



Professional Manufacturer of Pressure/  
Temperature Calibration Instruments

**Beijing Spake Technology Co., Ltd** is one of the most professional manufacturers of calibration instruments in China with 28 years' experience. We have been successfully manufactured Pressure/Temperature calibration instruments such as high accuracy Digital Pressure Gauge, Pressure Calibrator, Pressure Calibration Comparator Pumps as well as Process Calibrator and Temperature Calibrator Dry Blocks. So far "SPMK" brand calibration instruments have been used in over 100 countries worldwide and enjoy good reputation.

With the corporate philosophy of "Accurate Calibration, Perfect Service" going forward, we will continue developing high quality calibration instruments with the best service to more and more customers worldwide.



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## SPMK700 Digital Pressure Gauge-Reference



Gauges Pressure



Differential Pressure

### Product Description

SPMK700 precision digital pressure gauge is a single range, micro power consumption pressure indicator, which has large LCD screen and with high accuracy and stability. The standard RS232 interface can be used for data transfer into computer by our data logger software.

It can be working as a reference gauge, connect with SPMK Pressure comparator pump for pressure calibration of different pressure range.

### Product Characteristics





- Large LCD Screen with backlight and temperature display;
- Six digits resolution display switch;
- 11 pressure units available: kg/cm<sup>2</sup>, inHg, inH<sub>2</sub>O, Pa, kPa, MPa, bar, mbar, psi, mmHg, mmH<sub>2</sub>O;
- Connection tread of M20x1.5, NPT, BSP Optional.
- Pressure types: Gauge pressure, absolute pressure, differential pressure, compound pressure;
- Percentage display of the pressure value;
- Zero function, Peak function;
- Storage 40 files, 40 data per file;
- Rechargeable Lithium battery power supply.

## Technical Parameters

Project	Parameters
Pressure range ①	(-0.1~250)MPa
Accuracy②	±0.02/0.05%FS
Pressure type	Gauge pressure, Absolute pressure, Differential pressure
Connector	Connection tread of M20x1.5, NPT, BSP Optional.
	Differential Pressure Gauge: 4.00 mm diameter PVC plastic hose
Use environment	Temperature: (0~50)°C; Relative Humidity: <90% non-condensing; Atmospheric Pressure: (86~106)kPa.a
Communication	RS232 interface
Power supply	AC and DC power supply
Dimension	Head:Ø120mm×45mm;Total length:190mm
Weight	0.7 kg

Note: ① ②Specific ranges and accuracy levels are shown in the *Pressure Range Selection Table*.

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power Adapter	1 pc	
3	Rechargeable lithium batteries	1 pc	
4	Differential Pressure Gauge Connection Cable (only for Differential Pressure gauge)	1 pc	
5	User's manual	1 pc	
6	Test report	1 pc	



# SPMK223 Digital Pressure Calibrator



Pressure Gauges

Differential Pressure

## Product Description

SPMK223 intelligent digital pressure calibrator is a powerful pressure calibrator with high accuracy, which is mainly used to calibrate pressure (differential pressure) transmitter, pressure gauge, pressure switch and other pressure instruments. The standard RS232 interface can be used for data transfer into computer by our data logger software.

## Product Characteristics

- HART Communication to calibrate HART Pressure transmitter with 24V supply;
- Large LCD Screen with backlight and temperature display;
- Six digits resolution display switch;
- 11 pressure units available: kg/cm<sup>2</sup>, inHg, inH<sub>2</sub>O, Pa, kPa MPa, bar, mbar, psi, mmHg, mmH<sub>2</sub>O;
- Connection tread of M20x1.5, NPT, BSP Optional.
- Pressure types: Gauge pressure, absolute pressure, differential pressure, compound pressure;
- Percentage display of the pressure value;
- Zero function, Peak function;
- Storage 40 files, 40 data per file;
- Rechargeable lithium battery power supply;
- Automatic trigger function for pressure switch measure with a trigger time of less than 15 ms.

## Electrometric Indicators

Signal	Range	Resolution	Accuracy
Voltage measurement	(-30~30)V	0.1mV	$\pm(0.01\%RD+0.005\%FS)$
Current measurement	(-30 to 30) mA	0.1 $\mu$ A	$\pm(0.01\%RD+0.005\%FS)$
Switch detection	If the switch is energized, voltage range (3 to 24) V		
Temperature measurement	(0~50) $^{\circ}$ C	/	$\pm 1.0^{\circ}$ C
24VDC output	(24 $\pm$ 0.5)V, max. loaded 50mA		

Note: Ambient temperature is (25 $\pm$ 5) $^{\circ}$ C, 1 year accuracy.






## Technical Parameters

Project	Parameters
Pressure range ①	(-0.1~250)MPa
Accuracy②	$\pm 0.02/0.05\%$ F.S
Pressure type	Gauge pressure, Absolute pressure, Differential pressure
Connector	Connection tread of M20x1.5, NPT, BSP Optional.
	Differential Pressure Gauge: 4.00 mm diameter PVC plastic hose
	Electrical connector: $\varnothing$ 4 banana plug
Use environment	Ambient temperature: (0~50) $^{\circ}$ C; Storage temperature: (-20~60) $^{\circ}$ C; Relative humidity: <90% non-condensing; Atmospheric pressure: (86~106)kPa.a
Communication	RS232
Power supply	AC and DC power supply.
Dimensions	Head: $\varnothing$ 120mmx45mm;Total length:190mm
Weight	0.7 kg
Additional features	Pressure Leak Detection, Pressure Switch Trigger, Pressure Peak Recording,File Storage and Export, etc

Note: ① ②Specific ranges and accuracy levels are shown in the *Pressure Range Selection Table*



### Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1pc	
2	Power Adapter	1pc	
3	Rechargeable lithium batteries	1pc	
4	Test leads	1pc	
5	Differential Pressure Gauge Connection Cable (only for Differential Pressure Main Unit )	1pc	
6	User's manual	1pc	
7	Test report	1pc	

## Pressure Range Select Table of kPa/MPa/bar.

Pressure(kPa/MPa)	Pressure(bar)	Accuracy(%F.S)	Pressure Type
(-100~0)kPa	(-1~0)bar	0.05/0.1	Gauge Pressure
(0~100)kPa	(0~1)bar	0.05/0.1	Gauge Pressure
(0~160)kPa	(0~1.6)bar	0.02/0.05	Gauge Pressure
(0~250)kPa	(0~2.5)bar	0.02/0.05	Gauge Pressure
(0~400)kPa	(0~4)bar	0.02/0.05	Gauge Pressure
(0~600)kPa	(0~6)bar	0.02/0.05	Gauge Pressure
(0~1)MPa	(0~10)bar	0.02/0.05	Gauge Pressure
(0~1.6)MPa	(0~16)bar	0.02/0.05	Gauge Pressure
(0~2.5)MPa	(0~25)bar	0.02/0.05	Gauge Pressure
(0~4)MPa	(0~40)bar	0.02/0.05	Gauge Pressure
(0~6)MPa	(0~60)bar	0.02/0.05	Gauge Pressure
(0~10)MPa	(0~100)bar	0.02/0.05	Gauge Pressure
(0~16)MPa	(0~160)bar	0.02/0.05	Gauge Pressure
(0~25)MPa	(0~250)bar	0.02/0.05	Gauge Pressure
(0~40)MPa	(0~400)bar	0.02/0.05	Gauge Pressure
(0~60)MPa	(0~600)bar	0.02/0.05	Gauge Pressure
(0~70)MPa	(0~700)bar	0.02/0.05	Gauge Pressure
(0~100)MPa	(0~1000)bar	0.05/0.1	Gauge Pressure
(0~160)MPa	(0~1600)bar	0.1/0.2	Gauge Pressure
(0~250)MPa	(0~2500)bar	0.1/0.2	Gauge Pressure
(-100~100)kPa	(-1~1)bar	0.02/0.05	Gauge Pressure
(-100~160)kPa	(-1~1.6)bar	0.02/0.05	Gauge Pressure
(-100~250)kPa	(-1~2.5)bar	0.02/0.05	Gauge Pressure
(-100~600)kPa	(-1~6)bar	0.02/0.05	Gauge Pressure
(-0.1~1.0)MPa	(-1~10)bar	0.02/0.05	Gauge Pressure
(-0.1~2.5)MPa	(-1~25)bar	0.02/0.05	Gauge Pressure
(-0.1~4)MPa	(-1~40)bar	0.02/0.05	Gauge Pressure
(-0.1~6)MPa	(-1~60)bar	0.02/0.05	Gauge Pressure
(0~100)kPa.a	(0~1)bar.a	0.05	Absolute Pressure
(0~160)kPa.a	(0~1.6)bar.a	0.05	Absolute Pressure
(0~250)kPa.a	(0~2.5)bar.a	0.05	Absolute Pressure
(0~400)kPa.a	(0~4)bar.a	0.05	Absolute Pressure
(0~600)kPa.a	(0~6)bar.a	0.05	Absolute Pressure
(0~1)MPa.a	(0~10)bar.a	0.05	Absolute Pressure
(0~1.6)MPa.a	(0~16)bar.a	0.05	Absolute Pressure
(0~2.5)MPa.a	(0~25)bar.a	0.05	Absolute Pressure
(0~4)MPa.a	(0~40)bar.a	0.05	Absolute Pressure
(0~6)MPa.a	(0~60)bar.a	0.05	Absolute Pressure

