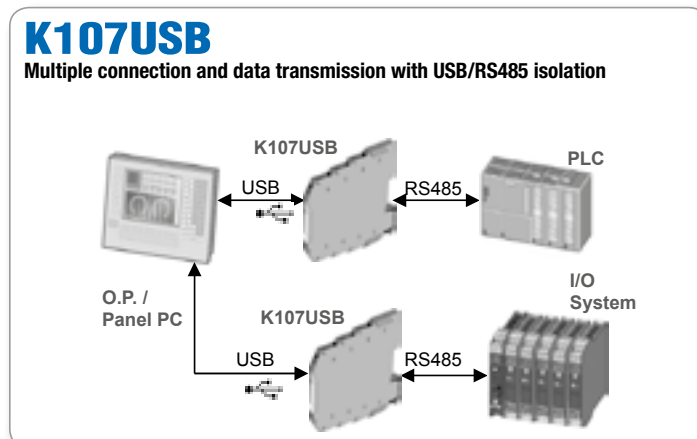
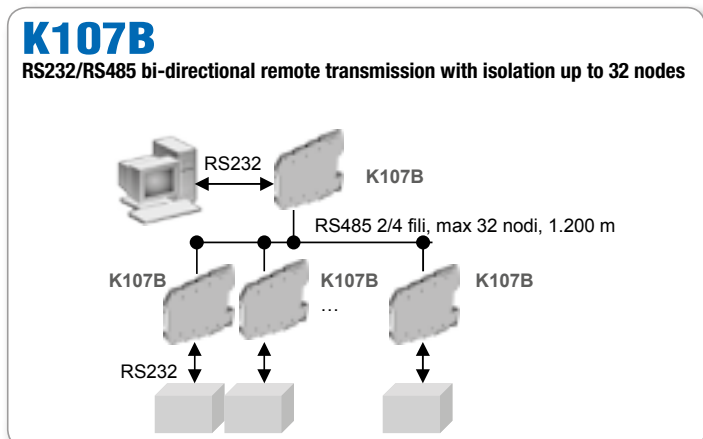
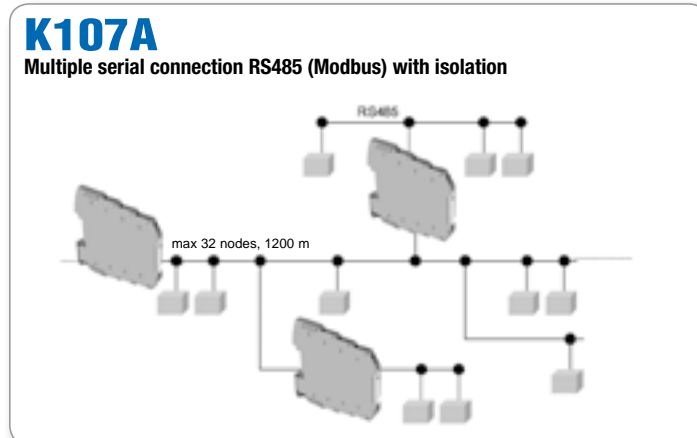
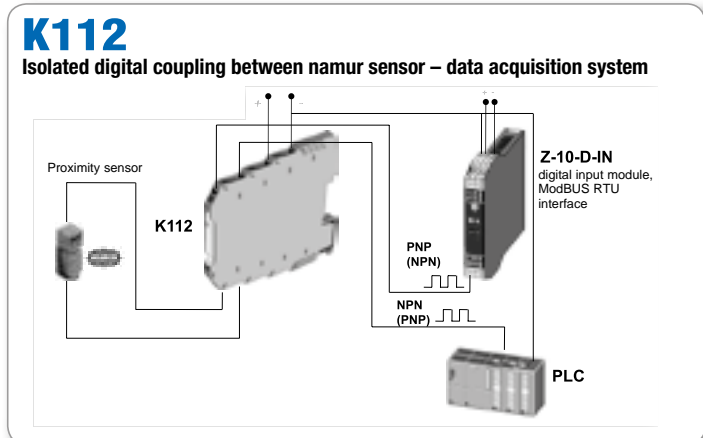
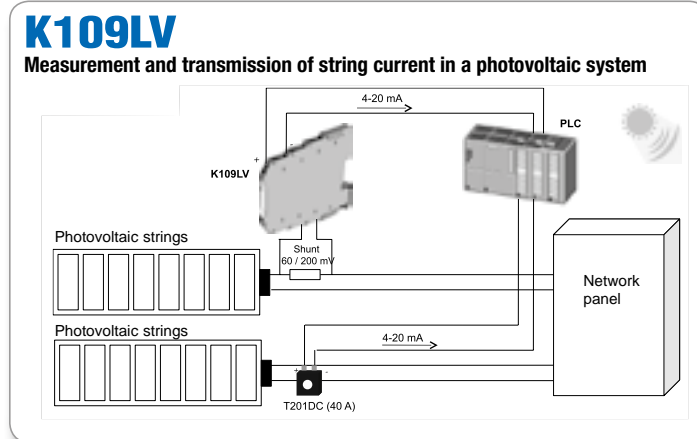
