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34 Channels Smart Logger User Guide

Certification and quality assurance

This series of instruments fully meet the nominal technical indicators in the manual.

Protection of solid service

Art-Logics Company provides one for the materials and manufacture of this product from the date of shipment Years of quality warranty service (warranty service except for the following warranty restrictions).

If this product needs warranty service or repair, please return the product to Art-Logics Company Fixed maintenance unit.

- For products sent back to Art-Logics for warranty services, customers must send them in advance One-way shipping rates delivered to Art-Logics repair units, Art-Logics Company will be negative. Responsible for paying the return freight.

- Products returned to Art-Logics for warranty services from other countries Freight, customs duties, and other taxes shall be borne by the customer.

Protection of consolidation restrictions

The retention service does not apply to damage resulting from:

- Products modified or repaired by customers themselves;
- Damage caused by the circuit installed by the customer or operating it outside the specified environment. Damage due to the product;
- The product model or body serial number has been altered, deleted, removed or unidentifiable;
- Damage caused by accidents, including but not limited to lightning strikes, water intake, fire, Abuse or negligence.

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1. Quick reference

This section briefly describes the functions of the front panel, rear panel and the interface of the instrument to ensure a quick understanding before operating the instrument. The appearance, structure, and interface function of the instrument, each operating feature are not detailed in this chapter, it is only a quick reference guide, help you quickly familiarize yourself with the operating characteristics of the instrument.

- ♦ product profile
- ♦ Hardware interface introduction
- ♦ Accessories Introduction

1.1 Product profile

The Smart Logger is a programmable voltage aquisition device with 34 channels, 16 bits precision and up to 100 kHz rate. It offers three communication interfaces, Ethernet TCP, USB-C and RS-232, to configure the parameters of the voltage input channels and receive the aquisition data.

Users can choose to use Ethernet TCP, USB-C, CAN or RS-232 as communication interfaces to configure the channel parameters and monitor the measurement data.

1.2. Introduction of the product

Interface

(1)(2)(3)DB-25 connector for input
(4)24V AC Power supply connector
(5)Trigger connector
(6)RS424 connector
(7)ETH connector for Ch1 to Ch12
(8)Tpye-C connector for Ch1 to Ch12
(9)ETH connector for Ch13 to Ch24
(10)Tpye-C connector Ch13 to Ch24
(11)ETH connector Ch25 to Ch26
(12)Tpye-C connector Ch25 to Ch26

PIN Definition

DB25-1	Smart Logger
1	VIN1+
2	VIN2+
3	VIN3+
4	VIN4+
5	VIN5+
6	VIN6+
7	VIN7+
8	VIN8+
9	VIN9+
10	VIN10+
11	VIN11+
12	VIN12+
13	VIN1-
14	VIN2-
15	VIN3-
16	VIN4-
17	VIN5-
18	VIN6-
19	VIN7-
20	VIN8-
21	VIN9-
22	VIN10-
23	VIN11-
24	VIN12-

DB25-2	Smart Logger
1	VIN13+
2	VIN14+
3	VIN15+
4	VIN16+
5	VIN17+
6	VIN18+
7	VIN19+
8	VIN20+
9	VIN21+
10	VIN22+
11	VIN23+
12	VIN24+
13	VIN13-
14	VIN14-
15	VIN15-
16	VIN16-

DB25-2	Smart Logger
17	VIN17-
18	VIN18-
19	VIN19-
20	VIN20-
21	VIN21-
22	VIN22-
23	VIN23-
24	VIN24-

DB25-3	Smart Logger
1	VIN25+
2	VIN26+
3	VIN27+
4	VIN28+
5	VIN29+
6	VIN30+
7	VIN31+
8	VIN32+
9	VIN33+
10	VIN34+
11	VIN351+
12	VIN36+
13	VIN25-
14	VIN26-
15	VIN27-
16	VIN28-
17	VIN29-
18	VIN30-
19	VIN31-
20	VIN32-
21	VIN33-
22	VIN34-
23	VIN35-
24	VIN36-

1.3 Accessories introduction

- 24V AC power supply
- SD card (Optional)

For offline operation mode and storage the test data.

- USB-C data cable

Used to connect the smart logger to the computer when using serial port communication.

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- Network cable

Used to connect a smart logger to a computer when using Ethernet communication.

