

# Pulse counters, electromechanical

<b>Standard counters</b>	<b>4 or 6 digits with/without reset, electrical reset (AC+DC)</b>	<b>Mk 14 / Mk 16</b>
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The standard totalizers **Mk 14** (with manual reset) and **Mk 16** (with manual or manual and electrical reset) boast a robust construction.

They are ideal for use in harsh industrial environments.



### Characteristics

- 6-digit totalizer without reset.
- 4- or 6-digit totalizer with manual, manual and electrical reset.
- Mk 16 has integrated electrical reset.

### Benefits

- Very long service life (200 million pulses).

### Applications

Piece counting, event counting, time and charge metering.

Type series				
Description	reset	4 digits	6 digits	Order information
Panel mount with front bezel and 2 mounting holes	manual	<b>Mk 14.11</b>	<b>Mk 16.11</b>	· Art. no. · For special voltages, please give type, voltage and series e.g.: Mk 16.21, 48 V AC, type a
Panel mount for clip mounting	without	–	<b>Mk 16.20</b>	
	manual	<b>Mk 14.21</b>	<b>Mk 16.21</b>	
	manual and electrical	–	<b>Mk 16.23</b>	

Accessories					
		Type / size	Description		Order no.
<b>Gasket counter</b>		<b>39 x 40 mm</b> <b>[1.54 x 1.58]</b>	suitable for Mk 14.11		<b>N511011</b>

# Pulse counters, electromechanical

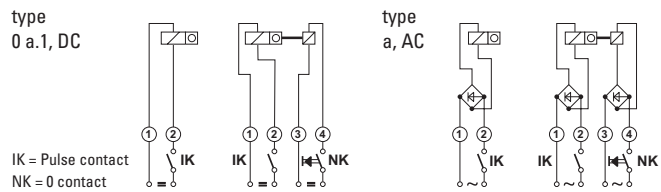
<b>Standard counters</b>	<b>4 or 6 digits with/without reset, electrical reset (AC+DC)</b>	<b>Mk 14 / Mk 16</b>
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Technical data	
<b>Electrical connection</b>	flat pin 0.8 x 2.8 mm [0.032 x 0.11"] with flat push on connector
<b>Rated voltage</b>	type 0 / 1 / a 12 / 24 / 48 / 60 / 115 / 230 V DC $\pm 10\%$ 24 / 48 / 60 / 115 / 230 V AC $\pm 10\%$
<b>Housing</b>	Makrolon, similar to RAL 7001
<b>Height of figures</b>	4 mm [0.16"]
<b>Color of figures</b>	white on black
<b>Counting mechanism shaft</b>	stainless steel
<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>	approx. 200 x 10 <sup>6</sup> pulses
<b>Protection</b>	with reset IP40 (front side) without reset IP41 (front side)
<b>Weight</b>	reset manual Mk 14 – 85 g [3.00 oz] Mk 16 – 100 g [3.53 oz] reset electrical Mk 14 – 145 g [5.12 oz] Mk 16 – 140 g [4.94 oz]
<b>Test voltage</b>	2000 V ~ effective
<b>Vibration resistance</b>	3 g up to 10 Hz 6 g up to 15 Hz independent of position 10 g 20 - 300 Hz
<b>EMC standards</b>	EN 55011 class B EN 61000-6-2, EN 61000-6-3
<b>Device safety</b>	designed to protection class 2 application area pollution level 2

Options
Extended temperature range

Reset magnet	
<b>Power consumption</b>	DC approx. 9 W AC approx. 12 VA
<b>Rated voltage</b>	12 / 24 / 48 / 60 / 115 / 230 V DC $\pm 10\%$ 24 / 48 / 60 / 115 / 230 V AC $\pm 10\%$
<b>Permissible residual ripple</b>	max. 48 %
<b>Minimum pulse time</b>	0.25 sec, during 0.3 sec no count pulse is allowed
<b>Cycle duration factor</b>	Mk 16 15 %, max. 1.0 min Mk 14 10 %, max. 40 sec

