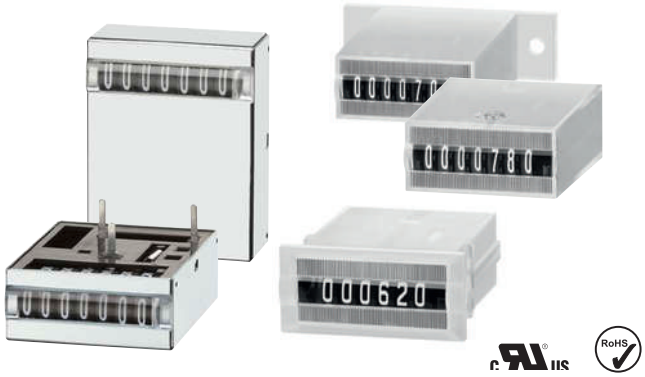
Pulse counters, electromechanical

Micro counters | High shock resistance (AC+DC) | K04 ... K07 / AK07



The micro adding counter families K04 to K07 and AK07 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 (K0X.40 and K0X.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.

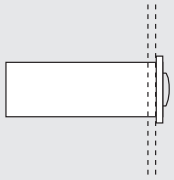
Type series

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	**K04.20**	**K05.20**	**K06.20**	**K07.20**
2)	PCB mount, lying	on the top	sheet steel	–	**K04.40**	–	–	**K07.40**
3)	PCB mount, hanging	front side	sheet steel	–	–	–	–	**K07.50**
4)	PCB mount, upright	front side	plastic	front side	–	–	**K06.80**	**K07.80**
5)	PCB mount, lying	on the top	plastic	front side/on rear	–	–	–	**K07.90**
6)	Base mount, upright	front side	plastic	front side	–	–	–	**AK07.00**

Order information
- Art. no.
- For options please give exact counter type, voltage and options e.g.:
  K06.20 – 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



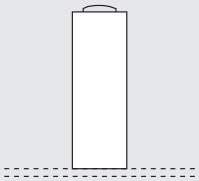
2) PCB mount, lying
display on the top



3) PCB mount, hanging
display front side



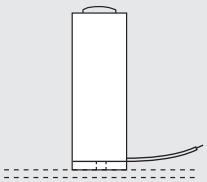
4) PCB mount, upright
display front side



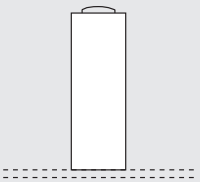
5) PCB mount, lying
display on the top



6) Base mount upright
display front side



Optional: PCB mount, upright
display front side, IP65



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Micro counters | High shock resistance (AC+DC) | K04 ... K07 / AK07

Accessories

		Type / size	Description		Order no.
Gasket counter		**32 x 15 mm [1.26 x 0.59]**	for cut-out 27 x 13 mm, suitable for K06.20 and K07.20		**N511058**

Technical data

Electrical connection		
	panel mount, base mount	flying leads, AWG 22 approx. 150 mm [5.91"], 6 mm [0.24"] stripped wire ends, tinned
	PCB mount	solder pins ø 0.4 x 1.2 mm [0.016 x 0.047"]
Power consumption (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
Rated voltage	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, ±10 %
	type a0	12/24/115/230 V AC, ±10 %
Counting frequency		max. 10 and 25 Hz
Pulse duration		
	at 10 Hz (type 0 and a0)	min. 50 ms
	at 25 Hz (type 1)	min. 20 ms
Pulse interval		
	at 10 Hz (type 0 a0)	min. 50 ms
	at 25 Hz (type 1)	min. 20 ms
Cycle duration factor		100 %
Number of digits		4, 5, 6 and 7
Counting system		adding
Height of figures	K04, K06, AK06	4 x 1.7 mm [0.16 x 0.067"] optical
	K05, K07, AK07	4 x 1.2 mm [0.16 x 0.047"] optical
Color of figures		white on black
Reset		no reset
Operating temperature		-10 °C ... +60 °C [+14 °F ... +140 °F] (non-condensing)
Relative humidity at +30 °C [+86 °F]		≤ 80 % (non-condensing)
Altitude		up to 2000 m [6562']
Mounting position		horizontal, other on request
Soldering temperature		265 °C [+509 °F], 3 s
Operating life		> 50 x 10^6 pulses
Solderable and wash proof types		K0X.92, K06.90, K07.90
Protection	K0X.92, K0X.90	IP65
	AK0X.00, K0X.80, K0X.20	IP65 (only front side)
	other types	depending on kind of mounting
Housing		PC (Polycarbonate), transparent or sheet steel types (see table) with IP65 protection, fully sealed (potted)
Weight		15 ... 18 g [0.53 ... 0.63 oz]
Device safety	designed to	EN 61010 part 1
	protection class	2
	application area	pollution level 2