(0~10)MPa.a	(0~100)bar.a	0.05	Absolute Pressure
(0~16)MPa.a	(0~160)bar.a	0.05	Absolute Pressure
(0~25)MPa.a	(0~250)bar.a	0.05	Absolute Pressure
(0~40)MPa.a	(0~400)bar.a	0.05	Absolute Pressure
(0~60)MPa.a	(0~600)bar.a	0.05	Absolute Pressure
(0~5)kPa	/	0.2	Differential Pressure
(-5~5)kPa	/	0.1	Differential Pressure
(0~10)kPa	/	0.1	Differential Pressure
(-10~10)kPa	/	0.05	Differential Pressure
(0~16)kPa	/	0.05	Differential Pressure
(-16~16)kPa	/	0.05	Differential Pressure
(0~25)kPa	/	0.05	Differential Pressure
(0~40)kPa	/	0.05	Differential Pressure
(-40~40)kPa	/	0.05	Differential Pressure
(0~60)kPa	/	0.05	Differential Pressure
(-60~60)kPa	/	0.05	Differential Pressure

## Pressure Range Select Table of psi.

Pressure (psi)	Pressure(bar)	Accuracy(%F.S)	Pressure Type
-15	-1	0.05	Gauge Pressure
2	0.16	0.05	Differential Pressure
5	0.35	0.05	Differential Pressure
10	0.7	0.05	Gauge Pressure
15	1	0.05	Gauge Pressure
30	2	0.05	Gauge Pressure
50	3.5	0.05	Gauge Pressure
100	7	0.05	Gauge Pressure
300	20	0.05	Gauge Pressure
500	35	0.05	Gauge Pressure
600	40	0.05	Gauge Pressure
1000	70	0.05	Gauge Pressure
2000	140	0.05	Gauge Pressure
3000	200	0.05	Gauge Pressure
5000	350	0.05	Gauge Pressure
10000	700	0.05	Gauge Pressure
15000	1000	0.05	Gauge Pressure
25000	1600	0.1	Gauge Pressure
36000	2500	0.1	Gauge Pressure

Note: For 0.02%FS accuracy, please contact with us.

Temperature Compensation included. Accuracy includes one-year stability.

# SPMK221G Automatic Pressure Calibrator



## Product Description

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SPMK221G automatic pressure calibrator has built-in electronic pressure pump. With functions of pressure measurement, electrical signal measurement/output, and HART communication, it is suitable for pressure calibration in the field. SPMK221G can help to complete the calibration of pointer pressure gauge, pressure transmitters, pressure switches and HART pressure instruments.

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## Product characteristics

- Accuracy  $\pm 0.02\%$  and  $\pm 0.05\%$  F.S optional;
- 8-inch color touch screen;
- Built-in automatic pressure generator;
- Chinese and English language available;
- Supports the step output method;
- Supports calibration of HART instruments;
- Supports measurement of voltage, current, pressure switch;
- Outputs mA and 24V;
- Use of external SDP pressure module (optional);
- RS232 interface with open communication protocols;
- Data storage function;
- Chargeable Li-ion Battery;
- 1 year warranty.

## Technical Parameters

Model	SPMK221G -0.1	SPMK221G -2.5	SPMK221G -4	SPMK221G -7	SPMK221G -60
Pressure auto-generation range	(-90~100) kPa	(-0.09~2.5) MPa	(-0.095~4) MPa	(-0.095~7) MPa	(0~60) MPa
Built-in pressure module I	(-90~100) kPa	(0~2.5) MPa	(-0.095 ~ 4) MPa	(-0.095 ~ 6) MPa	(0~60) MPa
Built-in pressure module II	(-16 ~ 16) kPa	(-90 ~ 250) kPa			
Control stability	≤ 0.003% FS	≤ 0.003% FS	≤ 0.003% FS	≤ 0.003% FS	≤ 0.005% FS
Pressure medium	Air	Air	Air	Air	Mineral Oil Distilled water
Task functions	★	★	★	★	★
HART communication	★	★	★	★	★
Data storage	★	★	★	★	★
Pressure switch detection	★	★	★	★	★
mA/V measurement	★	★	★	★	★
(0~22)mA output	★	★	★	★	★
24VDC output	★	★	★	★	★
Pressure type	differential/ gauge pressure	gauge pressure	gauge pressure/ absolute pressure	gauge pressure/ absolute pressure	gauge pressure
Automatic temperature compensation <sup>①</sup>	★	★	★	★	★
External Pressure Module <sup>②</sup>	★	★	★	★	★

Note: ① Temperature automatic compensation range is (-10~50)°C, 1 year accuracy.

② Modules can be customized, refer to *Module Selection Table for specifications*.

Tip: SPMK221G-0.1 and SPMK221G-2.5 can only be connected to the SDP pressure module for measurement but not pressure control.

## Module Selection Chart

Pressure range	Accuracy ratings	SPMK221G -0.1	SPMK221G -2.5	SPMK221G -4	SPMK221G -7	SPMK221G -60
(-5~ 5) kPa	0.02/0.05	★				
(-10 ~ 10) kPa	0.02/0.05	★				
(-16 ~ 16) kPa	0.02/0.05	★				
(-25 ~ 25) kPa	0.02/0.05	★				
(-40 ~ 40) kPa	0.02/0.05	★				
(-60 ~ 60) kPa	0.02/0.05	★				
(-100 ~ 100) kPa	0.02/0.05	★				
(-100 ~ 160) kPa	0.02/0.05		★	★	★	
(-100 ~ 250) kPa	0.02/0.05		★	★	★	
(-100 ~ 400) kPa	0.02/0.05		★	★	★	
(-100 ~ 600) kPa	0.02/0.05		★	★	★	
(0 ~ 1) MPa	0.02/0.05		★	★	★	
(0 ~ 1.6) MPa	0.02/0.05		★	★	★	
(0 ~ 2.5) MPa	0.02/0.05		★	★	★	★
(0 ~ 4) MPa	0.02/0.05			★	★	★
(0 ~ 6) MPa	0.02/0.05				★	★
(0 ~ 10) MPa	0.02/0.05					★
(0 ~ 25) MPa	0.02/0.05					★
(0 ~ 40) MPa	0.02/0.05					★
(0 ~ 60) MPa	0.02/0.05					★

## Electrometric Indicators








Signal	Range	Resolution	Accuracy
Voltage measurement	(-30 ~ 30)V	0.1 mV	$\pm(0.01\%RD+0.005\%FS)$
Current measurement	(-30 ~ 30) mA	0.1 $\mu A$	$\pm(0.01\%RD+0.005\%FS)$
Switch detection	If the switch is energized, voltage range (3 ~ 24) V		
Current output	(0 ~ 22) mA	1 $\mu A$	$\pm(0.02\%RD+0.005\%FS)$
24VDC output	(24 $\pm$ 0.5)V, Maximum belt load 50mA		

Note: Ambient temperature is (25 $\pm$ 5) °C, 1 year accuracy.





