SUPCON

SupX600 Series Interactive Calibrator & Communicator

ZHEJIANG SUPCON TECHNOLOGY CO.,LTD.
ZHEJIANG SUPCON INSTRUMENT CO.,LTD.

INTRODUCTION

Company Profile

2000

SUPCON Instrument was founded in 2000

20000+

Partnership with over 20,000 global companies

100+

More than 100 5S stores covering major petrochemical parks in China

Zhejiang SUPCON Technology Co., LTD. (hereinafter referred to as "SUPCON Technology" or "the Company", 688777.SH) was established in 1999. The Company is now providing a wide range of products varying from automation control system to automation control products such as instruments after it took its first step by providing distributed control system (DCS). In recent years, in a bid to assist customers in improving digital and intelligent operation and management, the company has formed a well-established "Industry 3.0 + 4.0" products and solutions system by promoting and boosting industrial software and solutions, as well as strengthening localized operation and maintenance services. Starting as an automation products supplier, SUPCON has turned itself into a world-renowned integral solution provider of intelligent manufacturing serving the process industry.

After continuous innovation for more than 20 years, SUPCON Technology has developed a instrument production system from the field to control room. SUPCON can provide various kinds of field instruments and secondary instruments for the customers in many industries including petroleum, chemical, electric power, metallurgy and etc., covering pressure instruments, flow instruments, level instruments, temperature instruments, gas detectors recorders/controllers, signal instruments and tool instruments.

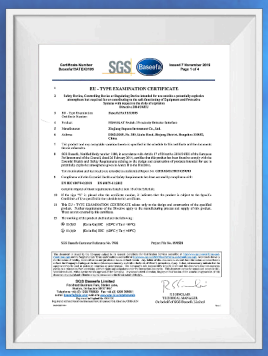
Many of SUPCON products have obtained SIL certification, classification society certification, CE certification and explosion-proof certification issued by international authorities. SUPCON products have reached the international advanced level in the reliability, stability and applicability. SUPCON has maintained the highest market share in many fields in China for years. SUPCON has become one of the leading suppliers of Sinopec, CNPC, CNOOC and other global top 500 companies.

The company insist on self-independent innovation and keep focusing on the industry pain points and hot issues. It has embarked on building a marketing network consisting of more than 100 physical 5S stores in China and a number of localized companies overseas. With "5T Technology", "Plantmate + Industrial APP" and "5S Store + S2B Platform" as three core strategies to enhance technological and business-model innovation, the company takes active steps in fostering “Industry 3.0+ Industry 4.0”. Its products and solutions have been extensively used in more than 50 countries and regions worldwide covering oil and gas, petrochemical, chemical, electric power, pharmaceutical, metallurgy, building materials, paper making, new materials, new energy, food and other industry.


ISO9000
萬泰認證
认证证书
GB/T19001-2016/idt ISO9001:2015

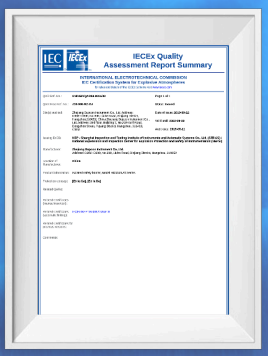

ISO14000
萬泰認證
认证证书
GB/T24001-2016/idt ISO14001:2015


ISO45001
萬泰認證
认证证书
GB/T 45001-2020/idt ISO45001:2018


SGS
EC - TYPE EXAMINATION CERTIFICATE


ATTESTATION
of conformity with European Directives
CE


Type certificate by assessment of the product design
ZHEJIANG SUPCON INSTRUMENT CO., LTD.
HD5500 series isolated barriers
IEC 61508 (edition 2) - Parts 1, 2 and 4


IECEx Quality
Assessment Report Summary
INTERNATIONAL ELECTROTECHNICAL COMMISSION