### Connection diagram

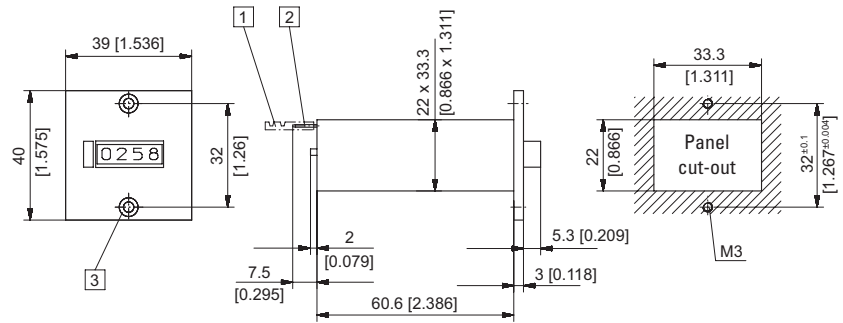
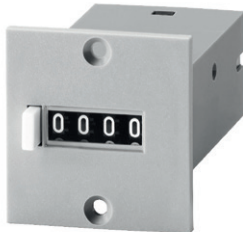


Type / Counting mechanism									
Voltage	Type	Pulse frequency max.	Pulse on time min.	Pulse interval min.	Pulse ratio	On-time	Power consump. approx.	Permi. residual ripple max.	Operating temp. (non-condensing)
V DC	0	10 Hz	64 ms	40 ms	3 : 2	100 %	1 W	48 %	-10 °C ... +45 °C [+14 °F ... +113 °F]
V DC	1	25 Hz	24 ms	16 ms	3 : 2	100 %	2 W	48 %	-10 °C ... +45 °C [+14 °F ... +113 °F]
V AC	a	18 Hz	22.2 ms	33.3 ms	2 : 3	100 %	2.9 VA	–	-10 °C ... +45 °C [+14 °F ... +113 °F]

# Pulse counters, electromechanical

**Standard counters**      **4 or 6 digits with/without reset, electrical reset (AC+DC)**      **Mk 14 / Mk 18**

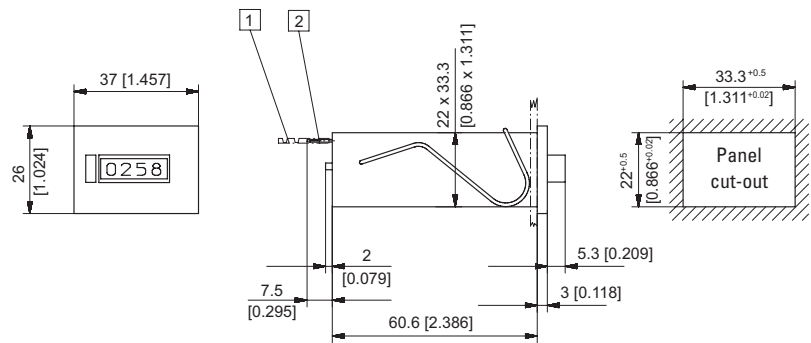
**Panel mount, front bezel with 2 mounting holes**  
4 digits, manual reset  
**Type Mk 14.11**



- 1 Flat push on connector 0.8 x 2.8 [0.032 x 0.11], tinned
- 2 Flat pin 0.8 x 2.8 [0.032 x 0.11], tinned
- 3 Countersinking Af3 DIN 74      Color of housing black, Art. no. 1.310.111.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
<b>Mk 14.11</b>	DC (10 Hz) / 0	4 digits, manual reset	<b>1.310.110.012</b>	<b>1.310.110.013</b>		
	DC (25 Hz) / 1		<b>1.310.110.032</b>	<b>1.310.110.033</b>		
	AC (18 Hz) / a			<b>1.310.110.061</b>	<b>1.310.110.064</b>	<b>1.310.110.066</b>

