-mounting



Schemes

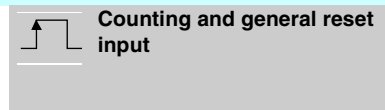
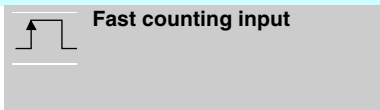
XBK P630G30E



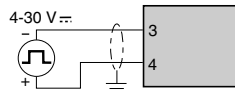
Connection schemes

RC 87 610 240

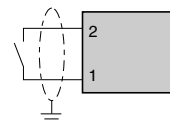
Description



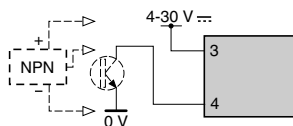
Voltage



Volt-free contact



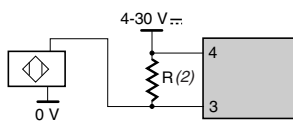
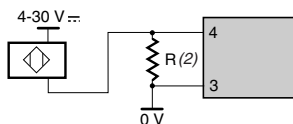
NPN transistor or 3-wire NPN proximity sensor (1)



PNP transistor or 3-wire PNP proximity sensor (1)



2-wire proximity sensor




(1) For sensor with leakage current ≤ 0.1 mA.


(2) $R = 470 \Omega / 2 \Omega$ for a 2-wire sensor with leakage current ≤ 1.5 mA.

Connection schemes (continued)

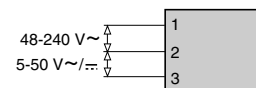
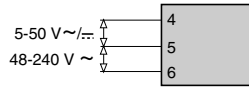
RC 87 610 050, RC 87 610 150, RC 87 610 250

Description

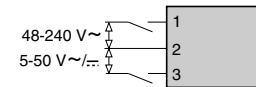
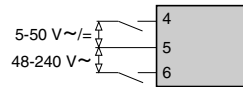
 **Counting input**
RC 87 610 050, RC 87 610 250
Start/Stop input
RC 87 610 150

 **Reset**
RC 87 610 050,
RC 87 610 150,
RC 87 610 250

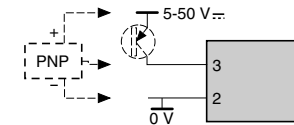
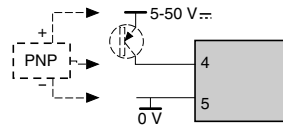
Voltage



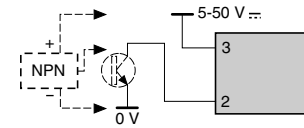
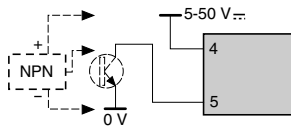
Live contact



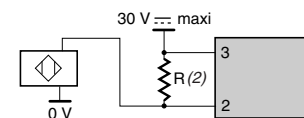
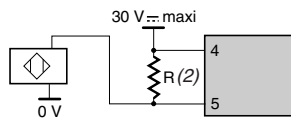
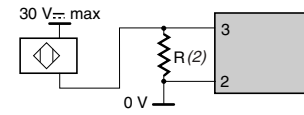
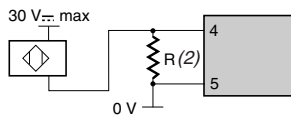
NPN transistor or 3-wire NPN proximity sensor (1)



PNP transistor or 3-wire PNP proximity sensor (1)



2-wire proximity sensor



(1) For sensor with leakage current ≤ 0.1 mA.

(2) $R = 470 \Omega / 2 \Omega$ for a 2-wire sensor with leakage current ≤ 1.5 mA.