CHINA CLASSIFICATION SOCIETY
型式认可证书
CERTIFICATE OF TYPE APPROVAL

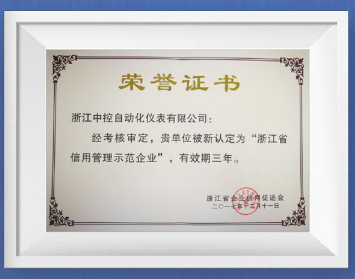

国家认定
企业技术中心
国家发展改革委 财 政 部
海 关 总 署 国家税务总局


高新技术企业
证书


软件企业证书


浙江省知名商号
浙江中控自动化仪表有限公司：
经认定，你单位 中控（仪表） 企业商号为浙江省知名商号。
（有效期六年）
浙江省市场监督管理局
二〇一九年一月十七日


“守合同重信用”企业
公示证书
浙江中控自动化仪表有限公司
为浙江省AAA级“守合同重信用”企业，公示期两年，公示期间实行动态管理，接受社会监督。


荣誉证书
浙江中控自动化仪表有限公司：
经考核审定，贵单位被新认定为“浙江省信用管理示范企业”，有效期三年。

PRODUCTION

Production Ability

73000

SUPCON Industrial Park covers an area of over 73,000 ㎡

100000

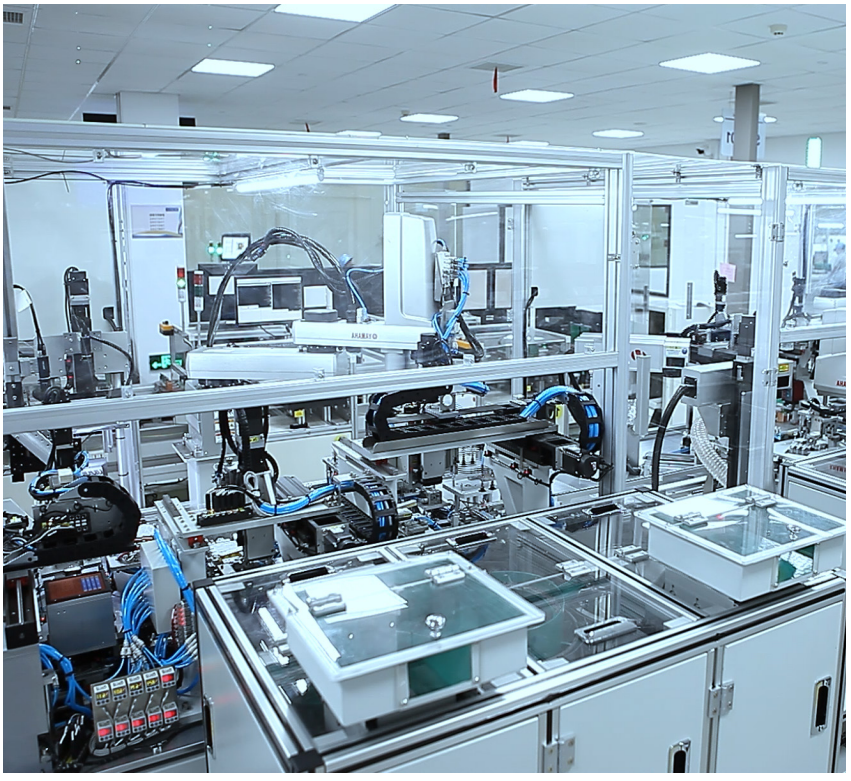
Annually more than 100000 pressure emitters can be produced.

20000

Annually more than 20000 radar level meters can be manufactured.

In October 2018, SUPCON intelligent manufacturing plant was relocated to Fuyang industrial park. Fuyang industrial park phase I takes up to a total area of 73,000 square meters, capable of producing 2.5 million modules and 30,000 cabinets per year. The park embodies advanced automation equipment such as PCBA production line, automatic coating production line, and self-developed functional test (FCT) production line. In the key quality control section, the park has SPI, X-Ray, AOI and other testing equipment. In terms of warehousing and logistics, the park is equipped with AGV, automatic silo and intelligent drying cabinet and other equipment.


