

## The ORIGINAL – because Quality Counts



- Tailor-made for energy meters
- Versatile
- Highest reliability at an attractive price
- RoHS compliant 
- 5 years warranty 



For more than 45 years thousands of customers have put their trust in the Kübler name. Kübler encoders, linear measuring systems, count and process technology are synonymous with innovation, flexibility and quality in over 50 countries worldwide.

Kübler products find their application in the fields of automation and instrumentation for detecting movement and for counting, displaying or controlling physical values.

Key areas include:

**Geared motors, medical technology, lifts and elevators, energy measurement, packaging machinery, steel, wind power, woodworking and other industrial sectors.**

Our repertoire includes some quite exceptional projects, such as the New York City subway, which we equipped completely with our encoders.

When you work together with Kübler, then you can expect to find more when it comes to innovation, flexibility and quality, than perhaps you are accustomed to.

- Each year we invest more than 10% of our turnover in R&D. Together with the close cooperation we have with our customers, this has led to pioneering innovations and solutions that we can manufacture for you both quickly and flexibly.
- We are in a position to develop special solutions for you - fast.
- As a rule our delivery reliability is better than 96% and, if required, we can manufacture the product you need within one or two days.

Together with our committed employees – over 180 in number – we look forward to working with you.



Gebhard Kübler



Lothar Kübler

Joint Managing Directors



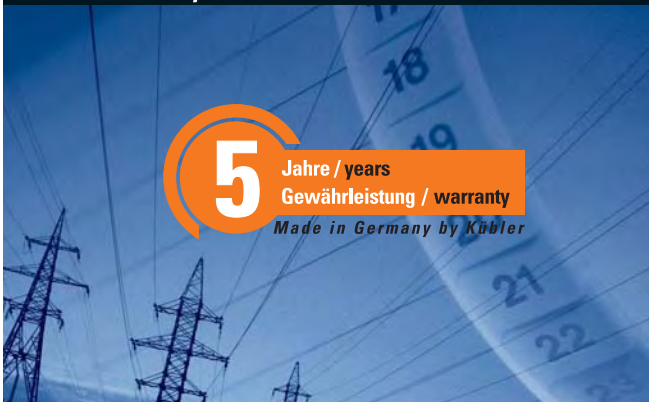
**Encoders, Linear Measuring Systems + Connection Technology**  
 Our portfolio stretches from miniature incremental encoders, via singleturn and multiturn encoders up to ATEX and Heavy Duty products, as well as linear magnetic measuring and draw wire systems. All popular interfaces and fieldbuses are available. Our patented Integrative Technology, Intelligent Sensing Technology as well as Safety Lock™ Design and OptoASIC technology are setting new standards for reliability and performance.

**Counting Technology**  
 Our electromechanical counters and miniature counters for PCB mounting are the ideal time and pulse counters for pumps, lifts/elevators, dryers, UV lamps, kWh meters and much more. Our Codix series offers functional, inexpensive electronic display counters, position indicators, timers and rate indicators. Our electronic preset counters facilitate distributed control and help reduce cycle times.

**Process Technology**  
 Our user-friendly, compact and well thought-out Codix process displays and controllers are suitable for all linear and non-linear analogue signals. Our temperature displays and controllers lend themselves to mounting either in a panel or on a DIN-rail.

**OEM Products and Systems (OPS)**  
 So that you can concentrate on your own core competence, we are able to offer you a number of services: fabricating and populating of printed circuit boards and sub-assemblies, planning of complete systems and integration solutions as well as the development and contract manufacturing of special purpose devices. Here we benefit from our long experience in the areas of precision mechanics, optics and electronic engineering.

## Because Quality counts



The Fritz Kübler GmbH, market leader in the manufacture of counters for energy metering, now offers a 5 year warranty on all of its electromechanical devices that are built into kWh meters.

- Kübler has over 40 years experience in counter production.
- Many patents ensure high technical reliability and quality
- A wide variety of both standard and customised versions offer attractive-cost solutions for incorporation into kWh meters.
- The 5 year warranty programme satisfies the customer need for reliability with lower costs

## Counters for energy metering technology from the market leader



### Reliable:

robust and resistant to magnetic fields, PTB tested, high temperature range from  $-40$  to  $+90^{\circ}$  C, used by all leading energy metering manufacturers.



Shock/  
vibration  
resistant



Magnetic  
field  
proof



Tempera-  
ture

### Simple:

direct control, universal use thanks to a wide variety of models, customer-specific connection technology or sub-assembling to reduce your production costs.

### Compact and economic:

from 24 x 14 mm, can be mounted close together as double tariff meters, low power consumption.

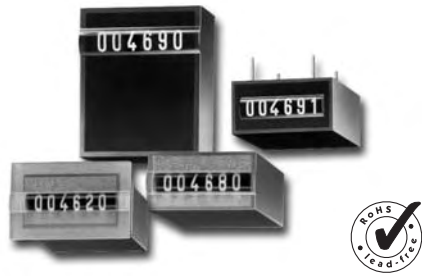
## The Kübler Group – a global presence



## Enthusiasming service and customer proximity

- active in more than 50 countries
- Quality engineered and produced in Germany
- Integrated Components. Off-the-shelf Systems
- Family owned, independent

**Micro Display counter K 46/K 47 shock resistant**



- high shock resistance
- low power consumption
- different mounting solutions
- PCB-mount versions
- stores value also at power failure
- long service life (50 x 10<sup>6</sup> impulses)

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**Micro Display counter K 66, K 67 shock- and magnetic field resistant**



- not affected by magnetic fields as moving parts are made from non-ferrous metal (patented system).
- maximum shock resistance, as a counter-rotating movement is required for counting, ACR-system (patented).
- PCB-mount versions
- Solderable and wash proof
- Long service life

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**Micro Display counter K 04 ... K 07, shock resistant**



- High shock resistance
- Low power consumption; suitable for battery consumption
- PCB-mount versions
- Solderable and wash proof
- long service life
- cULus approval on request (UL Underwriters Laboratories Inc.)

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**Stepper motor driven counter (Cyclometer)**



- Large figures 5 x 3 mm [0.197 x 0.118"]
  - Stepper motor driven
  - Only 25 mW power consumption
- One impulse increases the first number wheel by 1/100 => 100 pulses generates one turn of the first number wheel

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**LCD Counter Module 190/192**

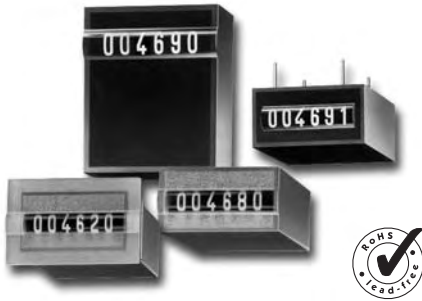


- Counting frequency up to 10 kHz
- 7-digit display, height 6 mm [0.236"]
- Non-volatile memory (no battery, EEPROM)
- Low operating current
- Wide operating voltage and temperature range
- Very high shock and vibration specs

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## Micro Display counter K 46/K 47 shock resistant



- 6/7-digit micro adding counter
- low cost
- **high shock resistance**
- low power consumption; suitable for battery operation
- small dimensions
- magnified large figures
- different mounting solutions
- flush mount with integrated spring clip (snap in)
- PCB-mount versions

- solderable and wash proof
- protection to IP 66
- stores value also at power failure
- long service life ( $50 \times 10^6$  impulses)



\* on all electromechanical devices that are built into kWh meters

### Technical data:

Electrical Connection:	flush mount:	flying leads AWG 22 approx. 150 mm [5.906"]
	PCB mount:	solder pins $\varnothing$ 0.64 mm [0.025"]
Power consumption:	up to 12 V DC:	approx. 70 mW
	at 24 V DC:	approx. 150 mW
Rated voltage:	1.5/3/4.5/5/6/12/24 V DC $-10\%$ $+20\%$	
Counting frequency:	max. 10 Imp/s (type 0)	
Pulse duration:	min. 50 ms	
Pulse interval:	min. 50 ms	
Cycle duration factor:	100 %	
Number of digits:	6 (K46), 7 (K47)	
Counting system:	adding	
Height of figures:	K 46: 4 x 1.7 mm [0.067"] K 47: 4 x 1,25 mm [0.049"] optical	
Colour of figures:	white on black	
Reset:	no reset	
Ambient temperature:	$-10 \dots +60$ °C [14 °F ... 140 °F]	

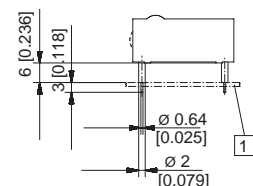
Mounting position:	any
Operating life:	$> 50 \times 10^6$ impulses
solderable and wash:	K 46.80, K 46.90, K 46.91, K 46.94, K 46.95
proof types:	K 47.80, K 47.90, K 47.91
Protection:	IP 65 (K 46.20, K 47.20: on front side)
Housing:	clear plastic
Weight:	12 ... 14 g
Options:	
K46.20, K46.80; K47.20 K47.80:	flat pin 0.8 x 2.8 mm [0.032 x 0.11"] and push on
K 46.9x ... 71:	connectors types with spacer (high 6 mm [0,236"]
K 47.9x ... 71:	Draw. 1)
further options:	– different voltages – counting frequency $> 10$ Imp/s – different colour of figures – extended temperature range: $-30 \dots +85$ °C or $-20 \dots +70$ °C [ $-22$ °F ... 185 °F or $-4$ °F... 158 °F]

### Series:

Type	Display	el. Connection	Description
K46.20, K47.20	Small side	Flying leads	Panel mount with latch
K46.80, K47.80	Small side	Solder pins	PCB mount wash proof
K46.90, K47.90	Large side	Solder pins	PCB mount wash proof
K46.91, K47.91	Small side	Solder pins	PCB mount wash proof
K46.94	Large side	Solder pins	PCB mount wash proof
K46.95	Small side	Solder pins	PCB mount wash proof

