

Zelio[®] Count - Counters

RC87610

Catalog
March

05

Class 9051



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This type of counter is typically used on very simple machines to keep a running total of the number of cycles the machine has performed or the total amount of time that the machine has been running. This information can be very useful in a preventative maintenance program.

Totalizing Counters

A totalizing counter is used to count electrical pulses or contact closings. The display will show the value and update this value after each pulse. They all count up only and can be reset on the front of the device or remotely.

Hour Counters

An hour counter is used to count the elapsed time and display the value. They can be reset on the front of the device or remotely.

	Totalizing Counters				Hour Counters	
Catalog Number	RC87610050	RC87610240	RC87610250	RC87610340	RC87610440	RC87610150
Input Speed	40 Hz	14 or 100Hz	14HZ	40 Hz / 7K Hz	- - -	- - -
Input	Voltage	Solid State	Voltage	Voltage	---	---
Display	8 digit LCD	8 digit LCD	8 digit LCD	8 digit LCD	6 digit LCD	6 digit LCD
Supply	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery
Degree of Protection	IP66	IP66	IP66	IP64	IP64	IP66
Approvals	cULus CSA CE	cULus CSA CE	cULus CSA CE	cULus CSA CE	cULus CSA CE	cULus CSA CE
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European Degrees of Protection

IP64 - Dust tight and protected against splashing water.

IP66 - Dust tight and powerful water jets.

Zelio[®] Count

Electronic Totalizing Counter

Counter Type **RC87610050**

Technical characteristics			
Function			Impulse counter
Display			8 digit LCD
Digit height		in (mm)	0.28 (7)
Counting capacity			0 to 99 999 999
Input characteristics			
2 voltage levels	Terminals 4 - 5	V	5 to 50 Vac/dc
	Terminals 5 - 6	V	48 to 240 Vac / 50/60 Hz
Reset to zero characteristics (1)			
Front panel	Dipswitch n° 2 to OFF		Inhibited (reset not allowed)
	Dipswitch n° 2 to ON		Enabled (reset allowed)
Voltage	Terminals 2 - 3	V	5 to 50 Vac/dc
	Terminals 1 - 2	V	48 to 240 Vac / 50/60 Hz
Counting speed characteristics			
Slow counting		Hz	40
Minimum impulse duration	Low level	ms	12
	High level	ms	12
Input levels		V	4 to 30 Vdc
Input impedance		kΩ	3.5 min
Supply characteristics			
2 alkaline batteries	Life (replaceable)		4 years
1 lithium battery	Life (replaceable)		8 years
			Supply can be switched off via Dipswitch n° 1 located on the underside of the device
General characteristics			
Material			Self-extinguishing
Connection			By 6 screw terminals on back of the device
Clamping capacity	Maximum	AWG (mm ²)	2 - #16 (2 x 1.31)
Mounting			By yoke
Degree of protection			IP 66
Temperature ratings	Operation	°F (°C)	14 to 131 (-10 to + 55)
	Storage	°F (°C)	-4 to 158 (-20 to + 70)
Insulation resistance	Conforming to IEC 255.5	MΩ	100 (500 Vdc)
Dielectric strength	Conforming to IEC 255.5		2000 V/60 Hz/1 min (2000 V/50 Hz/1 min)
Conforming to standards			VDE 0110, IEC 664, 348, 255.4, 255.5, 801.2, 801.4
Approvals			c UL us File: E173076 CCN: NRNT File: E173076 CCN: NRNT7 CSA File: 217698 Guide: 3211 07 CE

(1) The reset is electrically isolated (no conductive path) from the counting input.