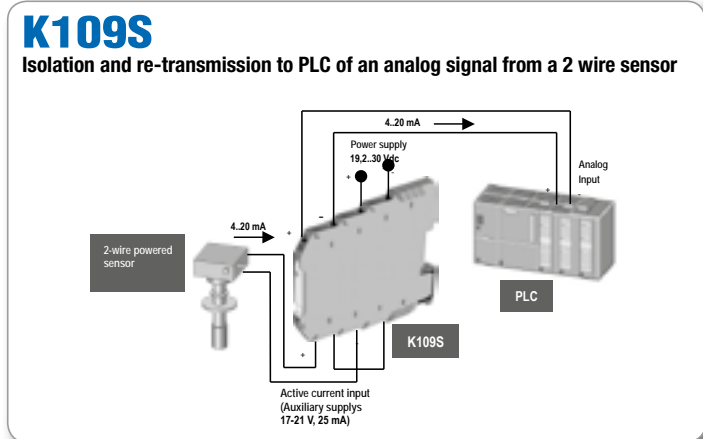
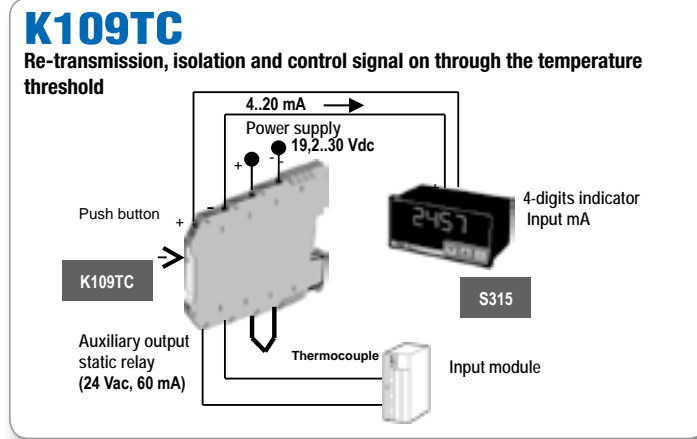
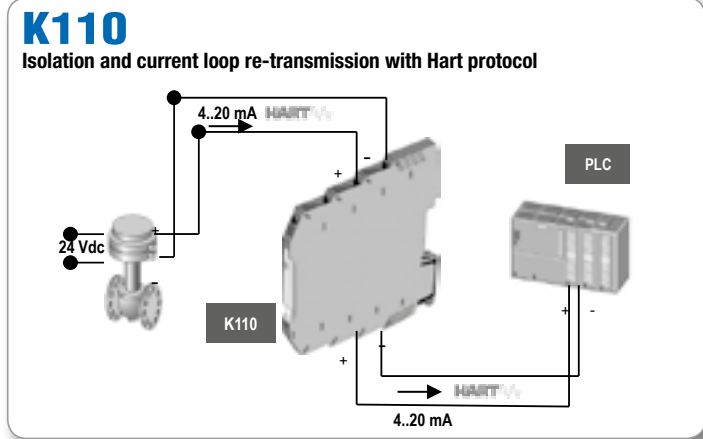
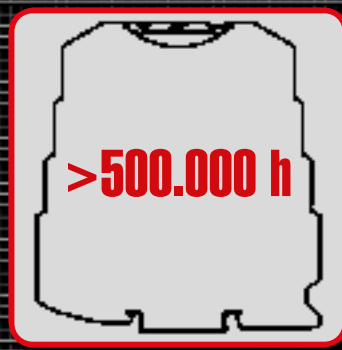


