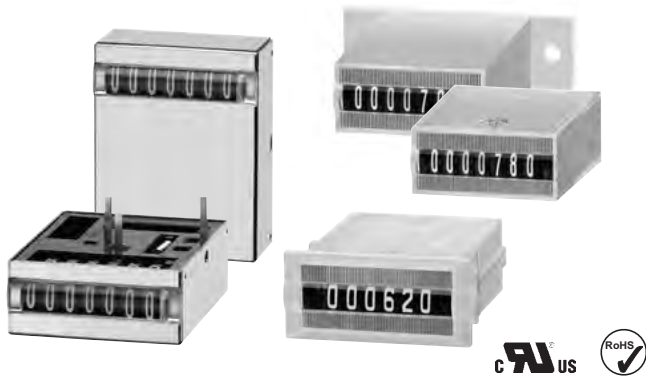


# Pulse counters, electromechanical

**Micro counters**

**High shock resistance (AC+DC)**

**K 04 ... K 07 / AK 07**



The micro adding counter families K 04 to K 07 and AK 07 are available in a very wide variety of models and can be used in both DC as well as in AC applications.

As panel mount, base mount and PCB mount counters with a very high level of shock resistance they can be used for numerous diverse application areas.



## Characteristics

- Low power consumption; suitable for battery operation.
- Very compact size, large optical figures.
- Different viewing possibilities.
- Panel mount counter with moulded spring clips, base mount counter with screw fixing or PCB mount versions.
- Version with additional magnetic shielding thanks to sheet-steel enclosure (K 0X.40 and K 0X.50).

## Benefits

- Machine solderable and washable.
- Stores values if power fails.
- High shock resistance, long service life, IP65 protection.

## Applications

General quantity counting, alarm systems, coin-operated machines, electricity meters, vending and slot machines, photocopiers, medical equipment, car washes.

## Type series

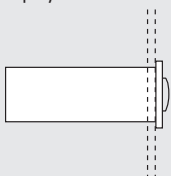
Fig.	Mounting options	Display	Housing	IP protection	4 digits	5 digits	6 digits	7 digits
1)	Panel mount with latch	front side	plastic	front side	<b>K 04.20</b>	<b>K 05.20</b>	<b>K 06.20</b>	<b>K 07.20</b>
2)	PCB mount, lying	on the top	sheet steel	–	<b>K 04.40</b>	–	–	<b>K 07.40</b>
3)	PCB mount, hanging	front side	sheet steel	–	–	–	–	<b>K 07.50</b>
4)	PCB mount, upright	front side	plastic	front side	–	–	<b>K 06.80</b>	<b>K 07.80</b>
5)	PCB mount, lying	on the top	plastic	front side/on rear	–	–	–	<b>K 07.90</b>
6)	Base mount, upright	front side	plastic	front side	–	–	–	<b>AK 07.00</b>

### Order information

- Art. no.
- For options please give exact counter type, voltage and options e.g.: K 06.20 – 9 V DC/0 – temperature range -20°C ... +70°C [-4°F ... +158°F]

## Mounting options and position of the display

1) Panel mount display front side



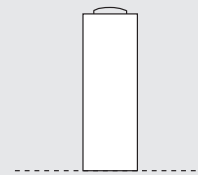
2) PCB mount, lying display on the top



3) PCB mount, hanging display front side



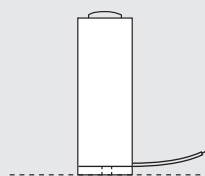
4) PCB mount, upright display front side



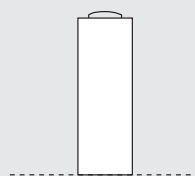
5) PCB mount, lying display on the top



6) Base mount upright display front side



Optional: PCB mount, upright display front side



# Pulse counters, electromechanical

<b>Micro counters</b>	<b>High shock resistance (AC+DC)</b>	<b>K 04 ... K 07 / AK 07</b>
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Accessories	Dimensions in mm [inch]	Order no.
<b>Gasket 32 x 15 [1.26 x 0.59]</b>	for cut-out 27 x 13 [1.06 x 0.51], suitable for K 06.20 and K 07.20	<b>N511058</b>