Catalog Numbers:
page 5

Dimensions:
page 5

Wiring:
pages 5 and 13

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Zelio[®] Count Electronic Totalizing Counter

- 8-digit LCD display; digit height 0.27" (7 mm)
- Powered by replaceable alkaline batteries or lithium battery
- *Counting inputs: 5 to 50 Vac/dc or 48 to 240 Vac*
- Dimensions DIN - 0.94 x 1.8" (24 x 48 mm)
- Reset on front panel or remote reset

Ordering Information

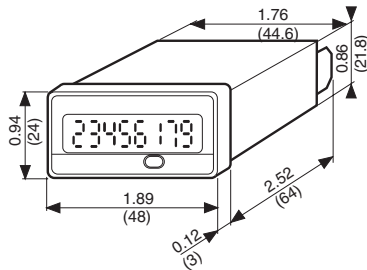


RC87610050

Description	Catalog Number	Weight lb. (kg)	
Totalizing counter, LCD 0.94 x 1.88" (24 x 48mm) voltage input	RC87610050	0.14 (0.065)	
Accessories			
Description	Dimensions	Catalog Number	Weight lb. (kg)
Adaptors for panel cut-out	0.98 x 1.96" (25 x 50 mm)	RC26546829	0.004 (0.002)
	1.77 x 1.77" (45 x 45 mm)	RC26546830	0.017 (0.008)
	Ø 1.96" (Ø 50 mm)	RC26546831	0.024 (0.011)

Approximate Dimensions

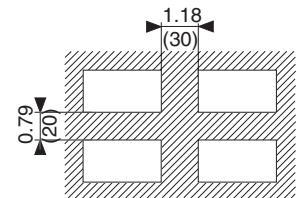
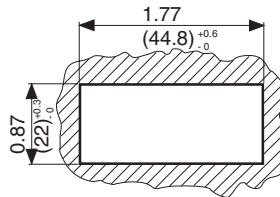
RC87610050



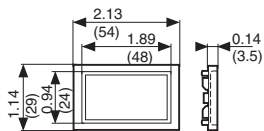
Panel cut-out

Max. thickness 0.39" (10mm) 1 unit

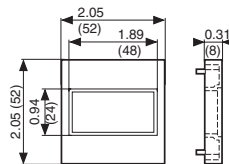
4 units



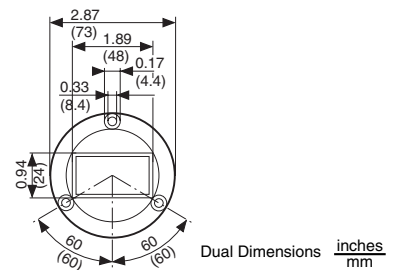
RC26546829



RC26546830

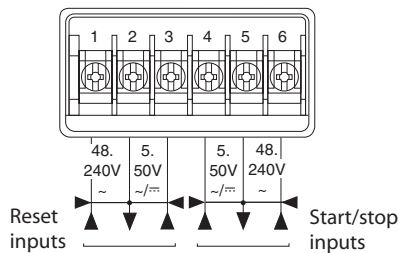


RC26546831



Dual Dimensions $\frac{\text{inches}}{\text{mm}}$

Wiring (for additional wiring refer to pages 12 and 13)



Terminals

- 1 - Reset ~ 48 to 240 Vac
- 2 - 0 V reset
- 3 - Reset ~/∞ 5 to 50 Vac/dc
- 4 - ~/∞ 5 to 50 Vac/dc
- 5 - 0 V
- 6 - ~ 48 to 240 Vac

Characteristics:
page 4

Zelio[®] Count

Electronic Total/Partial Impulse Counter

Counter Type

RC87610240

RC87610250

Technical characteristics

Function		Impulse counter
Display		8 digit LCD
Digit height	in (mm)	0.28 (7)
Counting capacity		0 to 99 999 999

Input characteristics

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	–
	Terminals 5 - 6	V	–
			5 to 50 Vac/dc
			48 to 240 Vac / 50/60 Hz

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	–
	Terminals 1 - 2	V	–
			5 to 50 Vac/dc
			48 to 240 Vac / 50/60 Hz

Counting input characteristics

Counting speed (selectable with dipswitch 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 (replaceable) Life		5 years
		Supply can be switched off via Dipswitch n° 3 located on the underside of the device

