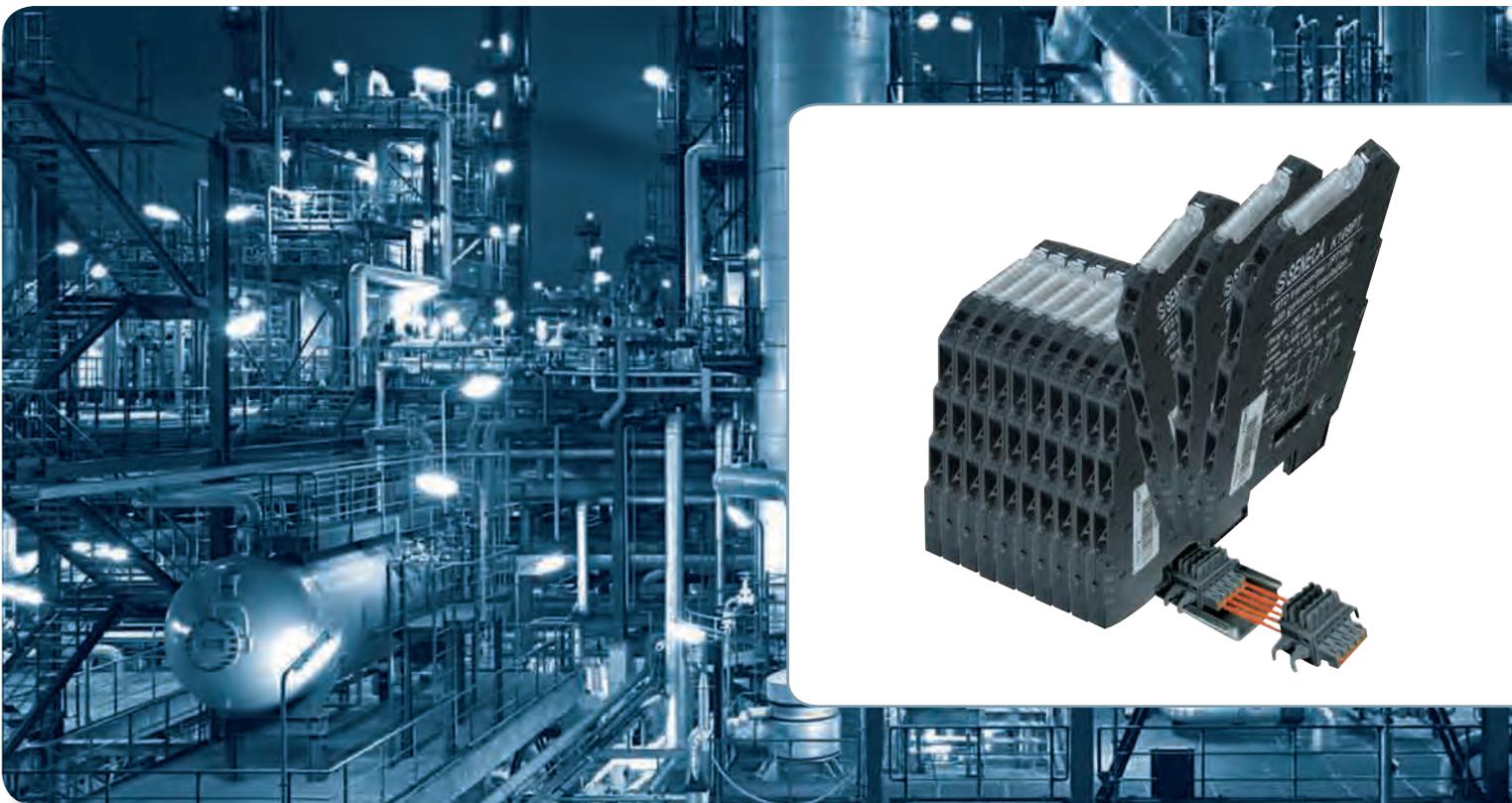


# K LINE

## Compact Signal Converters Isolators



 **SENECA**

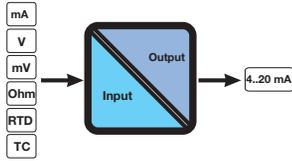
[www.seneca.it](http://www.seneca.it)