Technical data							
<b>Electrical connection</b>	<table border="0"> <tr> <td>panel mount, base mount</td> <td>flying leads, AWG 22 approx. 150 mm [5.91"], 6 mm [0.24"] stripped wire ends, tinned solder pins <math>\varnothing</math> 0.4 x 1.2 mm [0.016 x 0.047"]</td> </tr> <tr> <td>PCB mount</td> <td></td> </tr> </table>	panel mount, base mount	flying leads, AWG 22 approx. 150 mm [5.91"], 6 mm [0.24"] stripped wire ends, tinned solder pins $\varnothing$ 0.4 x 1.2 mm [0.016 x 0.047"]	PCB mount			
panel mount, base mount	flying leads, AWG 22 approx. 150 mm [5.91"], 6 mm [0.24"] stripped wire ends, tinned solder pins $\varnothing$ 0.4 x 1.2 mm [0.016 x 0.047"]						
PCB mount							
<b>Power consumption</b> (at 20°C [68°F] and normal voltage)							
at 10 Hz (type 0)	approx. 50 mW						
at 25 Hz (type 1)	approx. 250 mW						
at 10 Hz (type a0)	approx. 800 mVA						
<b>Rated voltage</b>	<table border="0"> <tr> <td>type 0</td> <td>1.5/3/4.5/5/6/12/24 V DC, -10 %, +20 %</td> </tr> <tr> <td>type 1</td> <td>3/4.5/5/6/12/24 V DC, <math>\pm</math>10 %</td> </tr> <tr> <td>type a0</td> <td>12/24/115/230 V AC, <math>\pm</math>10 %</td> </tr> </table>	type 0	1.5/3/4.5/5/6/12/24 V DC, -10 %, +20 %	type 1	3/4.5/5/6/12/24 V DC, $\pm$ 10 %	type a0	12/24/115/230 V AC, $\pm$ 10 %
type 0	1.5/3/4.5/5/6/12/24 V DC, -10 %, +20 %						
type 1	3/4.5/5/6/12/24 V DC, $\pm$ 10 %						
type a0	12/24/115/230 V AC, $\pm$ 10 %						
<b>Counting frequency</b>	max. 10 and 25 Hz						
<b>Pulse duration</b>	<table border="0"> <tr> <td>at 10 Hz (type 0 and a0)</td> <td>min. 50 ms</td> </tr> <tr> <td>at 25 Hz (type 1)</td> <td>min. 20 ms</td> </tr> </table>	at 10 Hz (type 0 and a0)	min. 50 ms	at 25 Hz (type 1)	min. 20 ms		
at 10 Hz (type 0 and a0)	min. 50 ms						
at 25 Hz (type 1)	min. 20 ms						
<b>Pulse interval</b>	<table border="0"> <tr> <td>at 10 Hz (type 0 a0)</td> <td>min. 50 ms</td> </tr> <tr> <td>at 25 Hz (type 1)</td> <td>min. 20 ms</td> </tr> </table>	at 10 Hz (type 0 a0)	min. 50 ms	at 25 Hz (type 1)	min. 20 ms		
at 10 Hz (type 0 a0)	min. 50 ms						
at 25 Hz (type 1)	min. 20 ms						
<b>Cycle duration factor</b>	100 %						
<b>Number of digits</b>	4, 5, 6 and 7						
<b>Counting system</b>	adding						
<b>Height of figures</b>	<table border="0"> <tr> <td>K 04, K 06, AK 06</td> <td>4 x 1.7 mm [0.16 x 0.067"] optical</td> </tr> <tr> <td>K 05, K 07, AK 07</td> <td>4 x 1.2 mm [0.16 x 0.047"] optical</td> </tr> </table>	K 04, K 06, AK 06	4 x 1.7 mm [0.16 x 0.067"] optical	K 05, K 07, AK 07	4 x 1.2 mm [0.16 x 0.047"] optical		
K 04, K 06, AK 06	4 x 1.7 mm [0.16 x 0.067"] optical						
K 05, K 07, AK 07	4 x 1.2 mm [0.16 x 0.047"] optical						
<b>Color of figures</b>	white on black						
<b>Reset</b>	no reset						
<b>Operating temperature</b>	-10°C ... +60°C [+14°F ... +140°F] (non-condensing)						
<b>Mounting position</b>	horizontal, other on request						

