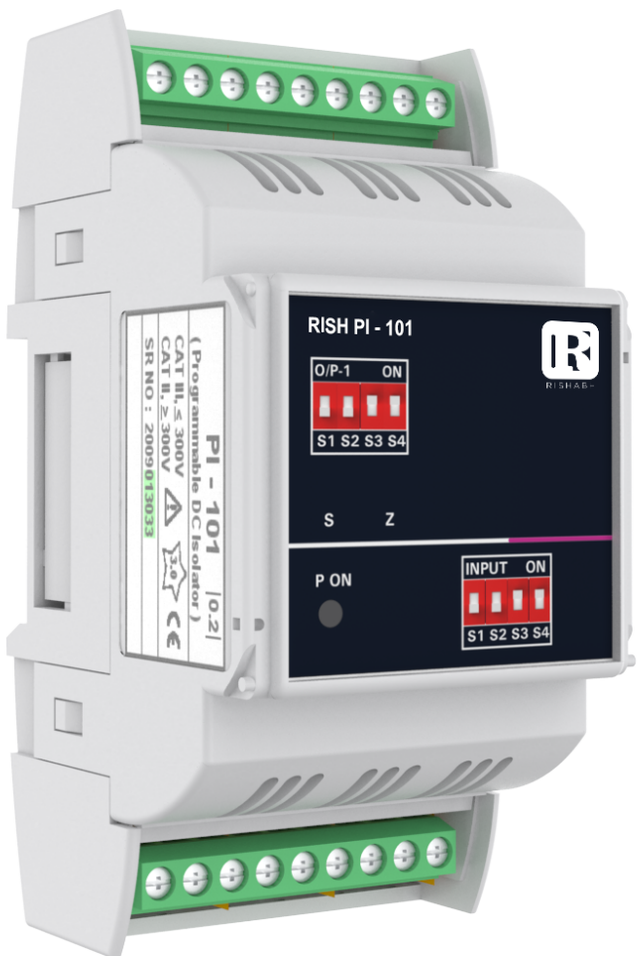
RISHABH

Data Sheet

RISH PI-101

Programmable Single Output DC Isolator



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Application

The purpose of the RISH PI-101 is to electrically isolate input, output and power supply. The isolator fulfills all requirements and regulation concerning electromagnetic compatibility EMC and safety (IEC61326-1 and IEC 61010-1:2010).
The device has one input and provides one independent output in an extremely small space.

Function

Simple dc isolator serves to electrically isolate programmable input dc signal to programmable dc output signal.

Product Features

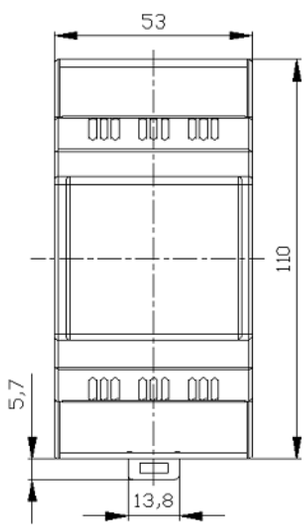
- One electrically isolated analog output prevent interference voltage and current. Solves grounding problem in meshed signal networks.
- High electric isolation between input and output – 2.3 kV, and power supply versus all other circuits – 3.0 kV.
- All input signal range and output signal range are user programmable.
- Electric isolation between input, output and power supply.
- Prevents false measurement due to spurious potentials.
- Processes live zero signals, provision for signal conversion.
- Red LED signals indicates device in operating condition.

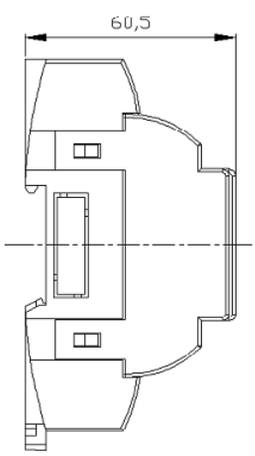
Technical Specifications

Measuring inputs

DC current standard ranges	1) 0...20mA 2) 0...10mA 3) 4...20mA 4) 0...24mA
Input resistance	< 15.5 Ω
DC voltage standard ranges	1) 0...12V 2) 0...10V 3) 0...5V 4) 1...5V
Input resistance	0...12V, 0...10V } ≥ 100 kΩ 0...5V, 1...5V } ≥ 60 kΩ
Measuring output1 :	
DC current standard ranges	1) 2...10mA 2) 4...20mA 3) 0...10mA 4) 0...20mA
Burden voltage	15V
External Resistance	Rext max. [Ω] = 15V/ IAN [mA] I AN =Output circuit full scale value
DC voltage standard ranges	1) 0...05V 2) 1...05V 3) 0...10V 4) 2...10V