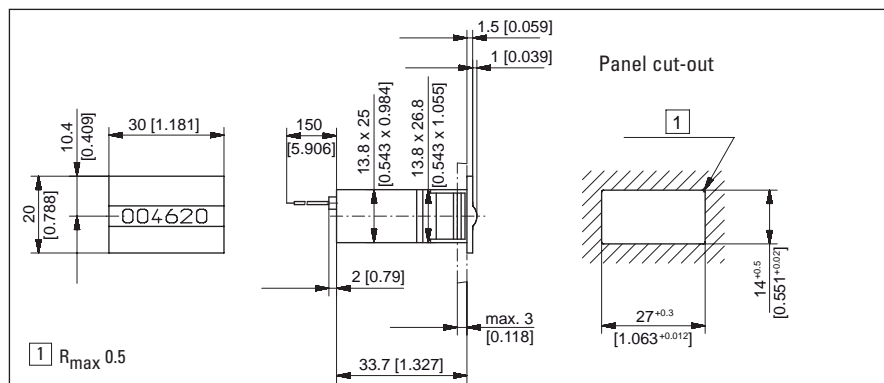
Ordering information:  
– Article number  
– for options please give exact counter type, voltage and options e.g. 1.700.200.012 K 46.20, 12 V DC/0 temperature range  $-20$  °C ...  $+70$  °C [ $-4$  °F ... 158 °F]

Draw 1



1) Pcb

### Type K 46.20/K47.20

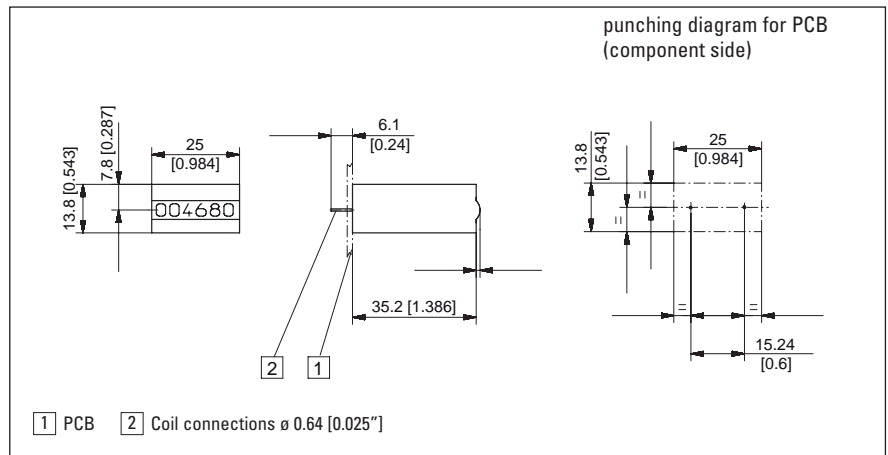


	1.5 V	3 V	4.5 V	5 V	6 V	12 V	24 V
<b>K 46.20</b>	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 imp/s)	1.700.200.002	1.700.200.006	1.700.200.008	1.700.200.009	1.700.200.010	1.700.200.012	1.700.200.013
<b>K 47.20</b>	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 imp/s)	1.710.200.002	1.710.200.006	1.710.200.008	1.710.200.009	1.710.200.010	1.710.200.012	1.710.200.013

# Display counter electromechanical



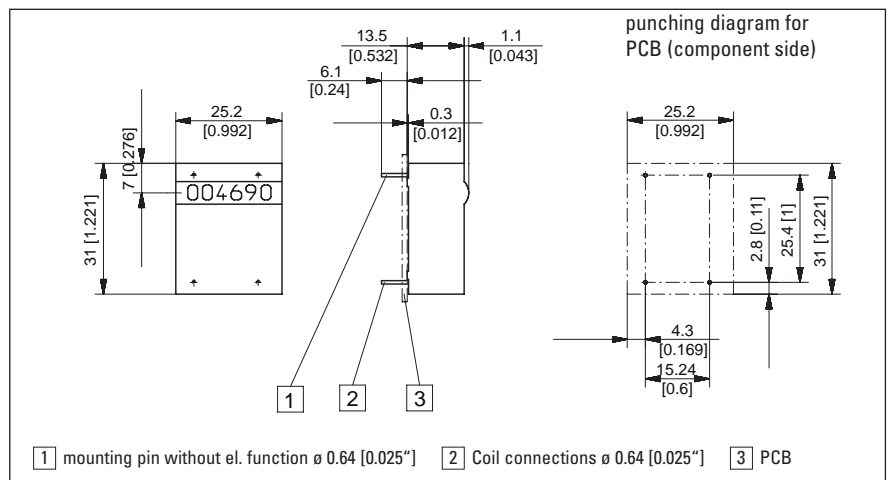
## Type K 46.80/K 47.80



K 46.80	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.700.800.002	1.700.800.006	1.700.800.008	1.700.800.009	1.700.800.010	1.700.800.012	1.700.800.013

K 47.80	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.710.800.002	1.710.800.006	1.710.800.008	1.710.800.009	1.710.800.010	1.710.800.012	1.710.800.013

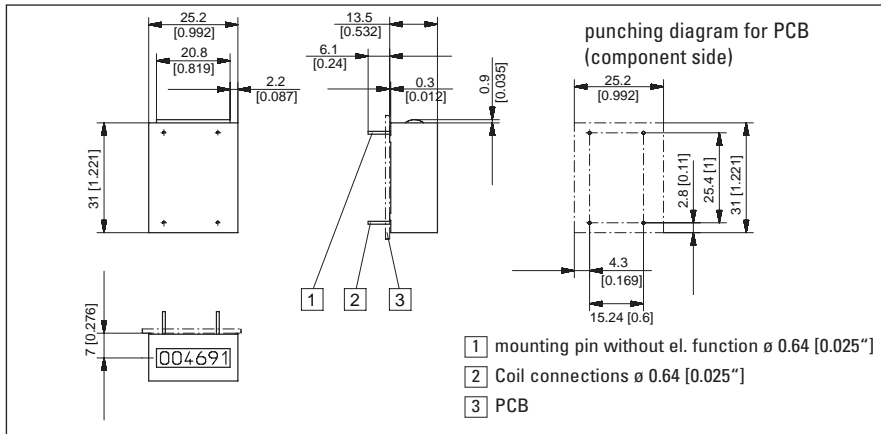
## Type K 46.90/K 47.90



K 46.90	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.700.900.002	1.700.900.006	1.700.900.008	1.700.900.009	1.700.900.010	1.700.900.012	1.700.900.013

K 47.90	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.710.900.002	1.710.900.006	1.710.900.008	1.710.900.009	1.710.900.010	1.710.900.012	1.710.900.013

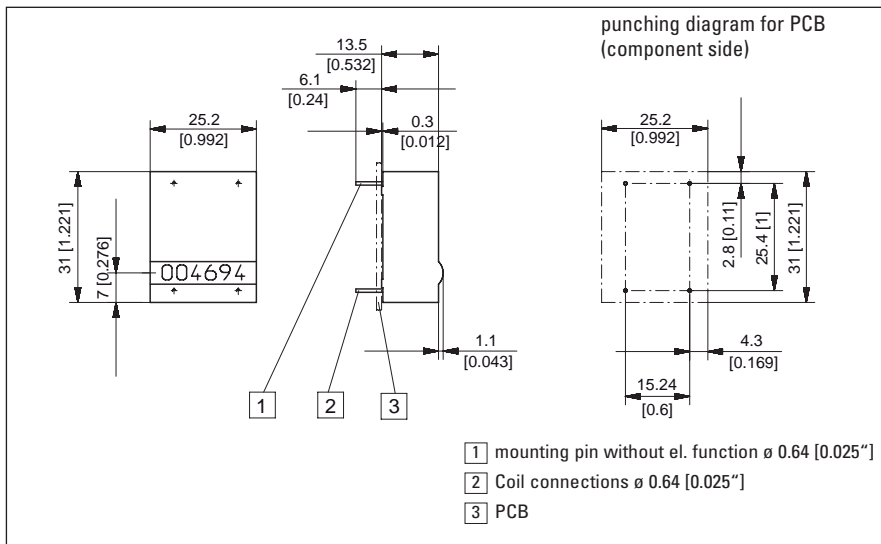
## Type K 46.91/K 47.91



K 46.91	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.700.910.002	1.700.910.006	1.700.910.008	1.700.910.009	1.700.910.010	1.700.910.012	1.700.910.013

K 47.91	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.710.910.002	1.710.910.006	1.710.910.008	1.710.910.009	1.710.910.010	1.710.910.012	1.710.910.013

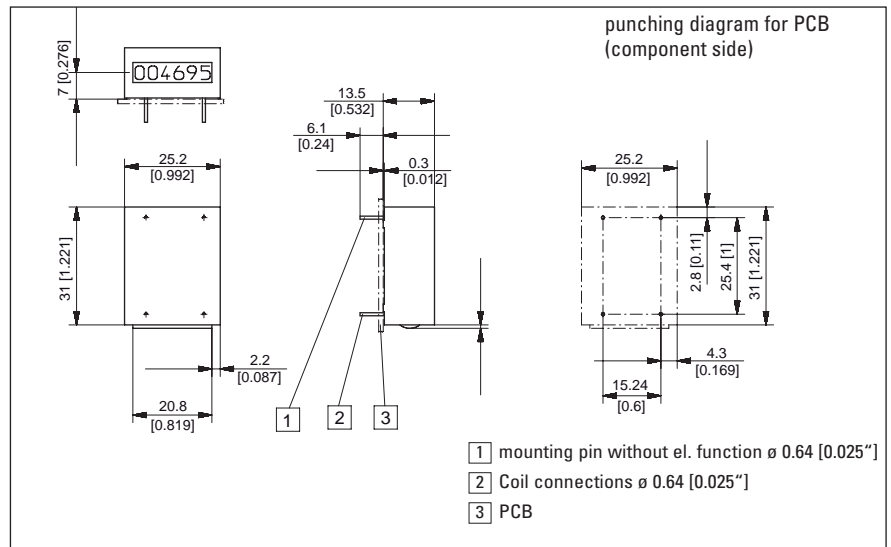
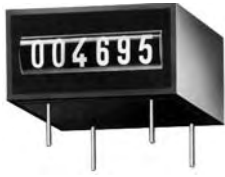
## Type K 46.94



