

RISH CON SI-102 (Dual out put DC Isolator)

Data sheet

Isolating Amplifier



Application :

The purpose of the RISH CON SI-102 is to electrically isolate input, outputs and power supply. The isolator fulfills all requirements and regulation concerning electromagnetic compatibility EMC and safety (IEC61326-1 and IEC61010-1:2010).

The device has one input and provides two independent outputs in an extremely small space.

Product Features

Electric Isolation

- 1) Two electrically isolated analog outputs prevent interference voltage and current. Solves grounding problem in meshed signal networks.
- 2) High electric isolation between input and outputs – 2.3 kV, and power supply versus all other circuits – 3.0 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.

Features :

- Electric isolation between input, outputs and power supply. Prevents false measurement due to spurious potentials.
- Processes live zero signals, provision for signal conversion. Green LED signals indicates device in operating condition.
- Electrical insulation between power supply versus all other circuits -3.0 kV, and between input and outputs -2.3 kV.

Technical Specifications

Measuring inputs :

DC current standard ranges	1) 0...20mA 2) 4...20mA 3) 1...5mA
Input resistance	≤ 15.5Ω
DC voltage standard ranges	1) 0...10V 2) 2...10V 3) 1...5V
Input resistance	≥ 100 kΩ

Measuring output1 and output2:

DC current standard ranges	1) 0...20mA 2) 4...20mA
Burden voltage	<13V
External Resistance	Rext max. [kΩ] = 12V/ IAN [mA] IAN =Output circuit full scale value
DC voltage standard ranges	1) 0...10V 2) 2...10V
Burden	Rext min. [kΩ] = UAN [V]/ 5 mA UAN =Output circuit full scale value
Current limiter at Rext =0	< 42mA for voltage output
Voltage limiter at Rext =∞	< 20 V for current output
Residual ripple in Output	< 0.4% p.p.
Response time	< 50 ms
Common mode voltage	100V
Pollution degree	2

Power supply :

Rated operating voltage	60 ... 230... 300 V DC/AC OR 20 ...30... 40V AC / 20 ...30... 60V DC
Rated operating frequency	40 ... 50-60 ... 400 Hz
Power input	≤ 2W resp ≤ 4 VA

Accuracy data (Acc to IEC 60688)

Basic Accuracy	Limit error < ± 0.2 % including linearity and reproducibility errors.
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Reference conditions

Ambient temperature	23°C ± 2°C
Output burden	Current: 0.5 * Rext max. Voltage: 2 * Rext min.
Nominal value of Aux supply voltage:	230V 50Hz or 60 Hz AC/DC 30V 50Hz or 60 Hz AC/DC

Influence factors

Temperature	± 0.01% per °C
Burden influence	< ± 0.1 % for current output < ± 0.1 % for voltage output
Switch-on drift	< ± 0.2%
Longtime drift	< ± 0.3% / 12 months
Magnetic field	< ±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.
Test Voltage	Power supply versus : -All 3 kV, 50 Hz 1 min Measuring inputs versus : -Measuring outputs 2.3 kV, 50 Hz 1min & O/P1 to O/P 2: 500 V ,50 Hz ,1 min

Environmental condition

Climatic rating	Climate class 3 acc. to VDI /VDE 3540
Nominal Range of Use	0 °C to 45 °C (Usage group II)
Operating Temperature	-10 °C to 55 °C
Storage temperature	-40 °C to 70 °C
Annual mean relative humidity	< 75% standard Climatic rating.

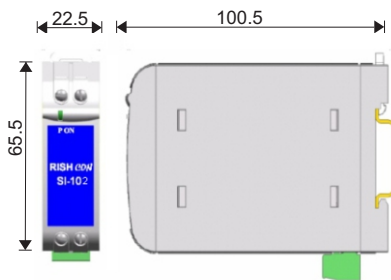
Installation Data

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. 0.2kg

Connection Terminal

Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	4.0mm ² single wire or 2 x 2.5mm ² Fine wire.
Permissible Vibrations Shocks	2 g acc. to EN 60 068-2-6 3 x 50 g 2 shocks each in 6 directions Acc. to EN 60 068-2-27

Dimensions



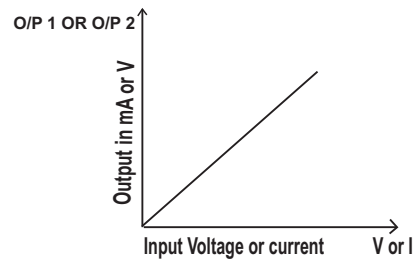
Note : All Dimensions are in mm

Electrical Connections



Connection	Terminal details	
	+	-
Measuring input	3	4
Measuring output 1	5	6
Measuring output 2	7	8
Auxiliary Supply	1	2

Output characteristics



Ordering Information

PRODUCT NAME- INPUT RANGE CODE-OUTPUT 1 RANGE CODE- OUTPUT 2 RANGE CODE -AUXILIARY SUPPLY

1) Product Name : SI-102

2) Standard input range codes

Current (mA)	Ordering Code	Voltage (V)	Ordering Code
0...20	1	0...10	4
1...5	2	2...10	5
4...20	3	1...5	6

3) Standard output range codes for output1 and output2

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

4) Auxiliary supply voltage

Auxiliary supply voltage	Order code
60....300V AC/DC	H
20....40V AC / 20...60V DC	L

Example:

To order model with 0 to 20 mA input, 0 to 10V output 1 & 4 to 20mA output 2 and lower aux specification, ordering information will be as follow: - SI-102-1-3-2-L



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RISHABH INSTRUMENTS PVT.LTD.
F-31, MIDC, Satpur, Nashik-422 007, India.
Tel.: +91 253 2202028, 2202202 Fax : +91 253 2351064
E-mail : marketing@rishabh.co.in
www.rishabh.co.in