- Software development data

Contains the computer software smart logger.
Note: See the Development Manual for more details

2. Installation and debugging

- ♦ Connects the power cord
- ♦ Connects communication lines
- ♦ Communication debugging
- ♦ Company receives objects

2.1 Connect the power cord

Before connecting the power cord

To prevent electric shock and damage to the instrument, observe the following precautions.

warn

· Before connecting the power cord, ensure that the supply voltage matches the rated input voltage of the instrument.

· Before connecting the power cord, make sure the power switch is off and confirm that there is no dangerous voltage at the terminal.

· To prevent electric shock and fire, please use the power cord provided by the company.

· Be sure to connect the input power line to the AC distribution box with protective grounding. Do not use the wiring board without protective grounding.

· Do not use the extension power cord without a protection grounding, otherwise the protection function will fail.

· Ensure that the protective cover is protected around the power cord terminals to avoid accidental contact Voltage causes potential personal safety hazards.

take care

The safety agency requires that there must be a way to physically disconnect the AC power cord from the device. In the final Ann Disconnect equipment (switch or circuit breaker) must be provided in the installation. The disconnection device must be close to this device and easy to reach (so that In operation), and the disconnect device for this device must be marked.

Wiring method

1. Verify that the switch of the instrument is turned off.
2. Make that there is no dangerous voltage at the interface.
3. Connect the 24V power supply

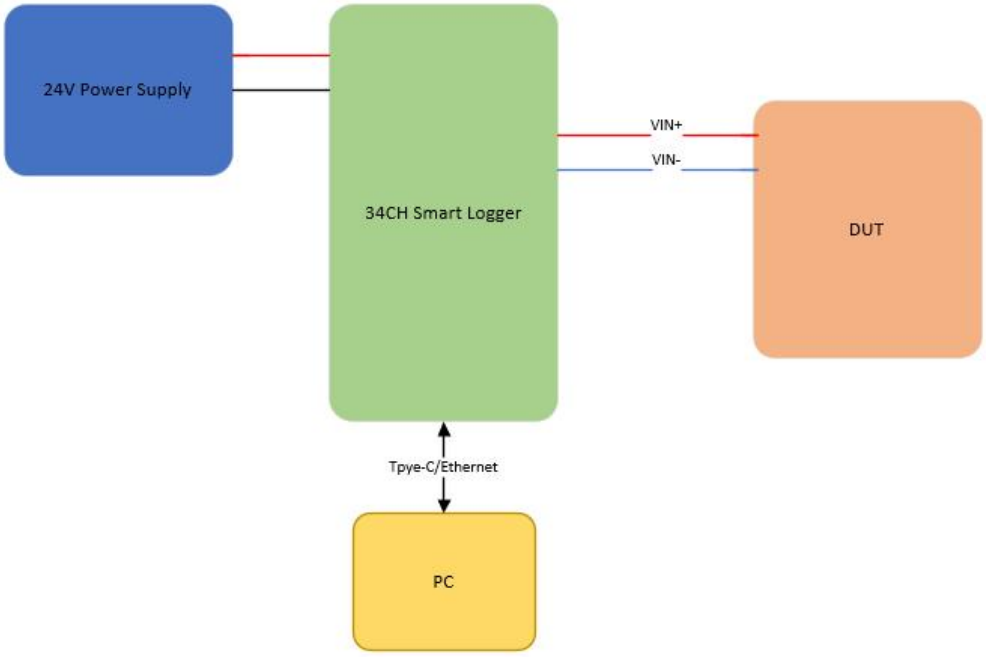
2.2 Connect communication lines

The instrument provides 2 communication modes.

- The first type is serial port communication, and the instrument end is the interface of Type-C.
- The second type is Ethernet communication, and the instrument end is the interface of Ethernet.

2.3 Setup

The connection mode between the instrument and the object to be measured is directly connected, and the schematic diagram is as follows.