SMT-E
Pb



SupX600 series
Interactive Calibrator & Communicator

SupX600 series interactive calibrator& communicator is a hand-held tool instrument product that uses a capacitive full touch screen, 1080P high-definition display, and integrates intelligent process calibrator and HARTcommunicator. The product adopts a unique separable operation design, which supports the separation of the operation terminal from the product to realize separate use, providing convenience for on-site operation. The product supports two-way independent output and measurement, provides convenient and easy-to-use process calibrator, recorder and other functions, and can complete electronic archiving of calibration, recording and other operations.

This product has the HART communication function, supports HART communication with devices using the electronic device description language (EDDL) of major manufacturers, and completes the configuration, calibration and diagnosis of various HART instruments.

01 Product Advantages

High accuracy process calibrator and HART Communicator in One

- Support the measurement and output of various thermal standard signals, Maximum accuracy: 0.01%.
- Comply with standard HART protocol and compatible with HART 5 6 7 protocol version devices.

Fully Compatible HART, Support HART DD files

- Support configuration, calibration and other operations for thousands of HART devices.
- Fully support online update of device DD file.

Provide data integration with SUPCON Intelligent device management software (IDM)

- Automatically records any changes in the field HART device parameter configuration and calibration.
- Upload to IDM software server to realize unified management of operation records .

Operation module and signal measurement module can be used separately

- When used separately, it can realize easy and efficient operation under many complex working conditions.
- When used together, all operations are the same as those of other hand-held tools.

02 Function Introduction

2.1 Calibrator

Measure/source basic functions

Support measurement of current, voltage (V), voltage (mV), frequency, pulse, 2/3/4-wire resistance or RTD, TC and switching signals; support output of current, voltage (V), voltage (mV), frequency, pulse, resistance and analog output of RTD or TC. The highest accuracy is 0.01%.

- Analog two-wire transmitter output mA signal
- Provides 24VDC power to the transmitter
- Measure transmitter current, can choose with or without power distribution
- Supports small signal clearing during mV/ resistance signal measurement
- The two signals are independent, and can be measured and output at the same time, or two channels can be measured at the same time
- Built-in ITS-90 international temperature scale two-way look-up table
- Celsius and Fahrenheit temperature scale switching
- Manual or automatic cold junction compensation mode
- Built-in high-accuracy cold junction temperature sensor

Various and convenient signal output methods

- 5 types of waveform output methods, graphical parameter configuration
- Quickly output of signal value can be set by user-defined preset value/step size/fine adjustment/reset

Data log

Real-time recording of single or dual-channel signal measurements or output values in the form of trend graphs. The recording interval can be set, support local saving and browsing as well as export. Maximum recording time up to 12 hours.

Documented process calibrator

The process calibrator module is designed for calibrating various process instruments. On sites often need to check and calibrate some process instruments or transmitters, usually requires two instruments or devices. This module is specially optimized for such applications. The output channel of the product outputs the signal to the process instrument, and at the same time, the output signal transmitted or processed by the process instrument is input to the input channel of the product for measurement to achieve equipment calibration.

It can save and copy calibration tasks, view calibration data locally, or export calibration reports for archiving.

2.2 HART Communicator

Fully compatible for HART devices

- Support HART DD file (which is HART device description file): support thousands of HART devices (such as Transmitters, Positioners, Flow Meters, Level Gauge, etc.) to configure, adjustment, diagnosis, etc. Realize the full-function of HART communication.
- Compatible HART 5, 6, 7 protocol version.

Customize the collection menu

- Support adding common menus to the [Collection] list, which is convenient to quickly update the device configuration status.
- Support collection by device type. Collection of the same device type have memory function, so there is no need to repeat collections.
- During HART adjustment, use the [Collection] button to reach the target menu directly, eliminating to view the menu layer by layer and simplifying the operation.