APPLICATION EXAMPLES



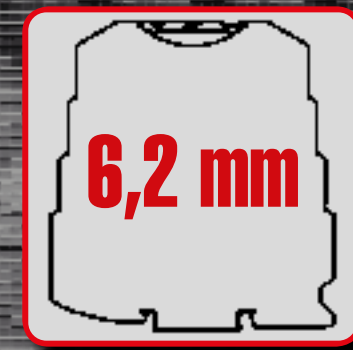
10 good reasons to choose K LINE



HIGH LEVEL RELIABILITY



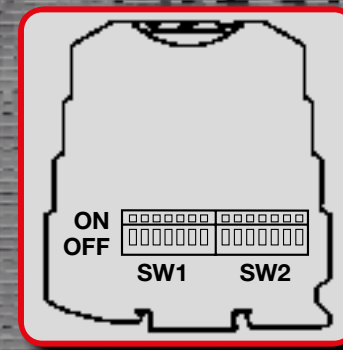
PC PROGRAMMING



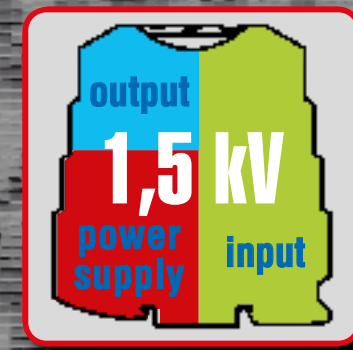
COMPACT SIZE



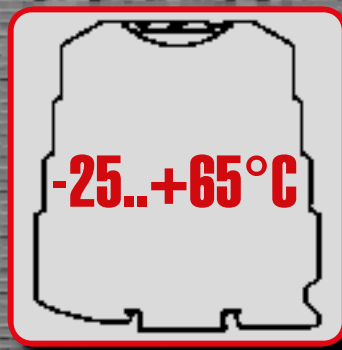
BEST ACCURACY



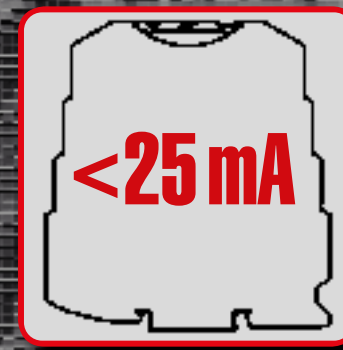
FLEXIBLE CONFIGURATION VIA DIP-SWITCHES



