

# Pulse counters, electromechanical

**Mini counters**      **6 or 7 digits without reset (AC+DC)**      **W 16 / W 17**



The mini totalizers W 16 and W 17 are not resettable, and have been designed for various front panel sizes in a wide variety of applications.

They offer an excellent price / performance ratio and are easy to operate.

### Characteristics

- 6- or 7-digit miniature pulse counters, adding without reset.
- Low power consumption.
- Available for all common DC and AC voltages.
- Versions available for DIN 48 x 24 mm and many other panel mount dimensions as well as for other types, e.g. PCB mount.

### Benefits

- Long service life / Protection IP41 (front side).

### Applications

Battery-powered devices, heat and water consumption measurement, establishing tolls and charges, general quantity counting.

### Type series

Description / mounting	Panel mount dim.	Housing	Display	6 digits		7 digits	
				W 16.20	-	-	W 17.50
Panel mount + mounting clip, 34 x 23 mm [1.34 x 0.91"]	31 x 20 mm [0.79 x 0.25"]	plastic	front side	W 16.20	-	-	-
Panel mount + mounting clip, 48 x 24 mm [1.89 x 0.94"]	45 x 22.2 mm [1.77 x 0.87"]	plastic	front side	-	-	W 17.50	-
PCB mount, lying		sheet steel	on the top	W 16.60	-	-	-
Panel mount + mounting clip, 42 x 28 mm [1.65 x 1.10"]	37.5 x 23.5 mm [1.48 x 0.93"]	plastic	front side	-	-	W 17.90	-

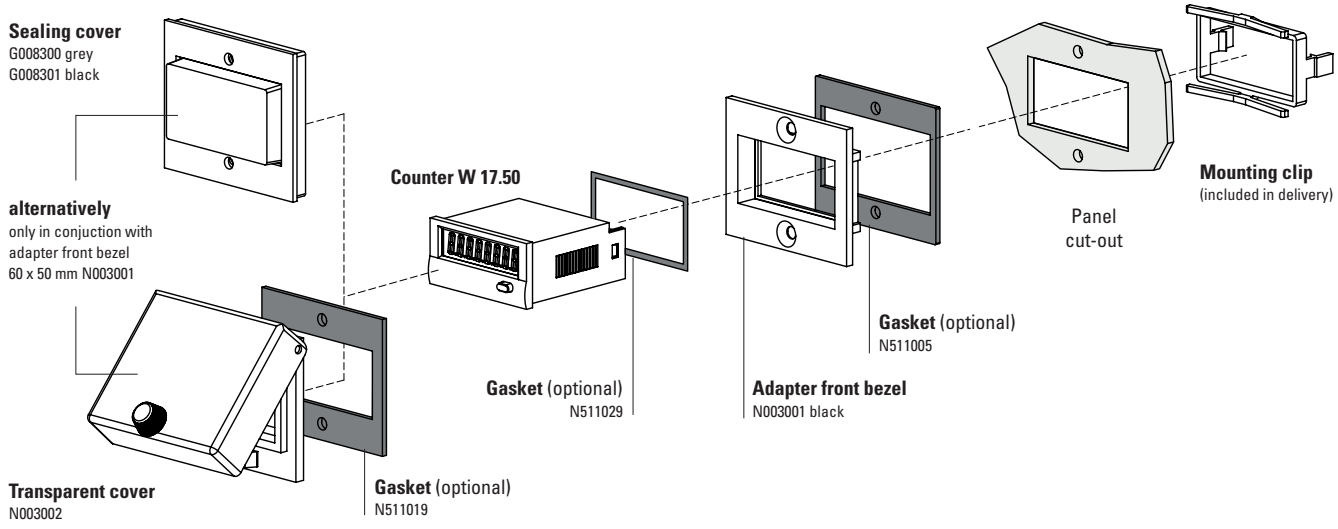
**Order information**

- Art. no.
- For special voltages, please give type, voltage, kind of voltage and series e.g.: W 16.20, 9 V DC, 05, black