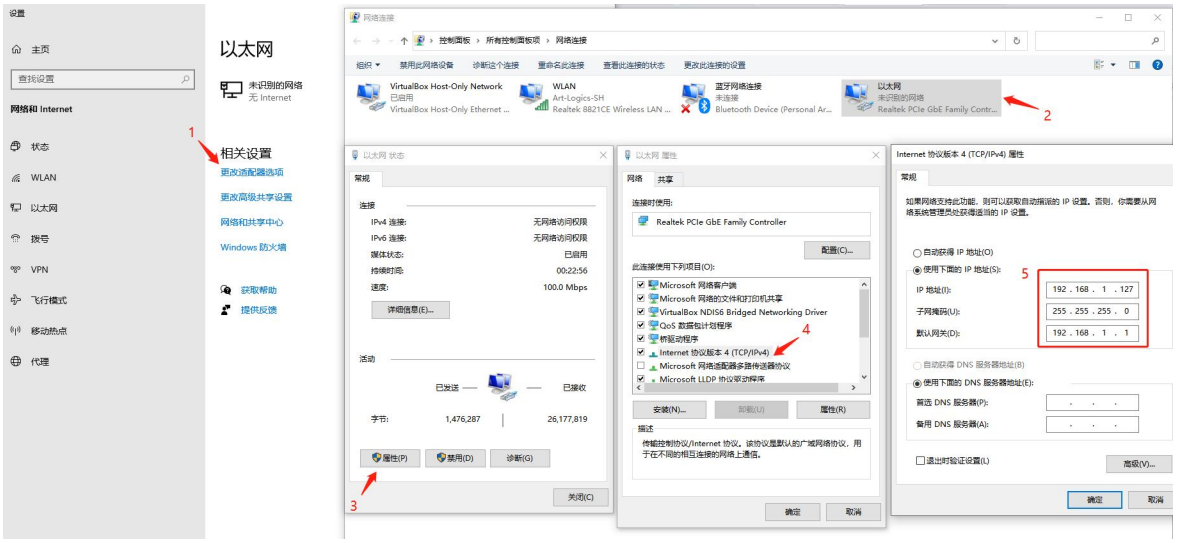


2.4 Communication debugging

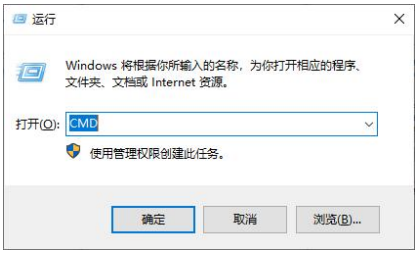
Set IP address for laptop

- Connect the power line to the communication line.
- Configure the computer IP and the instrument IP in the same previous LAN segment. the initial IP of the instrument is 192.168.0.121. The following example changes the computer address to 192.168.1.127.

Note: Only directly connected to the network cable, the computer needs to configure IP 1 times, not later.



3. Press WIN + R at the same time and enter CMD to open the command line window



4. Enter ping 192.168.1.149. Check whether the network communication is normal. If there is a reply below, the Ethernet connection is normal.

Note: Please ensure the smart logger is in the same network of the computer.

3. How to use it

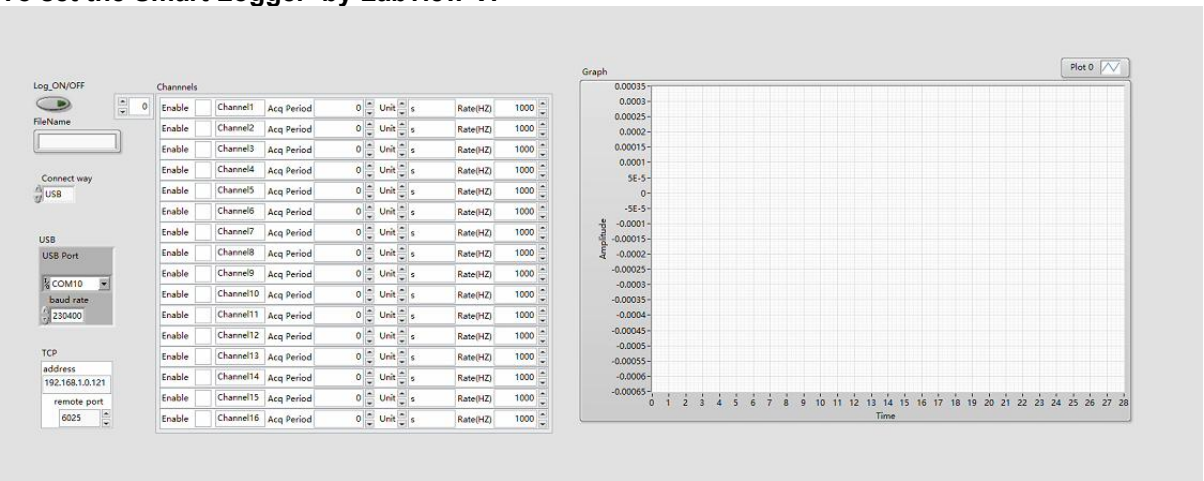
This section details how to use the instrument, including installation of software and driver, functional configuration and applications, and parameters set up.