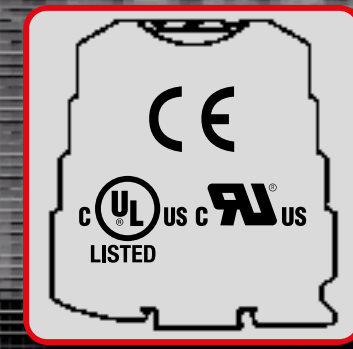
ISOLATION 3-WAY



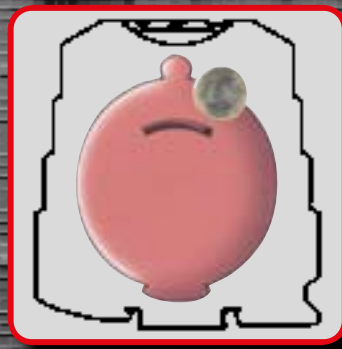
WIDE OPERATING TEMPERATURE



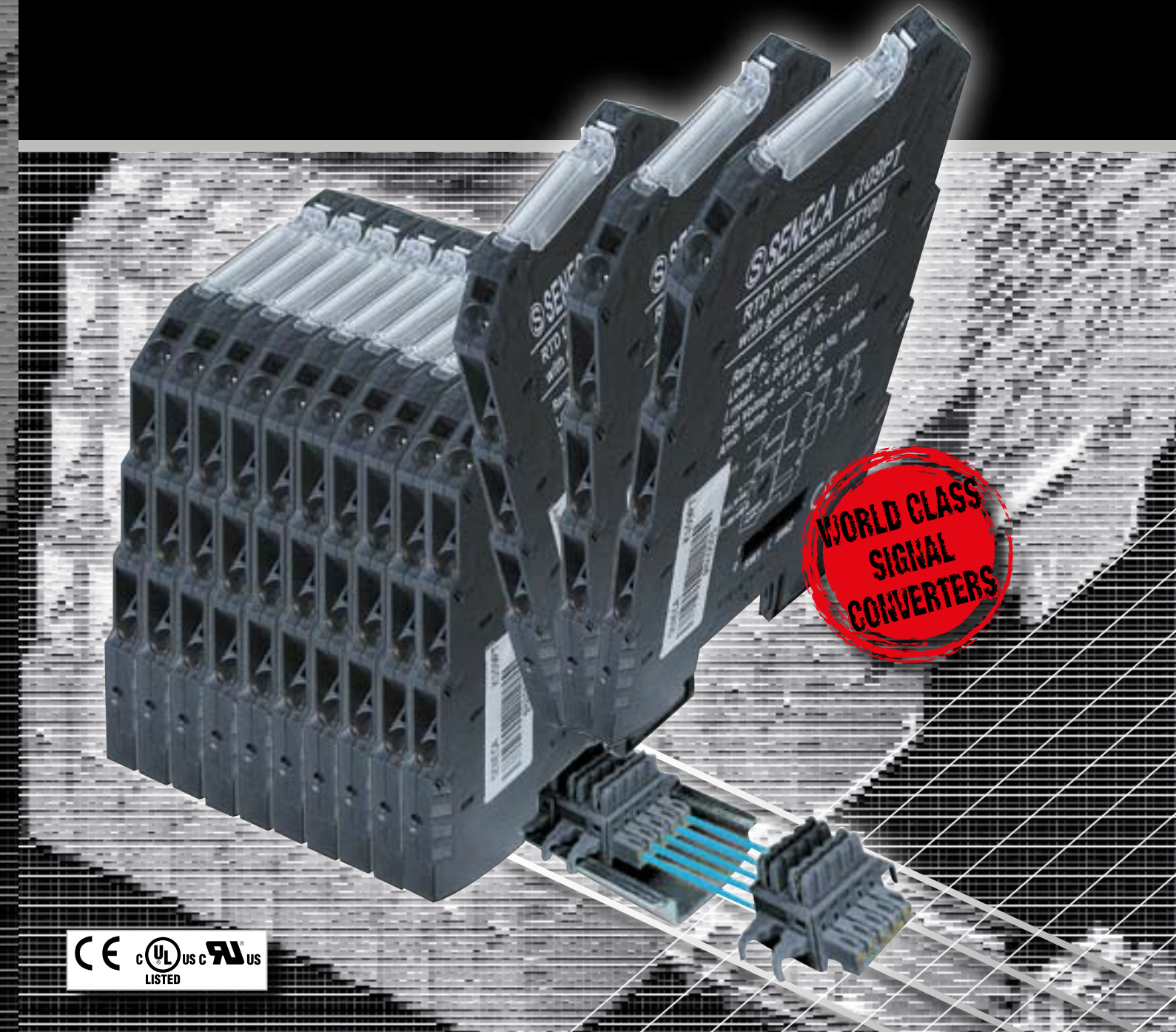
LOW POWER CONSUMPTION



INTERNATIONAL STANDARDS



COST EFFECTIVE



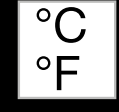
WORLD CLASS SIGNAL CONVERTERS



Galvanic Isolation



Digital / Frequency Conversion



Temperature conversion (TC, RTD)