## General Technical Indicators

<b>Display</b>	4/5/6-digit display optional
<b>Usage environment</b>	Ambient temperature: (0~50)°C; Relative humidity: <90% non-condensing; Atmospheric pressure: (86~106)kPa.a
<b>Storage environment</b>	M20 x 1.5 standard female thread, or BSP/NPT Optional
<b>Power supply mode</b>	8 hours (pneumatic version), 12 hours (hydraulic version)
<b>Dimensions</b>	360mm(L) x 295mm(W) x 210mm(H)
<b>Weight</b>	13kg (pneumatic version), 17kg (hydraulic version)
<b>Warranty</b>	1 year

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pcs	
2	Power Adapter	1 pcs	
3	Test Leads	2 sets	
4	Pressure module connection cable	1 pc	
5	Filters (except SPMK221G-60)	2 pc	
6	Seals	20 pc	
7	Pressure Outport Plugs	2 pc	
8	User's Manual	1 pc	
9	Test report	1 pc	

## Optional Accessories

Serial number	Description	QTY	Picture
1	SPMK SDP Pressure Module		
2	SDP Module Connection Cable (Low Pressure Hose)		
3	SDP Module Connection Cable (High Pressure Hose)		
4	RS232 communication cable		



## SPMK221S Portable Automatic Pressure Calibrator



### Product Description

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SPMK221S portable automatic pressure calibrator integrated with fully intelligent control technology, including automatic pressure generation, pressure measurement, electrical signal measure and output, HART calibration, task management, data storage and other functions, which is the ideal tool for on-site pressure calibration, maintenance and testing.

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### Product Characteristics



- Accuracy  $\pm 0.02\%$  and  $\pm 0.05\%$  F.S optional
- 7-inch color touch screen
- Chinese and English language available
- Built-in automatic pressure generator
- Built-in atmospheric pressure module, gauge and absolute pressure switch
- Support the step output method
- Support calibration of HART instruments
- Support measurement of voltage, current, and pressure switch
- External SDP pressure module (optional)
- Data storage function
- Chargeable Li-ion Battery
- 1 year warranty

## Technical Indicators

Model	SPMK221S-W	SPMK221S-D	SPMK221S-G
Pressure auto-generation range	(-10~10)kPa	(-85~250)kPa	(-0.085~2)MPa
Built-in factory earth force module	(-10~10)kPa	(-100~250)kPa	(-0.1~2)MPa
Control stability	≤0.003%FS	≤0.003%FS	≤0.003%FS
Pressure medium	★	★	★
Task functions	★	★	★
HART communication	★	★	★
Data storage	★	★	★
Pressure switch detection	★	★	★
mA/V measurement	★	★	★
(0~22) mA output	★	★	★
24VDC output	★	★	★
Automatic temperature compensation <sup>①</sup>	★	★	★
External Pressure Module <sup>②</sup>	★	★	★

Note: ①Temperature auto-compensation range of (-10~50)°C, 1 year accuracy.

②Modules can be customized Specifications can be found in the Module Selection Table.

In addition, it is prohibited to test the oil gauge.

## Module Selection Chart

Pressure range	Accuracy ratings	SPMK221S-W	SPMK221S-D	SPMK221S-G
(-5~5)kPa	0.05	★		
(-10~10)kPa	0.05	★		
(-16~16)kPa	0.05		★	
(-25~25)kPa	0.05		★	
(-40~40)kPa	0.05		★	

(-60~60)kPa	0.05		★	
(-100~0)kPa	0.02/0.05		★	★
(0~100)kPa	0.02/0.05		★	★
(0~160)kPa	0.02/0.05		★	★
(0~250)kPa	0.02/0.05		★	★
(0~400)kPa	0.02/0.05			★
(0~600)kPa	0.02/0.05			★
(0~1)MPa	0.02/0.05			★
(0~1.6)MPa	0.02/0.05			★

### Electrometric Indicators








Function	Range	Resolution	Accuracy
Voltage measurement	(-30~30)V	0.1mV	$\pm(0.01\%RD+0.005\%FS)$
Current measurement	(-30~30)mV	0.1 $\mu$ A	$\pm(0.01\%RD+0.005\%FS)$
Switch detection	If the switch is energized, voltage range (3 ~ 24) V		
Current output	(0~22)mV	1 $\mu$ A	$\pm(0.02\%RD+0.005\%FS)$
24VDC output	(24 $\pm$ 0.5)V, max. loaded 50mA		

Note: Ambient temperature is(25 $\pm$ 5) $^{\circ}$ C, 1 year accuracy.


### General Technical Indicators

Display	4/5/6-digit display optional
Usage Environment	Ambient temperature :(-10 ~ 50) $^{\circ}$ C ; Relative humidity <90% noncondensing; Atmospheric pressure (86~106)kPa.a
Pressure connection	1 x G 1/8 standard thread
Battery life	8 hours
Dimensions	241mm(L)x168mm(W)x73mm(H)
Weight	2.6kg
Warranty	1 year

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main Product	1 pc	
2	Power Adapter	1 pc	
3	Test Leads	2 set	
4	Pressure module connection cable	1 pc	
5	Gas connection hose	1 pc	
6	External pressure manifold with two outports	1 pc	
7	Seals	20 pc	
8	Pressure Outport Plugs	2 pc	
9	User's Manual	1 pc	

## Optional Accessories

Serial number	Description	QTY	Picture
1	SPMK SDP Pressure Module		
2	SPMK SDP Pressure Module Test Report		

## SPMK212C Low Pressure Test Pump



### Product Description

SPMK212C low pressure test pump is a high precision pneumatic handheld pressure generator. It provides stable micro pressure from -0.5 to 0.5bar (-7-7psi). Its Hard oxidation treatment makes it wear-resistant, and scratch-resistant. The simple structure and easy operation make it a perfect equipment for calibrating differential pressure gauges, pressure transmitters, pressure sensors, and other low pressure (vacuum) instruments.

### Product characteristics

- Pressure Range: -0.5-0.5bar, -7-7psi;
- Perfect pressure stability;
- Quick connector makes it easy and fast to connect the under tested device;
- Light weight, easy for filed and lab usage;
- Fine adjustment screw of 0.01Pa;
- Hard oxidation treatment, wear-resistant, scratch-resistant.

### Product Specifications

Model	SPMK212C
Pressure range	(-50~50)kPa, (-0.5-0.5)bar, (-7-7)psi
Fine adjustment	0.01 Pa
Medium	Air
Dimension	(240×130×130) mm
Weight	1.5 kg
Outport thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Outport O rings and repair kits
Warranty	1 year

## SPMK213C Low Pressure Test Pump



### Product Description

SPMK213C pressure calibration pump is pneumatic handheld pressure generator. It provides stable pressure from -0.7 to 1bar (-10-15psi). The simple structure and easy operation make it a perfect equipment for calibrating low pressure gauges, pressure transmitters, pressure sensors, and other low pressure (vacuum) instruments.

### Product characteristics

- Pressure range -0.7-1bar, -10-15psi;
- Perfect pressure stability;
- Quick connector makes it easy and fast to connect the under tested device;
- Light weight, good for both on-site and Lab usage;
- Fine adjustment screw of 0.01Pa.

### Product Specifications

Model	SPMK213C
Pressure range	(-70~100)kPa, (-0.7-1)bar, ( -10-15)psi
Fine adjustment	0.01 Pa
Medium	Air
Dimension	(305x205x140) mm
Weight	1.5 kg
Outport thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Outport O rings and repair kits
Warranty	1 year

## SPMK213B Low Pressure Test Pump



### Product Description

SPMK213B pressure calibration pump is pneumatic handle pressure generator. It provides stable low pressure from -0.95 to 6bar (-14-90psi). Its Hard oxidation treatment makes it wear-resistant and scratch-resistant. The simple structure and easy operation make it a perfect equipment for calibrating low pressure gauges, pressure transmitters, pressure sensors, and other low pressure (vacuum) instruments.

