

# Pulse counters, electromechanical

<b>Mini counters</b>	<b>6 or 7 digits without reset (AC+DC)</b>	<b>W 16 / W 17</b>
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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.

<h3>Characteristics</h3> <ul style="list-style-type: none"> <li>• 6- or 7-digit miniature pulse counters, adding without reset.</li> <li>• Low power consumption.</li> <li>• Available for all common DC and AC voltages.</li> <li>• Versions available for DIN 48 x 24 mm and many other panel mount dimensions as well as for other types, e.g. PCB mount.</li> </ul>	<h3>Benefits</h3> <ul style="list-style-type: none"> <li>• Long service life / Protection IP41 (front side).</li> </ul>
<h3>Applications</h3> <p>Battery-powered devices, heat and water consumption measurement, establishing tolls and charges, general quantity counting.</p>	

Type series					
Description / mounting	Panel mount dim.	Housing	Display	6 digits	7 digits
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	<b>W 16.20</b>	-
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	-	<b>W 17.50</b>
PCB mount, lying		sheet steel	on the top	<b>W 16.60</b>	-
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	-	<b>W 17.90</b>
<b>Order information</b>					
· Art. no.					
· For special voltages, please give type, voltage, kind of voltage and series e.g.: W 16.20, 9 V DC, 05, black					

Accessories	Dimensions in mm [inch]	Order no.
<b>Adapter front bezel, 53 x 28 [2.09 x 1.10]</b>	for cut-out 50 x 25 [1.97 x 0.98] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94]	anthracite <b>T008180</b>
<b>Adapter front bezel, 56 x 40 [2.20 x 1.57]</b>	for cut-out 50 x 25 [1.97 x 0.98] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting for counters 48 x 24 [1.89 x 0.94]	anthracite <b>T008181</b>
<b>Adapter front bezel, 72 x 36 [2.83 x 1.42]</b>	for cut-out 68 x 33 [2.68 x 1.30] to cut-out 45 x 22.2 [1.77 x 0.87], for counters 48 x 24 [1.89 x 0.94], as set	black and silver anodised <b>162704 Set</b>
<b>Adapter front bezel, 48 x 48 [1.89 x 1.89]</b>	for cut-out 45 x 45 [1.77 x 1.77] to cut-out 45 x 22.2 [1.77 x 0.87], with clip mounting for counters 48 x 24 [1.89 x 0.94]	black <b>T008883</b>
<b>Adapter front bezel, 60 x 50 [2.36 x 1.97]</b>	for cut-out 54 x 29 [2.13 x 1.14] to cut-out 45 x 22.2 [1.77 x 0.87], with screw mounting and gasket for counters 48 x 24 [1.89 x 0.94]	black <b>N003001</b>
<b>Transparent cover, lockable, IP65</b>	for cut-out 54 x 29 [2.13 x 1.14], for screw mounting to front bezel F1B or adapter front bezel N003001, for counters with cut-out 50 x 25 [1.97 x 0.98] or 45 x 22.2 [1.77 x 0.87]	<b>N003002</b>
<b>Sealing cover type K1, IP65</b>	suitable for front bezel 60 x 50 [2.36 x 1.97], for screw mounting of electromech. counters and via adapter front bezel N003001 for counters 48 x 24 [1.89 x 0.94]	<b>G008301</b>
<b>Mounting frame</b> with cut-out 50 x 25 [2.36 x 1.97] via separate adapter also for 45 x 22.2 [1.77 x 0.87]	for snap-on mounting on 35 [1.38] top-hat DIN rail, for counters 53 x 28 [2.09 x 1.10] and via separate adapter (T008180) for counters 48 x 24 [1.89 x 0.94]	chromated <b>G300004</b>

Suitable gaskets, other accessories and installation examples for optional accessories can be found in chapter accessories or in the accessories section under: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).

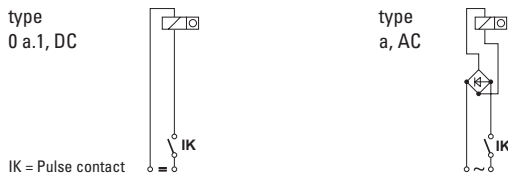
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Technical data		
<b>Electrical connection</b>	panel mount, base mount	flying leads, AWG 22 approx. 150 mm [5.91"] $\varnothing$ 0.34 mm <sup>2</sup> , 6 mm [0.24"] stripped wire ends, tinned
	PCB mount	round pin $\varnothing$ 1.6 mm [0.063"]
<b>Rated 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>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 application area	2 pollution level 2

Options		
<b>Electrical connection</b>	round pins $\varnothing$ 1.6 mm [0.063"] and push on connectors	(Art. no.: 1.161.XXX.XXX)
	with flat pin 0.8 x 2.8 mm [0.032 x 0.11"]	(Art. no.: 1.169.XXX.XXX)
	with flat pin 0.8 x 6.3 mm [0.032 x 0.25"] and push on connectors	(Art. no.: 1.165.XXX.XXX)
	with open screw terminals	(Art. no.: 1.164.XXX.XXX.023)
<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