- ♦ Installation of the software and the driver
- ♦ Basic Commands
- ♦ Advanced configuration

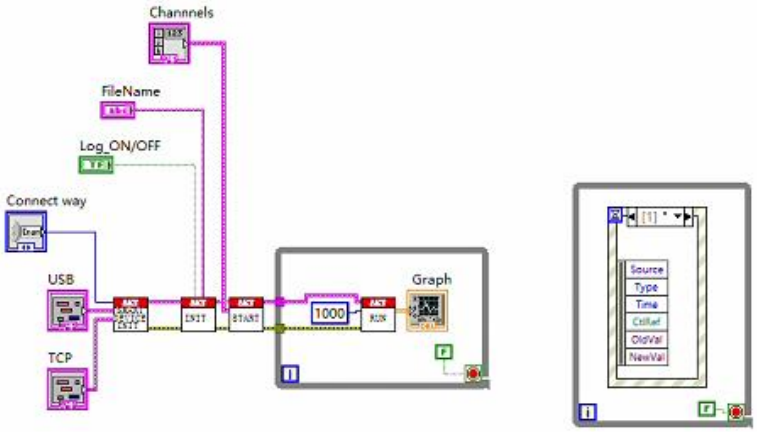
3.5 Labview VI

There are five vi for the equipment. You can connect the equipment with USB or ETH, And then can program as your test requirements.

