

Data Sheet

DC Transducer / Isolating Amplifier



Application :

The purpose of the RISH CON SI-101 is to electrically isolate input, output and power supply.

The isolator fulfills all requirements and regulation concerning electromagnetic compatibility EMC and safety acc to IEC 61010 . It was developed and is manufactured and tested in strict accordance with quality assurance standard ISO 9001.

The device has single channels and provides single independent isolating amplifiers in an extremely small space.

Product Features

Electric Isolation

- Electrically isolated analog output prevents interference voltage and current. Solves grounding problem in meshed signal networks.
- High electric isolation between input and output 3.2 kV, and power supply versus all other circuits 5.2 kV.

Function

Simple dc isolator serves to electrically isolate input dc signal in the range 0 – 20 mA or 4-20 mA or 0-10V or 2-10V is then converted to signal 0 – 20 mA or 4-20 mA or 0-10V or 2-10V finds its application for isolate input and output.

Technical Specifications

Measuring inputs :

DC current standard ranges

- 0...20mA
- 4...20mA
- 1...5mA

DC voltage standard ranges

- 0...10V
- 2...10V
- 1...5V
- 0...300V

Measuring outputs :

DC current standard ranges

- 0...20mA
- 4...20mA

Burden voltage 12V

External Resistance $R_{ext\ max.} [k\ \Omega] = 12V / I_{AN} [mA]$
 I_{AN} = Output circuit full scale value

DC voltage standard ranges

- 0...10V
- 2...10V

Burden $R_{ext\ min.} [k\ \Omega] = U_{AN} [V] / 5\ mA$
 U_{AN} = Output circuit full scale value

Current limiter at $R_{ext} = 0$ < 30mA for voltage output

Voltage limiter at $R_{ext} = \infty$. < 17V for current output

Residual ripple in Output current < 0.4% p.p.

Response time < 50 ms

Common mode voltage 100V

Pollution degree 2

Power supply :

Rated operating voltage 60 ... 230 ... 300 V AC/DC
 24...48...60 V AC/DC

Rated operating frequency 45...50 or 60... 400 Hz

Power input $\leq 1.6\ W$ resp. $\leq 3.4\ VA$

Accuracy data (Acc to IEC 60688)

Accuracy class 0.2 %

Reference conditions

Ambient temperature

23°C + 2°C

Output burden

Current: 0.5 * $R_{ext\ max.}$

Nominal value of Aux

Voltage: 2 * $R_{ext\ min.}$

supply voltage:

230V 50Hz or 60 Hz AC/DC
 48V 50Hz or 60 Hz AC/DC

Influence factors

Temperature

$\pm 0.15\%$ per 10 °C

Burden influence

< $\pm 0.1\%$ for current output

< $\pm 0.1\%$ for voltage output

Magnetic field

< $\pm 0.2\%$ (400 A/T)

Regulations

Electromagnetic Compatibility Protection

Acc. to IEC 61326 - 1

For Housing : IP40

Terminals : IP20

Electrical standards

Acc. to IEC 61010 -1 /

EN 61 010 -1

Pollution degree

2

Over voltage category

III for power supply.

II for measuring input and measuring output.

Double Insulation

- Power supply versus all other circuit.

- Measuring input versus measuring output.

Test Voltage

Power supply versus :

-All 5.2 kV, DC 1 min

Measuring inputs versus :

-Measuring output 3.2 kV, DC 1min

Ambient Temperature

Climatic rating

Climate case 3Z acc. to

VDI /VDE 3540

Nominal Range of use

0 °C to 45 °C (Usage Group II)

Storage temperature

-40 °C to 70 °C

Annual mean relative humidity

< 75% standard Climatic rating.

Installation Data

Mechanical Housing

Lexan 940 (polycarbonate)

Flammability Class V-0 acc.

to UL 94 self extinguishing,

non dripping, free of halogen.

Mounting position

Rail mounting / wall mounting

Weight

Approx. 0.15kg

Connection Terminal

Connection Element

Conventional Screw type

terminal with indirect wire

pressure

Permissible cross section

of the connection lead

4.0 mm² single wire or 2 x 2.5mm

Fine wire.