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**Accessories / Mounting examples (for W 17.50 only)**



		Type / size	Description		Order no.	suitable gasket
<b>Adapter front bezel</b>		<b>53 x 28 mm</b> [2.09 x 1.10"]	for cut-out 50 x 25 mm [1.97 x 0.98"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	grey black anthracite	<b>T008164</b> <b>T008165</b> <b>T008180</b>	<b>N511015</b>
		<b>56 x 40 mm</b> [2.20 x 1.57"]	for cut-out 50 x 25 mm [1.97 x 0.98"] to cut-out 45 x 22.2 mm [1.77 x 0.94"] screw mounting	black anthracite	<b>T008161</b> <b>T008181</b>	<b>N511045</b>
		<b>72 x 36 mm</b> [2.83 x 1.42"]	for cut-out 68 x 33 mm [2.68 x 1.30"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	black and silver anodised as set	<b>162704Set</b>	–
		<b>60 x 50 mm</b> [2.36 x 1.97"]	for cut-out 54 x 29 mm [2.13 x 1.14"] to cut-out 45 x 22.2 mm [1.77 x 0.94"] screw mounting	black	<b>N003001</b>	<b>N511005</b>
		<b>48 x 48 mm</b> [1.89 x 1.89"]	for cut-out 45 x 45 mm [1.77 x 1.77"] to cut-out 45 x 22.2 mm [1.77 x 0.94"]	black	<b>T008883</b>	–
<b>Sealing cover IP65</b>		<b>K1</b>	only in conjunction with adapter front bezel 60 x 50 mm N003001	transparent / grey transparent / black	<b>G008300</b> <b>G008301</b>	–
<b>Transparent cover IP65</b>		<b>1 Dv</b> (mounted on bezel)	cover lockable, for cut-out 54 x 29 mm [2.13 x 1.14"], only in conjunction with adapter front bezel 60 x 50 mm N003001	transparent / black	<b>N003002</b>	<b>N511019</b>
<b>Gasket counter</b>			48 x 24 mm (for installation in adapter front bezel) 49 x 25 mm		<b>N511029</b> <b>N511034</b>	
<b>Mounting frame</b>		<b>cut-out</b> <b>50 x 25 mm</b> [1.97 x 0.98"]	via adapter T008180 for snap-on mounting on 35 mm [1.38"] top-hat DIN rail	chromated	<b>G300004</b>	–
<b>Enclosure blind</b>		<b>48 x 24 mm</b> [1.89 x 0.94"]	for cut-out 45 x 22.2 mm [1.77 x 0.94"] and cut-out 50 x 25 mm [1.97 x 0.98"]	anthracite	<b>G003836</b>	–

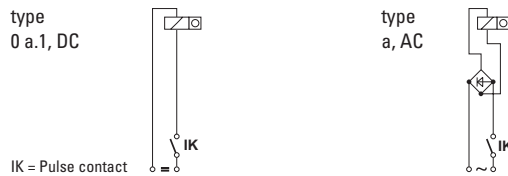
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Technical data	
<b>Electrical connection</b>	panel mount, base mount flying leads, AWG 22 approx. 150 mm [5.91"] $\varnothing$ 0.34 mm <sup>2</sup> , 6 mm [0.24"] stripped wire ends, tinned round pin $\varnothing$ 1.6 mm [0.063"] PCB mount
<b>Rated voltage</b>	type 05 (8 Hz) 1.5 / 3 / 4.5 / 5 / 6 / 12 V DC (+15 %, -5 %) type 0 (10 Hz) 12 / 24 / 48 / 115 / 230 V DC $\pm$ 10 % type a0 (10 Hz) 24 / 48 / 115 / 230 V AC, $\pm$ 10 %
<b>Cycle duration factor</b>	100 %
<b>Height of figures</b>	4 x 1.7 mm [0.16 x 0.067"]
<b>Color of figures</b>	white on black
<b>Counting mechanism shaft</b>	stainless steel
<b>Operating temperature</b>	-10 °C ... +50 °C [+14 °F ... +122 °F] (non-condensing)
<b>Relative humidity at +30 °C [+86 °F]</b>	$\leq$ 80 % (non-condensing)
<b>Altitude</b>	up to 2000 m [6562']
<b>Mounting position</b>	any
<b>Operating life</b>	$>$ 50 x 10 <sup>6</sup> pulses
<b>Protection</b>	IP41 (front side)
<b>Weight</b>	approx. 50 g [1.76 oz]
<b>EMC standards</b>	EN 55011 class B EN 61000-6-2, EN 61000-6-3
<b>Device safety</b>	designed to EN 61010 part 1 protection class 2 application area pollution level 2