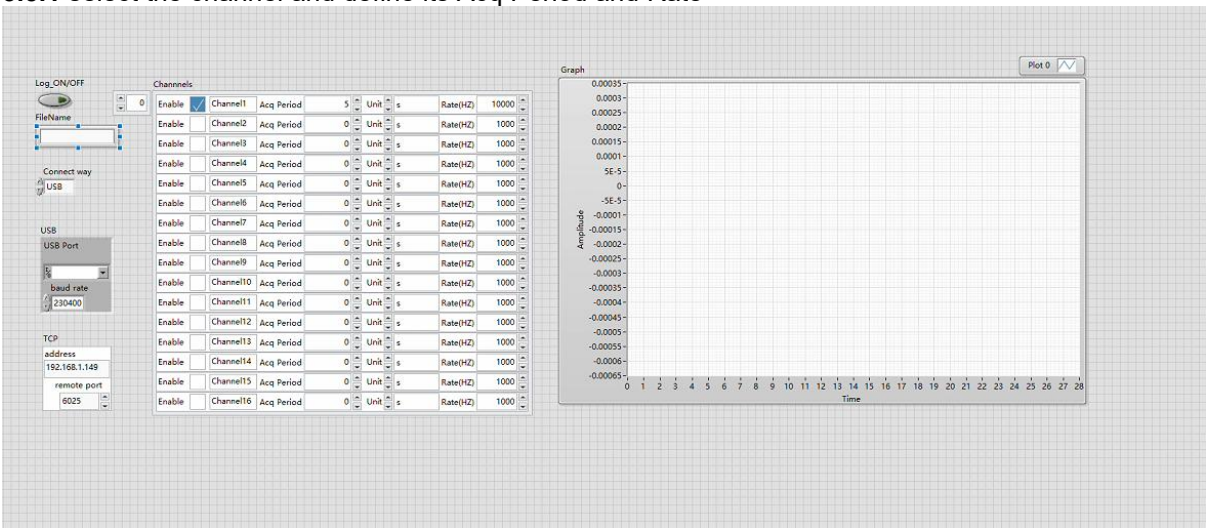
To set the Smart Logger by Labview VI



Example of programming



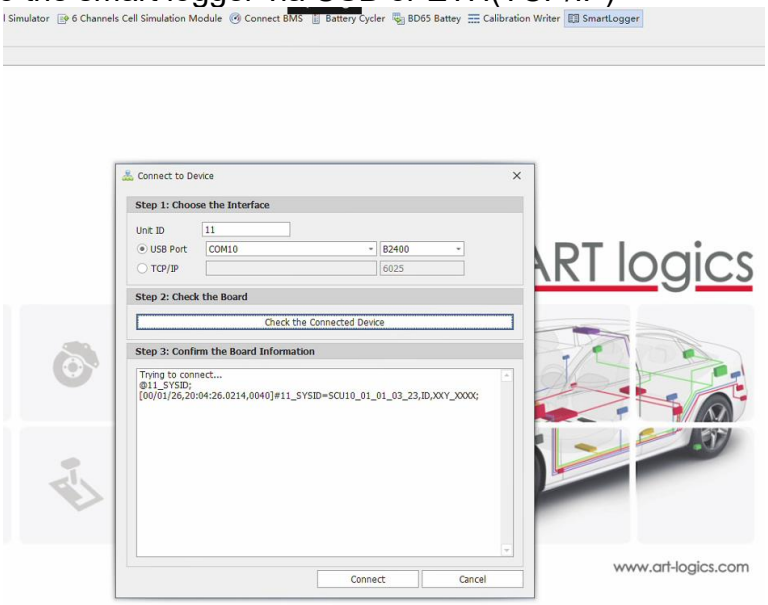
3.5.1 select the channel and define its Acq Period and Rate



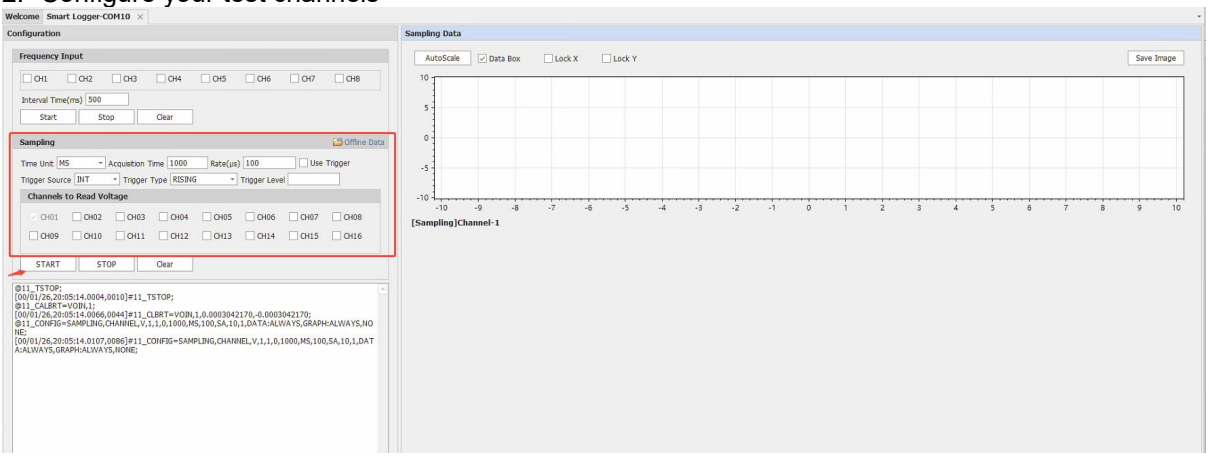
<AcqPeriod>: The length of the acquisition, Valid value is multiple of 10us starting from 20us to 4294967290 us.
<Rate>: the acquisition period, in microseconds only, specifying the time between each acquisition point. Valid value from 20us to 1000us with a 10us stepping.

3.6 Smart Logger Application

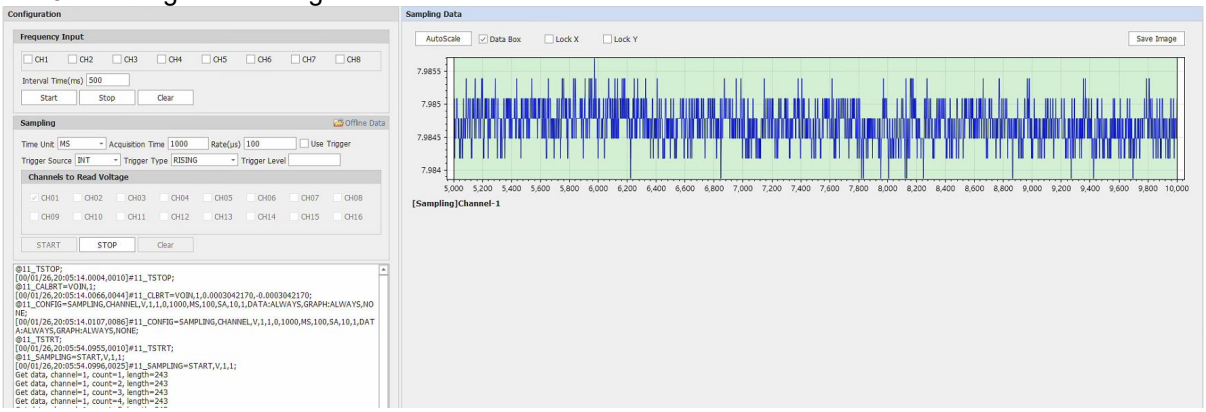
1. Connect to the smart logger via USB or ETH(TCP/IP)