Online update

- Support online updating and downloading HART DD file
- Support for updating application online

Power distribution to HART devices

- Provide a DC voltage source to power the transmitter
- Provide a DC current source to power the positioner

Simultaneously turn on the calibrator

- In the communicator mode, the calibrator module can be called up through shortcut keys
- Quickly complete the measurement or output of various signals through shortcut keys

Synchronize data with upper-layer systems

- Provide data integration with SUPCON IDM software
- Automatically record the field HART device parameter configuration and calibration records, which can be synchronized to the IDM software server through the USB cable

OTHER FEATURES

- 5.5-inch high-definition full-color display Icon-based touch operation
- Dynamic and intuitive prompts for wiring information
- Use 24K gold-plated material to effectively ensure signal accuracy
- High or low alarm can be activated in signal measurement mode
- Removable 18650 lithium battery for easy field replacement .
- Electronic operation manual and quick guide
- Support RS-485 communication, convenient for secondary development
- Built-in safety barrier Bluetooth configuration tool
- Support automatic dark screen or automatic shutdown settings
- Support DCS loop wiring information query
- Built in RTD, TC scale conversion tool
- Support remote updating of product software

03 Product Accuracy

Normally, all specifications apply to the temperature range from +18°C to +28°C.

All specifications assume a 5-minute warm-up time, with a temperature coefficient of ±0.005%/°C from -10°C to +18°C and +28°C to +50°C.

The following indicators are all indicators in the state of not being cleared (excluding resistance and thermal resistance measurement and output). The calibrator provides a zero function to counteract the resistance of probe or leads.

The maximum allowable input voltage of the calibrator is 30VDC and the input current is 24mA.

3.1 Output

Signal type		Resolution	Measuring range	Accuracy1 Note*	Accuracy2 Note*	Notes
DC Voltage	100mV	1uV	(-10.000~110.000) mV	± (0.01%RD+10μV)	± (0.015%RD+10μV)	Note 1
	20V	1mV	(0.000~22.000) V	± (0.01%RD+1mV)	± (0.015%RD+1mV)	
DC current	20mA Active	1uA	(0.000~24.000) mA	± (0.01%RD+2μA)	± (0.015%RD+2μA)	
	20mA Passive	1uA	(0.000~24.000) mA	± (0.01%RD+2μA)	± (0.015%RD+2μA)	Note 2
Resistance	400Ω	10mΩ	(1.00~400.00) Ω	± (0.01%RD+0.04Ω)	± (0.015%RD+0.04Ω)	Note 3
	1800Ω	10mΩ	(400.00~1800.00) Ω	± (0.01%RD+0.18Ω)	± (0.015%RD+0.18Ω)	Note 4
	4800Ω	10mΩ	(1800.00~4800.00) Ω	± (0.01%RD+0.48Ω)	± (0.015%RD+0.48Ω)	Note 5
Frequency / pulse	1000Hz	0.01Hz	(1.00~1000.00) Hz	± (0.01%RD+0.1Hz)	± (0.015%RD+0.1Hz)	Note 6
	5000Hz	0.01Hz	(1000.00~5000.00) Hz	± (0.01%RD+1Hz)	± (0.015%RD+1Hz)	
	10000Hz	0.01Hz	(5000.00~10000.00) Hz	± (0.01%RD+3Hz)	± (0.015%RD+3Hz)	
	pulse	1	1~999999	±1	±1	

*Note * : Accuracy 1 applies to SupX600 Pro model*

Accuracy 2 apply to SupX600/ SupX600H/ SupX600HR Model.