General characteristics

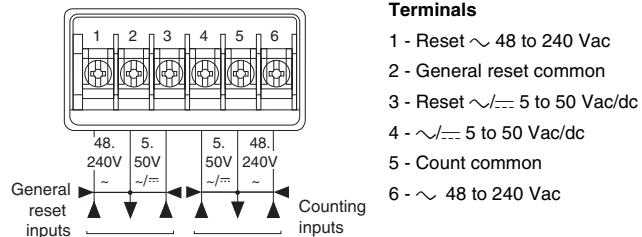
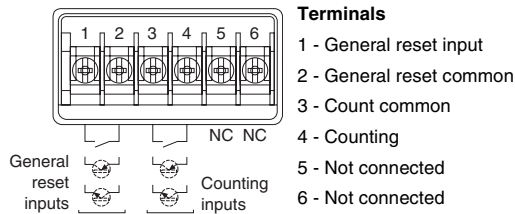
Material		Self-extinguishing	
Connection		By 6 screw terminals on back of the device	
Clamping capacity	Maximum	AWG (mm ²)	2 - #16 (2 x 1.5)
Mounting		By yoke	
Degree of protection		IP 66	
Temperature ratings	Operation	°F (°C)	14 to 131 (- 10 to + 55)
	Storage	°F (°C)	- 4 to 158 (- 20 to + 70)
Conforming to standards		VDE 0110, IEC 60664, IEC 60048, IEC 60255.4, IEC 60255.5, IEC 60801.2, IEC 60801.4	
Approvals		c UL us File: E173076 CCN: NRNT File: E173076 CCN: NRNT7 CSA File: 217698 Guide: 3211 07 CE	

(1)The reset is electrically isolated (no conductive path) from the counting input.

Wiring (for additional wiring refer to pages 12 and 13)

RC87610240

RC87610250



Catalog Numbers:
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Dimensions:
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Zelio[®] Count

Electronic Total/Partial Impulse Counter

- Partial or total count display
- Counting capacity:
partial: 0 to 999 999 / total: 0 to 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
5 to 50 Vac/dc, 48 to 240 Vac)
- Powered by replaceable lithium battery.
Life: 5 years
- Front panel reset for "partial" count
- Front panel or electrical reset for total count
- Accessories for panel cut-out
0.98 x 1.96, 1.77 x 1.77, Ø 1.96"
25 x 50, 45 x 45, Ø 50 (mm)

Ordering Information



RC87610240

Description	Catalog Number	Weight lb. (kg)	
Totalizing counter, LCD 0.94 x 1.88 (24 x 48 mm) solid state input	RC87610240	0.13 (0.060)	
Totalizing counter, LCD 0.94 x 1.88 (24 x 48 mm) voltage input	RC87610250	0.14 (0.065)	
Accessories			
Description	Dimensions	Catalog Number	Weight lb. (kg)
Adapters for panel cut-out	0.98 x 1.96" (25 x 50 mm)	RC26546829	0.004 (0.002)
	1.77 x 1.77" (45 x 45 mm)	RC26546830	0.017 (0.008)
	Ø 1.96" (Ø 50 mm)	RC26546831	0.024 (0.011)