Options

K0x.20

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

- different voltages
- version not potted
- different figure colors
- different lengths of flying leads
- different connections
- different temperature range, depends on version
  -30 °C ... +85 °C [-22 °F ... +185 °F] or
  -20 °C ... +70 °C [-4 °F ... +158 °F]

Approvals

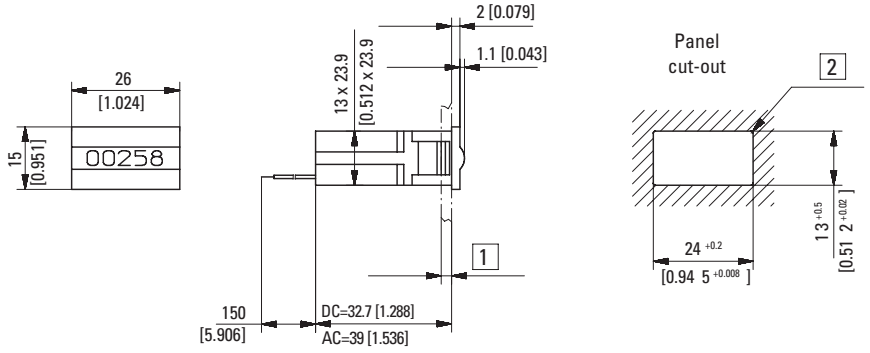
UL compliant in accordance with		File no. E128604
CE compliant in accordance with		
	EMC Directive	2014/30/EU
	RoHS Directive	2011/65/EU
	Low Voltage Directive	2014/35/EU

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Micro counters | High shock resistance (AC+DC) | K04 ... K07 / AK07

Panel mount counter
4- and 5-digit display front side
Type K04.20 / K05.20



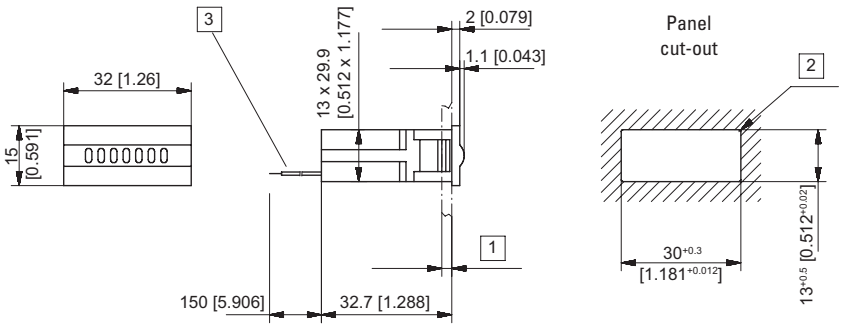


1 1.2 ... 3 [0.047 x 0.12] 2 R_{max} 0.5 [0.020]

Type	Voltage	Display	Art. no. 3 V	4.5 V	12 V	24 V	115 V	230 V
K04.20	DC (10 Hz) / 0	4 digits	**1.100.200.006**	**1.100.200.008**	**on request**	**on request**		
	DC (25 Hz) / 1				**1.100.200.032**	**1.100.200.033**		
	AC (10 Hz) / a0					**1.100.200.051**	**1.100.200.054**	**1.100.200.056**
K05.20	DC (10 Hz) / 0	5 digits	**1.110.200.006**	**1.110.200.008**	**on request**	**1.110.200.013** 1)		
	DC (25 Hz) / 1				**1.110.200.032**	**1.110.200.033**		
	AC (10 Hz) / a0					**1.110.200.051**	**1.110.200.054**	**1.110.200.056** 1)

Panel mount counter
6- and 7-digit display front side
Type K06.20 / K07.20





1 1.2 ... 3 [0.047 x 0.12] 2 R_{max} 0.5 [0.020]

Type	Voltage	Display	Art. no. 3 V	4.5 V	12 V	24 V	115 V	230 V
K06.20	DC (10 Hz) / 0	6 digits	**1.120.200.006**	**1.120.200.008**	**on request**	**1.120.200.013**		
	DC (25 Hz) / 1				**1.120.200.032**	**1.120.200.033**		
	AC (10 Hz) / a0					**1.120.200.051**	**1.120.200.054**	**1.120.200.056**
K07.20	DC (10 Hz) / 0	7 digits	**1.130.200.006**	**1.130.200.008**	**1.130.200.012** 1)	**1.130.200.013**		
	DC (25 Hz) / 1				**1.130.200.032** 1)	**1.130.200.033** 1)		
	AC (10 Hz) / a0					**1.130.200.051**	**1.130.200.054** 1)	**1.130.200.056**

Dimensions in mm [inch]

1) Stock types.