Same as below

Note 1: Maximum load: 3mA
Note 2: Load capacity: 750Ω/20mA
Note 3: Excitation current (0.15~0.5)mA

Note 4: Excitation current (0.05~0.8)mA
Note 5: Excitation current (0.05~0.4)mA
Note 6: Waveform: (0~22)V±0.5V square wave (peak-to-peak);
load driving capacity: 3mA

3.2. Measurement

Signal type	Aisle	Reso-lution	Measuring range	Accuracy 1	Accuracy2	Notes
DC Voltage	100mV (measuring terminal)	1uV	(-100.000~1100.000) mV	± (0.01%RD+10μV)	± (0.015%RD+10μV)	
	100mV (output / Measurement end)	1uV	(-10.000~100.000) mV	± (0.01%RD+10μV)	± (0.015%RD+10μV)	
	30V (measuring terminal)	1mV	(-30.000~30.000) V	± (0.01%RD+3mV)	± (0.015%RD+3mV)	
	20V (measuring /output terminal)	1mV	(0.000~22.000) V	± (0.01%RD+2mV)	± (0.015%RD+2mV)	
DC current	20m A (measuring terminal)	1uA	(-24.000~24.000)mADC	± (0.01%RD+2μA)	± (0.015%RD+2μA)	
	20mA loop (measuring terminal)	1uA	(0.000~24.000)mADC	± (0.01%RD+2μA)	± (0.015%RD+2μA)	
Resistance (2,3,4-wire)	400Ω (measuring / output terminal)	10mΩ	(0.00~400.00) Ω	± (0.01%RD+0.04Ω)	± (0.015%RD+0.04Ω)	Note7 Note8
	1800Ω (measuring / output terminal)	10mΩ	(400.00~1500.00) Ω	±(0.01%RD+0.18Ω)	±(0.015%RD+0.18Ω)	
	4200Ω (measuring / output terminal)	10mΩ	(1500.00~4200.00) Ω	±(0.01%RD+0.42Ω)	± (0.015%RD+0.42Ω)	
Frequency / pulse	1000Hz (measuring / output terminal)	0.01Hz	(1.00~1000.00)Hz	±(0.01%RD+0.1Hz)	±(0.015%RD+0.1Hz)	Note 9
	5000Hz (measuring / output terminal)	0.01Hz	(1000.00~5000.00) Hz	± (0.01%RD+1Hz)	± (0.015%RD+1Hz)	
	30000Hz (measuring / output terminal)	0.01Hz	(5000.00~30000.00Hz	± (0.01%RD+1Hz)	± (0.015%RD+1Hz)	
	Pulse count (measuring /output terminal)	1	0~9999999	±1	±1	

Note 7: Excitation current: 0.5mA

Note 8: The resistance measurement and output are only calibrated to the calibrator jack at the factory. Therefore, please short-circuit the test leads to clear them before use, to offset the resistance effect of probe or wires

Note 9: Sensitivity: At least 1V (peak-to-peak); Waveform: Square wave

3.3 Measurement and Simulation of Thermal Resistance

Type	Temperature range (℃)		Accuracy 1	Accuracy 2	Notes
Cu50	-50.0~150.0	-50.0~150.0	±0.2℃	±0.6℃	IEC751
Pt100(385)	-200.0~800.0	-200.0~800.0	±0.1℃	±0.3℃	IEC751
Pt100(3916)	-200.0~510.0	-200.0~510.0	±0.1℃	±0.3℃	JIS C 1604 1989 (JPt100)
Pt200(385)	-200.0~630.0	-200.0~250.0	±0.1℃	±0.2℃	IEC751
		250.0~630.0	±0.2℃	±0.8℃	
Pt500(385)	-200.0~630.0	-200.0~500.0	±0.1℃	±0.3℃	IEC751
		500.0~630.0	±0.2℃	±0.4℃	
Pt1000(385)	-200.0~630.0	-200.0~100.0	±0.1℃	±0.2℃	IEC751
		100.0~630.0	±0.2℃	±0.2℃	