### Product characteristics

- Pressure range -0.95-6bar (-14-90psi);
- Quick connector makes it easy and fast to connect the under tested device;
- Light weight, good for both on-site and Lab usage;
- Fine adjustment screw of 1Pa;
- Hard oxidation treatment, wear-resistant, scratch-resistant.

### Product Specifications

Model	SPMK213B
Pressure range	(-95~600)kPa, (-0.95-6)bar , (-14-90)psi
Fine adjustment	1 Pa
Medium	Air
Dimension	(250×139×144)mm
Weight	2.2 kg
Outport thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Outport O rings and repair kits
Warranty	1 year



## SPMK213H Pneumatic Pressure Test Pump



### Product Description

SPMK213H pressure calibration pump is pneumatic handle pressure generator. It provides stable low pressure from -0.95 to 25bar (-14-375psi) or -0.95 to 40bar (-14-600psi) two types. Its Hard oxidation treatment makes it wear-resistant and scratch-resistant. The simple structure and easy operation make it a perfect equipment for calibrating low pressure gauges, pressure transmitters, pressure sensors, and other low pressure (vacuum) instruments.

### Product characteristics

- Pressure range -0.95 to 25bar (-14-375psi) ; -0.95 to 40bar (-14-600psi) ;
- Perfect pressure stability;
- Quick connector makes it easy and fast to connect the under tested device;
- Light weight, easy for filed and lab usage;
- Fine adjustment screw of 1Pa;
- Hard oxidation treatment, wear-resistant, scratch-resistant.

### Product Specifications

Model	SPMK213H
Pressure range	(-0.95-25)bar (-14-375)psi ; (-0.95-40)bar (-14-600)psi
Fine adjustment	1 Pa
Medium	Air
Dimension	(298×179×154)mm
Weight	2.6 kg
Output thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Output O rings and repair kits
Warranty	1 year

## SPMK213E Pneumatic Pressure Test Pump



### Product Description

SPMK213E pressure calibration pump is one high pressure pneumatic type. It provides stable high pressure from -0.95 to 70bar (-14-1000psi) or -0.95 to 100bar (-14-1500psi) two types. The hard oxidation treatment makes it wear-resistant and scratch-resistant. The special structure makes it easier to generate high pressure. It is a perfect equipment for calibrating pressure gauges, pressure transmitters, pressure sensors, and other pressure (vacuum) instruments.

### Product characteristics

- Pressure range -0.95-70bar (-14-1000psi) ; -0.95-100bar (-14-1500psi) ;
- Perfect pressure stability;
- Hand tight quick connector, easy to connect the under tested device;
- Light weight, easy for filed and lab usage;
- Fine adjustment screw of 1Pa;
- Hard oxidation treatment, wear-resistant, scratch-resistant.

### Product Specifications

Model	SPMK213E
Pressure range	(-0.95-70)bar (-14-1000)psi ; (-0.95-100)bar (-14-1500) psi
Fine adjustment	1 Pa
Medium	Air
Dimension	(400×262×170)mm
Weight	5.5 kg
Outport thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Outport O rings and repair kits
Warranty	1 year

## SPMK214E High Pressure Test Pump



### Product Description

SPMK214E pressure calibration pump is high pressure pneumatic type. It provides stable high pressure from -0.95 to 160bar (-14-2320psi) and -0.95 to 200bar (-14-3000psi) two types. The hard oxidation treatment makes it wear-resistant and scratch-resistant. The special structure makes it easier to generate high pressure up to 2320psi and 3000psi. It is a perfect equipment for calibrating pressure gauges, pressure transmitters, pressure sensors, and other pressure (vacuum) instruments.

### Product characteristics

- Pressure range -0.95 to 160bar (-14-2320psi); and -0.95 to 200bar (-14-3000psi)
- Perfect pressure stability
- Hand tight quick connector, easy to connect the under tested device
- Special structure makes easy to reach high pressure
- Fine adjustment screw of 1Pa
- Hard oxidation treatment, wear-resistant, scratch-resistant.

### Product Specifications

Model	SPMK214E
Pressure range	(-0.95-160)bar (-14-2320)psi; (-0.95-200)bar (-14-3000) psi
Fine adjustment	1 Pa
Medium	Air
Dimension	(470 x 262 x 170) mm
Weight	6 kg
Output thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Output O rings and repair kits
Warranty	1 year

## SPMK214L Hydraulic Pressure Test Pump



### Product Description

SPMK214L pressure test pump is hydraulic pressure generator with hydraulic oil or distilled water media. It can generate pressure of 0 to 700bar (0-10,000psi). It is portable design which is suitable for both field and lab use. The special design structure makes it a perfect equipment for calibrating pressure gauges, pressure transmitters, pressure sensors, and other pressure instruments.

### Product characteristics

- Pressure range 0 to 700bar, 0-10,000psi;
- Perfect pressure stability;
- Hand tight quick connector, easy to connect the under tested device;
- Special structure makes easy to reach high pressure;
- Fine adjustment screw of 0.1kPa;
- Hard oxidation treatment, wear-resistant, scratch-resistant.

### Product Specifications

Model	SPMK214L
Pressure range	(0-700)bar, (0-10,000)psi
Fine adjustment	0.1kPa
Medium	Mineral oil (Distilled water) Two types
Dimension	(384×198×180)mm
Weight	4.7kg
Output thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Output O rings and repair kits
Warranty	1 year

## SPMK2000E Pneumatic Pressure Calibration Pump



### Product Description

SPMK2000E pressure calibration pump is a pneumatic desk-top pressure generator with 3 outputs. The pressure range is -0.95 to 60bar (-14-900psi). It is a hand operated pressure pump which can generate pressure smoothly up to 60bar. It is a perfect pressure calibration comparator for lab use.

### Product characteristics

- Pressure range -0.95 to 60bar (-14-900psi) ;
- Pneumatic type, Perfect pressure stability;
- Hand tight quick connector, easy to connect the under tested device;
- Special structure design makes easy to reach high pressure;
- Fine adjustment screw of 1Pa.

### Product Specifications

Model	SPMK2000E
Pressure range	(-0.95- 60)bar (-14-900)psi
Fine adjustment	1 Pa
Medium	Air
Dimension	(465×360×246) mm
Weight	14 kg
Outlet thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm 1 or 2 thread type from above.
Accessories	Outlet O rings and repair kits
Warranty	1 year

# SPMK990 Hydraulic High Pressure Calibration Pump



## Product Description

SPMK990S and SPMK990Y hydraulic high pressure calibration pump is hydraulic pressure generator with distilled water media or hydraulic oil two types. The pressure range is 0-600bar (0-9,000psi) and 0-1000bar (0-15,000psi) two types. With special structure design, it can generate pressure smoothly and easily to 600bar and 1000bar. It is a perfect pressure calibration comparator for lab use.

## Product characteristics

- 0-600bar (0-9,000psi); 0-1000bar (0-15,000psi) two types;
- SPMK990S Water media type, SPMK990Y Oil Media type;
- Perfect pressure stability;
- Hand tight quick connector, easy to connect the under tested device;
- Special structure design makes easy to reach high pressure;
- Fine adjustment of 0.1kPa.

## Product Specifications

Model	SPMK990S	SPMK990Y
Pressure range	(0-600)bar (0-9,000psi); ( 0-1,000)bar (0-15,000)psi	(0-600)bar (0-9,000psi); ( 0-1,000)bar (0-15,000)psi
Fine adjustment	0.1 kPa	0.1 kPa
Medium	Distilled water	Hydraulic oil
Dimension	(465 x 370 x 240) mm	
Weight	15 kg	
Medium volume	0.38L	
Outport thread	M20*1.5, 1/4NPT, 1/4BSP, 1/2NPT, 1/2BSP Female. Please confirm thread type from above.	
Accessories	Outport O rings and repair kits	
Warranty	1 year	

# SPMK213K Hydraulic Ultrahigh Pressure Pump



## Product Description

SPMK213K pressure test pump is hydraulic pressure generator, which can generate pressure up to 2500bar (0-36,500psi). There are water media type and oil media two types available. With Pre-Pressure design, it can generate very high pressure smoothly and easily up to 2500bar. It is a perfect pressure calibration comparator for lab use.