<b>Soldering temperature</b>	265°C [+509°F], 3 s						
<b>Operating life</b>	> 50 x 10 <sup>6</sup> pulses						
<b>Solderable and wash proof types</b>	K 0X.92, K 06.90, K 07.90						
<b>Protection</b>	<table border="0"> <tr> <td>K 0X.92, K 0X.90</td> <td>IP65</td> </tr> <tr> <td>AK 0X.00, K 0X.80, K 0X.20</td> <td>IP65 (only front side)</td> </tr> <tr> <td>other types</td> <td>depending on kind of mounting</td> </tr> </table>	K 0X.92, K 0X.90	IP65	AK 0X.00, K 0X.80, K 0X.20	IP65 (only front side)	other types	depending on kind of mounting
K 0X.92, K 0X.90	IP65						
AK 0X.00, K 0X.80, K 0X.20	IP65 (only front side)						
other types	depending on kind of mounting						
<b>UL approval</b>	file E128604						
<b>Housing</b>	PC (Polycarbonate), transparent or sheet steel types (see table) with IP65 protection, fully sealed (potted)						
<b>Weight</b>	15 ... 18 g [0.53 ... 0.63 oz]						
<b>EMC standards</b>	EN 55011 class B EN 61000-6-2, EN 61000-6-3						
<b>Device safety</b>	<table border="0"> <tr> <td>designed to protection class</td> <td>EN 61010 part 1</td> </tr> <tr> <td>application area</td> <td>2 pollution level 2</td> </tr> </table>	designed to protection class	EN 61010 part 1	application area	2 pollution level 2		
designed to protection class	EN 61010 part 1						
application area	2 pollution level 2						
<b>UL approval</b>	file E128604						

Options	
<b>K 0x.20</b>	flat pin 0.5 x 2.8 mm [0.020 x 0.11"] Art. no.: 1.1X7.XX0.XXX flat pin 0.4 x 1.2 mm [0.016 x 0.047"] Art. no.: 1.1X9.XX0.XXX <ul style="list-style-type: none"> <li>• different voltages</li> <li>• version not potted</li> <li>• different figure colors</li> <li>• different lengths of flying leads</li> <li>• different connections</li> <li>• different temperature range, depends on version -30°C ... +85°C [-22°F ... +185°F] or -20°C ... +70°C [-4°F ... +158°F]</li> </ul>

Pulse counters

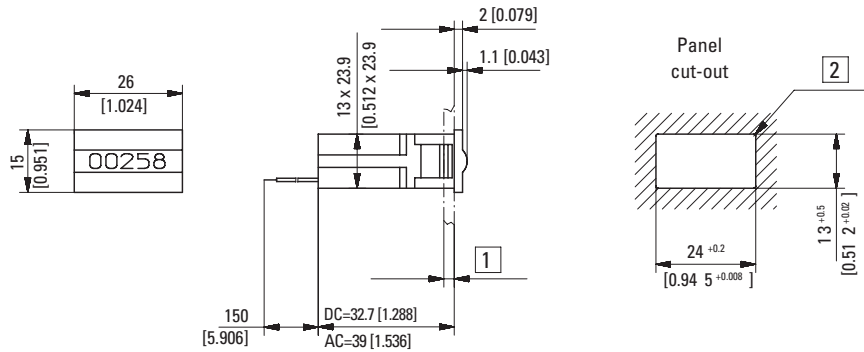
# Pulse counters, electromechanical

**Micro counters**

**High shock resistance (AC+DC)**

**K 04 ... K 07 / AK 07**

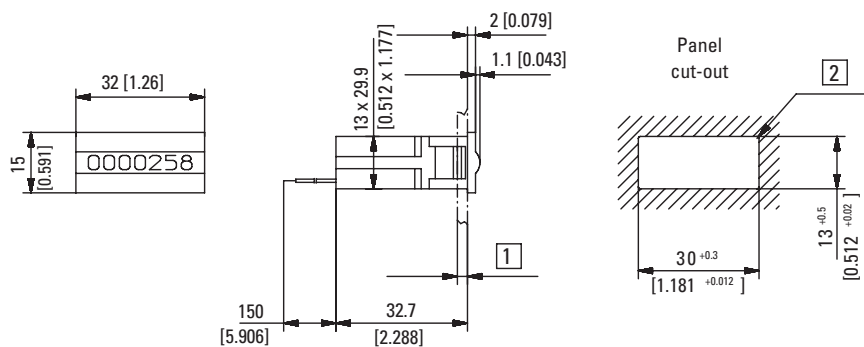
**Panel mount counter  
4- and 5-digit display front side  
Type K 04.20 / K 05.20**