3.4 Measurement and Simulation of Thermocouples

Type	Temperature range (℃)		Accuracy 1 (Excluding the RJC error)	Accuracy 2 (Excluding the RJC error)	Notes
J	-210.0~1200.0	-210.0~0.0	±0.3℃	±0.6 ℃	IEC 584-1
		0.0~1200.0	±0.2℃	±0.4 ℃	
K	-200.0~1300.0	-200.0~0.0	±0.4℃	±0.8 ℃	IEC 584-1
		0.0~1300.0	±0.3℃	±0.5 ℃	
T	-200.0~400.0	-200.0~0.0	±0.7℃	±0.8 ℃	IEC 584-1
		0.0~400.0	±0.3℃	±0.5 ℃	
E	-100.0~1000.0	-100.0~0.0	±0.4℃	±0.5 ℃	IEC 584-1
		0.0~1000.0	±0.3℃	±0.4 ℃	
R	-20.0~1768.0	-20.0~0.0	±1.0℃	±1.6 ℃	IEC 584-1
		0.0~500.0	±0.7℃	±1.1 ℃	
		500.0~1768.0	±0.6℃	±0.9 ℃	
S	-20.0~1750.0	-20.0~0.0	±1.0℃	±1.6 ℃	IEC 584-1
		0.0~500.0	±0.7℃	±1.1 ℃	
		500.0~1750.0	±0.6℃	±0.9 ℃	
B	250.0~1820.0	250.0~600.0	±1.6℃	±1.8 ℃	IEC 584-1
		600.0~1000.0	±1.0℃	±1.2 ℃	
		1000.0~1820.0	±0.9℃	±1.0 ℃	
N	-200.0~1300.0	-200.0~0.0	±0.6℃	±0.9 ℃	IEC 584-1
		0.0~1300.0	±0.3℃	±0.5 ℃	

04 Comprehensive index

Item	Illustrate
Display	5.5" FHD IPS Full HD screen
Operating Temperature	-10℃ ~50℃
Storage Temperature	-20℃ ~70℃
Relative Humidity (No Condensation)	90% (10℃ ~30℃)
	75% (30℃ ~40℃)
	45% (40℃ ~50℃)
	35% (50℃ ~55℃)
	<10℃ , do not control
Electromagnetic Compatibility	EN55022, EN55024
Vibration	Randomness, 2g, (5~500)Hz
Shock	30g, 11ms, , Half-sine shock
Dimensions	About 215.0mm×100.0mm×49.0mm
Power Adapter Power Requirements	(100~240)VAC
Smart Calibrator Power Requirements	5V, 3A
Weight	About 870g (Including smart terminals)
IP Rate	IP54
Communication Method	RS-485 serial communication
External Connection	TYPE-C
	External high-accuracy cold junction temperature sensor interface
Battery	>15000mAh, lithium battery Typical working time: 15 hours

05 Selection Instructions

Model Selection

Model	Main function description
SupX600	Accuracy: 0.02 Process calibrator function
SupX600H	Accuracy: 0.02 Support HART communication Process calibrator function
SupX600HR	Accuracy: 0.02 Support HART Communication Process calibrator function Data recording function
SupX600Pro	Accuracy: 0.01 Support HART communication Professional process calibrator function Data recording function

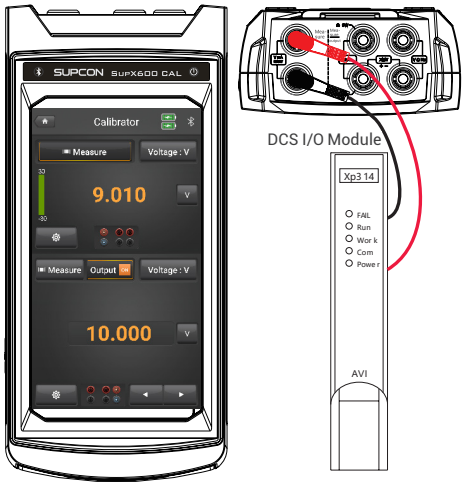
Standard accessories

- Test lead (A pair, one red and one black)
- Alligator clip (A pair, one red and one black)
- Probe (A pair, one red and one black)
- High accuracy cold junction temperature sensor
- Test hook (A pair, one red and one black)*
- Power Adapter +Type-C charging cable
- Dual banana test leads *
- U-clip (A pair, one red and one black)
- Short circuit block
- Quick guide of product
- Portable backpack
- Certificate (warranty card)
- Lead (A pair, one red and one black, red wire with built-in 250Ω resistor) *

Note: Accessory mark with * is with HART functional products other models do not include this accessory.