## Product characteristics

- Generate 0-2500bar; (0-36,500psi)
- Oil and water two type available, Perfect pressure stability
- Hand tight quick connector, easy to connect the under tested device
- Pre-Pressure design makes easy to reach high pressure
- Fine adjustment of 1kPa

## Product Specifications

Model	SPMK213K
Pressure range	(0-2500)bar; (0-36,500psi)
Fine adjustment	1kPa
Medium	Mineral oil or Distilled water two types
Dimension	(450×380×250)mm
Weight	17 kg
Medium volume	0.38L
Outport thread	M20*1.5, 1/2NPT, 1/2BSP Female, UNF 9/16 Male and Female.
Accessories	Outport O rings and repair kits
Warranty	1 year



# SPMK214K Hydraulic Ultrahigh Pressure Pump



## Product Description

SPMK214K pressure test pump is Oil media hydraulic pressure generator, which can generate pressure up to 4200bar (0-60,000psi). With Pre-Pressure design, it can generate very high pressure smoothly and easily up to 4200bar. It is a perfect pressure calibration comparator for high pressure device in lab use.




## Product characteristics

- Generate pressure 0 to 4200bar (0-60,000psi) ;
- Oil media type, Perfect pressure stability;
- Hand tight quick connector of 2 outports
- Pre-Pressure design makes easy to reach high pressure;
- Fine adjustment of 10kPa.

## Product Specifications

Model	SPMK214K
Pressure range	(0-4200)bar (0-60,000)psi
Fine adjustment	10 kPa
Medium	Mineral oil
Dimension	(480×430×380)mm
Weight	22.8 kg
Medium volume	0.38L
Outport thread	M20*1.5, UNF 9/16 Male and Female.
Accessories	Outport O rings and repair kits
Warranty	1 year

## Pressure Calibrators Accessories

Model No.	Items	Pictures	Application	Range
<b>SPMK 2000-1</b>	Adaptors sets		Based on M20×1.5M to 38 different thread following:  M20×1.5 M/F    M12×1.5 M/F M16×1.5 M/F    M10×1.0 M/F M14×1.5 M/F 1/2BSP M/F    1/4BSP M/F 3/8BSP M/F    1/8BSP M/F 1/2NPT M/F    1/4NPT M/F 3/8NPT M/F    1/8NPT M/F ZG1/2 M/F    ZG3/8 M/F ZG1/4 M/F    ZG1/8 M/F Ø6 Ø8 Ø10 M20×1.5 Right Angle	(-1~2500) bar
<b>SPMK 2000-1N4</b>	Adaptors sets		Based on 1/4NPTM to 38 different threads as mentioned above	(-1~700) bar
<b>SPMK 2000-1N2</b>	Adaptors sets		Based on 1/2NPTM to 38 different threads as mentioned above	(-1~2500) bar
<b>SPMK 2000-1B4</b>	Adaptors sets		Based on 1/4BSPM to 38 different threads as mentioned above	(-1~700) bar
<b>SPMK 2000-1B2</b>	Adaptors sets		Based on 1/2BSPM to 38 different threads as mentioned above	(-1~2500) bar
<b>SPMK 2000-2</b>	Pressure Hose		For Pneumatic Gauge Calibration	(-1~8) bar
<b>SPMK 2000-3</b>	Pressure Hose		For Pneumatic Gauge Calibration	(-1~40) bar
<b>SPMK 2000-4</b>	Pressure Hose		For Hydraulic Gauge Calibration	(0~700) bar
<b>SPMK 2000-5</b>	Pneumatic-Hydraulic Separation Filter		Filter impurities and remove oil during pneumatic pressure comparator calibration.	(-1~250) bar

<b>SPMK 2000-6</b>	Hydraulic Filter		Filter impurities in the gauge, protect the pump from pollution	(0~700) bar
<b>SPMK 2000-8</b>	Thread Clean Tool		Remove tape from instrument threads	/
<b>SPMK 2000-9</b>	Pressure Manifolds		5-in-1 Pressure Manifolds Pneumatic and Hydraulic two types	(-1~250) bar (0-700) bar
<b>SPMK 2000-10</b>	Pressure Manifolds		4-in-1 Pressure Manifolds Pneumatic and Hydraulic two types	(-1~250) bar (0-700) bar
<b>SPMK 2000-17</b>	Pressure Manifolds		8-in-1 Pressure Manifolds Pneumatic and Hydraulic two types	(-1~250) bar (0-700) bar
<b>SPMK 2000-15</b>	Carrying Case		White, Aluminum Material. For portable pressure comparators	/
<b>SPMK 2000-16</b>	Carrying Case		Black, PP Alloy Material, Outer Dimension: 560mm x 455mm x 365mm For SPMK213K&990S comparator only	/
<b>SPMK 2000-18</b>	Rubber Protector		SPMK223 Calibrator and SPMK700 pressure gauge only.	/

\*\*NPT/BSP/M20X1.5 thread are available for all accessories.

\*\*ZG and PT refers to the same screw thread.

# SPMK361 Precision Digital Thermometer



## Product Description

SPMK361 handheld precision digital thermometer is with high accuracy and good stability, which is a precision temperature measuring instrument for industrial temperature measurement and calibration. The temperature measurement range is  $(-80 \sim 300)^{\circ}\text{C}$ . It can directly display the temperature on the LCD screen, which is very suitable for laboratory and field use.

## Product characteristics

- Accuracy of  $0.05^{\circ}\text{C}$  annually.
- Temperature display:  $^{\circ}\text{C}$ , K,  $^{\circ}\text{F}$  unit switch, resolution  $1/0.1/0.01/0.001^{\circ}\text{C}$  switch.
- 7 levels of back lighting, LCD display, the screen can be flipped.
- Over-temperature alarm display (alarm range can be set).
- Documentation: The time files accompanying the data can be stored in groups of 248 (22 files per group).
- Acquisition time 1~3 seconds optional.
- Low power consumption, can work for 1000 hours when wireless communication is closed;
- Warranty: 1 year.

## Product Specifications

Model	Temperature range	Accuracy	calibration cycle
SPMK361-160	(-40~160)°C	±0.05°C/±0.1°C	1 year
SPMK361-300	(-80~300)°C	±0.05°C/±0.1°C	1 year

## Technical Parameters

Project	Parameters
Power supply mode	Chargeable lithium battery
Annual stability	0.05°C
Usage environment	Ambient temperature: (-10~50)°C, should be lower than 40°C when charging; Relative humidity: ≤90%RH; Air pressure: (86~101)kPa
Storage environment	Ambient temperature: (-10~60)°C; Relative humidity: ≤90%RH; Air pressure: (86~101)kPa
Dimensions	(123 x 160 x 30) mm
Sensor length	300/500 mm
Weight	0.4 kg
Warranty	1 year

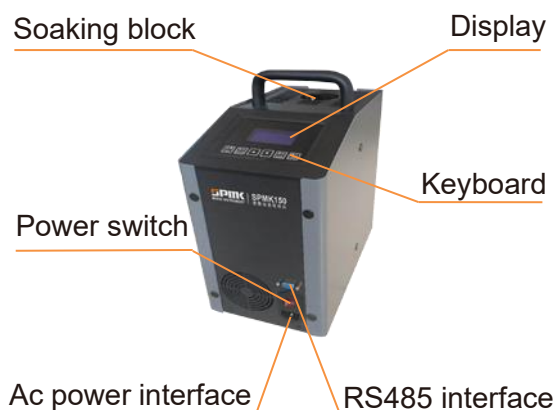
# SPMK150/650 Portable Temperature Calibrator



## Features

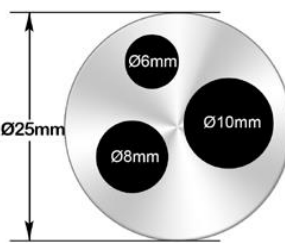
- Temperature range: SPMK150 (-30~155)°C ; SPMK650 (33~660)°C;
- With 6 digits display;
- The soaking block is replaceable and customized;
- Digital temperature control, fast cooling and heating with good stability;
- Dry Block has a series of protection functions such as built-in load short circuit, load disconnection, and sensor protection;
- Portable and easy to carry without any pollution.