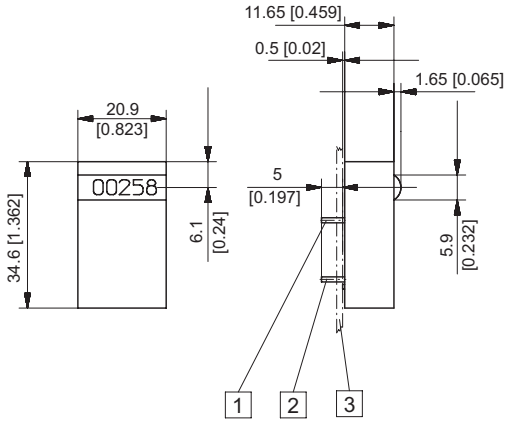
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Micro counters | High shock resistance (AC+DC) | K04 ... K07 / AK07

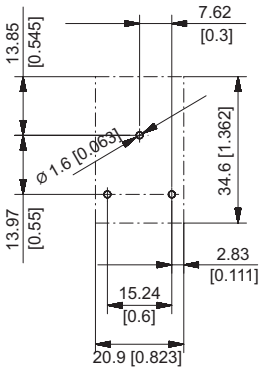
PCB mount, lying
4- digit display on the top
Type K04.40

Color of housing blue (zinc-plated)





Punching diagram for PCB (component side)



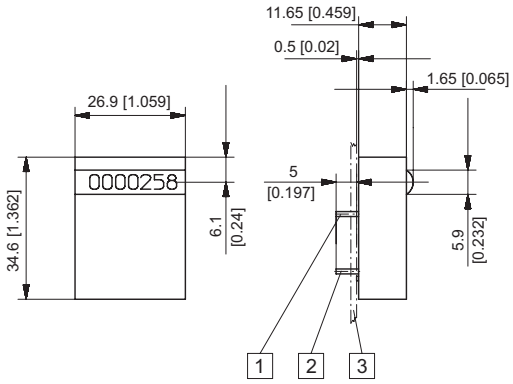
1 Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]
2 Coil connections 0.4 x 1.2 [0.016 x 0.047] 3 PCB

Type	Voltage	Display	Art. no. 3 V	4.5 V	12 V	24 V	
K04.40	DC (10 Hz) / 0 DC (25 Hz) / 1	4 digits	**1.100.401.006**	**1.100.401.008**	**on request** **1.100.401.032**	**on request** **1.100.401.033**	

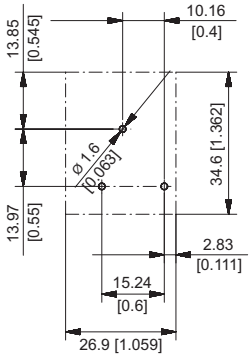
PCB mount, lying
7-digit display on the top
Type K07.40

Color of housing blue (zinc-plated)





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	
K07.40	DC (10 Hz) / 0 DC (25 Hz) /1	7 digits	**1.130.401.006**	**1.130.401.008** [1)]	**on request** **1.130.401.032**	**on request** **1.130.401.033**	

Dimensions in mm [inch]

1) Stock types.

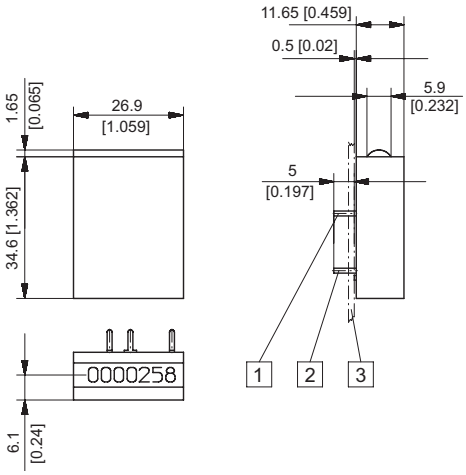
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Micro counters | High shock resistance (AC+DC) | K04 ... K07 / AK07

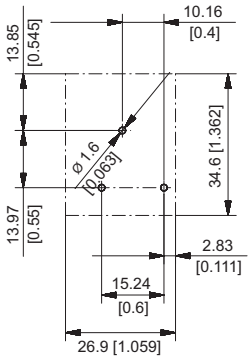
PCB mount, hanging
7-digit display front side
Type K07.50

Color of housing blue (zinc-plated)





Punching diagram for PCB (component side)