**Panel mount, for clip mounting**  
4 digits, manual reset  
**Type Mk 14.21**



- 1 Flat push on connector 0.8 x 2.8 [0.032 x 0.11], tinned
  - 2 Flat pin 0.8 x 2.8 [0.032 x 0.11], tinned
- Color of housing black, Art. no. 1.310.211.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
<b>Mk 14.21</b>	DC (10 Hz) / 0	4 digits, manual reset	<b>1.310.210.012</b>	<b>1.310.210.013</b>		
	DC (25 Hz) / 1		<b>1.310.210.032</b>	<b>1.310.210.033</b>		
	AC (18 Hz) / a			<b>1.310.210.061</b>	<b>1.310.210.064</b>	<b>1.310.210.066</b>

# Pulse counters, electromechanical

**Standard counters**

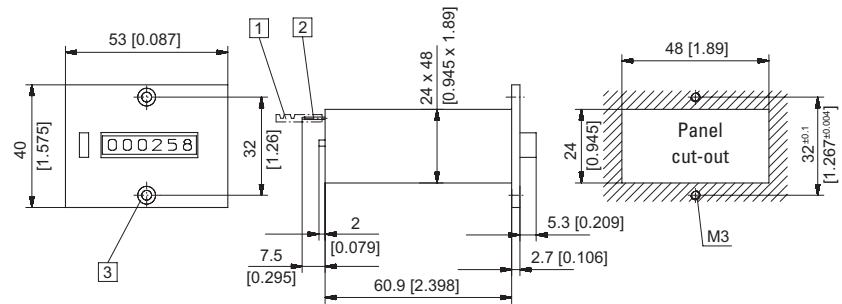
**4 or 6 digits with/without reset, electrical reset (AC+DC)**

**Mk 14 / Mk 16**

**Panel mount, front bezel with  
2 mounting holes**

6 digits, manual reset

**Type Mk 16.11**



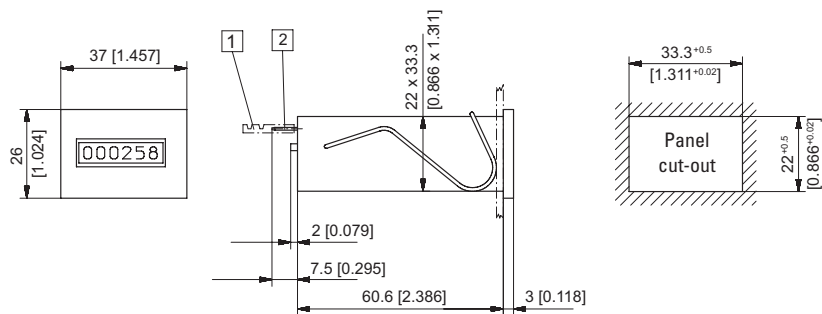
- 1 Flat push on connector 0.8 x 2.8 [0.032 x 0.11], tinned    2 Flat pin 0.8 x 2.8 [0.032 x 0.11], tinned  
3 Countersinking Af3 DIN 74    Color of housing black, Art. no. 1.340.111.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
<b>Mk 16.11</b>	DC (10 Hz) / 0	6 digits,	<b>1.340.110.012</b>	<b>1.340.110.013</b>		
	DC (25 Hz) / 1	manual reset	<b>1.340.110.032</b>	<b>1.340.110.033</b>		
	AC (18 Hz) / a			<b>1.340.110.061</b>	<b>1.340.110.064</b>	<b>1.340.110.066</b>