Serial conversion (RS232, RS485, USB)



Analog conversion (mA, V, mV)

UNIVERSAL

K121 **EASY LP**

Loop powered isolator / universal converter (mA, V, RTD, TC)

LOOP POWERED

Power supply range: 5..30 Vdc
Isolation: 1.5 kVdc

Input: Nr 1 channel, current (4..20, 20..4 mA), voltage (± 30 V), Pt100 (-200..+650°C), Ni100 (-60..+250°C), Pt500 (-200..+650°C), Pt1000 (-200..+200°C) TC (J, K, R, S, T, B, E, N)

Output: Nr 1 channel 4..20 / 20..4 mA
Accuracy: 0,1%

T121
Isolated loop powered temperature transmitter

TEMPERATURE

K109PT

Pt100 to DC current / voltage isolator converter

Power supply: 19,2..30 Vdc
Input: Nr 1 channel, Pt100, -150..+650 °C, min span 50°C

Output: Nr 1 channel, voltage (0..10 / 10..0 / 0..5 / 1.5 V) / current (4..20 / 20..4 / 0..20 / 20..0 mA)

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

K109PT-HPC

Pt100 to DC current / voltage isolator converter (high precision)

Power supply: 19,2..30 Vdc
Input: Nr 1 channel, Pt100, -200..+160 °C, min span 50°C

Output: Nr 1 channel, voltage (0..10 / 10..0 / 0..5 / 1.5 V) / current (4..20 / 20..4 / 0..20 / 20..0 mA)

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

ANALOG

K109UI

DC current / voltage to current / voltage isolator converter

Power supply: 19,2..30 Vdc
Input: corrente Nr 1 channel, current (0/4..20 mA) / voltage (0/1..5, 0/2..10, 0..15/30 Vdc)

Output: Nr 1 channel, current (0/4..20, 20..4/0 mA) / voltage (0..5/10, 10..0, 1..5 Vdc)

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

Special function: scale inversion, square root extraction, tank linearization

K109S

DC current / voltage to current / voltage isolator converter (2 wire power transducer)

Power supply: 19,2..30 Vdc
Input: Nr 1 channel, current (0/4..20 mA powered by loop) / voltage (0..10 / 10..0 / 0..5 / 1..5 V)

Output: Nr 1 channel, current (0/4..20, 20..4/0 mA) or voltage (0..5/10, 10..0, 1..5 Vdc)

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

Auxiliary supply: 17..20 V

Special function: scale inversion, square root extraction, tank linearization

ACTIVE INPUT

K109LV

DC low voltage to current / voltage isolator converter

Power supply: 19,2..30 Vdc
Input: Nr 1 channel, pre-settled scales from ± 25 mV to ± 2000 mV

Output: Nr 1 channel, current (0/4..20, 20..4/0 mA) / voltage (0..5/10, 10..0, 1..5 Vdc)

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

BATTERY AND STRING CURRENT MONITORING

TEMPERATURE

K120RTD **EASY LP**

Pt100, Ni100 to DC current converter (loop powered)

LOOP POWERED

Power supply range: 5..30 Vdc (by loop)

Input: Pt100 (EN 60751/A2 - ITS90), -200..+650°C, Ni100 (-60..+250 °C min span 20°C)

Output: Nr 1 channel, current (4..20, 20..4 mA)

Accuracy class: 0,1% o 0,1°C

T120
2 wire loop powered transmitter for Pt100 and Ni100 probes

K109PT1000

Pt1000 to DC current / voltage isolator converter

Power supply: 19,2..30 Vdc
Input: Pt1000 (EN 60751/A2 - ITS90), -200..+210 °C, min span 30°C

Output: current (0/4..20, 20..4/0 mA) / voltage (0..5/10, 10..0, 1..5 Vdc)

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

K109TC

TC to DC current / voltage isolator converter with settable threshold

Power supply: 19,2..30 Vdc
Input: Nr1 thermocouple type B, E, J, K, R, S, T (ITS-90), min span 100 °C