1) 1.2 ... 3 [0.047 x 0.12] 2) R<sub>max</sub> 0.5 [0.020]

Type	Voltage	Display	Art. no.							
			3 V	4.5 V	12 V	24 V	115 V	230 V		
K 04.20	DC (10 Hz) / 0	4 digits	1.100.200.006	1.100.200.008	on request	on request	1.100.200.054	1.100.200.056		
	DC (25 Hz) / 1				1.100.200.032	1.100.200.033				
	AC (10 Hz) / a0				1.100.200.051					
K 05.20	DC (10 Hz) / 0	5 digits	1.110.200.006	1.110.200.008	on request	1.110.200.013 <sup>1)</sup>	1.110.200.054	1.110.200.056 <sup>1)</sup>		
	DC (25 Hz) / 1				1.110.200.032	1.110.200.033				
	AC (10 Hz) / a0				1.110.200.051					

**Panel mount counter  
6- and 7-digit display front side  
Type K 06.20 / K 07.20**



1) 1.2 ... 3 [0.047 x 0.12] 2) R<sub>max</sub> 0.5 [0.020]

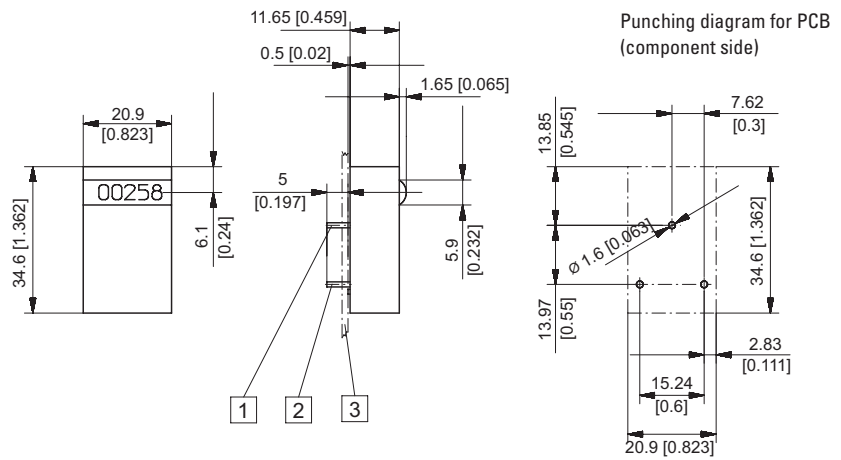
Type	Voltage	Display	Art. no.							
			3 V	4.5 V	12 V	24 V	115 V	230 V		
K 06.20	DC (10 Hz) / 0	6 digits	1.120.200.006	1.120.200.008	on request	1.120.200.013	1.120.200.054	1.120.200.056		
	DC (25 Hz) / 1				1.120.200.032	1.120.200.033				
	AC (10 Hz) / a0				1.120.200.051					
K 07.20	DC (10 Hz) / 0	7 digits	1.130.200.006	1.130.200.008	1.130.200.012 <sup>1)</sup>	1.130.200.013	1.130.200.054 <sup>1)</sup>	1.130.200.056		
	DC (25 Hz) / 1				1.130.200.032 <sup>1)</sup>	1.130.200.033 <sup>1)</sup>				
	AC (10 Hz) / a0				1.130.200.051					

# Pulse counters, electromechanical

**Micro counters**      **High shock resistance (AC+DC)**      **K 04 ... K 07 / AK 07**

**PCB mount, lying**  
**4-digit display on the top**  
**Type K 04.40**

Color of housing blue (zinc-plated)

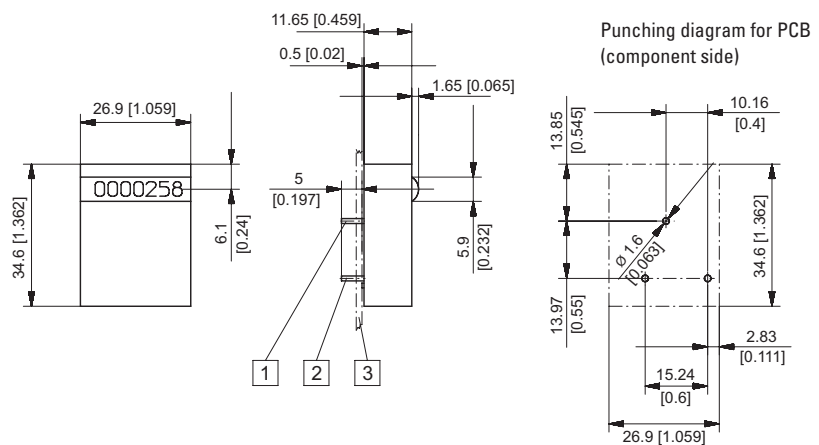


- 1) Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]  
 2) Coil connections 0.4 x 1.2 [0.016 x 0.047]    3) PCB