Dimensions Details



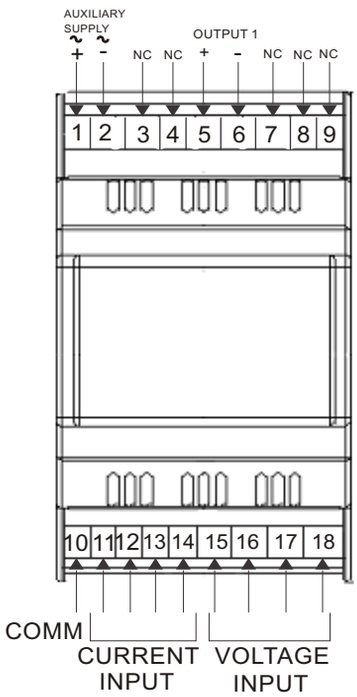


Note : All Dimensions are in mm

Technical Specifications:

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 ... 24 ...40 VAC / 20...30...60 VDC
Rated operating frequency	45 ... 50-60 ... 65 Hz
Power input	< 5 VA
Accuracy data (Acc to IEC 60688)	
Basic Accuracy	Limit error < ± 0.2 % including linearity and reproductibility errors.
Reference conditions	
Ambient temperature	23°C ± 2°C
Output burden	Current: 0.5 * Rext max. Voltage: 2 * Rext min.
Nominal value of Aux	230V 50Hz or 60 Hz AC/DC
Supply voltage	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	Acc. to IEC 61326 - 1
Protection	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 3.7 kV, 50 Hz 1 min (Leakage current 5mA) Measuring inputs versus: Measuring output 2.3 kV, 50 Hz 1min & O/P1 to O/P 2: 500 V, 50 Hz, 1 min All circuits versus case: 3.7kV, 50 Hz,1min

Electrical Connections:



Connection	Terminal details	
Measuring Current input	+	-
A) 0....24mA	11	10
B) 4....20mA	12	10
C) 0....20mA	13	10
D) 0....10mA	14	10
Measuring Voltage input		
A) 1....05V	15	10
B) 0....05V	16	10
C) 0....12V	17	10
D) 0....10V	18	10
Measuring output 1	5	6
Auxiliary supply	1	2

Technical Specifications:

Environmental condition

Climatic rating	Climate class 3 acc. to VDI / VDE 3540
Operating Temperature	-10...23... 55 ºC
Storage temperature	-40 ºC to 70 ºC
Annual mean relative humidity	< 75% standard Climatic rating.

Installation Data

Mounting position	Rail mounting
Weight	Approx. 0.25kg

Connection Terminal

Connection Element	Conventional Screw type
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 60068-2-6 3 x 50 g 2 shocks each in 6 directions Acc. to EN 60068-2-27

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Configuration

RISH PI-101 inputs and output can be configured using slide switches. Table A and B contains the switch position information for the configuration of input and output respectively.

When ever configuration is changed output need adjustment must be accomplished using “Z” (Zero) and “S” (Span) potentiometers provided on front panel.

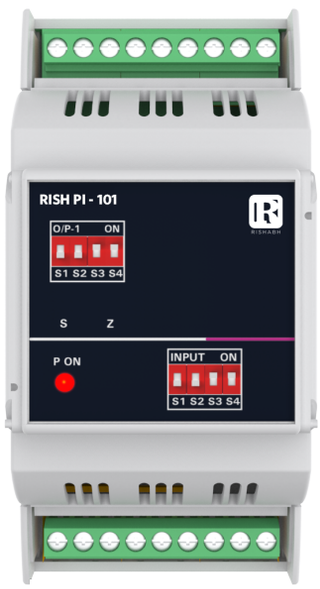

Fig. Front Panel of RISH PI 101

TABLE B: O/P RANGE SELECTION

Output	S1 & S2	S3	S4
0...10mA	OFF	OFF	OFF
0...20mA	OFF	OFF	ON
2...10mA	OFF	ON	OFF
4...20mA	OFF	ON	ON
0...5V	ON	OFF	OFF
0...10V	ON	OFF	ON
1...5V	ON	ON	OFF
2...10V	ON	ON	ON

Output characteristics

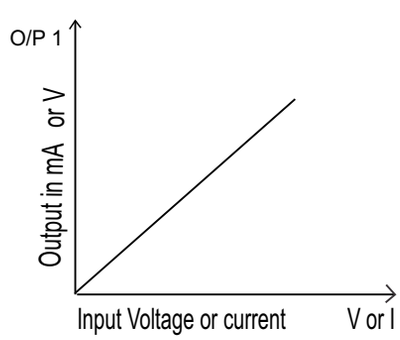

TABLE A: INPUT RANGE SELECTION

Input	S1	S2	S3	S4
0...20mA	OFF	OFF	OFF	OFF
0...10mA	OFF	OFF	OFF	ON
0...24mA	OFF	OFF	ON	OFF
4...20mA	OFF	OFF	ON	ON
0...10V	OFF	ON	OFF	OFF
0...12V	OFF	ON	OFF	ON
0...5V	OFF	ON	ON	OFF
1...5V	OFF	ON	ON	ON

Ordering Information

Ordering Information	PI01-	X	000000000000
Product Type	RISH PI 101 : Programmable Single Output DC		
Auxiliary Supply	20-40V AC / 20-60V DC	L	
	60-300V AC/DC	H	

Ordering Code Example : PI01-H000000000000

Rish PI 101 : Programmable Single Output DC Isolator, Aux 60-300V AC/DC

Specifications may change without prior notice

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