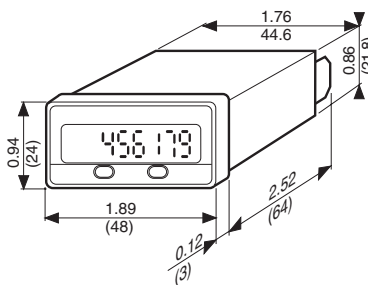
Approximate Dimensions

RC87610240 / RC87610250

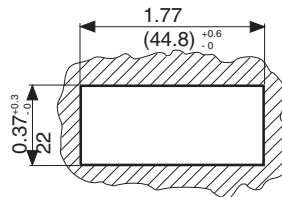
Panel cut-out

Max. thickness 0.39" (10mm) 1 unit

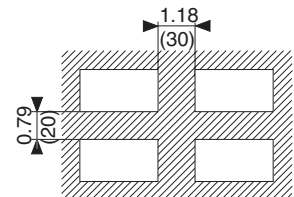
4 units



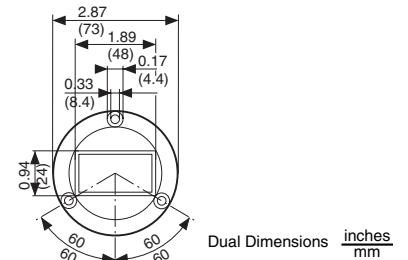
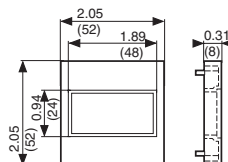
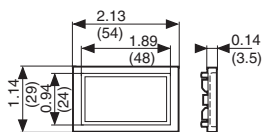
RC26546829



RC26546830



RC26546831



Dual Dimensions inches mm

Characteristics:
page 6

Wiring:
page 6

Zelio[®] Count

Electronic Totalizing Counter; Hour Counter Chronometer

Counter Type		RC87610340	RC87610440
Technical characteristics			
Functions		Impulse counter	Hour counter/chronometer
Solid state input		Solid state	Solid state
Display		8 digit LCD	6 digit LCD
Digit height	in (mm)	0.28 (7)	0.28 (7)
Counting capacity		0 to 99 999 999	–
Time ranges		–	0 to 99 999.9 h 0 to 99 999.9 min 0 to 99 999.9 s 0 to 99 h 59 min 59 s
Time base		–	Quartz (precision ± 50 ppm)
Possibility of reloading current value		–	Yes
Supply			5 years
1 lithium battery (replaceable)	Life	8 years	
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)		Hz	40 max
	T OFF	ms	12 min
Volt-free contact or transistor	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
	NPN collector		–
Fast input (In.H)		kHz	7 max
	T OFF	µs	70 min
	T ON	µs	70 min
	Level 0	V	0 to 1 Vdc
	Level 1	V	4 to 30 Vdc
	Current consumption	mA	6 max at 24 Vdc
Reset to zero: Reset			Volt-free contact or transistor
	NPN open collector	ms	12 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			
Material			Self-extinguishing
Connection			By 5 screw terminals on back of the device.
Clamping capacity	Maximum	AWG (mm ²)	2 - #16 (2 x 1.5)
Mounting			By yoke
Degree of protection			IP 64
Temperature ratings	Operation	°F (°C)	32 to 131 (0 to + 55)
	Storage	°F (°C)	-13 to 158 (- 25 to + 70)
Conforming to standards			VDE 0110, IEC 60664, 60348, 60255.4, 60255.5, 60801.2, 60801.4
Approvals			c UL us File: E173076 CCN: NRNT File: E173076 CCN: NRNT7 CSA File: 217698 Guide: 3211 07 CE

Catalog Numbers:
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Wiring:
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Zelio® Count

Electronic Totalizing Counter; Hour Counter

- LCD display, digit height 0.27" (7 mm)
- Totalizing counter: 7 kHz and 40 Hz input
- Max counting capacity: 99 999 999 impulses
- Hour counter: 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 replaceable lithium battery
- Reset from front panel or remote reset

