

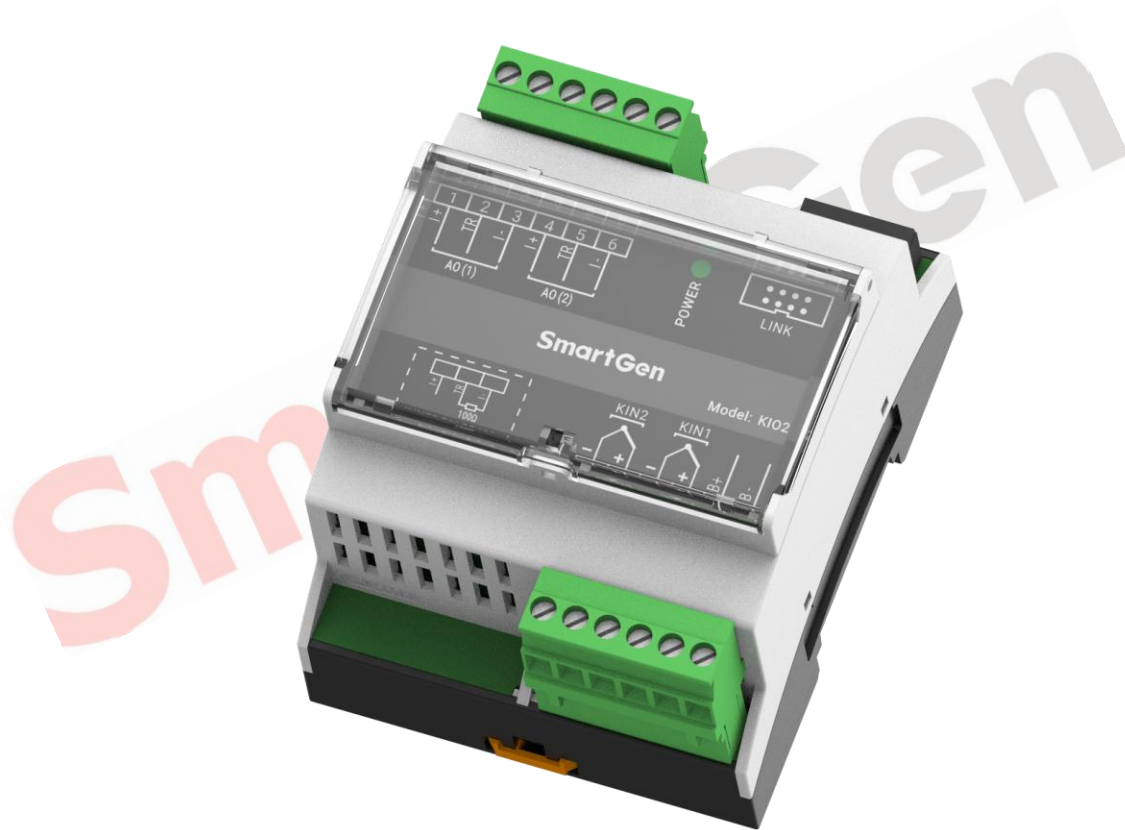


SmartGen
ideas for power

KIO22

ANALOG INPUT/OUTPUT MODULE

USER MANUAL



SMARTGEN (ZHENGZHOU) TECHNOLOGY CO., LTD.



Chinese trademark

SmartGen English trademark

SmartGen – make your generator *smart*

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Table 1 -Software Version

Date	Version	Note
2021-06-08	1.0	Original release.



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1 OVERVIEW

KIO22 is a K-type thermocouple to 4-20mA module, which is used to convert 2 analog inputs of K-type thermocouple into 2 current outputs of 4-20mA. Users can use MODBUS protocol to realize parameter configuration and data collection via LINK interface.

2 PERFORMANCE AND CHARACTERISTICS

Its main characteristics are as follows:

- With 32-bit ARM SCM, high hardware integration, improved reliability;
- DC(8~35)V working voltage;
- 35mm guide rail installation method;
- Modular design and pluggable connection terminals; compact structure with easy mounting.