## Basic structure



### Diameter of soaking block




Standard 3 holes	Other customized holes
Ø6mm Ø8mm Ø10mm	1.Ø6mm Ø6mm Ø6mm
	2.Ø6mm Ø8mm Ø8mm
	3.Ø6mm Ø6mm Ø10mm
	4.Ø6mm Ø6mm Ø12mm
	5.Ø8mm Ø8mm Ø8mm
	6.Ø6mm Ø8mm
	7.Ø6mm Ø10mm
	8.Ø6mm Ø12mm
	Consult us for other diameters



## Technical Data

MODEL	SPMK150	SPMK650
Temperature range	(-30 ~ 155)°C (Ambient temperature 25°C)	(33 ~ 660)°C
Temperature deviation	±0.15°C	±0.5°C
Temperature stabilization time	5 minutes	10 minutes
Display resolution	0.001°C	
Insert Depth	170 mm	
Outside diameter of soaking block	Ø25 mm	
Standard block insertion aperture	Ø6, Ø8, Ø10mm or customized	
Unit	°C、°F、K	
Temperature difference between holes	≤±0.05°C (Using special soaking block for temperature field test)	
Axial temperature field	Temperature change within 20mm from the bottom of the block insertion≤0.5°C	
Temperature fluctuation	±0.03°C/15min	
Power supply	220VAC 50Hz 0.45kW	220VAC 50Hz 1.2kW
Communication	RS485	
Language	Chinese and English	
Dimensions (including carrying handle)	(410 x 235 x 410) mm	(315 x 175 x 380) mm
Weight	15.5 kg	14 kg
Power	0.45 kW	1.2 kW
Warranty	1 year	

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power adaptor	1 pc	
3	Test leads	4 sets	
4	Soaking block picking tool	1 pc	
5	User's manual	1 pc	
6	Test report	1 pc	



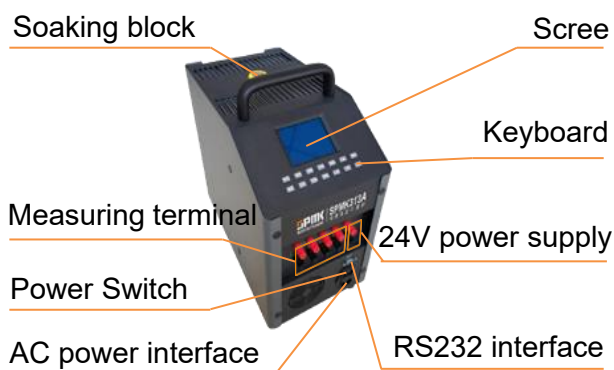
## SPMK313A / 313B Temperature Calibrator / Dry Block



### Features

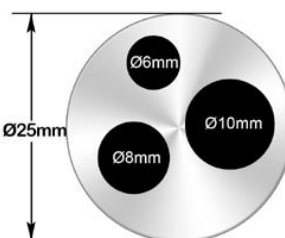
- Measure DC voltage, millivolt voltage, DC current, resistance, switch on and off and other signals.
- It can measure 8 kinds of thermocouples (S, B, R, K, E, J, T, N) and 4 kinds of thermal resistances (Pt100, Pt10, Cu100, Cu50), and provide cold end compensation function, which provides more convenience for users.
- It is convenient and quick to provide 24V power supply when measuring transmitter signal.
- It has dual-channel measurement function, which does not interfere with each other and can be used at the same time.
- The large screen display
- Six-digit display with resolution of  $0.001^{\circ}\text{C}$  (adjustable).
- The temperature control resolution and measurement resolution can be set independently

### Basic structure



#### Diameter of soaking block

Standard 3 holes	Other customized holes
Ø6mm Ø8mm Ø10mm	1. Ø6mm Ø6mm Ø6mm
	2. Ø6mm Ø8mm Ø8mm
	3. Ø6mm Ø6mm Ø10mm
	4. Ø6mm Ø6mm Ø12mm
	5. Ø8mm Ø8mm Ø8mm
	6. Ø6mm Ø8mm
	7. Ø6mm Ø10mm
	8. Ø6mm Ø12mm
	Consult us for other diameters



## Electrometric Indicators

Signal	Range	Resolution	Accuracy
Voltage measurement	(-75~75)mV	0.1μV	±(0.01%RD+0.005%FS)
	(-30~30)V	0.1mV	±(0.01%RD+0.005%FS)
Current measurement	(-30~30)mA	0.1μA	±(0.01%RD+0.005%FS)
Resistance 4-wire	(0~400)Ω	1mΩ	±(0.01%RD+0.005%FS)
Switch measurement	Short circuit resistance <100Ω	0.01℃	Reaction time: < 10ms

## Technical Data

MODEL	SPMK313A	SPMK313B
Temperature range	(-30~155)℃ or (-40~155)℃ (Ambient temperature 25℃)	(33~660)℃
Temperature deviation	±0.15℃	±0.5℃
Temperature stabilization time	5 minutes	10 minutes
Display resolution	0.001℃	
Insert Depth	170 mm	
Outside diameter of soaking block	Ø25 mm	
Standard block insertion	Ø6, Ø8, Ø10mm/ customized	
Temperature Unit	℃、℉、K	
Temperature difference between holes	≤±0.05℃ (Using special soaking block for temperature field test)	
Axial temperature field	Temperature change within 20mm from the bottom of the block insertion≤0.5℃	
Temperature fluctuation	±0.03℃/15min	

<b>Power Supply</b>	220VAC 50Hz 0.45kW	220VAC 50Hz 1.2kW
<b>Communication</b>	RS232	
<b>Language</b>	Chinese and English	
<b>Dimension</b>	(310×240×400) mm	(300×175×380) mm
<b>Weight</b>	15 kg	14 kg
<b>Power</b>	0.45 kw	1.2 kw
<b>Warranty</b>	1 year	

### Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power adaptor	1 pc	
3	Test leads	4 sets	
4	Soaking block picking tool	1 pc	
5	User's manual	1 pc	
6	Test report	1 pc	

# SPMK51X Series Multi-function Process Calibrator

Whether for troubleshooting or normal maintenance or calibration, SPMK51X series of multifunction process calibrators will help you accomplish your tasks quickly and accurately.