# PRODUCT RANGE

## ANALOG / UNIVERSAL

### K121

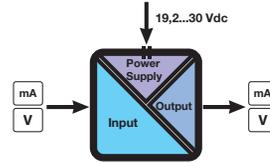
LOOP POWERED UNIVERSAL CONVERTER



Order Code: **K121**

### K109UI

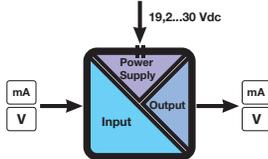
DC CURRENT/VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



Order Code: **K109UI**

### K109S

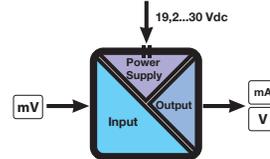
DC CURRENT / VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



Order Code: **K109S**

### K109LV

DC LOW VOLTAGE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER

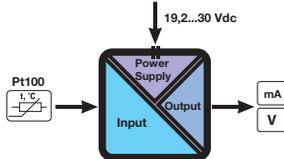


Order Code: **K109LV**

## TEMPERATURE

### K109PT

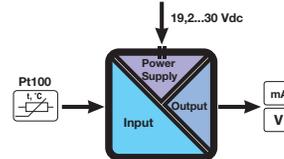
PT100 TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



Order Code: **K109PT**

### K109PT-HPC

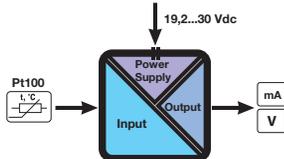
PT100 (HIGH-PRECISION) TO DC CURRENT/VOLTAGE ISOLATOR CONVERTER



Order Code: **K109PT-HPC**

### K109PT1000

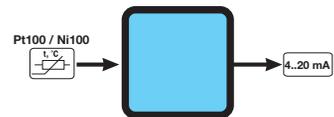
PT1000 TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER



Order Code: **K109PT1000**

### K120RTD

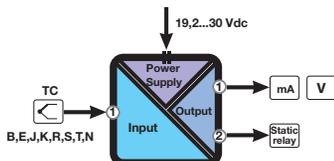
PT100, NI100 LOOP POWERED CONVERTER



Order Code: **K120RTD**

### K109TC

THERMOCOUPLE TO DC CURRENT/VOLTAGE ISOLATOR/CONVERTER (WITH TRIP ALARM)

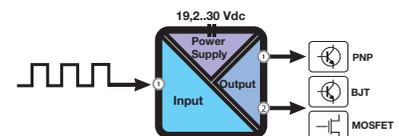


Order Code: **K109TC**

## DIGITAL

### K111

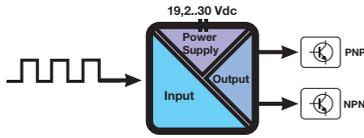
ISOLATED DUAL OUTPUT FREQUENCY TRIP AMPLIFIER



Order Code: **K111**

## K112

UNIVERSAL DIGITAL COUPLER/ISOLATOR

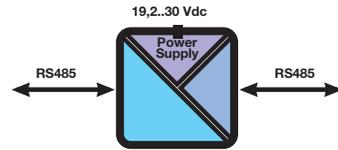


Order Code: **K112**

## SERIAL

### K107A

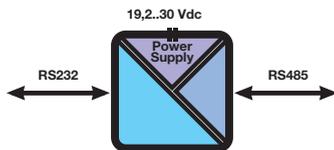
RS485 ↔ RS485 SERIAL ISOLATOR/AMPLIFIER



Order Code: **K107A**

### K107B

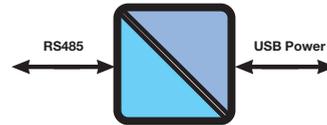
RS232 ↔ RS485 SERIAL CONVERTER



Order Code: **K107B**

### K107USB

USB ↔ RS485 SERIAL CONVERTER



Order Code: **K107USB**

## ACCESSORIES

### K-BUS

EXPANDABLE POWER SUPPLY CONNECTOR (EN 60175)



Order Code: **K-BUS**

### K-SUPPLY

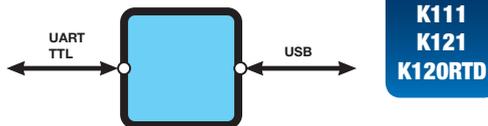
REDUNDANT POWER SUPPLY MODULE WITH OVERVOLTAGES PROTECTION