3 SPECIFICATION

Table 2 Performance Parameters

Items	Contents
Working Voltage Range	DC(8~35)V
LINK Interface	Baud rate: 9600bps Stop bit: 1-bit Parity bit: None
Case Dimension	71.6mmx93mmx60.7mm (LxWxH)
Working Temperature & Humidity	Temperature: (-40~+70)°C; Humidity: (20~93)%RH
Storage Temperature	Temperature: (-40~+80)°C
Protection Level	IP20
Weight	0.115kg

4 WIRING

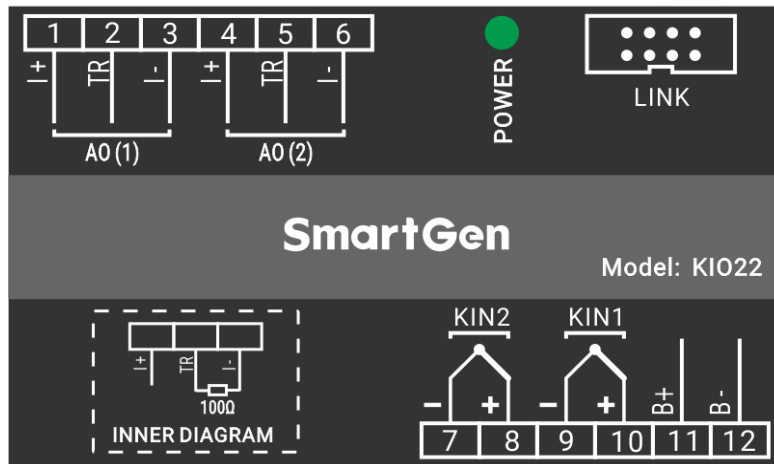


Fig.1 KIO22 Mask Drawing

Table 3 Wiring Terminals Description

No.	Function	Cable Size	Remark
1.	A0(1) I+	1.0mm ²	Current positive output.
2.	A0(1) TR		TR and I+ are short connection, the internal 100Ω resistance can be connected to the output circuit, and the output signal can be converted into a voltage signal.
3.	A0(1) I-		Current negative output.
4.	A0(2) I+	1.0mm ²	Current positive output.
5.	A0(2) TR		TR and I+ are short connection, the internal 100Ω resistance can be connected to the output circuit, and the output signal can be converted into a voltage signal.
6.	A0(2) I-		Current negative output.
7.	KIN2 -	0.5mm ²	K-type thermocouple sensor
8.	KIN2 +		
9.	KIN1 -	0.5mm ²	K-type thermocouple sensor
10.	KIN1 +		
11.	DC Power Input B+	1.0mm ²	DC power positive input.
12.	DC Power Input B-	1.0mm ²	DC power negative input.
/	POWER		Power normal indicator.
/	LINK		Communicate with host computer via MODBUS RTU protocol.

5 PROGRAMMABLE PARAMETER SCOPE AND DEFINITION

Table 4 Parameter Content and Scope

No.	Item	Range	Default	Description
1	Output 1 The temperature value corresponding to 4mA	(0-1000.0)°C	0	The temperature value of the thermocouple sensor corresponding to 4mA from the output 1.
2	Output 1 The temperature value corresponding to 20mA	(0-1000.0)°C	1000.0	The temperature value of the thermocouple sensor corresponding to 20mA from the output 1.
3	Output 2 The temperature value corresponding to 4mA	(0-1000.0)°C	0	The temperature value of the thermocouple sensor corresponding to 4mA from the output 2.
4	Output 2 The temperature value corresponding to 20mA	(0-1000.0)°C	1000.0	The temperature value of the thermocouple sensor corresponding to 20mA from the output 2.