Ordering Information

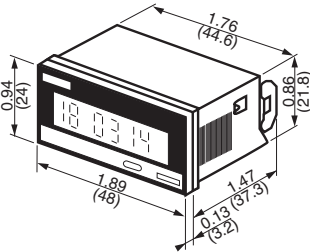


RC87610340

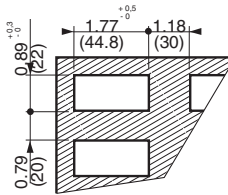
Description	Catalog Number	Weight lb. (kg)	
Totalizing counter, 8 digit LCD, 0.94 x 1.88" (24 x 48 mm)	RC87610340	0.13 (0.060)	
Hour counter, 6 digit LCD, 0.94 x 1.88" (24 x 48mm)	RC87610440	0.13 (0.060)	
Accessories			
Description	Dimensions	Catalog Number	Weight lb. (kg)
Adapters for panel cut-out	0.98 x 1.96" (25 x 50 mm)	RC26546829	0.004 (0.002)
	1.77 x 1.77" (45 x 45 mm) (Ø 50 mm)	RC26546830	0.017 (0.008)
		RC26546831	0.024 (0.011)

Approximate Dimensions

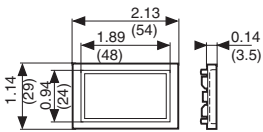
RC87610340 / RC87610440



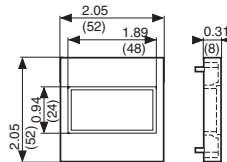
Panel cut-out



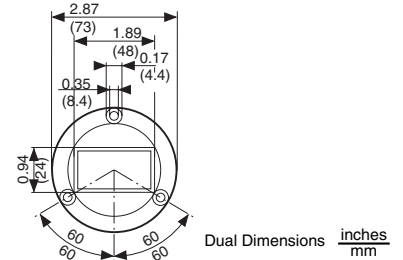
RC26546829



RC26546830



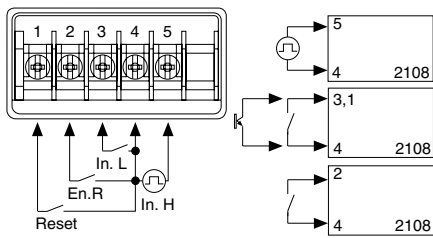
RC26546831



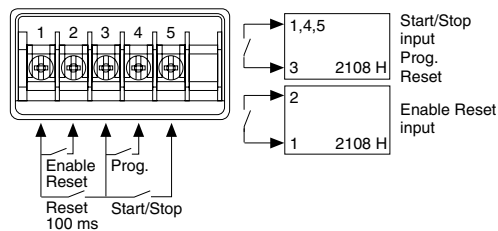
Dual Dimensions inches
mm

Wiring

RC87610340



RC87610440



Terminals

- 1 - Reset input
- 2 - Enable Reset
- 3 - Slow counting input and reset
- 4 - OV
- 5 - Fast counting

Terminals

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

Characteristics:
page 8

Zelio[®] Count

Electronic Hour Counter

Counter Type

RC87610150

Technical characteristics

Function		Hour counter
Display		6 digit LCD
Digit height	in (mm)	0.28 (7)
Time ranges		0 to 99 999.9 h 0 to 99 999.9 min 0 to 99 999.9 s 0 to 99 h 59 min 59 s
Time base		Quartz (precision \pm 50 ppm)
Possibility of reloading current value		Yes

Input characteristics

Input type		1 start/stop input	
Voltage	Terminals 4 - 5	V	5 to 50 Vac/dc
	Terminals 5 - 6	V	48 to 240 Vac / 50/60 Hz
Minimum impulse time	Vac	ms	50
	Vdc	ms	35

Reset characteristics (1)

Front panel	Dipswitch n° 2 to OFF		Inhibited
	Dipswitch n° 2 to ON		Enabled
Voltage	Terminals 2 - 3	V	5 to 50 Vac/dc
	Terminals 1 - 2	V	48 to 240 Vac / 50/60 Hz
Minimum impulse time		ms	100

Supply characteristics

Life		5 years
1 lithium battery (replaceable)		Supply can be switched off via Dipswitch n° 1 located on the underside of the device

General characteristics

Material		Self-extinguishing	
Connection		By 6 screw terminals on back of the device	
Clamping capacity	Maximum	AWG (mm ²)	2 - #16 (2 x 1.31)
Mounting		By yoke	
Degree of protection		IP 66	
Temperature ratings	Operation	°F (°C)	14 to 131 (-10 to + 55)
	Storage	°F (°C)	-4 to 158 (-20 to + 70)
Conforming to standards		VDE 0110, IEC 60664, 60348, 60255.4, 60255.5, 60801.2, 60801.4	
Approvals		c UL us File: E173076 CCN: NRNT File: E173076 CCN: NRNT7 CSA File: 217698 Guide: 3211 07 CE	

(1) The reset is electrically isolated (no conductive path) from the counting input.