Options	
<b>Electrical connection</b>	<ul style="list-style-type: none"> <li>round pins <math>\varnothing</math> 1.6 mm [0.063"] and push on connectors (Art. no.: 1.XX1.XXX.XXX)</li> <li>with flat pin 0.8 x 2.8 mm [0.032 x 0.11"] (Art. no.: 1.XX9.XXX.XXX)</li> <li>with flat pin 0.8 x 6.3 mm [0.032 x 0.25"] and push on connectors (Art. no.: 1.XX7.XXX.XXX)</li> <li>with open screw terminals (Art. no.: 1.XX4.XXX.XXX.023)</li> </ul>
<b>Color of housing</b> (availability see table)	grey Art. no.: X.XXX.XX0.XXX black Art. no.: X.XXX.XX1.XXX
<b>Extended temperature range</b>	on request
<b>With lens for digit height 5 or 6.3 mm</b>	on request

### Connection diagram

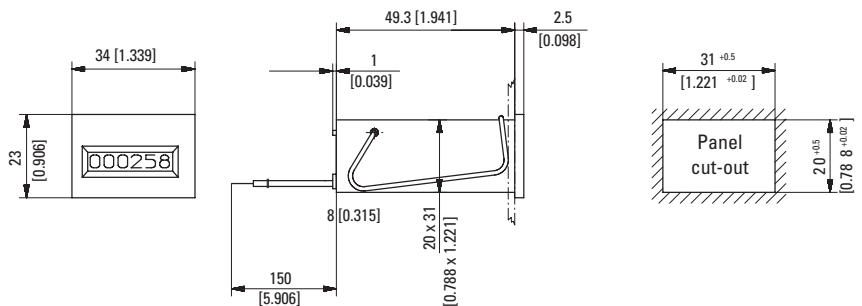


Type / Counting mechanism						
Voltage	Type	Pulse frequency max.	Pulse on time min.	Pulse interval min.	Power consumption approx.	Permi. residual ripple max.
V DC	05	8 Hz	50 ms	75 ms	50 mW	5 %
V DC	0	10 Hz	50 ms	50 ms	0.5 W ( $\leq$ 115 V) 1 W (185 V)	48 %
V AC	a0	10 Hz	50 ms	50 ms	0.75 VA ( $\leq$ 115 V) 1.5 VA (230 V)	—

### Panel mount with mounting clip

Panel mount dimensions 31 x 20 [1.22 x 0.79]

### Type W 16.20



Color of housing black: Art. no. 1.160.201.XXX

Type	Voltage	Display	Art. no.				Further stock types:
			12 V	24 V	115 V	230 V	
W 16.20	DC (8 Hz) / 05	6 digits	1.160.200.049	1.160.200.050			1.160.201.013 24 V DC/0sw 1.160.201.056 230 V AC/a0sw
	DC (10 Hz) / 0		1.160.200.012	1.160.200.013 <sup>1)</sup>			
	AC (10 Hz) / a0			1.160.200.051	1.160.200.054	1.160.200.056 <sup>1)</sup>	