Output: Nr 1 channel, current (0/4..20, 20..4/0 mA) / voltage (0..5/10, 10..0, 1..5 Vdc)

Auxiliary output: static relay for settable alarm trip

Isolation: 1,5 kVdc (3-way)
Accuracy: 0,1%

SETTABLE THRESHOLD

ANALOG

K110

Loop powered current isolator, Hart compliance

Power supply range: 24 V
Input: Nr 1 channel, current (0..20, 4..20 mA)

Output: Nr 1 channel, current (0..20, 4..20 mA)

Accuracy: 0,1%
Isolation: 1,5 kVdc

Compliance: Hart, Brain

HART-BRAIN PROTOCOLS COMPLIANCE

DIGITAL / FREQUENCY

K111

Dual output frequency trip amplifier for on/off sensors

Power supply: 19,2..30 Vdc
Input: Nr 1 channel, IEC1131, Namur, 2/3 fili PNP/NPN, reed, photocell

Input frequency: Max 20 kHz, min 1 pulse each 116'

Output: Nr 2 channels threshold, PNP, max current 200 mA

Isolation: 1,5 kVdc

EASY K111

K112

Universal digital coupler / isolator

Power supply: 19,2..30 V
Input: Contact (IEC 1131.1 type 1), Namur (DIN 19234, EN 60947), NPN or PNP (12 o 22 V) 2/3 wire, reed, photocell, max frequency 400 Hz

Sensor supply: 8 \pm 0,6 V, 12 \pm 1 V, 22 \pm 2 V

Output: Nr 2 simultaneous channels, PNP / NPN, max current 200 mA, max voltage 30 V (continuous), 50 V (pulse)

Isolation: 1,5 kVdc 2-way

SERIAL

K107A

RS485 \leftrightarrow RS485 serial isolator amplifier

Serial port #1: RS485 Half Duplex
Serial port #2: RS485 Half Duplex

Isolation: 1,5 kVdc (3-way)
Handshake: Automatic
Baud rate: 1.200..115.200 bps

K107B

RS232 \leftrightarrow RS485 serial isolator converter

Serial port #1: RS232B
Serial port #2: RS485 Half Duplex

Isolation: 1,5 kVdc (3-way)
Handshake: automatic
Baud rate: 1.200..115.200 bps

K107USB

RS485 \leftrightarrow USB serial isolator converter

Power supply: By USB port
Serial port #1: USB standard 1.0 e 2.0, USB A and MINI USB B connectors

Serial port #2: RS485 Half Duplex

Compliance: USB standard 1.1 e 2.0
Isolation: 1,5 kVdc (USB/RS485)
Handshake: automatic

CD Driver

S107USB
Portable version

ACCESSORIES & SOFTWARE

K-SUPPLY

Redundant power supply module with overvoltages protection

Power supply: 19,2..30 Vdc
Max drop voltage: 300 mV

Input: Nr 2 independent channels, max current per terminal 4 A

Differential mode filter

S117P-1

K121, K120RTD, K111, T120, T121 configuration toolkit including S117P-1 (RS485, RS232, TTL / USB converter with power transducer), PM002411 (S117P connection cable), Easy LP, Easy K111 (programming software)

EASY LP

K120RTD, K121, T120, T121 programming software

EASY LP

EASY K111

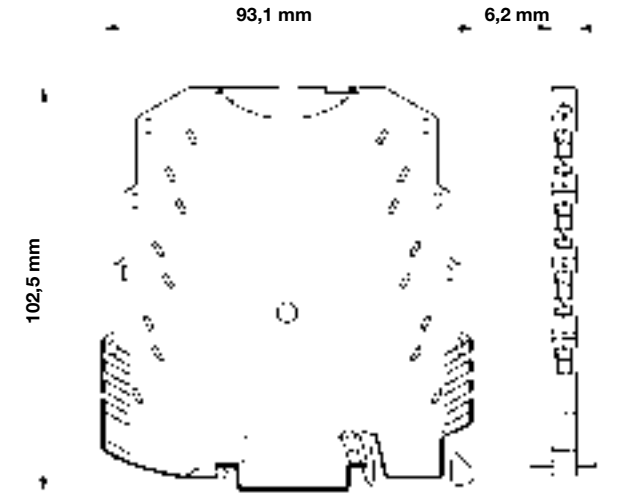
K111 configuration software

EASY K111

K-BUS

Expandable power supply connector (EN 60175)