- Inputs and reset: voltage
- Integral module for voltage inputs
5 to 50 Vac/dc, 48 to 240 Vac)
- 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 replaceable lithium battery. Life: 5 years
- Reset on front panel or remote reset

Ordering Information

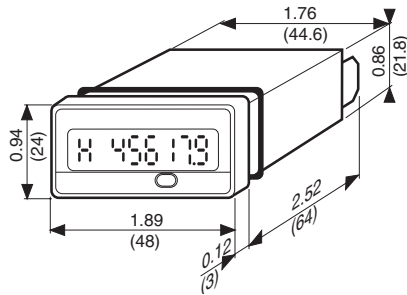


RC87610150

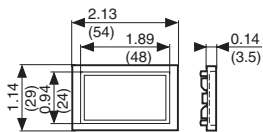
Description	Catalog Number	Weight lb. (kg)	
Hour counter, 6 digit LCD, 0.94 x 1.88 (24 x 48 mm)	RC87610150	0.14 (0.065)	
Accessories			
Description	Dimensions	Catalog Number	Weight lb. (kg)
Adaptors for panel cut-out	0.98 x 1.96" (25x50 mm)	RC26546829	0.004 (0.002)
	1.77 x 1.77" (45x45 mm)	RC26546830	0.017 (0.008)
	Ø 1.96 (Ø 50 mm)	RC26546831	0.024 (0.011)

Approximate Dimensions

RC87610150



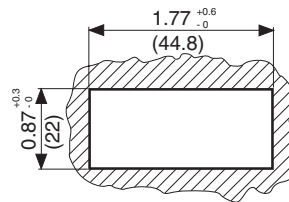
RC26546829



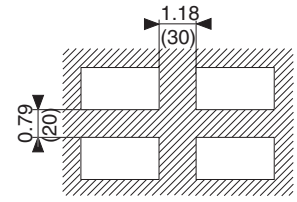
Panel cut-out

Max. thickness 0.39" (10 mm) 1 unit

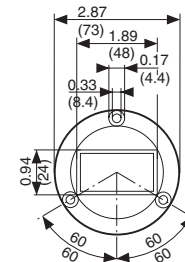
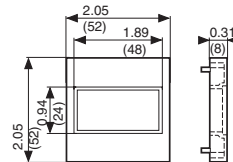
units



RC26546830

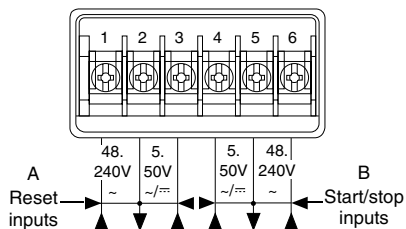


RC 26546831



Dual Dimensions inches/mm

Wiring (for additional wiring refer to pages 12 and 13)



Terminals


- 1 - Reset ~ 48 to 240 Vac
- 2 - Reset common
- 3 - Reset ~/--- 5 to 50 Vac/dc
- 4 - ~/--- 5 to 50 V
- 5 - Start/stop common
- 6 - ~ 48 to 240 V


Characteristics:
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Zelio[®] Count

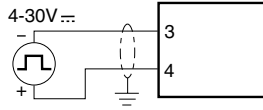
Additional Wiring

RC87610240

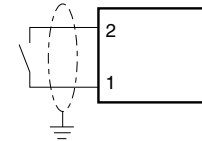
 **Fast counting input**
(3)