K 46.94	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.700.940.002	1.700.940.006	1.700.940.008	1.700.940.009	1.700.940.010	1.700.940.012	1.700.940.013



Type K 46.95



K 46.95	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.700.950.002	1.700.950.006	1.700.950.008	1.700.950.009	1.700.950.010	1.700.950.012	1.700.950.013

## Micro Display counter K 66, K 67 shock- and magnetic field resistant



- 6/7-digit micro adding counter
- **not affected by magnetic fields as moving parts are made from plastic or non-ferrous metal (patented system).**
- **maximum shock resistance, as a counter-rotating movement is required for counting, ACR-system (patented).**
- Low power consumption; suitable for battery consumption
- small dimensions
- large optical figures
- Flush mount with integrated spring clip

- PCB-mount versions
- Solderable and wash proof
- Protection IP 65
- Stores value also at power failure
- Long service life



\* on all electromechanical devices that are built into kWh meters

### Technical data:

Electrical Connection:	flush mount:	Flying leads AWG 22 approx. 150 mm [5.906"]
	PCB-mount:	solder pins $\varnothing$ 0.64 mm [0.025"]
Power consumption:	up to 6 V DC:	approx. 70 mW
(at 20 °C)	at 12 V DC:	approx. 120 mW
	at 24 V DC:	approx. 500 mW
Rated voltage:	1.5/3/4.5/5/6/12/24 V DC-10 % +20 %	
Counting frequency:	max. 10 Imp/s (type 0)	
Pulse duration:	min. 50 ms	
Pulse interval:	min. 50 ms	
Cycle duration factor:	100 %	
Number of digits:	6 (K 66), 7 (K 67)	
Counting system:	adding	
Height of figures:	K 66: 4 x 1.7 mm [0.067"] K 67: 4 x 1,25 mm [0.049"] optical	
Colour of figures:	white on black	
Reset:	no reset	
Ambient temperature:	-10 ... +60 °C [14 ... 140 °F]	

Mounting position:	number wheel view horizontal
Operating life:	> 50 x 10 <sup>6</sup> pulses
solderable and wash proof types	K 66.80, K 66.90, K 66.91, K 66.94, K 66.95 K 67.80, K 67.90, K 67.91
Protection:	IP 65 (K 66.20, K 67.20: only front side)
Housing:	clear plastic types with protection IP 65 are sealed
Weight:	9 ... 11 g [0.317 ... 0.388 oz]

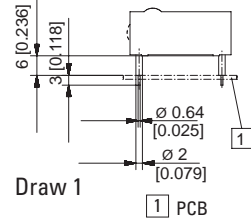
Options:	K 66.20, K 66.80, K 67.20, K 67.80: flat pin 0.8 x 2.8 mm [0.032 x 0.11"] and push on connectors K 66.20, K 67.20: solder pins $\varnothing$ 0.64 mm [0.025"] K 66.9x ... 71, K 67.9x ... 71: types with spacer (High 6 mm [0.236"] Draw.1) Further options: – different voltages – counting frequency > 10 Imp/s – different colour of figures – extended temperature range –30 ... +85 °C or –20 ... +70 °C [–22 ... 185 °F or –4 ... 158 °F]
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### Series:

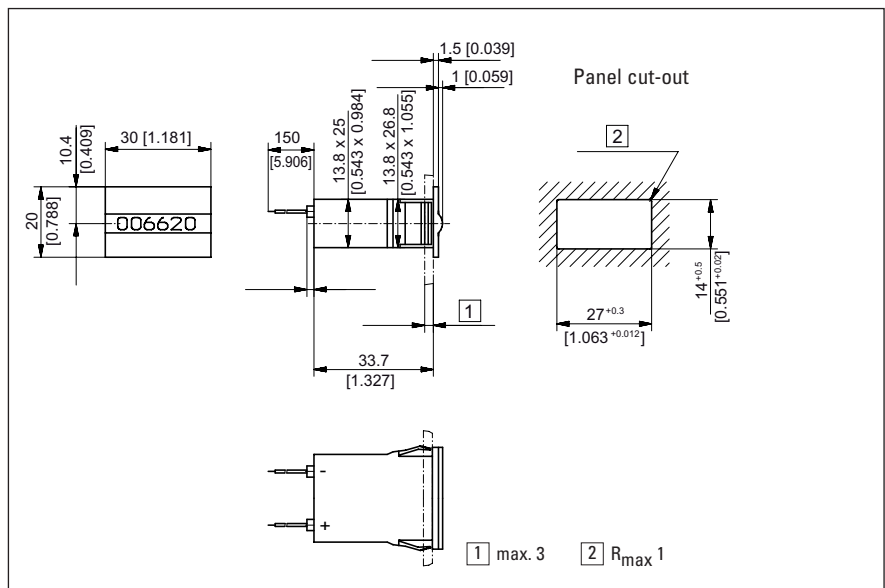
Type	Display	el. Connection	Description
K66.20, K 67.20	Small side	Flying leads	Panel mount with latch
K66.80, K 67.80	Small side	Solder pins	PCB mount wash proof
K66.90, K 67.90	Large side	Solder pins	PCB mount wash proof
K66.91, K 67.91	Small side	Solder pins	PCB mount wash proof
K66.94	Large side	Solder pins	PCB mount wash proof
K66.95	Small side	Solder pins	PCB mount wash proof

### Ordering information:

- Article number 1.680.9X0.XXX
- for options please give exact counter type, voltage and options e.g. K 66.20, 9 V DC/0 temperature range –20 °C ... +70 °C [–4 °F ... 158 °F]



### Type K 66.20/K 67.20

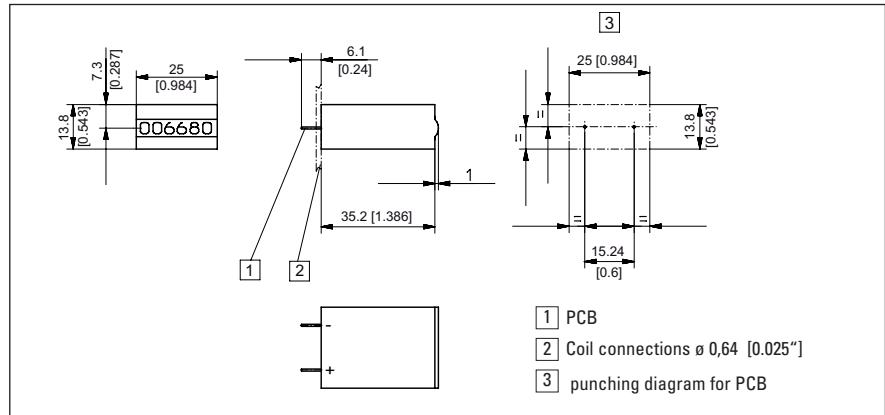


Order code see next page.

## Type K 66.20/K 67.20

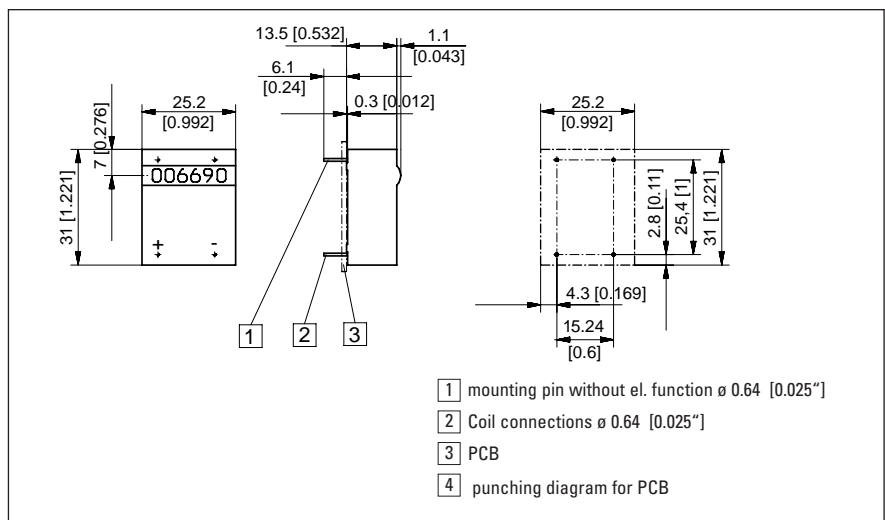
K 66.20	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.650.200.002	1.650.200.006	1.650.200.008	1.650.200.009	1.650.200.010	1.650.200.012	1.650.200.013
K 67.20	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.660.200.002	1.660.200.006	1.660.200.008	1.660.200.009	1.660.200.010	1.660.200.012	1.660.200.013

## Type K 66.80/K 67.80



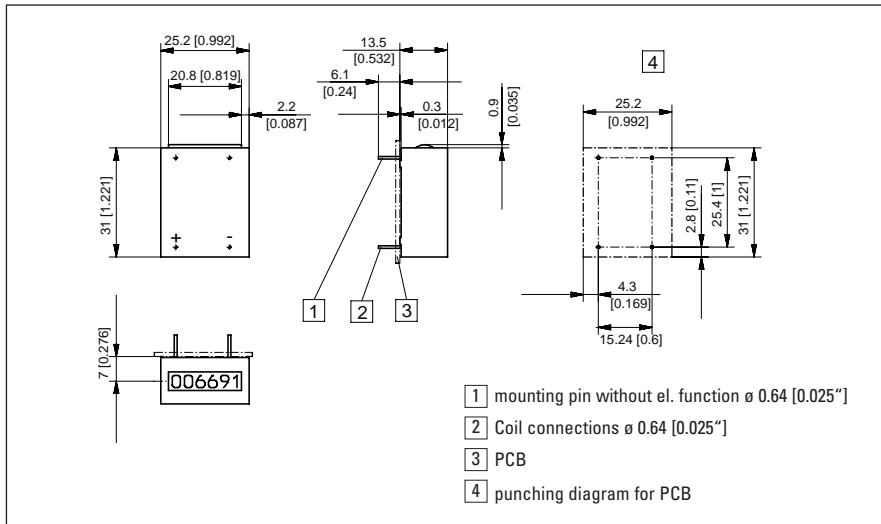
K 66.80	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.650.800.002	1.650.800.006	1.650.800.008	1.650.800.009	1.650.800.010	1.650.800.012	1.650.800.013
K 67.80	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.660.800.002	1.660.800.006	1.660.800.008	1.660.800.009	1.660.800.010	1.660.800.012	1.660.800.013