Order Code: **K-SUPPLY**

### EASY-USB

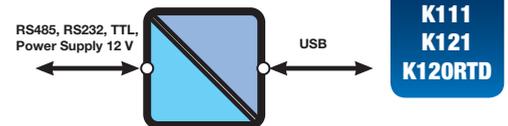
USB ↔ TTL CONVERTER



Order Code: **EASY-USB**

### S117P-1

USB ↔ RS485/RS232/TTL SERIAL ISOLATOR/CONVERTER (DESK)



Order Code: **S117P-1**

## PROGRAMMING SOFTWARE

### EASY SETUP - EASY LP

PLUG&PLAY PROGRAMMING SOFTWARE



K111  
K121  
K120RTD

Software available for Free  
Download from [www.seneca.it](http://www.seneca.it)

## SIMILAR PRODUCTS

### T120



### T121



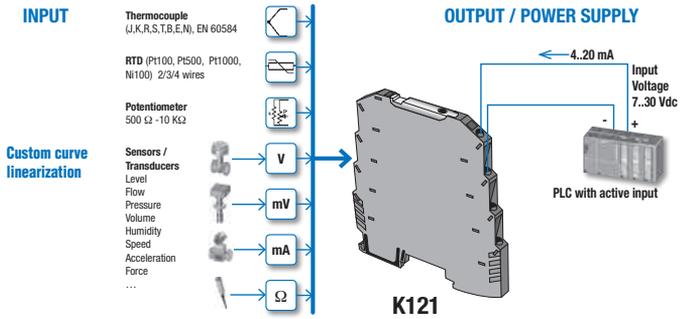
### S107USB



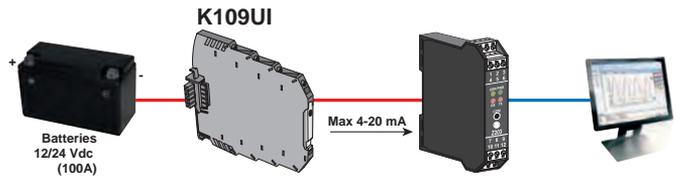
Code	Description
T120	Loop powered (5..30) transmitter for Pt100 and Ni100 probes (in head mounting)
T121	Isolated loop powered (7..30) temperature transmitter (in head mounting)
S107USB	USB ↔ RS485 serial converter (desk version), drivers and cable included

# APPLICATION EXAMPLES

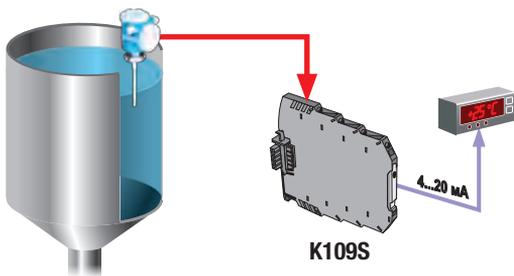
## UNIVERSAL ANALOG SIGNAL CONVERSION FOR PLC



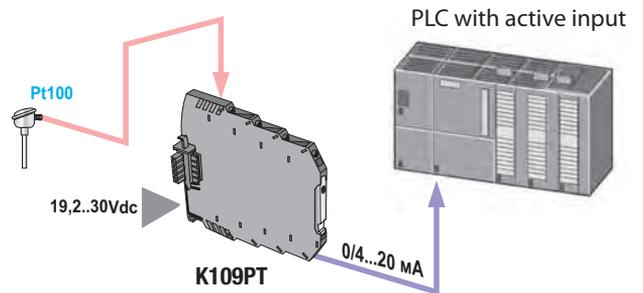
## BATTERY VOLTAGE MONITORING



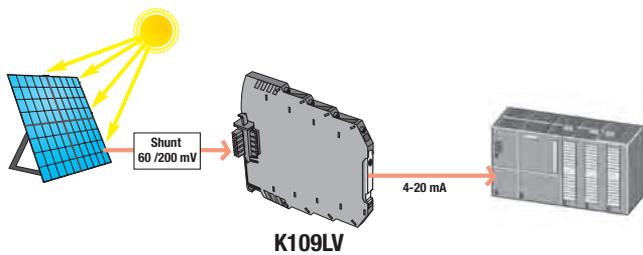
## ANALOG SIGNAL ISOLATION, RETRANSMISSION, VISUALIZATION FROM 2 WIRE SENSOR



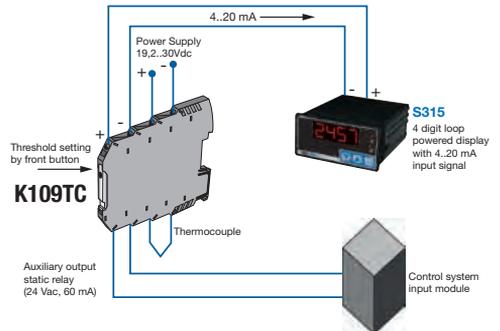
## PT100 TEMPERATURE TO ANALOG SIGNAL CONVERSION