Type	Voltage	Display	Art. no.			
			3 V	4.5 V	12 V	24 V
K 04.40	DC (10 Hz) / 0	4 digits	1.100.401.006	1.100.401.008	on request	on request
	DC (25 Hz) / 1				1.100.401.032	1.100.401.033

**PCB mount, lying**  
**7-digit display on the top**  
**Type K 07.40**

Color of housing blue (zinc-plated)



- 1) Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]  
 2) Coil connections 0.4 x 1.2 [0.016 x 0.047]    3) PCB

Type	Voltage	Display	Art. no.			
			3 V	4.5 V	12 V	24 V
K 07.40	DC (10 Hz) / 0	7 digits	1.130.401.006	1.130.401.008 <sup>1)</sup>	on request	on request
	DC (25 Hz) / 1				1.130.401.032	1.130.401.033

# Pulse counters, electromechanical

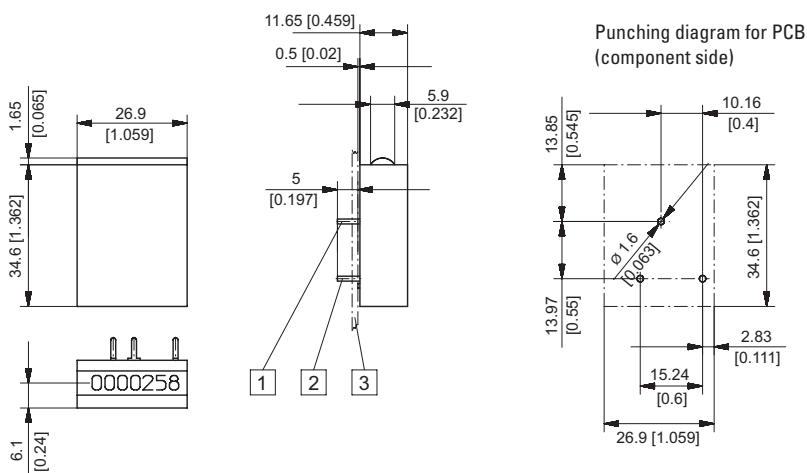
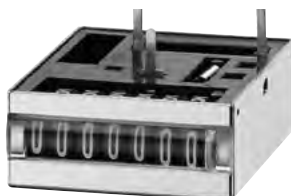
**Micro counters**

**High shock resistance (AC+DC)**

**K 04 ... K 07 / AK 07**

**PCB mount, hanging**  
**7-digit display front side**  
**Type K 07.50**

Color of housing blue (zinc-plated)

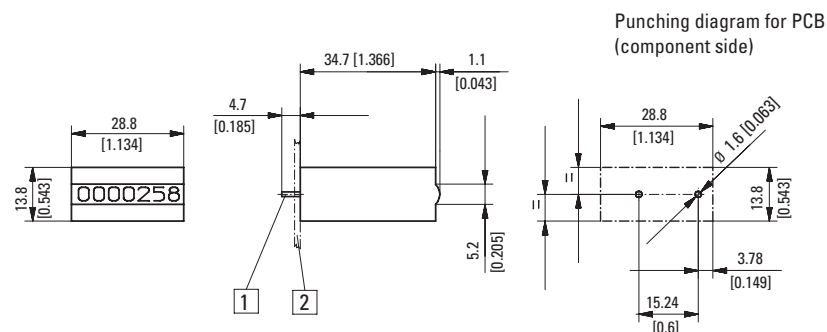


1) Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]

2) Coil connections 0.4 x 1.2 [0.016 x 0.047] 3) PCB

Type	Voltage	Display	Art. no.			
			3 V	4.5 V	12 V	24 V
K 07.50	DC (10 Hz) / 0	7 digits	1.130.501.006	1.130.501.008	on request	on request
	DC (25 Hz) / 1				1.130.501.032	1.130.501.033