## Type K 66.90/K 67.90



K 66.90	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.650.900.002	1.650.900.006	1.650.900.008	1.650.900.009	1.650.900.010	1.650.900.012	1.650.900.013
K 67.90	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.660.900.002	1.660.900.006	1.660.900.008	1.660.900.009	1.660.900.010	1.660.900.012	1.660.900.013

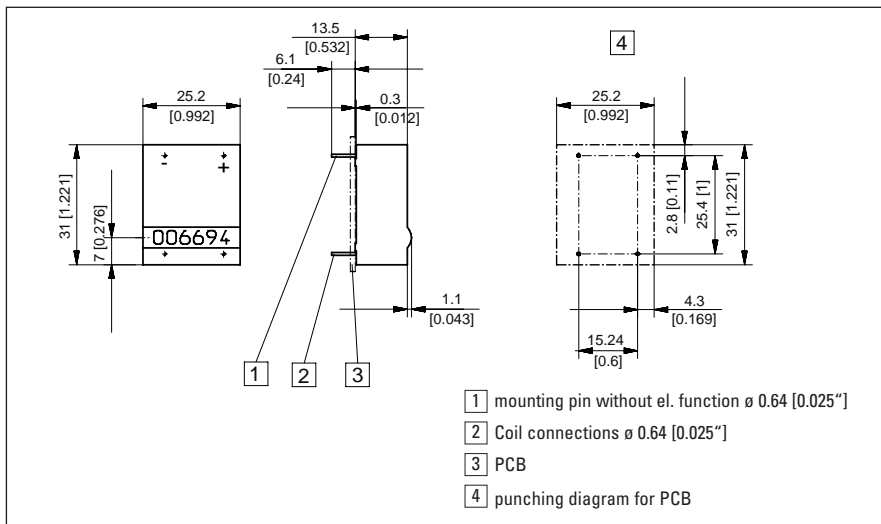
## Type K 66.91/K 67.91



K 66.91	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.650.910.002	1.650.910.006	1.650.910.008	1.650.910.009	1.650.910.010	1.650.910.012	1.650.910.013

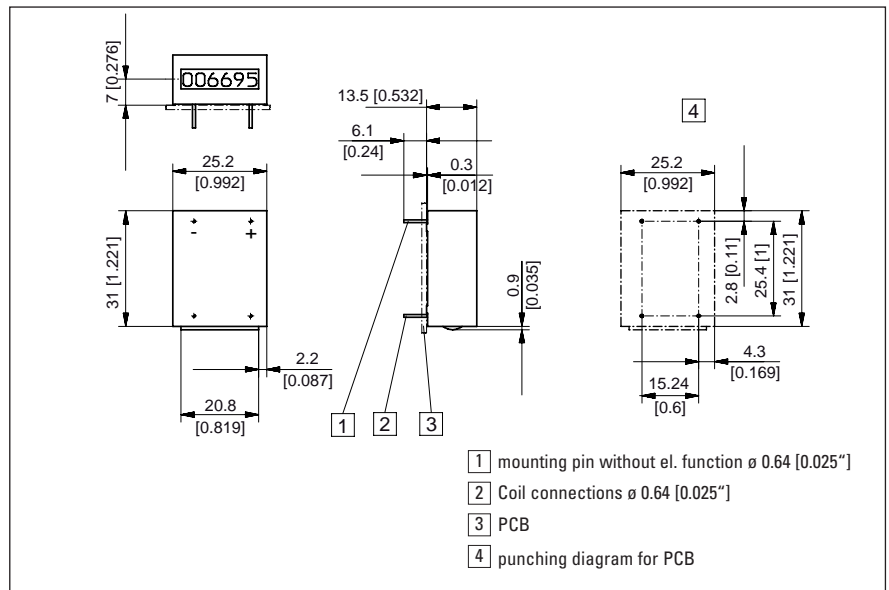
K 67.91	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.660.910.002	1.660.910.006	1.660.910.008	1.660.910.009	1.660.910.010	1.660.910.012	1.660.910.013

## Type K 66.94



K 66.94	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.650.940.002	1.650.940.006	1.650.940.008	1.650.940.009	1.650.940.010	1.650.940.012	1.650.940.013

## Type K 66.95



K 66.95	1.5 V Art.-No.	3 V Art.-No.	4.5 V Art.-No.	5 V Art.-No.	6 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 imp/s)	1.650.950.002	1.650.950.006	1.650.950.008	1.650.950.009	1.650.950.010	1.650.950.012	1.650.950.013

## Micro Display counter K 04 ... K 07, shock resistant



- 4-, 5-, 6- and 7 digit Micro adding counter
- High shock resistance
- Low power consumption; suitable for battery consumption
- small dimensions
- Large optical figures
- Different viewing possibilities
- Flush mount with integrated spring clip
- PCB-mount versions
- Solderable and wash proof
- Protection IP 65

- Stores value also at power failure
- long service life
- cULus UL approval on request



\* on all electromechanical devices that are built into kWh meters

### Technical data:

Electrical Connection:	Built-in counter	Flying leads AWG 22 approx. 150 mm [5.906"]
	PCB counter:	Solder pins 0,4 x 1,2 mm [0.016 x 0.047"]
Power consumption:	at 10 Imp/s (type 0):	approx. 50 mW
(at 20 °C and normal voltage)	at 25 Imp/s (type 1):	approx. 250 mW
	at 10 Imp/s (type a0):	approx. 800 mVA
Rated voltage:	type 0:	1.5/3/4.5/5/6/12 V DC -10 % +20 %
	type 1:	3/4.5/5/6/12/24 V DC ± 10 %
	type 4:	24 V DC -10 % +20 %
	type a0:	12/24/115/230 V AC ± 10 %
Counting frequency:	max. 10 and 25 Imp/s	
Pulse duration:	at 10 Imp/s (type 0 and a0):	min. 50 ms
	at 25 Imp/s (type 1):	min. 20 ms
Pulse interval:	at 10 Imp/s (type 0 and a0):	min. 50 ms
	at 25 Imp/s (type 1):	min. 20 ms
Cycle duration factor:	100 %	
Number of digits:	4, 5, 6 and 7	
Counting system:	adding	
Height of figures:	K 04, K 06: 1,7 x 4 mm [0.067 x 0.158"] optical	
	K 05, K 07: 1,2 x 4 mm [0.047 x 0.158"] optical	
Colour of figures:	white on black	

Reset:	no reset
Ambient temperature:	-10 ... +60 °C [14 °F ... 140 °F]
Mounting position:	any
Operating life:	> 50 x 10 <sup>6</sup> pulses
solderable and wash proof types	K 04.92, K 05.92, K 06.90, K 06.92, K 07.90 K 07.92
Protection:	K 04.92, K 05.92, K 06.90, K 06.92, K 07.90 K 07.92: IP 65 (K 04.20, K 05.20, K 06.20, K 07.20: IP 65 only front side) others, depending from kind of mounting
UL-certified:	File E43429
Housing:	clear plastic or steel (see table "Series") types with protection IP 65 are fully sealed enclosure
Weight:	15 ... 18 g [0.529 ... 0.635 oz]
Options:	
K 0x.20	Flat pin 0.5 x 2.8 mm [0.02 x 0.11] Art.-No.: 1.1X7.XX0.XXX - different voltages - version not potted - different figure colours - different lengths of flying leads - different connections - different temperature range, depends on version -30 ... +85 °C, -20 ... +70 °C [-22 °F ... 185 °F, -4 °F ... 158 °F]

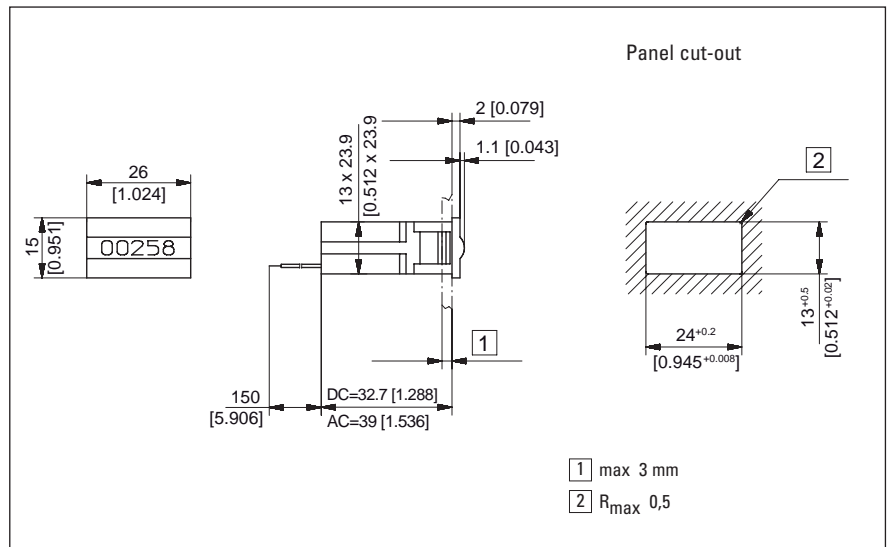
### Series:

4 digit	5 digit	6 digit	7digit	Housing	Display	Description
K 04.20	K 05.20	K 06.20	K 07.20	Plastic	Small side	Flush mount
K 04.40	K 05.40	K 06.40	K 07.40	Steel	Large side	PCB mount
K 04.50	K 05.50	K 06.50	K 07.50	Steel	Small side	PCB mount
K 04.80	K 05.80	K 06.80	K 07.80	Plastic	Small side	PCB mount
K 06.90	K 07.90			Plastic	Large side	PCB mount wash proof
K 04.92	K05.92	K 06.92	K 07.92	Plastic	Small side	PCB mount wash proof