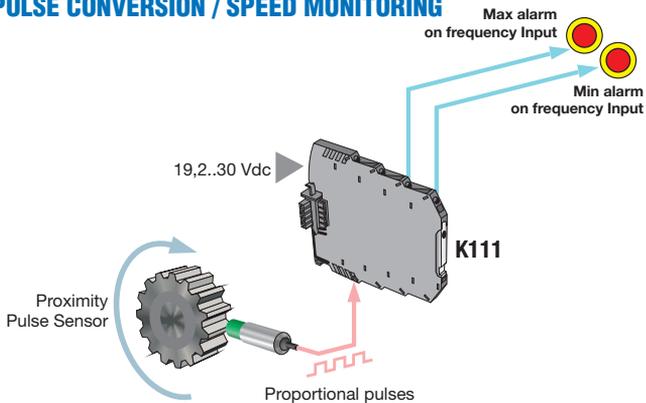
## STRING CURRENT MEASUREMENT AND TRANSMISSION IN PHOTOVOLTAIC PLANT



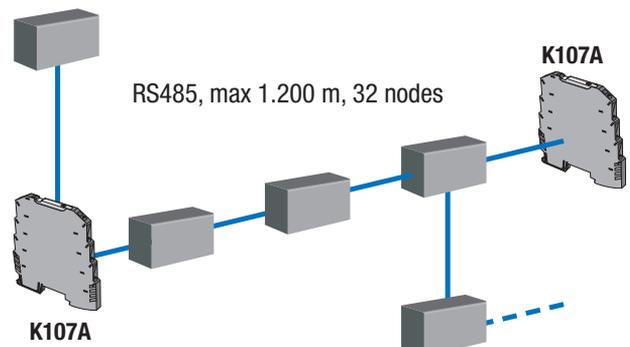
## THERMOCOUPLE CONVERSION / DISPLAYING THROUGH S315 ALARM MANAGEMENT



## PULSE CONVERSION / SPEED MONITORING

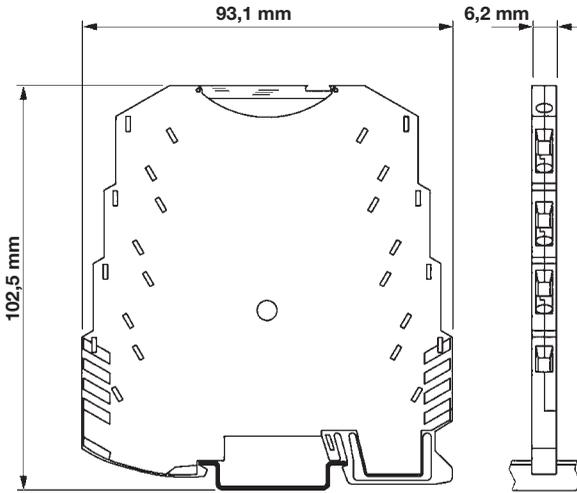


## SERIAL RE-TRANSMISSION



# K LINE

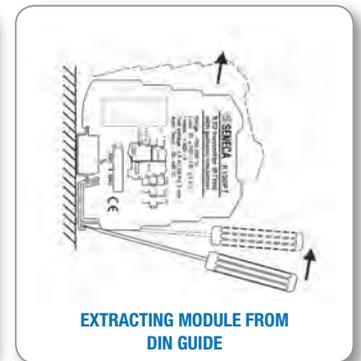
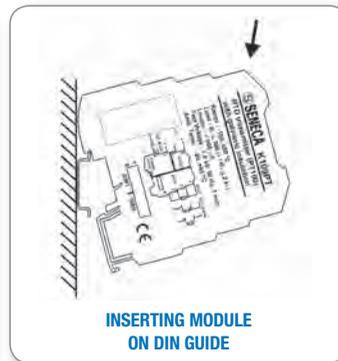
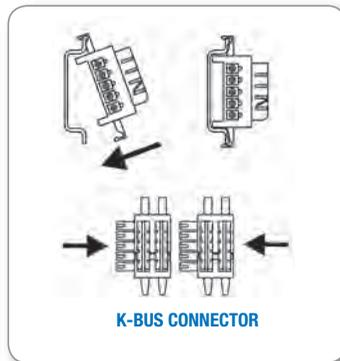
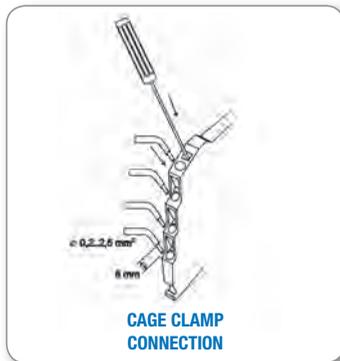
## Compact Signal Converters Isolators