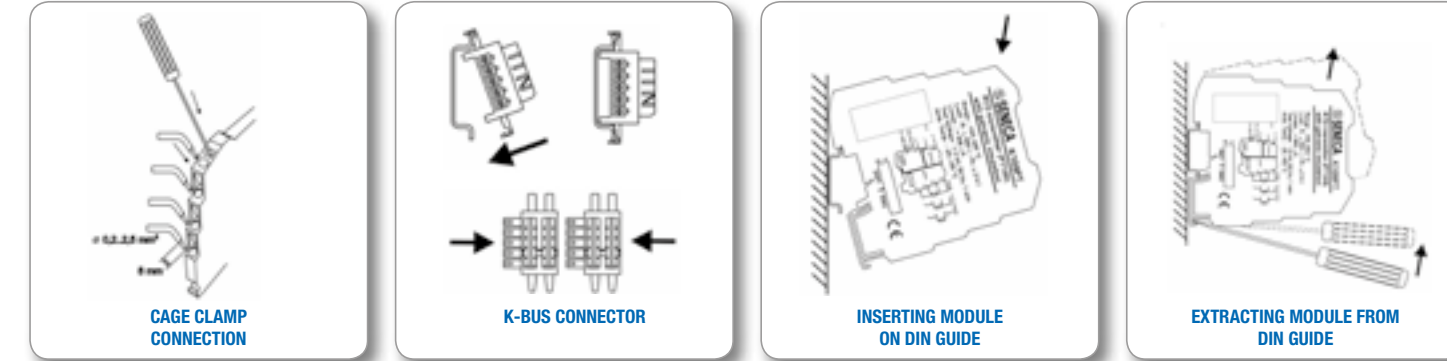
K LINE Compact Signal Conditioners & Isolators