Permissible Vibrations

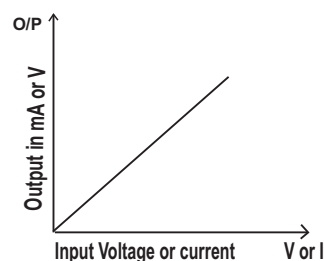
2 G acc. to EN 60 068-2-6

Shocks

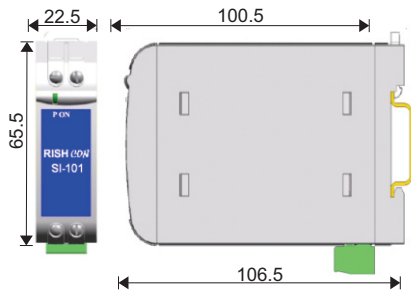
3 x 50 g 2 shocks each in 6 directions

Acc. to EN 60 068-2-27

Output characteristics

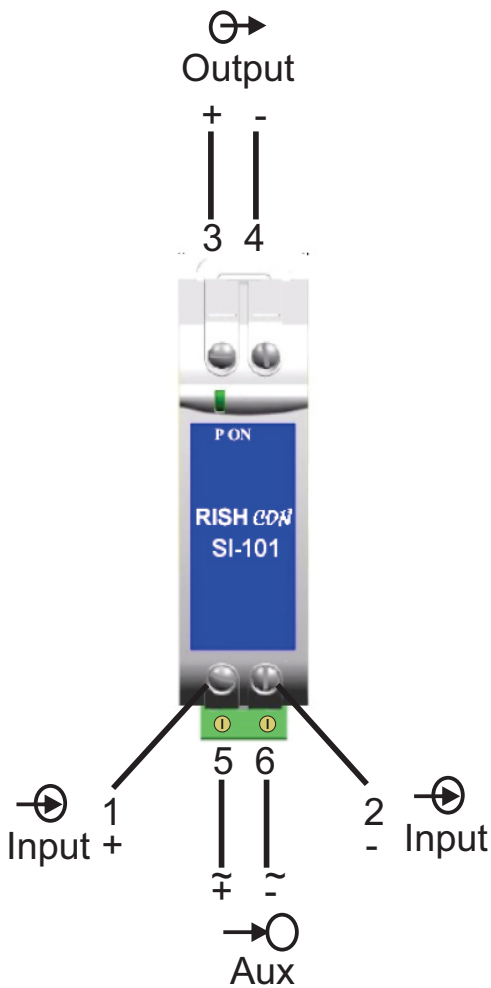


Dimensions



Note : All Dimensions are in mm

Electrical connections



Connection	Terminal details	
Measuring input	+	1
	-	2
Measuring output	+	3
	-	4
Auxiliary Supply	~, +	5
	~, -	6

Ordering Information

PRODUCT NAME- INPUT RANGE CODE-OUTPUT RANGE CODE
-AUXILLARY SUPPLY

1) Product Name : SI-101

2) Input range codes

Input(mA)	Order code	Input(V)	Order code
Standard input ranges			
0...20	1	0...10	4
1...5	2	2...10	5
4...20	3	1...5	6
Non standard input ranges			
0....0.1	7	0....0.06	20
0....0.2	8	0.....0.1	21
0....0.5	9	0....0.2	22
0.....1	10	0.....0.5	23
0.....2	11	0.....1	24
0.....5	12	0.....2	25
0....10	13	0.....5	26
0....40	14	0.....20	27
0....80	15	0.....40	28
0....100	16	0.2.....1	29
0.2...1	17	1.....5	30
1.....5	18	4.....20	31
2.....10	19	0.....48	32

3) Standard output range codes

Current (mA)	Ordering Code	Voltage (V)	Ordering Code
0...20	1	0...10	3
4...20	2	2...10	4

4)

Auxiliary supply	Ordering Code
60 ...300V AC/DC	H
24...60V AC/DC	L

Example:

To order model of 0 to 20 mA input & 0 to 10V output and auxiliary supply 24 to 60 V AC DC, ordering information will be as follow :-
SI-101-1-3 -L



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Measure, Control & Record with a Difference

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