<b>Power supply range*</b>	19,2... 30 Vdc
<b>Bridge supply</b>	Bus connectors (K-BUS) can be snapped into 35 mm DIN rail according to EN 60175
<b>Wire section</b>	0,2..2,5 mm <sup>2</sup>
<b>Wire stripping</b>	8 mm
<b>Power on side terminals</b>	yes
<b>Hot swapping</b>	yes
<b>Max current consumption*</b>	21..25 mA (24 Vdc)
<b>Consumption without load @ 25°C</b>	7,5 mA
<b>Max power consumption</b>	500 mW
<b>A/D conversion</b>	16 bit
<b>Rejection</b>	50 o 60 Hz (programmable)
<b>Settings</b>	DIP switch, software
<b>Filter</b>	Insertable
<b>Dimension</b>	93,1 x 6,2 x 102,5 mm
<b>Isolation</b>	1,5 KV (50 Hz, 1 min)
<b>Isolation technique</b>	Digital (optocoupler)
<b>Processing</b>	Floating point 32 bit
<b>Colour</b>	Black
<b>Case material</b>	PBT
<b>Weight</b>	45 g
<b>Operating temperature</b>	-20...+65 °C
<b>Storage temperature</b>	-40...+85 °C
<b>Humidity</b>	10..90 % non condensing
<b>Connection</b>	Clamp terminals and/or BUS
<b>Protection degree</b>	IP 20
<b>Conformity</b>	CE, UL-UR CSAEN 50081-2, EN 50082-2, EN 61010-1, EN 60742, EN 61000-6-4, EN 61000-6-2

\* except loop powered versions

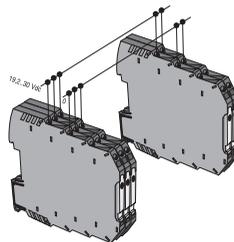
### CONNECTION AND INSTALLATION



### POWER SUPPLY TECHNIQUE

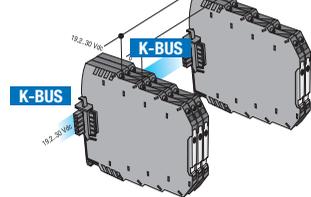
**SUPPLY SYSTEM.** Except from loop powered instruments which aren't bus powered, K Line signal conditioners can be powered in 3 different ways: by the springcage terminal block (24 Vdc direct from power supply) or by SMART SUPPLY system. SMART SUPPLY system is based on expandable K-BUS connector. Up to 16 devices, the distribution of power supply is possible connecting a single device at voltage source, as whole consumption doesn't exceed 400 mA. Over 16 and up to 75 devices, with maximum current consumption of 1,6 A (approx 21 mA per module), it's necessary K-SUPPLY module that gets overvoltages protections on-board.

#### POWER SUPPLY ON SPRING-CAGE TERMINAL



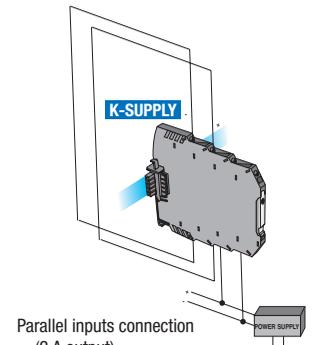
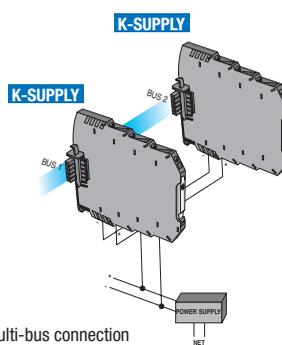
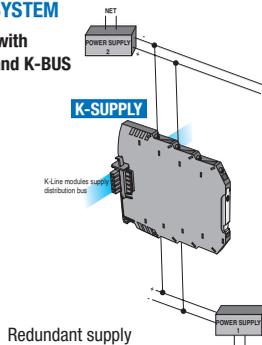
#### SMART SUPPLY SYSTEM

