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Loop Powered Isolator 6570

- **Input 4..20 mA**
- **Output alternatives 0..20 mA, 4..20 mA or 0..10V**
- **Without auxiliary power supply**
- **Accuracy 0.05% of span**
- **3000 VDC isolation voltage**
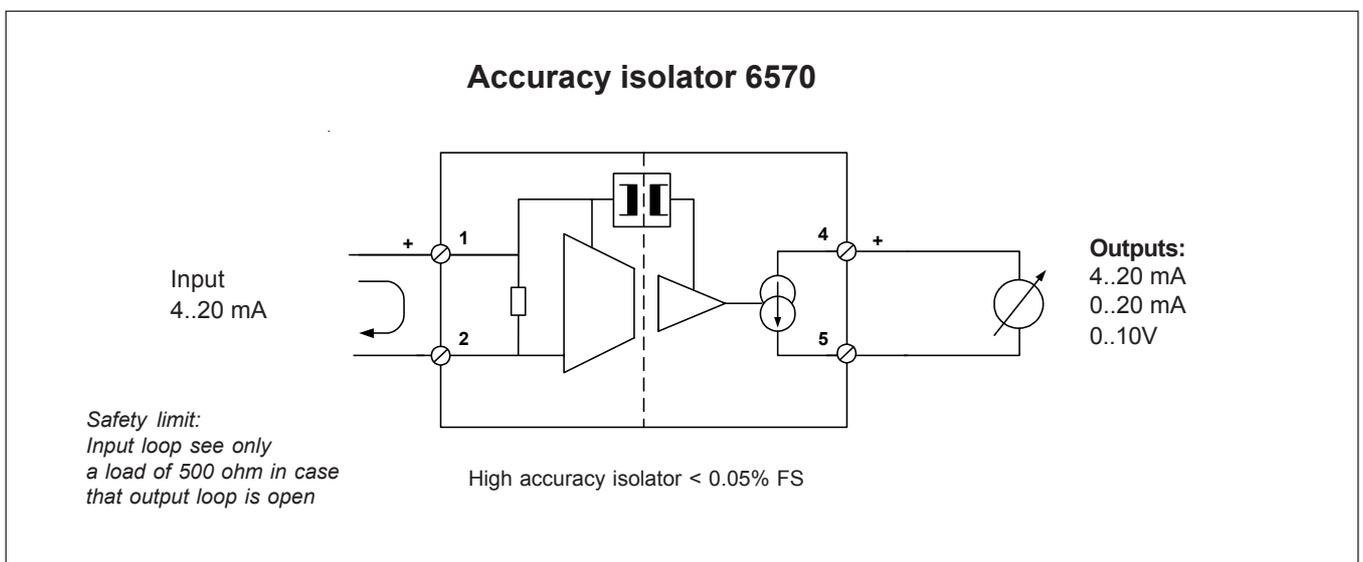- **DIN-rail mounting**
- **Detachable connectors**

Loop powered galvanic accuracy isolator 6570 is designed for current input 4..20 mA works without auxiliary operating voltage. Converter is serial connected into a current loop which will be galvanic isolated over to the output 0..20 mA, 4..20 mA or 0..10 V. Typical inaccuracy is smaller than 0.05% of full scale.

Accuracy isolator 6570 can be delivered in three versions according to the output signal: 4..20 mA, 0..20 mA or 0..10V. Input is always 4..20 mA

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Loop powered converter takes its operating voltage from the input current loop 4..20 mA. When comparing to auxiliary powered converters the larger voltage drop in the input loop must be noticed when calculating the total voltage need. On the next page is an example how to calculate the necessary operating voltage's.

Typically loop powered isolator cause 5 V voltage drop in the primary loop increased with the output load voltage drop. Model 6570 does not have to have minimum output load nor calibration according to the load. On the voltage output 0..10 V primary input voltage drop is 10V, when input loop current is in maximum 20 mA.

Nokeval manufactures also converters with auxiliary voltage 24 VDC or 230 VAC which can be programmed for different modifications of standard messages. For example input 0..1000 mV can be converted and isolated as an output of ±10V or inverse current output 20..4 mA with model 641. Narrowest converter is only 9 mm wide, 2-wire model 6580 is designed for applications where the space is the deficiency.