 **Counting and general reset input**
(3)

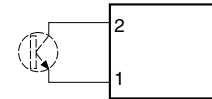
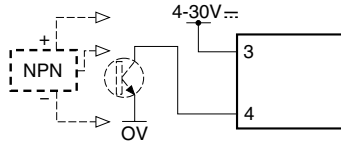
Voltage



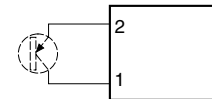
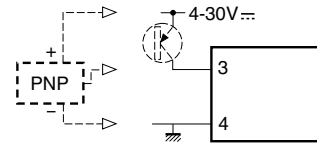
Hard contact



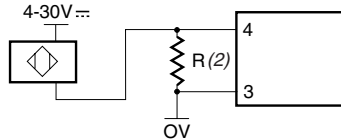
NPN transistor or 3-wire NPN proximity sensor (1)
(RC87610240)



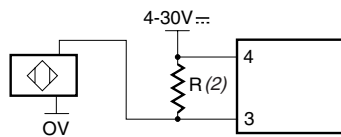
PNP transistor or 3-wire PNP proximity sensor (1)
(RC87610240)



2-wire proximity sensor



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

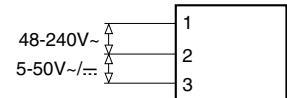
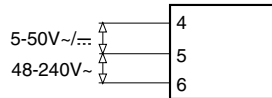
(3) The count takes place when the voltage becomes present (rising edge).

RC87610050, RC87610150, RC87610250

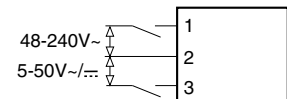
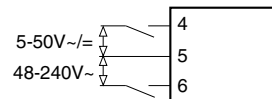
 **Counting input RC87610050**
Start/Stop input RC87610150
(3)

 **Reset**
RC87610050, RC87610150,
RC87610250
(3)

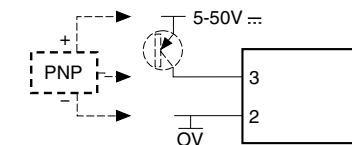
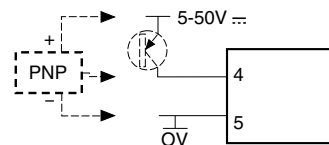
Voltage



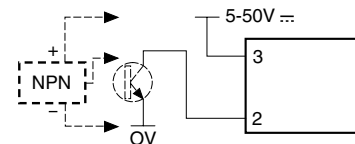
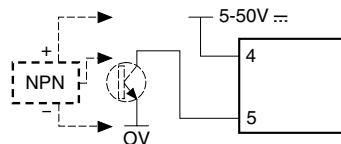
Live contact



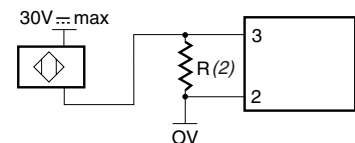
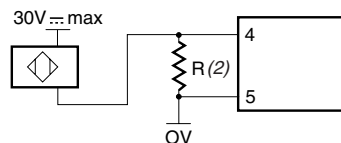
PNP transistor or 3-wire PNP proximity sensor (1)



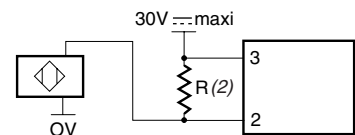
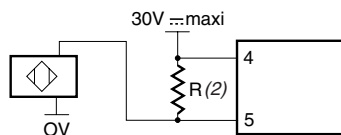
NPN transistor or 3-wire NPN proximity sensor (1)



2-wire proximity sensor



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

(3) The count takes place when the voltage becomes present (rising edge).

Zelio® Count Additional Wiring

RC26546829	7
RC26546830	7
RC26546831	7
RC87610050	5
RC87610150	11
RC87610240	7
RC87610250	7
RC87610340	9
RC87610440	9

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