## Product Characteristics

- **Variety of functions**  
Calibrate pressure, temperature, voltage, current, frequency, pulse, resistance. Both measurement and source functions.
- **Measurement and source functions**  
Measures 13 types of thermocouples and 11 types of RTDs and provides analog output with cold end compensation.
- **Data storage functions**  
No need to worry about data loss. Supports output methods such as step or program
- **Built-in HART function**  
It can calibrate and maintain HART-type instruments, and realize functions such as management of instrument basic information, range migration, zero point and full scale calibration (only for 516 and 518)
- **Support external pressure modules**  
SPMK SDP Pressure Module (only for 517 and 518) (Optional)
- **Task management function**
- **Analog transmitters**  
Generate precise electrical, temperature or pressure signals.
- **Provides commonly used tools**  
Thermal engineering treasure trove, user-built RTD library, temperature and pressure unit conversion.
- **Automatic cold-end compensation technology**  
Built-in cold end insulation module for fast tracking of temperature changes.
- **3.5-inch high-resolution TFT display**
- **Chinese and English languages available**
- **RS232 interface and open communication protocol**
- **Provide a 24VDC loop power supply with measurement and output isolated from each other**
- **Warranty: 1 year**

## Product Functions

Function		SPMK510	SPMK516	SPMK517	SPMK518
Measurement	Millivolts	★	★	★	★
	Voltage	★	★	★	★
	Current	★	★	★	★
	Frequency		★	★	★
	Pulse		★	★	★
	Resistance		★	★	★
	On-off	★	★	★	★
	11 RTDs		★	★	★
	13 thermocouples		★	★	★
Source	Millivolt current	★	★	★	★
	Voltage	★	★	★	★
	Current	★	★	★	★
	Frequency		★	★	★
	Resistance		★	★	★
	Simulate 11 RTDs		★	★	★
	Simulate 13 thermocouples		★	★	★
Other Functions	HART communication		★		★
	External pressure module <sup>①</sup>			★	★
	Thermal book		★	★	★
	Step programming output	★	★	★	★
	24V loop current	★	★	★	★
	Simulating transmitter		★	★	★
	RS232 communication	★	★	★	★
	Storage	★	★	★	★

Note: SPMK510 millivolt voltage measurement and output range is wider Measurement range (-200~200)mV, Output range (-10~200)mV, Loop integrity test range (0~2000)Ω

① External pressure module means SPMK SDP Module produced by our company.

## Technical Parameters

### Electrical Signal Measurement Specifications (Ambient Temperature (20±5) °C, 1 year Accuracy)

Signal		Range	Accuracy	Resolution
Current		(-30-30)mA	±(0.01%RD+0.005%FS)	0.1 μA
Voltage		(-30-30)V	± (0.01%RD+0.005%FS)	0.1 mV
Millivolts		(-75-75)mV	± (0.01%RD+0.005%FS)	0.1 μV
Resistance	R-3W	(0-400)Ω (0-4000)Ω	± (0.02% RD + 0.005% FS)	1mΩ 10mΩ
	R-4W	(0-400)Ω (0-4000)Ω	± (0.01% RD + 0.005% FS)	1mΩ 10mΩ
Frequency		(1-50000)Hz	± (0.005% RD + 0.002% FS)	1Hz
Pulse		0-999999	1 pulse of earth	1
Switch (on/off)		If the switch is equipped with an inspection voltage, the voltage range is (3~24)V		
Thermocouples		k、E、J、T、N、R、S、B、C、D、G、L、U		
RTDs		Pt1000(385)、Pt500(385)、Pt100(385)、Pt100(3916)、Pt100(3926)、Pt10(385)、Cu10(427)、Cu50(428)、Cu100(428)、Ni120(672)、Ni100(618)		
Pressure range		Refer to the Pressure Range Selection Chart (SPMK518, SPMK517 only).		

### Electrical Source Specifications (Ambient Temperature (20±5)°C, 1 year accuracy)

Signal	Range	Accuracy	Resolution
Current	(0-22)mA	±(0.02% RD + 0.005% FS)	0.1μA
Voltage	(0-12)V	±(0.02% RD + 0.005% FS)	0.1mV
Millivolts	(-10-100)mV	±(0.02% RD + 0.005% FS)	0.1μV
Resistance	(0-400)Ω (400-4000)Ω	±(0.02% RD + 0.005% FS) ±(0.03%RD+0.01%FS)	1mΩ 10mΩ
Frequency	(0-50000)Hz	±(0.005% RD + 0.002% FS)	0.1Hz
Pulse	0-999999	±1pcs	1
24VDC	(24±0.5)V Maximum belt load 50mA		
Simulating Thermocouple	k, E, J, T, N, R, S, B, C, D, G, L, U		
Simulating RTDs	Pt1000(385)、Pt500(385)、Pt100(385)、Pt100(3916)、Pt100(3926)、Pt10(385)、Cu10(427)、Cu50(428)、Cu100(428)、Ni120(672)、Ni100(618)		

# Measuring and Simulating thermocouple source temperature specifications using thermocouples (ambient temperature (20±5) °C)

Thermocouple type	Reference	Temperature range (°C)	Tolerance temperature range (°C)	Maximum permissible error (°C)	
				Measurement	Output
Type K	IEC584	-270~1372	-200~-100	±0.4	±0.6
			-100~600	±0.3	±0.3
			600~1372	±0.4	±0.5
Type E	IEC584	-270~1000	-200~-100	±0.3	±0.4
			-100~600	±0.2	± 0.2
			600~1000	±0.2	±0.4
Type J	IEC584	-210~1200	-210~-100	±0.3	±0.4
			-100~1200	±0.3	±0.3
Type T	IEC584	-270~400	-200~0	P0.4	S0.5
			0~300	±0.2	±0.3
			300~400	±0.2	±0.2
Type N	IEC584	-270~1300	-200~-100	±0.5	±0.6
			-100~1300	±0.4	±0.5
Type R	IEC584	-50~1768	-50~100	±1.4	±1.5
			100~500	±0.6	±0.7
			500~1768	±0.7	±0.7
Type S	IEC584	-50~1768	-50~100	±1.1	±1.2
			100~400	±1.0	±1.1
			400~1768	± 0.7	±0.8
Type B	IEC584	0~1820	0~450	±3.8	±3.8
			450~800	± 0.9	±1.0
			800~1200	±0.6	± 0.7
			1200~1820	±0.6	±0.8
Type C	ASTM E988	0~2315	0~1000	±0.6	±0.7
			1000~1800	±0.8	±1.0
			1800~2315	±1.2	±1.5

Type D	ASTM E988	0~2315	0~100	±0.6	±0.6
			100~1100	±0.5	±0.6
			1100~2000	±0.8	±1.0
			2000~2315	±1.0	±1.4
Type G	ASTM E1751	0~2315	0~200	±2.4	±2.5
			200~400	±0.5	±0.6
			400~1400	±0.4	±0.6
			1400~2315	±0.8	±1.0
Type L	DIN43710	-200~900	-200~-100	±0.3	±0.5
			-100~400	±0.2	±0.3
			400~900	±0.5	±0.6
Type U	DIN43710	-200~600	-200~0	±0.5	±0.4
			0~600	±0.3	±0.5

Note: Thermocouple type C is WRe5-WRe26, Thermocouple type D is WRe3-WRe25.

### Measuring and Simulating RTD source temperature specifications using RTDs (ambient temperature(20±5)°C)

Thermocouple type	Reference	Temperature range (°C)	Tolerance applicable temperature range (°C)	Maximum permissible error (°C)		
				Measurement		Output
				3W	4W	
Pt1000 (385)	IEC751	-200~850	-100~200	±0.13	±0.08	±0.29
			200~600	±0.24	±0.13	±0.45
			600~840	±0.32	±0.19	±0.56
Pt500 (385)	IEC751	-200~850	-100~200	±0.22	±0.16	±0.35
			200~600	±0.35	±0.22	±0.56
			600~850	±0.39	±0.28	±0.69
Pt100 (385)	IEC751	-200~850	-100~200	±0.18	±0.14	±0.18
			200~600	±0.27	±0.18	±0.27
			600~850	±0.36	±0.29	±0.36
Pt100 (3926)	Minco Application Aid #18	-200~850	-100~200	±0.18	±0.14	±0.18
			200~600	±0.27	±0.18	±0.27
			600~850	±0.36	±0.29	±0.33



Pt100 (3916)	JIS1604	-200~850	-100~200	±0.18	±0.14	±0.18
			200~600	±0.27	±0.18	±0.27
			600~850	±0.35	±0.29	±0.35
Pt10 (385)	IEC751	-200~850	-100~200	±0.68	±0.64	±0.68
			200~600	±0.85	±0.82	±0.85
			600~850	±0.98	±0.89	±0.98
Cu100 (428)	JB/T8623—1 997	-50~150	-50~150	±0.15	±0.10	±0.16
Cu50 (428)	JB/T8623—1 997	-50~150	-50~150	±0.19	±0.17	±0.20
Cu10 (427)	Minco Application Aid #18	-100~260	-100~260	±0.65	±0.58	±0.65
Ni120 (672)	Edison curve #7	-70~270	-70~270	±0.08	±0.06	±0.08
Ni100 (618)	DIN43760	-70~190	-70~190	±0.10	±0.07	±0.10








## General Technical Indicators

<b>Display</b>	6-digit display
<b>Usage environment</b>	Ambient temperature (-10 ~ 50)°C; Relative humidity <90% non-condensing; Atmospheric pressure(86~106)kPa.a
<b>Storage environment</b>	Ambient temperature(-20~60)°C; Relative humidity <90% non-condensing
<b>Power supply mode</b>	AC and DC power supply (battery power is recommended for good measurement and output)
<b>Dimensions</b>	208mm(L)x101mm(W)x55mm(H)
<b>Weight</b>	0.7kg
<b>Warranty</b>	1 year


## Ordering Information

SPMK510/ SPMK516/SPMK517/SPMK518 multifunction process calibrators.