Accuracy isolator 6570

Input
4..20 mA

1
2

4
5

Outputs:
4..20 mA
0..20 mA
0..10V

Safety limit:
Input loop see only
a load of 500 ohm in case
that output loop is open

High accuracy isolator < 0.05% FS

Technical specifications:

Input   4..20 mA
Input resistance   see output resistance chart
                         below
Safety limit   <500 Ω   when output loop open

Current output 0/4..20 mA:
Max output load   0..300 Ω
Load accuracy effect   <0.01 %/100 Ω

Voltage output 0..10V:
Max load   <5mA, output load >2kΩ
Input voltage drop   10V, when max output 10V

General:
Ambient temperature effect:
For zero level   <0.005 % /°C
For Span   <0.01% /°C
Typical linearity   <0.03% of span
Accuracy   <0.05% of span
Isolation voltage   3 kV DC, 2 s test

response time (63%)   100 ms
Output fine adjustment   with potentiometer
Operating temperature   0..60°C
Storage temperature   -30..70°C
Case protection   IP30
Terminal connections   detachable, 1.5 mm²
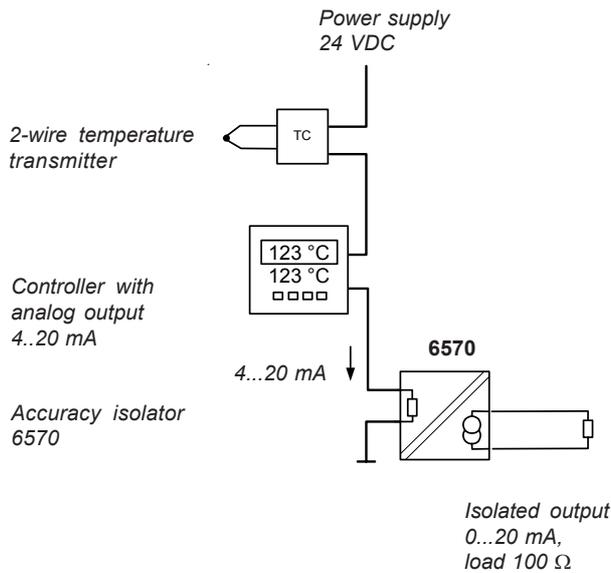Weight   100 g

Order codes:

6570-4/20

Model type

Output, please specify:
4..20 mA
0..20 mA
0..10V
Model 6570 is not user configurable like the other Nokeval converter types. Therefore it must be ordered for desired output. Input is always 4..20 mA.


Application example

Power supply
24 VDC

2-wire temperature
transmitter

TC

123 °C
123 °C

Controller with
analog output
4..20 mA

4...20 mA

6570

Accuracy isolator
6570

Isolated output
0...20 mA,
load 100 Ω

e.g.1: Voltage demand for application in picture can be calculated as follows:

		Voltage drop
Termperature transmitter min. voltage		*= 10 V*
Controller input resistance 50 Ω (20 mA)		*= 1 V*
Wire resistance ~10 Ω (at 20 mA)		*= 0.2 V*
Converter voltage drop *)		*= 8.2 V*

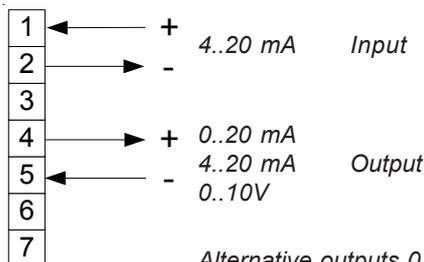*Voltage demand*   *min. 19.4 V*

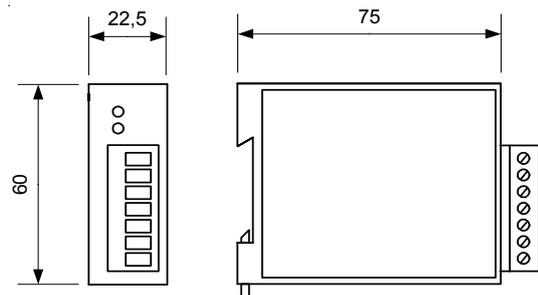**) see output resistance chart below*

6570   Output resistance
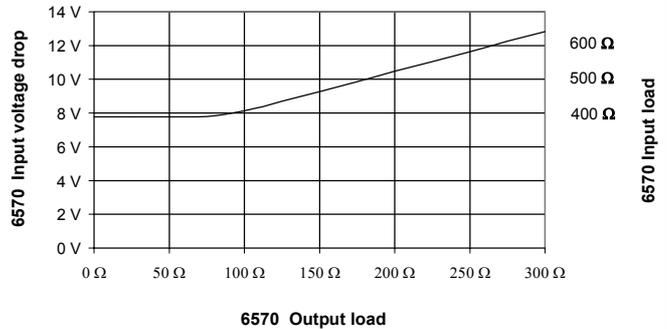
e.g.2: Output transmitter max. output load 600 Ω. (600Ω / 20 mA = 12 V). Isolator 6570 max output load = 270Ω

Connections:

1	← +	4..20 mA Input
2	→ -	
3		
4	→ +	0..20 mA
		4..20 mA Output
5	← -	0..10V
6		
7		

Alternative outputs 0..20 mA, 4..20 mA or 0..10V

Case dimensions (mm):

22,5   75

60

*Detachable terminal connections 1.5 mm²
Mounting rail (35 mm) DIN 46277*

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