

Input: V, mA, RTD, Potentiometer, Thermocouple
Output: 4-20 mA

- Only 6.2 mm Wide
- Universal Input to 4-20 mA Output
- 4-20 mA Loop Powered
- PC Configuration
- Full 2-Way Isolation

Applications

- Convert Common Signals to a PLC Input for Control and/or Validation
- Interface Sensors with Panel Meters, PLCs, Recorders, Data Acq., DCS, & SCADA Systems

Description

The K121 is a universal converter able to manage all analog signals (mA, mV, V, Pt100, Pt1000, Pt500, Ni100, T/Cs, Ohm) and convert/isolate it to a 4-20mA loop-powered signal.

Input and output are completely configurable via the free PC program. The output mode (normal/inverted), scale over-range, output fault, sensor fault action are selectable. 2-way galvanic input-output isolation ensures the integrity of your signals.

The compact 0.25" wide size saves considerable panel space.

Specifications

Input

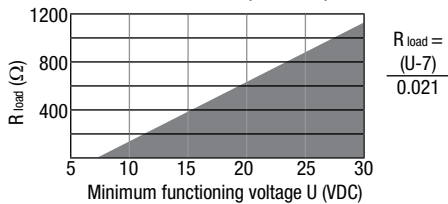
Voltage: -150 mV to +150 mV, Input imp.: 10 MΩ
 -30 V to +30V, Input imp.: 200 KΩ
Current: -24 mA to 24 mA, Input imp.: 40 Ω
RTD: Pt100, Pt500, Pt1000, Ni100
 2, 3, 4 or wire
 Excitation current: 375 μA
 Maximum cable resistance: 25 Ω
 Cable resistance influence: 0.003 Ω/Ω

Thermocouple: Type J, K, T, E, R, S, B, N
 10 MΩ input impedance
 CJC: -40 to 65°C, ±1.5°C, settable
 Settable upscale/downscale burnout

Potentiometer: 500 Ω to 10 KΩ
Resistance: 1750 Ω

2, 3, 4 or wire
 10 MΩ input impedance

Custom: User-defined input curve using Easy Setup software. Insert data points or upload from file.



Output

4-20 mA, sinking (passive) output powered by 7-30 VDC loop
 1 kΩ @ 28 VDC, 21 mA
 Over-range output: + 2.5% of end scale, -2.5% of start scale
 Fault output: + 5% of end scale, -5% of start scale
 Current output protection: ~30 mA

Accuracy

±0.1% of span
 Thermal drift: <100 ppm/K, 30 ppm typical
 Output resolution error 2 μA (>13 bit)

Response Time

140 ms typ. for voltage and current, <620 ms for other inputs

Sensor Test Current

<50 nA

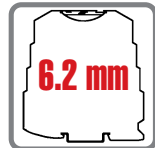
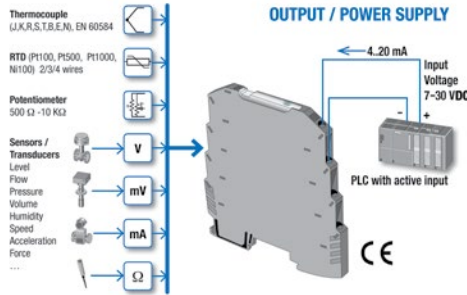
Configuration

EASY Setup LP PC software

Isolation

Two-way galvanic isolation: input, output
 1500 V_{RMS} 1 minute isolation

Quick Link
api-usa.com/k-line



Narrow 0.25" Width



Best Accuracy



Long MTBF



Easy PC Setup

Ambient Conditions

-20°C to +65°C operating
 -20°C to +85°C storage
 30 to 90% RH at 40°C non-condensing

Connections

24 to 14 AWG wire size stripped 5/16"
 Spring clamp terminals

Housing

IP 20, requires installation in panel or enclosure
 Mount vertically to a standard 35 mm DIN rail
 1.7 ounces (50 grams)

Power

7 to 30 VDC via output loop
 <660 mW

Dimensions

2.5" H x 0.25" W x 4" D (93.1 x 6.2 x 102.5 mm)

CE Standards

EN61000-6-4/2002 (Electromagnetic emission, industrial environment)

EN61000-6-2/2006 (Electromagnetic immunity, industrial environment)

EN61010-1/2001 (safety). All circuits must be isolated from the other circuits under dangerous voltage with double isolation. The power supply transformer must comply with EN60742 "Isolated transformers and safety transformers".

ATEX Standards

ATEX 2014/34/UE according to European standards:
 EN 60079-0:2012/A11:2013
 EN 60079-15:2010
 EN 60079-31:2014

Accessories and Software



EASY USB

USB to UART TTL converter



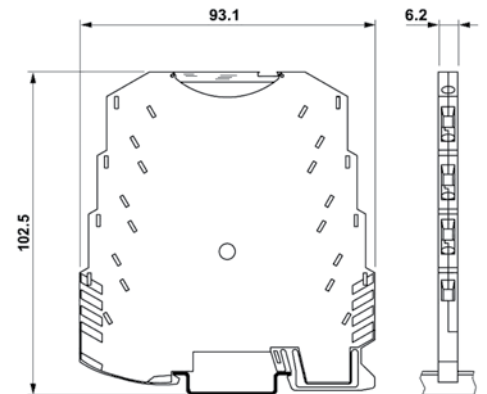
EASY LP

Free programming software
 see www.seneca.it/en

K LINE



Actual Size



Call 1-800-942-0315 to place your order!

Model	Description
K121	Universal input transmitter. User configurable V, mA, RTD, potentiometer, T/C. 4-20 mA output. 7-30 VDC loop powered.
K121-C	Universal input transmitter programmed to order. 7-30 VDC loop powered. Call for lead time.
EASY USB	USB to UART TTL converter required to set up the K121 and other programmable models*

Other 6 mm Transmitters

K109TC	Thermocouple to DC transmitter
K109PT	100 Ohm RTD to DC
K109UI	DC to DC isolator/converter
K107A	RS485 - RS485 serial amplifier/isolator
K107B	RS232 - RS485 serial isolator/converter
K107USB	USB - RS485 isolator/converter