### Ordering information:

- Article number
- 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]

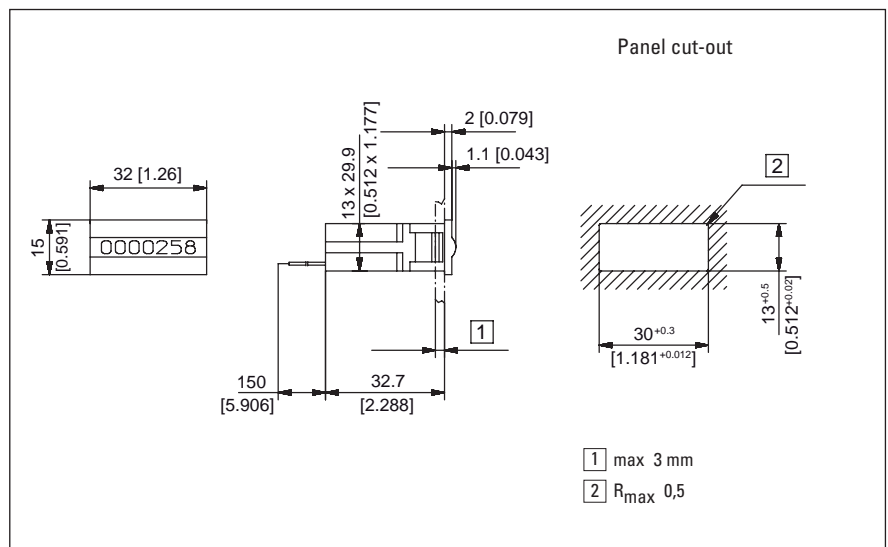
## Type K 04.20 and K 05.20



K 04.20 (4 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.100.200.006	1.100.200.008	1.100.200.012	1.100.200.418		
DC (25 Imp/s)			1.100.200.032	1.100.200.033		
AC (10 Imp/s)				1.100.200.051	1.100.200.054	1.100.200.056

K 05.20 (5 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.110.200.006	1.110.200.008	1.110.200.012	1.110.200.418		
DC (25 Imp/s)			1.110.200.032	1.110.200.033		
AC (10 Imp/s)				1.110.200.051	1.110.200.054	1.110.200.056

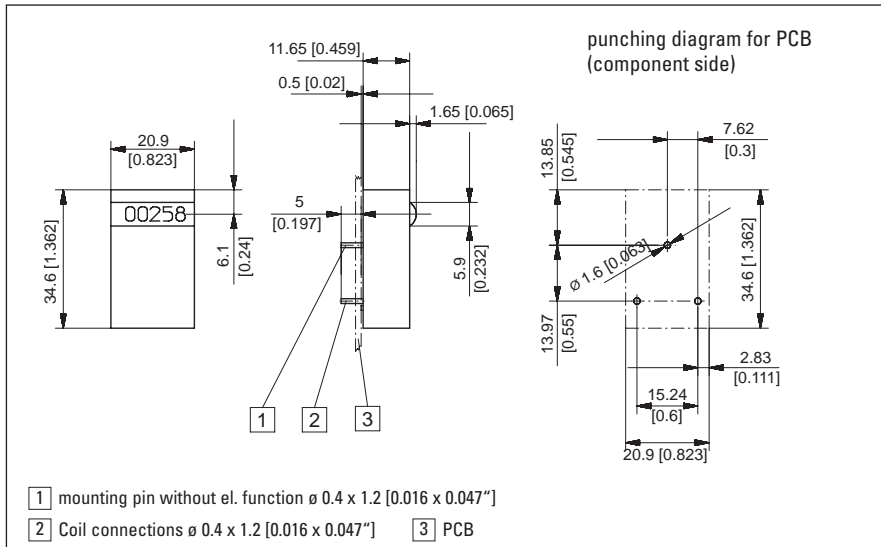
## Type K 06.20 and K 07.20



K 06.20 (6 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.120.200.006	1.120.200.008	1.120.200.012	1.120.200.418		
DC (25 Imp/s)			1.120.200.032	1.120.200.033		
AC (10 Imp/s)				1.120.200.051	1.120.200.054	1.120.200.056

K 07.20 (7 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.130.200.006	1.130.200.008	1.130.200.012	1.130.200.012		
DC (25 Imp/s)			1.130.200.032	1.130.200.033		
AC (10 Imp/s)				1.130.200.051	1.130.200.054	1.130.200.056

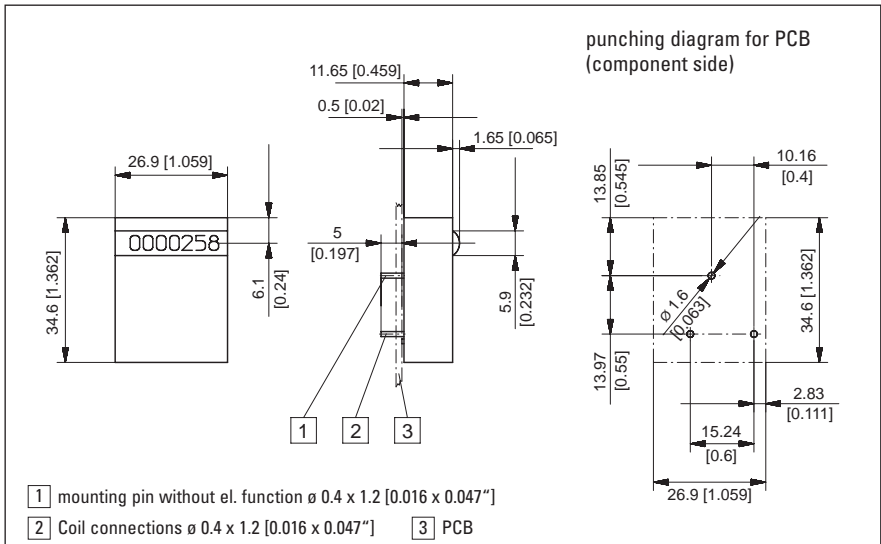
## Type K 04.40 and K 05.40



K 04.40 (4 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.100.401.006	1.100.401.008	1.100.401.012	1.100.401.418
DC (25 Imp/s)			1.100.401.032	1.100.401.033

K 05.40 (5 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.110.401.006	1.110.401.008	1.110.401.012	1.110.401.418
DC (25 Imp/s)			1.110.401.032	1.110.401.033

## Type K 06.40 and K 07.40

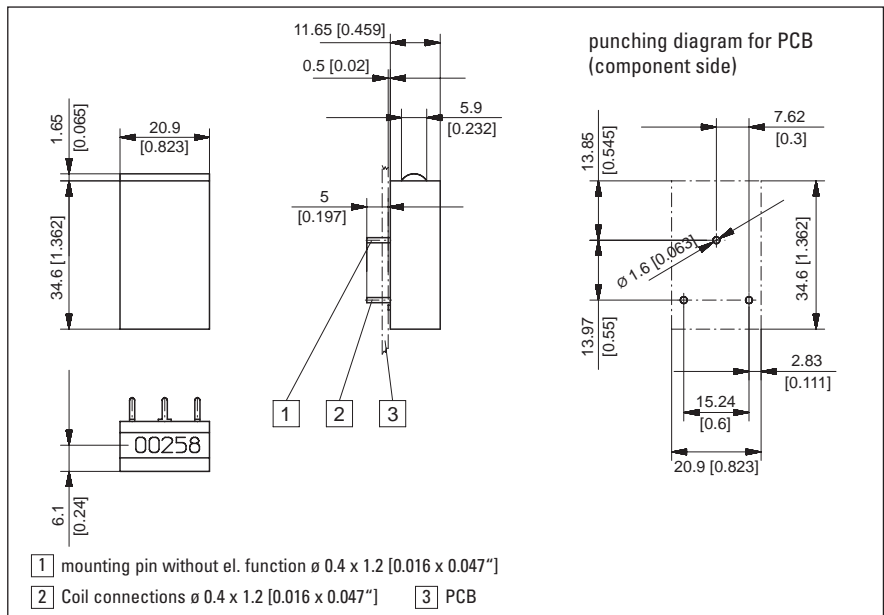


K 06.40 (6 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.120.401.006	1.120.401.008	1.120.401.012	
DC (25 Imp/s)			1.120.401.032	1.120.401.033

K 07.40 (7 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.130.401.006	1.130.401.008	1.130.401.012	
DC (25 Imp/s)			1.130.401.032	1.130.401.033



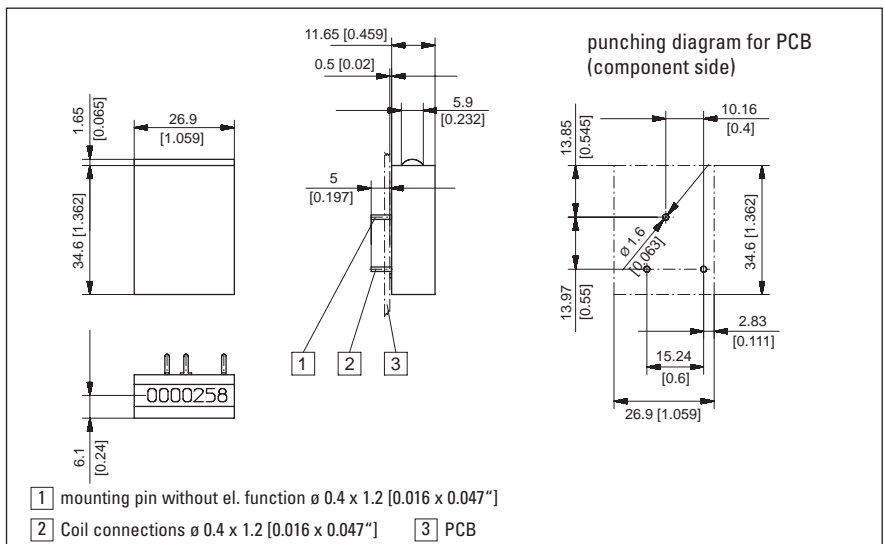
## Type K 04.50 and K 05.50



K 04.50 (4 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.100.501.006	1.100.501.008	1.100.501.012	1.100.501.418
DC (25 Imp/s)			1.100.501.032	1.100.501.033