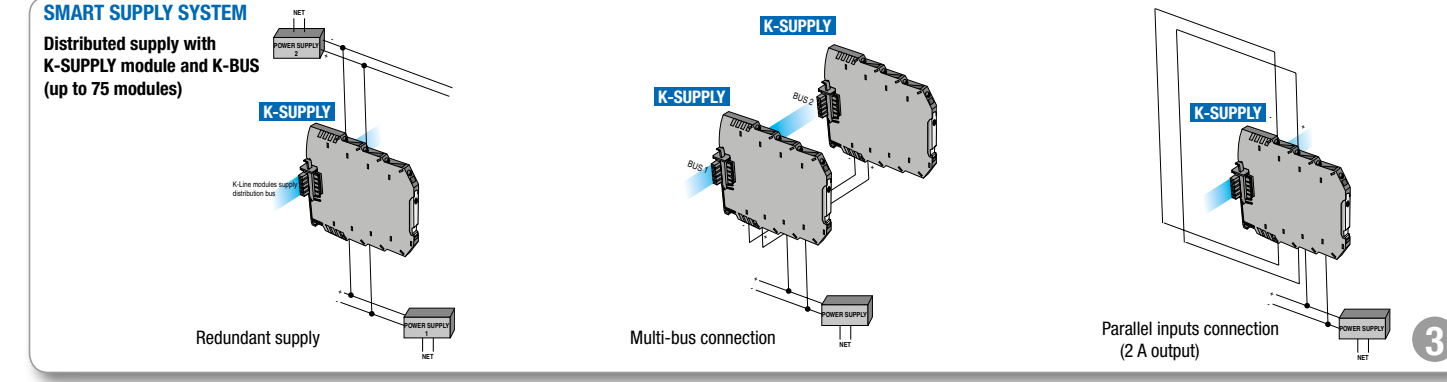
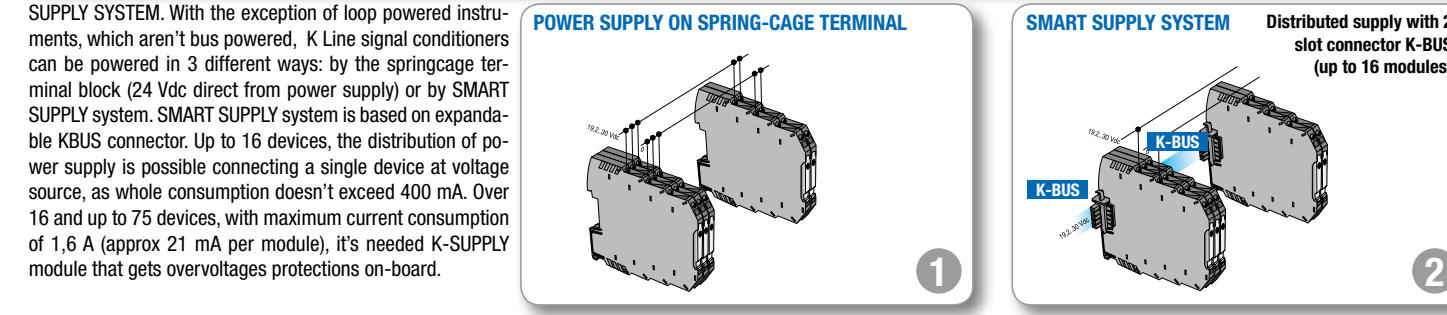
Power supply range*	19,2..30 Vdc
Bridge supply	Bus connectors (K-BUS) can be snapped into 35 mm DIN rail according to EN 60175
Wire section	0,2..2,5 mm ²
Wire stripping	8 mm
Power on side terminals	yes
Hot swapping	yes
Max current consumption*	21..25 mA (24 Vdc)
Consumption without load @ 25°C	7,5 mA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



TECHNICAL SPECIFICATIONS

K-Bus – Connector for K-line modules



ORDER CODES

K-BUS

Expandable power supply connector – min 10 pieces

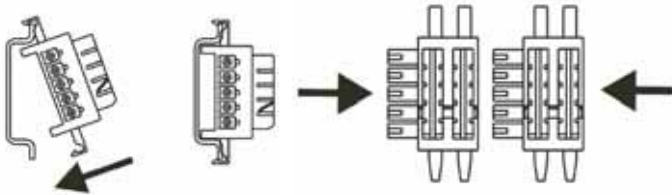
Description

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 needed K-Supply module that gets overvoltages protections on-board.

DIMENSIONS AND INSTALLATION

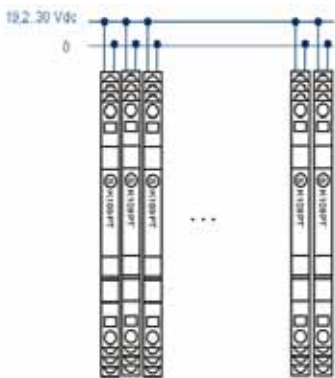
Each expandable connector K-Bus allows inserting two modules. K-Bus are inserted on guide setting them to the top and round them at the bottom.

Expandable connector K-BUS

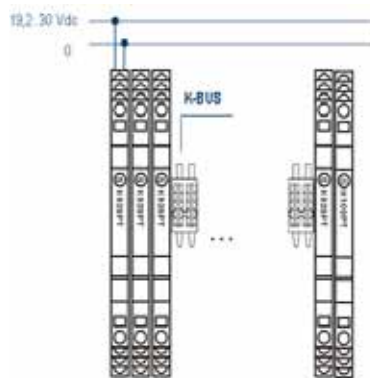


APPLICATION WITH K-SUPPLY AND K-BUS

Power supply on spring-cage terminals



Power supply on spring-cage terminals using K-Bus connector (up to 16 modules)



Power supply on spring-cage terminals using K-Supply and K-Bus connector (up to 75 modules)