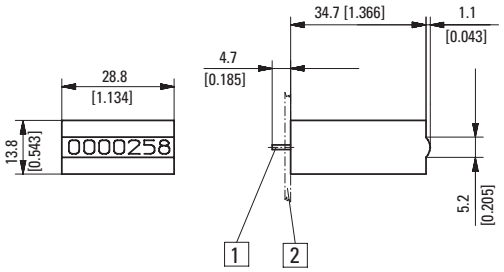


1 Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]
2 Coil connections 0.4 x 1.2 [0.016 x 0.047] 3 PCB

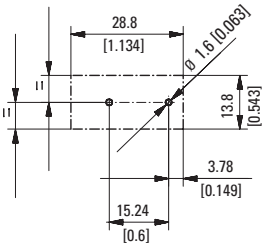
Type	Voltage	Display	Art. no. 3 V	4.5 V	12 V	24 V	
K07.50	DC (10 Hz) / 0	7 digits	**1.130.501.006**	**1.130.501.008**	**on request**	**on request**	
	DC (25 Hz) / 1				**1.130.501.032**	**1.130.501.033**	

PCB mount, upright
6- and 7-digit display front side
Type K06.80 / K07.80





Punching diagram for PCB (component side)



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
K06.80	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**
K07.80	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** [1]	**1.130.800.033**		
	AC (10 Hz) / a0					**1.130.800.051**	**1.130.800.054**	**1.130.800.056**

Dimensions in mm [inch]

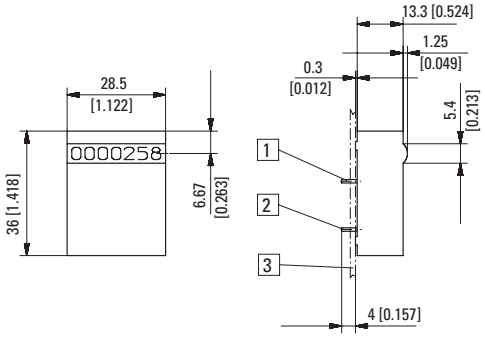
1) Stock types.

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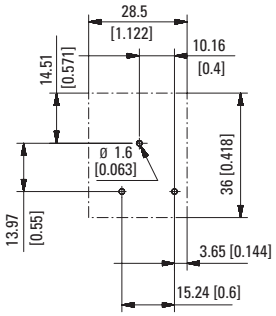
Micro counters | High shock resistance (AC+DC) | K04 ... K07 / AK07

PCB mount, lying
7-digit display on the top
Type K07.90





Punching diagram for PCB
(component side)

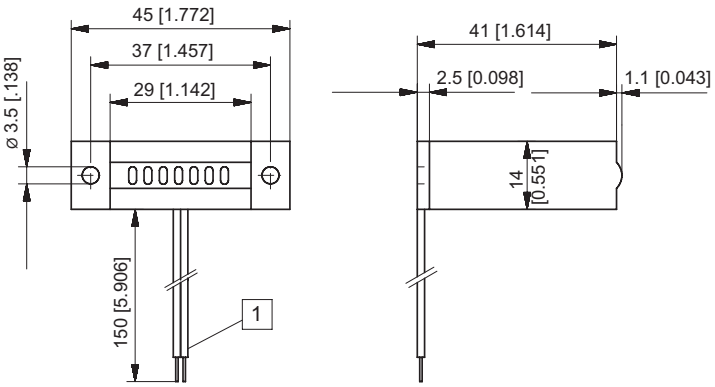


1 Mounting pin without el. function 0.4 x 1.2 [0.016 x 0.047]
2 Coil connections 0.4 x 1.2 [0.016 x 0.047] 3 PCB

Type	Voltage	Display	Art. no. 3 V	4.5 V	12 V	24 V	115 V	230 V
K07.90	DC (10 Hz) / 0	7 digits	**1.130.900.006**	**1.130.900.008**	**1.130.900.012** [1)]	**on request**		
	DC (25 Hz) / 1				**1.130.900.032**	**1.130.900.033**		
	AC (10 Hz) / a0					**1.130.900.051**	**1.130.900.054**	**1.130.900.056**

Base mount, upright
7-digit display front side
Type AK07.00





1 Flying leads (red+ / black–)

Type	Voltage	Display	Art. no. 3 V	4.5 V	12 V	24 V	115 V	230 V
AK07.00	DC (10 Hz) / 0	7 digits	**1.130.000.006**	**1.130.000.008**	**1.130.000.012**	**1.130.000.013**		
	DC (25 Hz) / 1				**1.130.000.032**	**1.130.000.033**		
	AC (10 Hz) / a0					**1.130.000.051**	**1.130.000.054**	**1.130.000.056** [1)]

Dimensions in mm [inch]

1) Stock types.

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