K 05.50 (5 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.110.501.006	1.110.501.008	1.110.501.012	1.110.501.418
DC (25 Imp/s)			1.110.501.032	1.110.501.033

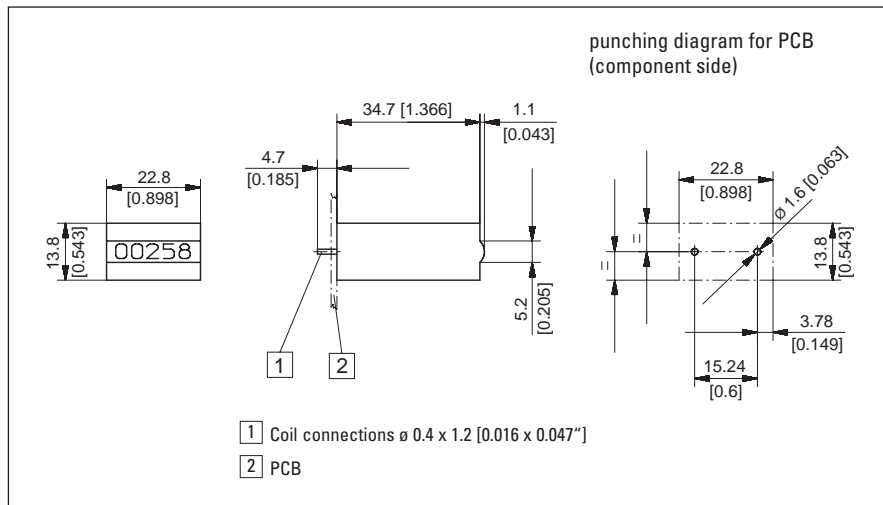
## Type K 06.50 and K 07.50



K 06.50 (6 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.120.501.006	1.120.501.008	1.120.501.012	1.120.501.418
DC (25 Imp/s)			1.120.501.032	1.120.501.033

K 07.50 (7 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.130.501.006	1.130.501.008	1.130.501.012	1.130.501.418
DC (25 Imp/s)			1.130.501.032	1.130.501.033

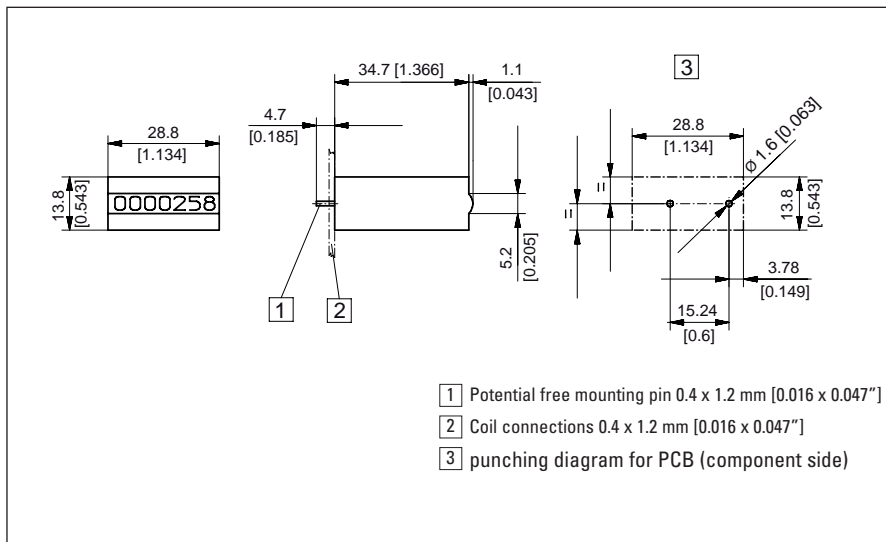
## Type K 04.80 and K 05.80



K 04.80 (4 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.100.800.006	1.100.800.008	1.100.800.012	1.100.800.418
DC (25 Imp/s)			1.100.800.032	1.100.800.033

K 05.80 (5 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.110.800.006	1.110.800.008	1.110.800.012	1.110.800.418
DC (25 Imp/s)			1.110.800.032	1.110.800.033

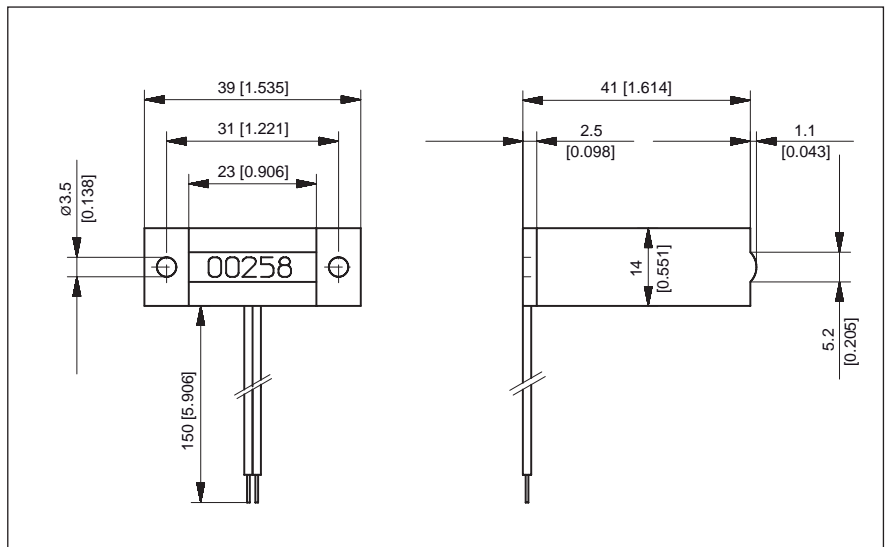
## Type K 06.80 and K 07.80



K 06.80 (6 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.120.800.006	1.120.800.008	1.120.800.012	1.120.800.418		
DC (25 Imp/s)			1.120.800.032	1.120.800.033		
AC (10 Imp/s)				1.120.800.051	1.120.800.054	1.120.800.056

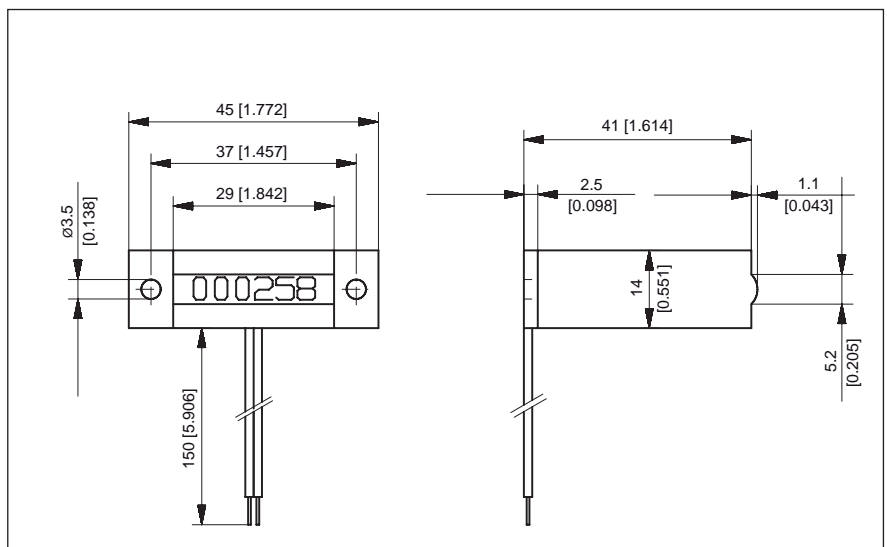
K 07.80 (7 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.130.800.006	1.130.800.008	1.130.800.012	1.130.800.418		
DC (25 Imp/s)			1.130.800.032	1.130.800.033		
AC (10 Imp/s)				1.130.800.051	1.130.800.054	1.130.800.056

## AK 05.00



AK 05.00	3 V	4.5 V	12 V	24 V	115 V	230 V
(5 digit)	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 Imp/s)	1.110.000.006	1.110.000.008	1.110.000.012	1.110.000.418		
DC (25 Imp/s)			1.110.000.032	1.110.000.033		
AC (10 Imp/s)				1.110.000.051	1.110.000.054	1.110.000.056

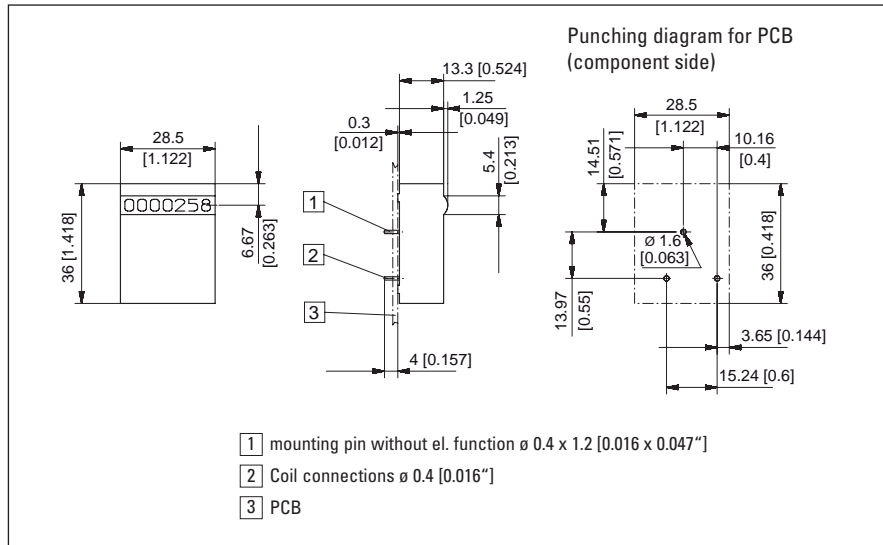
## Type AK 06.00 and AK 07.00



AK 06.00	3 V	4.5 V	12 V	24 V	115 V	230 V
(6 digit)	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 Imp/s)	1.120.000.006	1.120.000.008	1.120.000.012	1.120.000.418		
DC (25 Imp/s)			1.120.000.032	1.120.000.033		
AC (10 Imp/s)				1.120.000.051	1.120.000.054	1.120.000.056