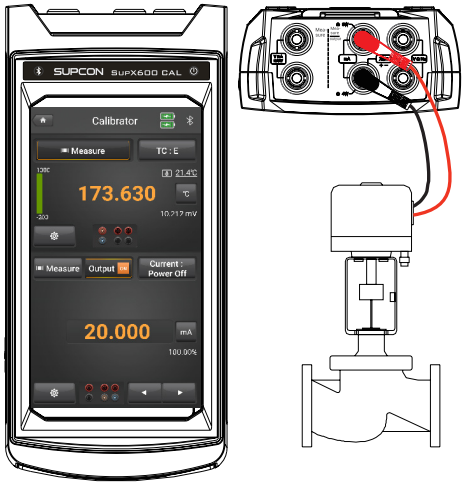
06 Application Scenario

Maintain DCS card

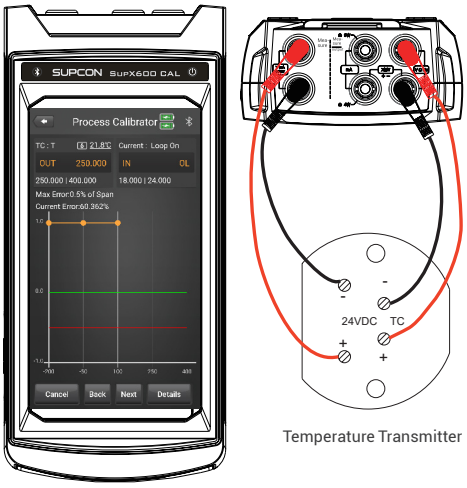


Adjust flowmeter

Maintain valve position

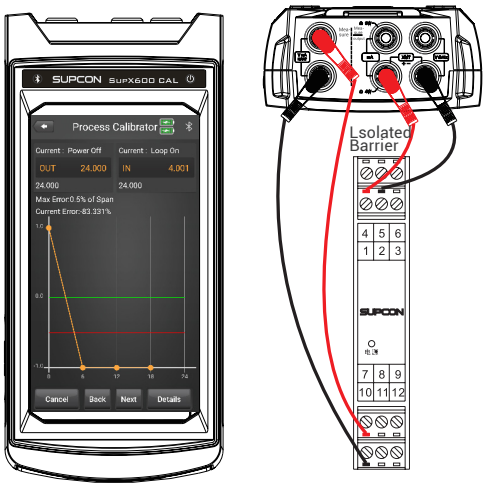


Test temperature transmitter

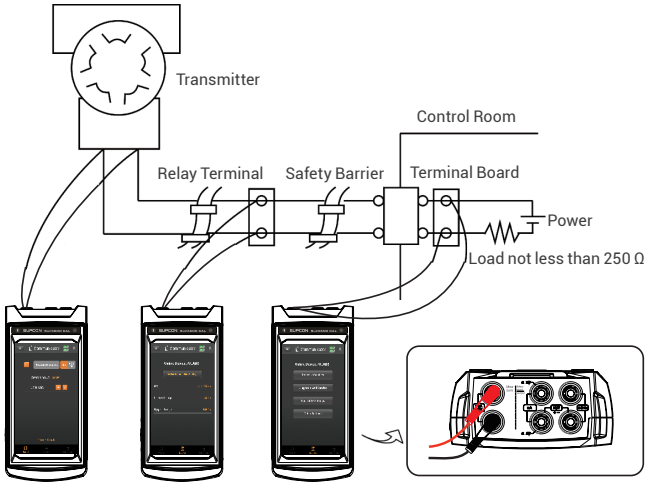


Maintenance of secondary instrument

Adjust signal product



HART communication with the transmitter: the handheld communicator can be connected to any of the three positions shown in the below picture.



Memorandum

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