**Panel mount for clip mounting**

6 digits, without reset

**Type Mk 16.20**



- 1 Flat push on connector 0.8 x 2.8 [0.032 x 0.11], tinned    2 Flat pin 0.8 x 2.8 [0.032 x 0.11], tinned  
Color of housing black, Art. no. 1.330.201.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
<b>Mk 16.20</b>	DC (10 Hz) / 0	6 digits,	<b>1.330.200.012</b>	<b>1.330.200.013</b>		
	DC (25 Hz) / 1	without reset	<b>1.330.200.032</b>	<b>1.330.200.033</b>		
	AC (18 Hz) / a			<b>1.330.200.061</b>	<b>1.330.200.064</b>	<b>1.330.200.066</b>

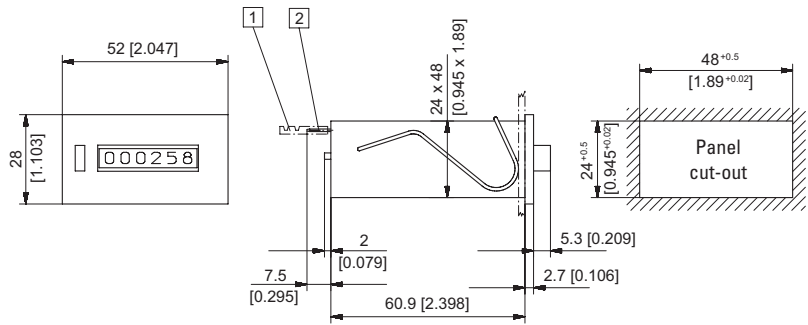
# Pulse counters, electromechanical

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**Panel mount for clip mounting**

6 digits, manual reset

**Type Mk 16.21**



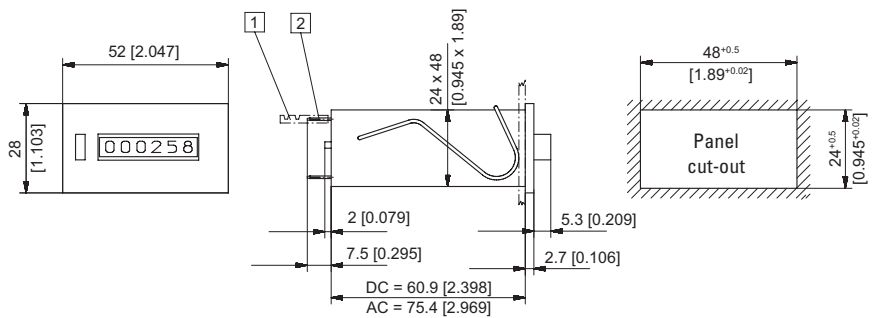
1 Flat push on connector 0.8 x 2.8 [0.032 x 0.11], tinned      2 Flat pin 0.8 x 2.8 [0.032 x 0.11], tinned  
Color of housing black, Art. no. 1.340.21 1.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
<b>Mk 16.21</b>	DC (10 Hz) / 0	6 digits, manual reset	<b>1.340.210.012</b>	<b>1.340.210.013</b>		
	DC (25 Hz) / 1		<b>1.340.210.032</b>	<b>1.340.210.033</b>		
	AC (18 Hz) / a			<b>1.340.210.061</b>	<b>1.340.210.064</b>	<b>1.340.210.066</b>

**Panel mount, for clip mounting**

6 digits, manual and electrical reset

**Type Mk 16.23**



1 Flat push on connector 0.8 x 2.8 [0.032 x 0.11], tinned      2 Flat pin 0.8 x 2.8 [0.032 x 0.11], tinned  
Color of housing black, Art. no. 1.340.23 1.XXX

Type	Voltage	Display	Art. no.			
			12 V	24 V	115 V	230 V
<b>Mk 16.23</b>	DC (10 Hz) / 0	6 digits, manual and electr. reset	<b>1.340.230.012</b>	<b>1.340.230.013</b>		
	DC (25 Hz) / 1		<b>1.340.230.032</b>	<b>1.340.230.033</b>		
	AC (18 Hz) / a			<b>1.340.230.061</b>	<b>1.340.230.064</b>	<b>1.340.230.066</b>