**PCB mount, upright**  
**6- and 7-digit display front side**  
**Type K 06.80 / K 07.80**



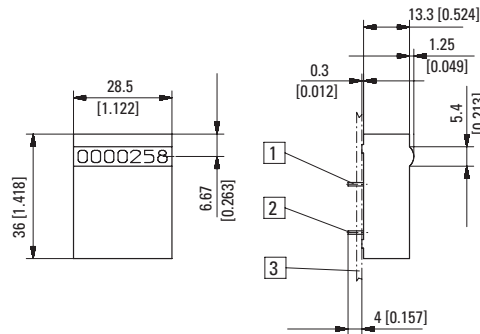
1) Coil connections 0.4 x 1.2 [0.016 x 0.047] 2) PCB

Type	Voltage	Display	Art. no.							
			3 V	4.5 V	12 V	24 V	115 V	230 V		
K 06.80	DC (10 Hz) / 0	6 digits	1.120.800.006	1.120.800.008	on request	on request				
	DC (25 Hz) / 1				1.120.800.032	1.120.800.033				
	AC (10 Hz) / a0					1.120.800.051	1.120.800.054	1.120.800.056		
K 07.80	DC (10 Hz) / 0	7 digits	1.130.800.006	1.130.800.008	on request	on request				
	DC (25 Hz) / 1				1.130.800.032 <sup>1)</sup>	1.130.800.033				
	AC (10 Hz) / a0					1.130.800.051	1.130.800.054	1.130.800.056		

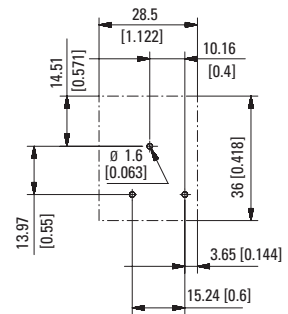
# Pulse counters, electromechanical

**Micro counters**      **High shock resistance (AC+DC)**      **K 04 ... K 07 / AK 07**

**PCB mount, lying**  
**7-digit display on the top**  
**Type K 07.90**



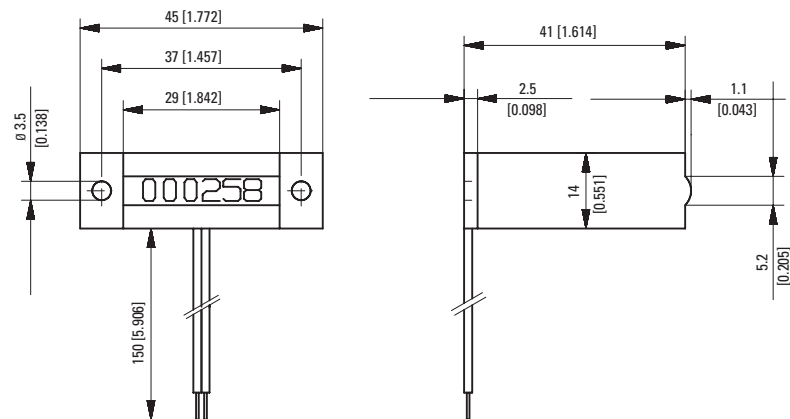
Punching diagram for PCB (component side)



- 1) Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]  
 2) Coil connections 0.4 x 1.2 [0.016 x 0.047]    3) PCB

Type	Voltage	Display	Art. no.					
			3 V	4.5 V	12 V	24 V	115 V	230 V
K 07.90	DC (10 Hz) / 0	7 digits	1.130.900.006	1.130.900.008	1.130.900.012 <sup>1)</sup>	on request	1.130.900.054	1.130.900.056
	DC (25 Hz) / 1					1.130.900.033		
	AC (10 Hz) / a0					1.130.900.051		

**Base mount, upright**  
**7-digit display front side**  
**Type AK 07.00**



Type	Voltage	Display	Art. no.					
			3 V	4.5 V	12 V	24 V	115 V	230 V
AK 07.00	DC (10 Hz) / 0	7 digits	1.130.000.006	1.130.000.008	1.130.000.012	1.130.000.013	1.130.000.054	1.130.000.056 <sup>1)</sup>
	DC (25 Hz) / 1					1.130.000.033		
	AC (10 Hz) / a0					1.130.000.051		