Distributed supply with 2 slot connector K-BUS (up to 16 modules)



#### SMART SUPPLY SYSTEM

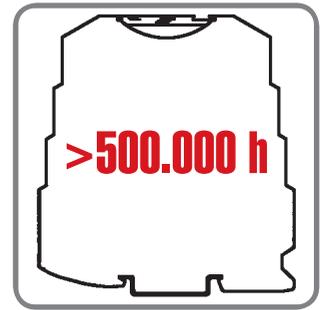
Distributed supply with K-SUPPLY module and K-BUS (up to 75 modules)



# 10 good reasons to choose KLINE



**PC PROGRAMMING**



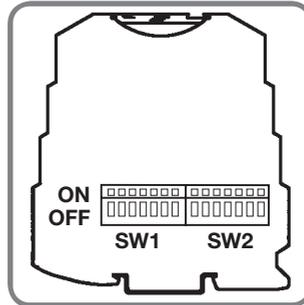
**HIGH LEVEL RELIABILITY**



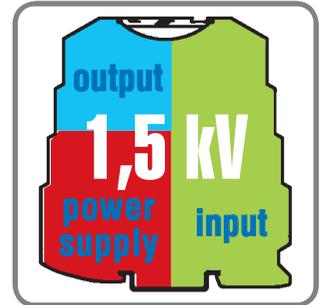
**COMPACT SIZE**



**BEST ACCURACY**



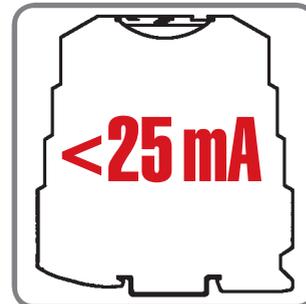
**FLEXIBLE CONFIGURATION VIA DIP-SWITCHES**



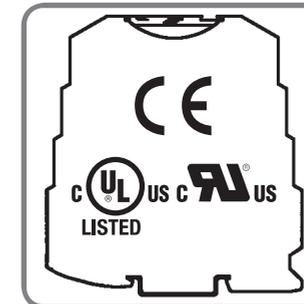
**ISOLATION 3-WAY**



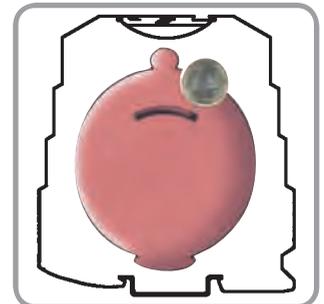
**WIDE OPERATING TEMPERATURE RANGE**



**LOW POWER CONSUMPTION**



**INTERNATIONAL STANDARDS**



**COST EFFECTIVE**

## CONVERTER SELECTOR

PRODUCT CODE	MEASUREMENT	CONVERSION TYPE			SIGNALS / INTERFACES		OTHER FEATURES			
		IN	OUT		NR INPUT	NR OUTPUT	POWER SUPPLY	MAX GALVANIC ISOLATION	CASE (DIMENSION)	ACCURACY CLASS
K109UI	Analog	mA, V	mA, V		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K109S	Analog	mA, V, senso power supply	mA, V		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K109LV	Analog	mV	mA, V		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K111	Digital / Pulse	Namur, PNP, NPN, Reed, Photocell	PNP		1	2	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K112	Digital / Pulse	Namur, PNP, NPN, Reed, Photocell	PNP, NPN		1	2	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K107A	Serial	RS485	RS485		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K107B	Serial	RS232	RS485		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K107USB	Serial	USB	RS485		1	1	external / by loop	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	
K109PT	Temperature	Pt100	mA, V		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K109PT-HPC	Temperature	Pt100	mA, V		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	< 0.1%
K109PT1000	Temperature	Pt1000	mA, V		1	1	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K120RTD	Temperature	Pt100, Ni100	mA		1	1	external / by loop		K (6,2 x 93,1 x 102,5 mm)	0.1%
K109TC	Temperature	TC (J,K,R,S,T,B,E,N)	mA, V, relay		1	2	19,2...30 Vdc	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%
K121	Universal	mA, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000	mA		1	1	external / by loop	1,5 kVac	K (6,2 x 93,1 x 102,5 mm)	0.1%



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