AK 07.00	3 V	4.5 V	12 V	24 V	115 V	230 V
(7 digit)	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 Imp/s)	1.130.000.006	1.130.000.008	1.130.000.012	1.130.000.418		
DC (25 Imp/s)			1.130.000.032	1.130.000.033		
AC (10 Imp/s)				1.130.000.051	1.130.000.054	1.130.000.056

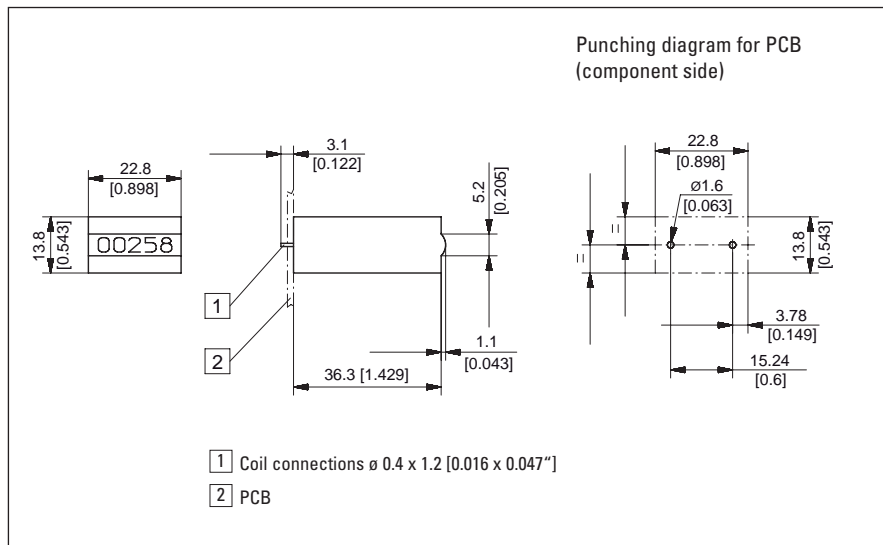
## Type K 06.90 and K 07.90



K 06.90 (6 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.120.900.006	1.120.900.008	1.120.900.012	1.120.900.418		
DC (25 Imp/s)			1.120.900.032	1.120.900.033		
AC (10 Imp/s)				1.120.900.051	1.120.900.054	1.120.900.056

K 07.90 (7 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.	115 V Art.-No.	230 V Art.-No.
DC (10 Imp/s)	1.130.900.006	1.130.900.008	1.130.900.012	1.130.900.418		
DC (25 Imp/s)			1.130.900.032	1.130.900.033		
AC (10 Imp/s)				1.130.900.051	1.130.900.054	1.130.900.056

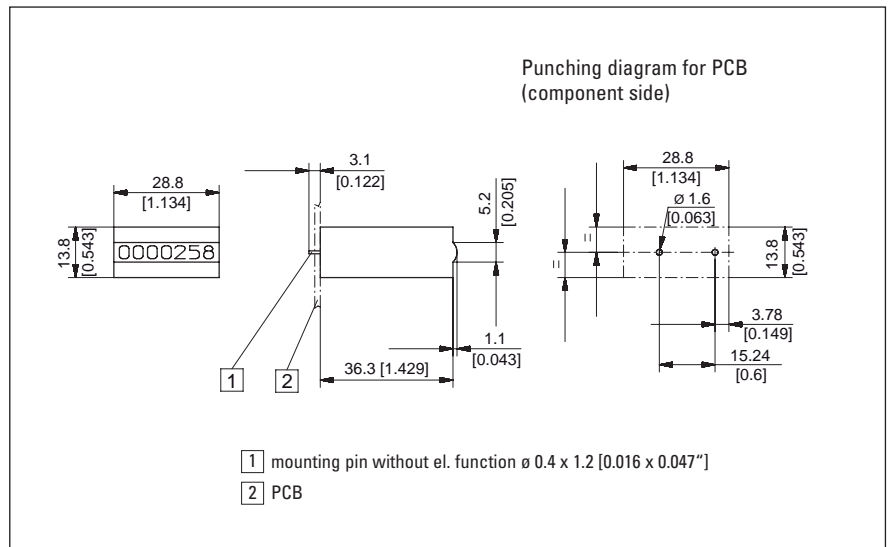
## Type K 04.92 and K 05.92



K 04.92 (4 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.100.920.006	1.100.920.008	1.100.920.012	1.100.920.418
DC (25 Imp/s)			1.100.920.032	1.100.920.033

K 05.92 (5 digit)	3 V Art.-No.	4.5 V Art.-No.	12 V Art.-No.	24 V Art.-No.
DC (10 Imp/s)	1.110.920.006	1.110.920.008	1.110.920.012	1.110.920.418
DC (25 Imp/s)			1.110.920.032	1.110.920.033

## Type K 06.92 and K 07.92



<b>K 06.92</b>	3 V	4.5 V	12 V	24 V	115 V	230 V
(6 digit)	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 Imp/s)	1.120.920.006	1.120.920.008	1.120.920.012			
DC (25 Imp/s)			1.120.920.032	1.120.920.033		
AC (10 Imp/s)				1.120.920.051	1.120.920.054	1.120.920.056

<b>K 07.92</b>	3 V	4.5 V	12 V	24 V	115 V	230 V
(7 digit)	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DC (10 Imp/s)	1.130.920.006	1.130.920.008	1.130.920.012			
DC (25 Imp/s)			1.130.920.032	1.130.920.033		
AC (10 Imp/s)				1.130.920.051	1.130.920.054	1.130.920.056

## KWH 17



- Reliable:**  
 high degree of resistance against external influences such as magnetic fields. Does not need any multiple shielding.
- Simple:**  
 can be soldered directly onto the printed circuit board. To assemble it, just solder it in. Snap-on or screw mounting. Triggered via rectangular- or needle-shaped pulses.

- Compact & economical:**  
 In double tariff meters, two counting mechanisms can be easily placed tight up against each other. 5 x 3 mm large digits as with conventional Ferraris meters. Low power consumption.

## Applications

Assembly module for electronic kWh meters. Each incoming pulse advances the decimal place of the counting mechanism by 1/100 of a revolution.

**Important note:**  
 Not all counting mechanisms are the same. Do not take any expensive risks. Opt straight away for the original and the world's best-selling counter with stepper motor drive system from the market leader Kübler. Profit from our 45 years of experience. Optimum quality means that we can now offer you 5 years guarantee.

Thanks to a special shielding material, the KWH 17 with its patented stepper motor drive is particularly resistant to magnetic fields and is characterized by an extremely low power consumption.

### Technical data:

Drive:	Stepper motor	Stepper motor
Nominal voltage:	5 V DC $\pm 10\%$	10 V DC $\pm 10\%$
Activation:	rectangular- or needle-shaped pulses	rectangular- or needle-shaped pulses
Electrical connection:	Solder pins	Solder pins
Display:	7-digit display, decimal place with additional 1/100 division Counter reading on delivery: 000 0001 $\pm 3$ digits	
Figure drums:	Digits white, background black, decimal place red, Background black	
Coil resistance:	1 kOhm	3.6 kOhm
Power consumption.	25 mW	8 mW
Height of figures:	5 x 3 mm	5 x 3 mm
Ambient temperature:	-20 ... +70 °C	-20 ... +70 °C

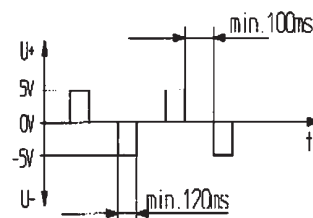
### Options:

Division other than 1/100, other mechanical division Adaptation, alternative supply voltage and other coil resistance values on request

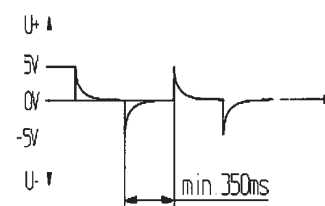
Data sheet and other options in the catalog (order number R.100.156)