6 ELECTRICAL CONNECTION DIAGRAM

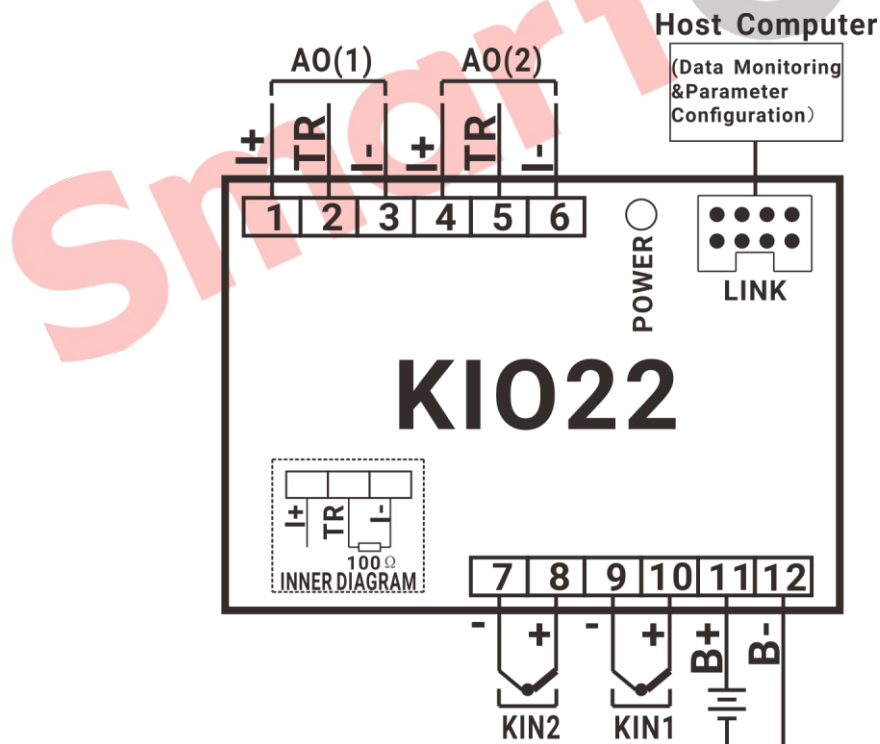


Fig.2 Electrical Connection Diagram



7 OVERALL DIMENSION AND INSTALLATION

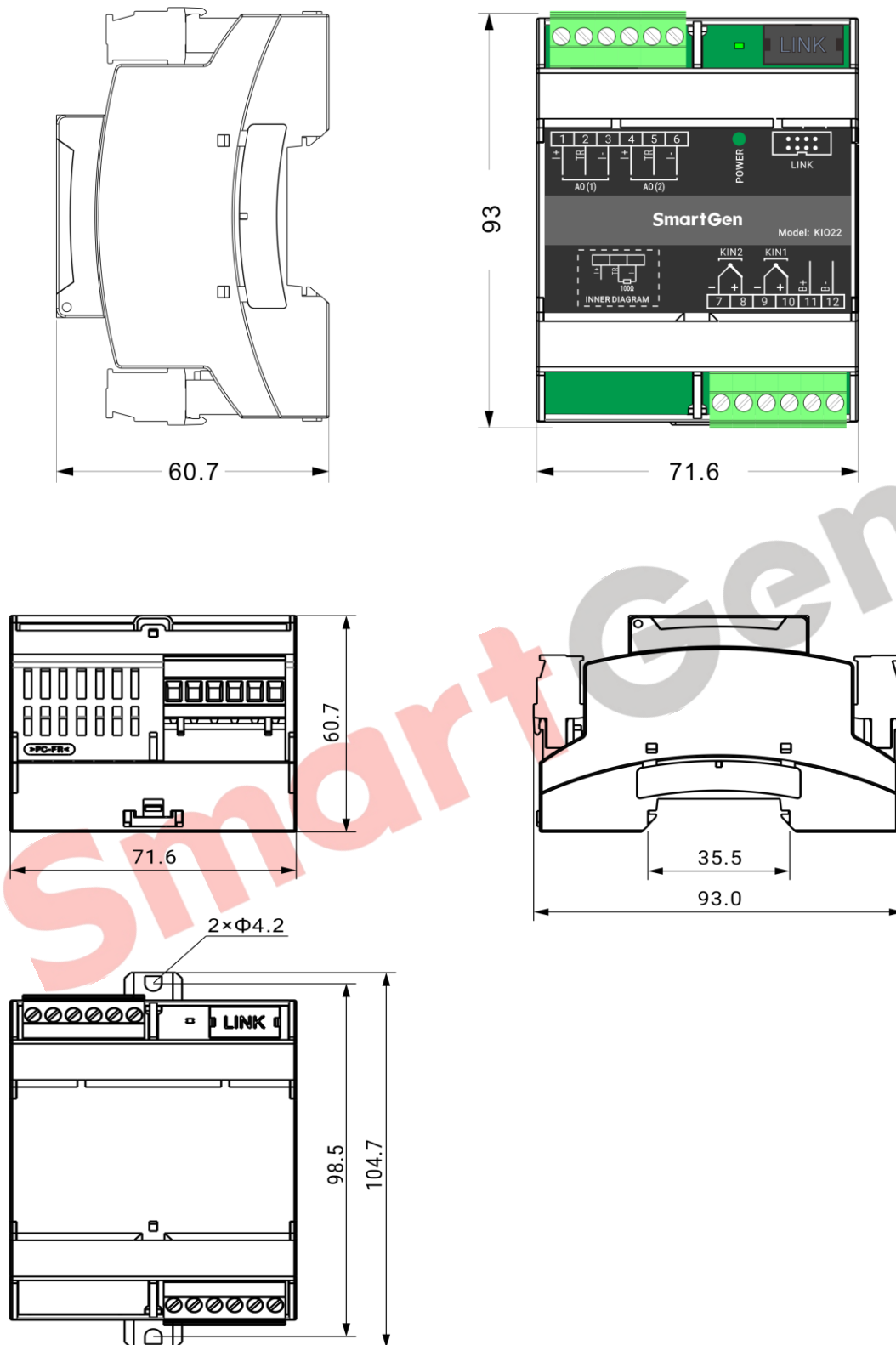


Fig.3 Overall Dimension and Installation (Unit: mm)