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**Mini counters**

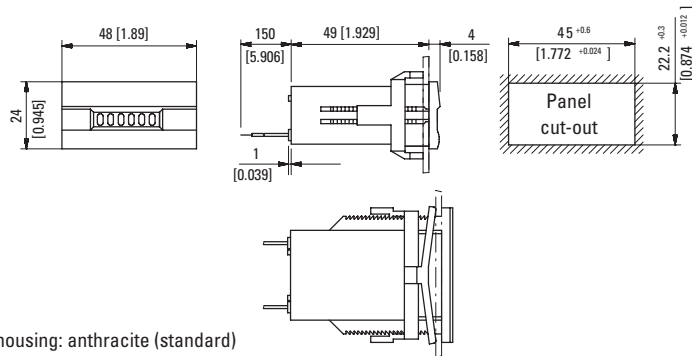
**6 or 7 digits without reset (AC+DC)**

**W 16 / W 17**

**Panel mount with mounting clip 48 x 24 [1.89 x 0.94]**

Panel mount dimensions 45 x 22.2 [1.77 x 0.87]

**Type W 17.50**



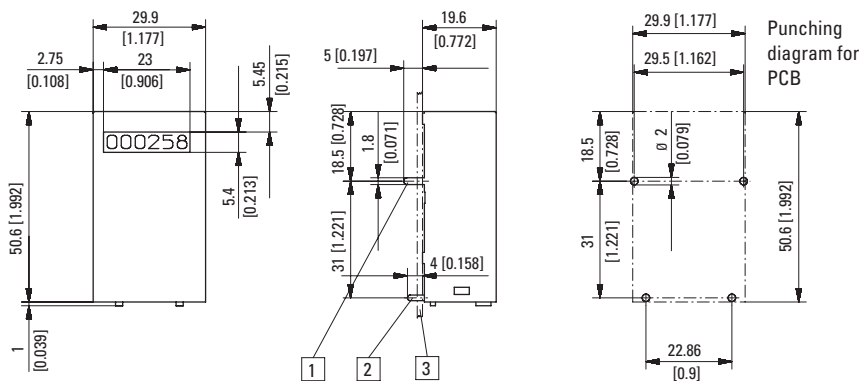
Color of housing: anthracite (standard)

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
W 17.50	DC (8 Hz) / 05	7 digits	1.740.500.049.550	1.740.500.050.550		
	DC (10 Hz) / 0		1.740.500.012.550 <sup>1)</sup>	1.740.500.013.550 <sup>1)</sup>		
	AC (10 Hz) / a0			1.740.500.051.550	1.740.500.054.550	1.740.500.056.550 <sup>1)</sup>

**PCB mount, sheet steel**

Display wide side

**Type W 16.60**



1) Mounting pins 1.8 x 0.4 [0.071 x 0.016] 2) Coil connections  $\varnothing$  0.16 [0.006] 3) PCB

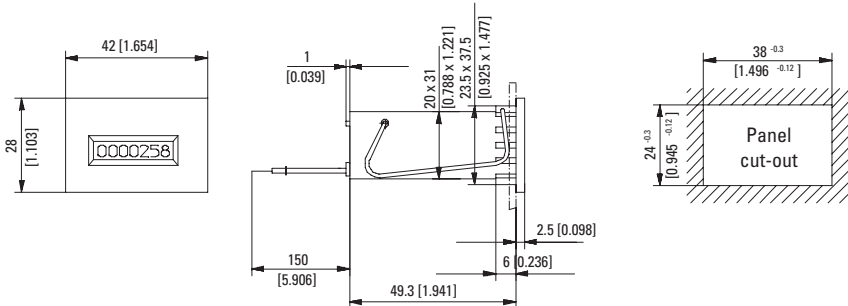
Color of housing blue (zinc-plated)

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
W 16.60	DC (10 Hz) / 0	6 digits	1.160.601.012	1.160.601.013		

**Panel mount with mounting clip**

Panel mount dimensions 37.5 x 23.5 [1.48 x 0.93]

**Type W 17.90**



Color of housing black: Art. no. 1.XXX.901.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
W 17.90	DC (8 Hz) / 05	7 digits	1.740.900.049	1.740.900.050		
	DC (10 Hz) / 0		1.740.900.012	1.740.900.013		
	AC (10 Hz) / a0				1.740.900.054	1.740.900.056