### Pulse diagrams:



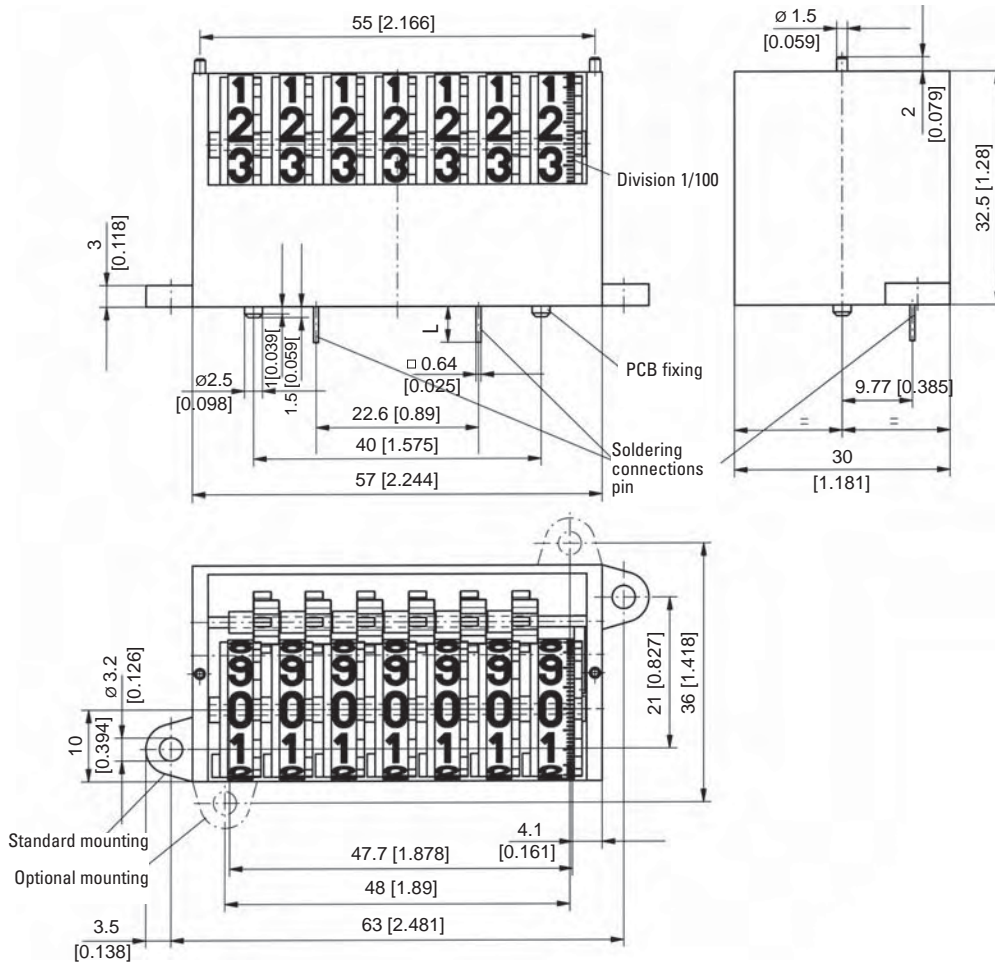
Rectangular shaped pulses



Pulses by capacitor charge or discharge

## KWH 17

### Dimensions:



### Order code:

**1.94X.XXX.XXX.XXX**

#### Electrical connection

- 3 = Pin □ 0.64 x L = 19 mm
- 4 = Pin □ 0.64 x L = 5 mm
- 5 = Pin □ 0.64 x L = 7.5 mm

#### Mounting

- 0 = latch at the side
- 1 = latch on top and bottom

#### Colour of wheels

- 0 = Digit color white on black,
- 1. Decimal place red on black
- 2 = Digit color white on black, for all digits
- 3 = Digit color white on black, 1. Decimal place with symbols white on black
- 4 = Digit color white on black, 1. Decimal place with symbols red on black

#### Options

- 346 = extended temperature range -40 ... +90 °C

#### Nominal voltage

- 090 = 5 V DC
- 091 = 10 V DC

#### Protective housing against magnetic fields

- 0 = without
- 1 = with protective housing

## LCD Counter Module 190



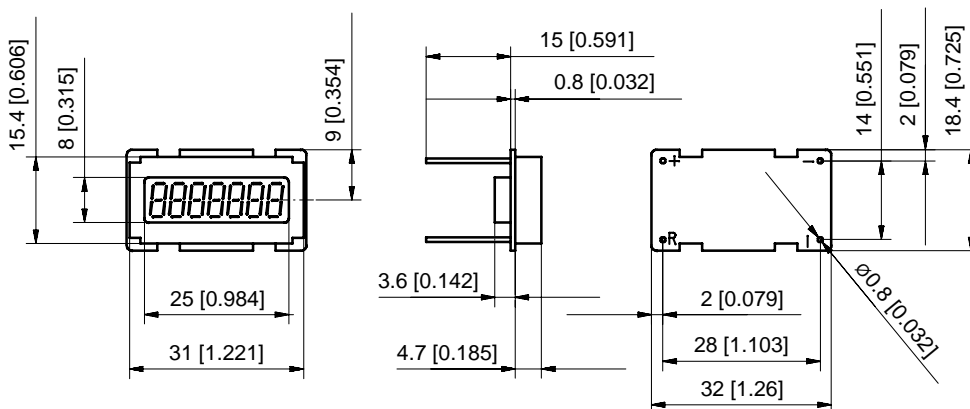
- Counting frequency up to 10 kHz
- 7-digit display, height 6 mm [0.236"]
- Non-volatile memory (no battery, EEPROM)
- High reliability
- Low operating current
- Wide operating voltage and temperature range
- Very high shock and vibration specs
- Low cost and small size

### Technical features for LCD Counter Module Type 190:

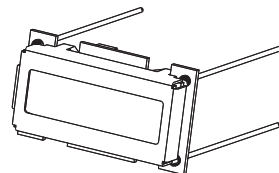
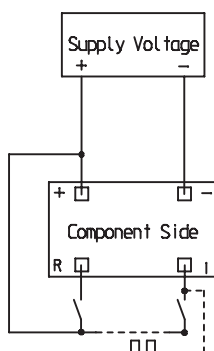
Supply:	1. 4,75 ... 15 V DC 2. 9 ... 60 V DC reverse polarity protection
Current consumption:	1. 8 mA at 4,75 ... 15 V DC 2. 6 mA at 9 ... 60 V DC
Count and reset input:	High 4 ... 60 V DC, Low: 0 ... 0,7 V DC
Max. Count frequency:	10 kHz (edge triggered)
Display:	7-digit display, figure height 6 mm [0.236"]
Data backup:	EEPROM
Colour:	black
Working temperature:	-20 ... +85 °C [-4 °F ... 185 °F]
Operating temperature:	-40 ... +80 °C [-40 °F ... 176 °F]
Storage temperature:	-50 ... +90 °C [-58 °F ... 194 °F]

Interference emission:	EN 61000-6-3, EN 55 011 Class B
Interference resistance:	EN 61000-6-2
Weight:	approx. 8 g [0.282 oz]
Memory capacity:	CMOS EEPROM. non-volatile memory has data retention in excess of 10 years.
Shock resistance acc. to DIN-IEC 68-2-27:	550 m/s <sup>2</sup> , 11 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	50 ... 200 m/s <sup>2</sup> , 10 ... 80 Hz
Needs protection from:	inductive stress peaks high energy noise fields switching, alternator load dump

### Dimensions:



### Connecting diagram:



### Order code:

Availability on request  
 LCD count module type 190:  
 4,75 ... 15 V DC Order-No.: 6.190.012.F00  
 Art-No.: 162 135  
 9 ... 60 V DC Order-No.: 6.190.012.G00  
 Art-No.: 162 136

### Scope of delivery:

- LCD Counter Module Type 190
- Operating instructions



## LCD Counter Module 192

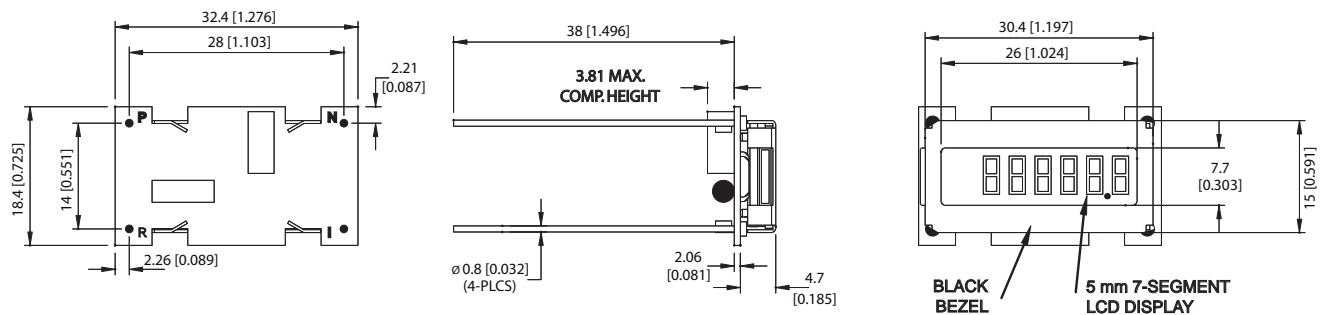


- Non-volatile memory (no battery)
- High reliability
- Low cost and small size
- Low operating current
- Wide operating voltage and temperature range
- Very high shock and vibration specs
- Solid state electronics

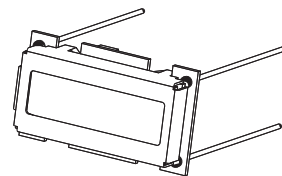
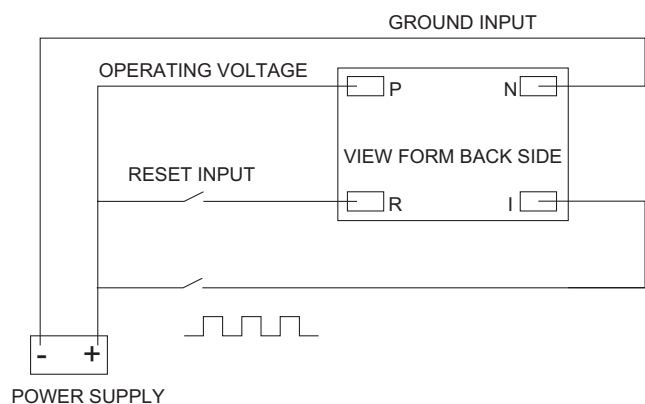
### Technical features for LCD Counter Module Type 192:

Supply:	8 ... 28 V DC	Humidity:	95 % RH +32 C for 2 hours
Current consumption:	3 mA maximum at 8 ... 24 V DC 10 mA at 28 V DC	EMC:	according to EC EMC directive 89/36/EWG
Count and reset input:	8 ... 28 V DC	Interference emission:	EN 61 000-6-3/EN 55 011 Class B
Max. Count frequency:	100 Hz	Interference resistance:	EN 61 000-6-2
Display:	6-digit display, figure height 5 mm [0.197"]	Weight:	approx. 8 g [0.282 oz]
Data backup:	EEPROM	Memory capacity:	CMOS EEPROM. non-volatile memory has data retention in excess of 10 years without power.
Housing:	Dimension 19 x 33 mm [0.748 x 1.299"]	Needs protection from:	inductive stress peaks high energy noise fields switching, alternator load dump
Colour:	black		
Operating temperature:	-40 ... +85 °C [-40 °F ... 185 °F]		

### Dimensions:



### Connecting diagram:



**Order code:**  
LCD Counter Module Type 192:  
Order-No.: 6.192.012.300

**Scope of delivery:**  
– LCD Counter Module Type 192  
– Operating instructions

**Germany**

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