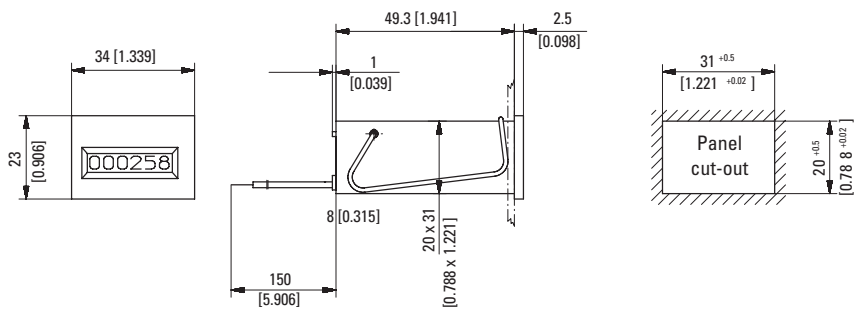


Type / Counting mechanism						
Voltage	Type	Pulse frequency max.	Pulse on time min.	Pulse interval min.	Power consumption approx.	Permi. residual ripple max.
<b>V DC</b>	05	8 Hz	50 ms	75 ms	50 mW	5 %
<b>V DC</b>	0	10 Hz	50 ms	50 ms	0.5 W ( $\leq$ 115 V) 1 W (185 V)	48 %
<b>V AC</b>	a0	10 Hz	50 ms	50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

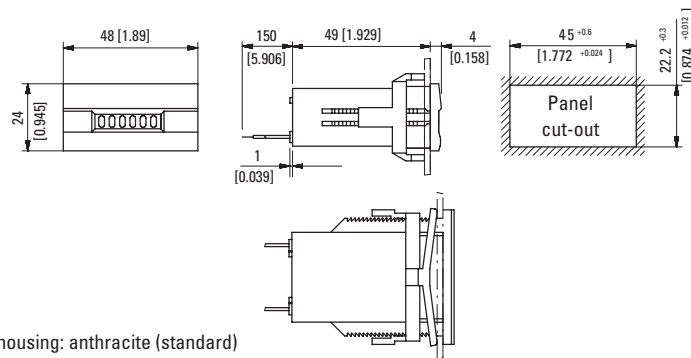
Type	Voltage	Display	Art. no.				Further stock types: 1.160.201.013 24 V DC/0sw 1.160.201.056 230 V AC/a0sw
			12 V	24 V	115 V	230 V	
<b>W 16.20</b>	DC (8 Hz) / 05	6 digits	<b>1.160.200.049</b>	<b>1.160.200.050</b>			
	DC (10 Hz) / 0		<b>1.160.200.012</b>	<b>1.160.200.013</b> <sup>1)</sup>			
	AC (10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

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**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**



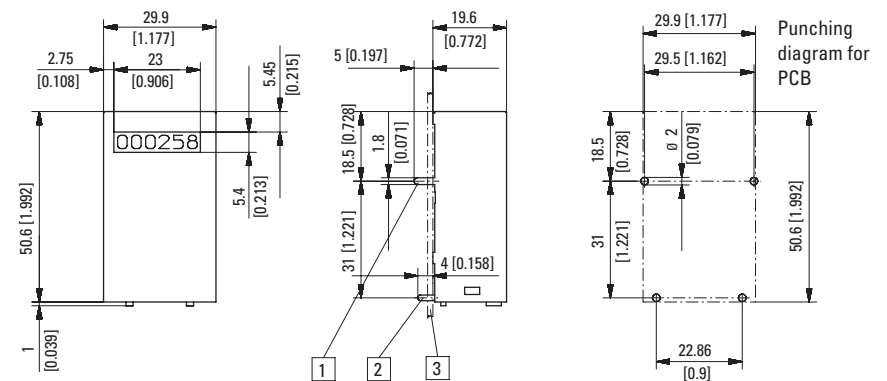
Color of housing: anthracite (standard)

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

**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

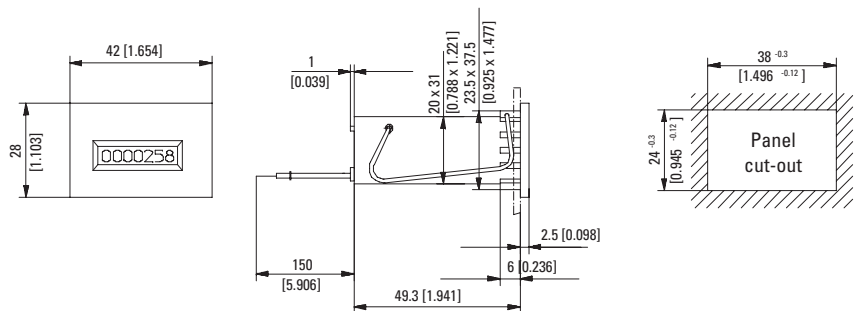
Color of housing blue (zinc-plated)

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

**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
<b>W 17.90</b>	DC (8 Hz) / 05	7 digits	<b>1.740.900.049</b>	<b>1.740.900.050</b>		
	DC (10 Hz) / 0		<b>1.740.900.012</b>	<b>1.740.900.013</b>		
	AC (10 Hz) / a0				<b>1.740.900.054</b>	<b>1.740.900.056</b>

Dimensions in mm [inch]

1) Stock types