2. Configure your test channels

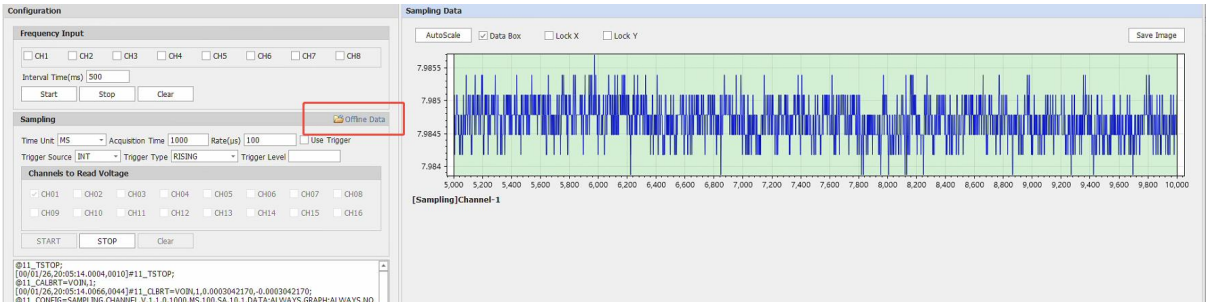


3. Running result at right side window

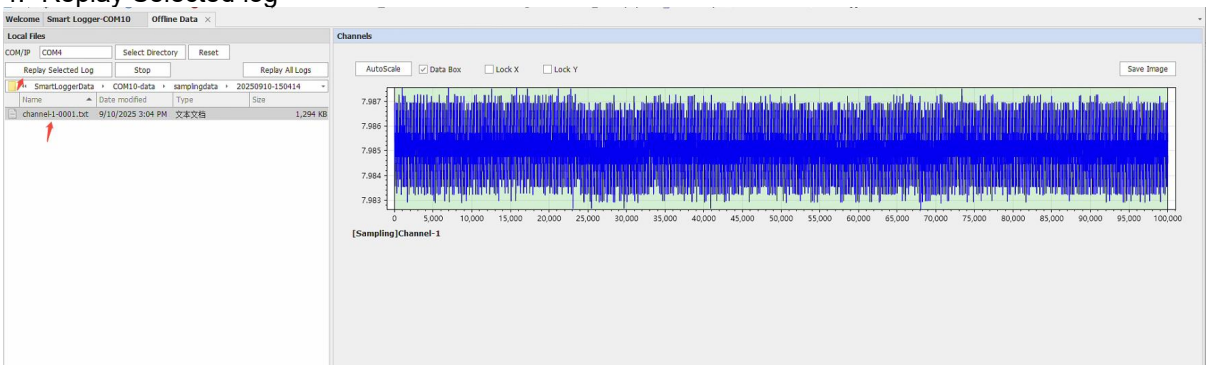


To replay the test

1. Click “Offline Data”



2. Fined the test data in the folder - SmartLoggeData
3. Select the file
4. Replay Selected log



You also can click “Relay All Logs”, then you can get one chart with all channels view.

4. Technical specifications

♦ Main technical parameters

4.1. Main technical parameters

Analog voltage output	parameter
Channel	36 channels
Resolution ratio	16bit
Output voltage range (usual / maximum)	0-10 V
Voltage accuracy	±1m V

Connector interface	parameter
Ethernet	TCP/IP 10/100 Mbps link Programmable source code, gateway, and mask ip
USB-C	USB 2.0 5V power supply

Environment	
Working humidity	10 – 90 RH% without condensation
Storage humidity	And 5 – 95% RH without condensation

5.FAQ

5.1 Connection warning

1. Click and try to connect again
2. Check USB/IP configuration and setup as section 2.4
3. Plug the connector again