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power Adapter	1 pc	
3	Chargeable Lithium battery	1 pc	
4	Test leads	3 set	
5	Pressure module connection cable (Only for SPMK517, SPMK518)	1 pc	
6	type compensation conductor (Only for SPMK516, SPMK517, SPMK518)	1 pc	
7	Dedicated short routes	1 pc	
8	User's manual	1 pc	
9	Calibration test reports	1 pc	

## Optional Accessories

Serial number	Description	QTY	Picture
1	SDP Pressure module (Only for SPMK517, SPMK518)		
2	SDP Pressure module test report		
3	Cold End Compensation Assembly (Optional E, Person T, N, R, S, B, C, D, G, L, U)		

# SPMK51XT Series Multifunction Process Calibrator



## Product Description

SPMK51XT series process calibrator is a high precision, multi-functional benchtop calibrator, which is the ideal tool for industrial field and laboratory calibration of temperature, pressure and other process instruments.

## Product Characteristics

- **Variety of functions**  
Calibrate pressure, temperature, voltage, current, frequency, pulse, resistance. Both measurement and source functions.
- **Measurement and source functions**  
Measures 13 types of thermocouples and 11 types of RTDs and provides analog output with cold end compensation.
- **Data storage functions**  
No need to worry about data loss. Supports output methods such as step or program
- **Built-in HART function**  
It can calibrate and maintain HART-type instruments, and realize functions such as management of instrument basic information, range migration, zero point and full scale calibration (518T only)
- **Support external pressure modules**  
SPMK SDP Pressure Module (only for 517T and 518T) (Optional)
- **Task management function**
- **Analog transmitters**  
Generate precise electrical, temperature or pressure signals.
- **Provides commonly used tools**  
Thermal engineering treasure trove, user-built RTD library, temperature and pressure unit conversion.
- **Automatic cold-end compensation technology**  
Built-in cold end insulation module for fast tracking of temperature changes.
- **5.6" high resolution TFT display**
- **Chinese and English languages available**
- **RS232 interface and open communication protocol**
- **Provides a 24VDC loop power supply with measurement and output isolated from each other**
- **Warranty: 1 year**

## Product Functions

Function		SPMK516T	SPMK517T	SPMK518T
Measurement	Millivolts	★	★	★
	Voltage	★	★	★
	Current	★	★	★
	Frequency	★	★	★
	Pulse	★	★	★
	Resistance	★	★	★
	On-off	★	★	★
	11 RTDs	★	★	★
	13 thermocouples	★	★	★
Source	Millivolt current	★	★	★
	Voltage	★	★	★
	Current	★	★	★
	Frequency	★	★	★
	Resistance	★	★	★
	Simulate 11 RTDs	★	★	★
	Simulate 13 thermocouples	★	★	★
Other Functions	HART communication	★		★
	External pressure module ①		★	★
	Thermal book	★	★	★
	Step programming output	★	★	★
	24V loop current	★	★	★
	Simulating transmitter	★	★	★
	RS232 communication	★	★	★
	Storage	★	★	★

Note: ① External pressure module means SPMK SDP Module produced by our company.

## Technical Parameters

### Electrical Signal Measurement Specifications (Ambient Temperature (20±5) °C, 1 year Accuracy)

Signal		Range	Accuracy	Resolution
Current		(-30-30)mA	±(0.01%RD+0.005%FS)	0.1 μA
Voltage		(-30-30)V	± (0.01%RD+0.005%FS)	0.1 mV
Millivolts		(-75-75)mV	± (0.01%RD+0.005%FS)	0.1 μV
Resistance	R-3W	(0-400)Ω (0-4000)Ω	± (0.02% RD + 0.005% FS)	1mΩ 10mΩ
	R-4W	(0-400)Ω (0-4000)Ω	± (0.01% RD + 0.005% FS)	1mΩ 10mΩ
Frequency		(1-50000)Hz	± (0.005% RD + 0.002% FS)	1Hz
Pulse		0-999999	1 pulse of earth	1
Switch (on/off)		If the switch is equipped with an inspection voltage, the voltage range is (3~24)V		
Thermocouples		K、E、J、T、N、R、S、B、C、D、G、L、U		
RTDs		Pt1000(385)、Pt500(385)、Pt100(385)、Pt100(3916)、Pt100(3926)、Pt10(385)、Cu10(427)、Cu50(428)、Cu100(428)、Ni120(672)、Ni100(618)		
Pressure range		Refer to the Pressure Range Selection Chart (only for SPMK518T, SPMK517T).		

### Electrical Source Specifications (Ambient Temperature (20±5)°C, 1 year accuracy)

Signal	Range	Accuracy	Resolution
Current	(0-22)mA	±(0.02% RD + 0.005% FS)	0.1μA
Voltage	(0-12)V	±(0.02% RD + 0.005% FS)	0.1mV
Millivolts	(-10-100)mV	±(0.02% RD + 0.005% FS)	0.1μV
Resistance	(0-400)Ω (400-4000)Ω	±(0.02% RD + 0.005% FS) ±(0.03%RD+0.01%FS)	1mΩ 10mΩ
Frequency	(0-50000)Hz	±(0.005% RD + 0.002% FS)	0.1Hz
Pulse	0-999999	±1pcs	1
24VDC	(24±0.5)V Maximum belt load 50mA		
Simulating Thermocouple	K, E, J, T, N, R, S, B, C, D, G, L, U		
Simulating RTDs	Pt1000(385)、Pt500(385)、Pt100(385)、Pt100(3916)、Pt100(3926)、Pt10(385)、Cu10(427)、Cu50(428)、Cu100(428)、Ni120(672)、Ni100(618)		

## Measuring and Simulating thermocouple source temperature specifications using thermocouples (ambient temperature (20±5) °C)

Thermocouple type	Reference	Temperature range (°C)	Tolerance temperature range (°C)	Maximum permissible error (°C)	
				Measurement	Output
Type K	IEC584	-270~1372	-200~-100	±0.4	±0.6
			-100~600	±0.3	±0.3
			600~1372	±0.4	±0.5
Type E	IEC584	-270~1000	-200~-100	±0.3	±0.4
			-100~600	±0.2	± 0.2
			600~1000	±0.2	±0.4
Type J	IEC584	-210~1200	-210~-100	±0.3	±0.4
			-100~1200	±0.3	±0.3
Type T	IEC584	-270~400	-200~0	±0.4	±0.5
			0~300	±0.2	±0.3
			300~400	±0.2	±0.2
Type N	IEC584	-270~1300	-200~-100	±0.5	±0.6
			-100~1300	±0.4	±0.5
Type R	IEC584	-50~1768	-50~100	±1.4	±1.5
			100~500	±0.6	±0.7
			500~1768	±0.7	±0.7
Type S	IEC584	-50~1768	-50~100	±1.1	±1.2
			100~400	±1.0	±1.1
			400~1768	± 0.7	±0.8
Type B	IEC584	0~1820	0~450	±3.8	±3.8
			450~800	± 0.9	±1.0
			800~1200	±0.6	± 0.7
			1200~1820	±0.6	±0.8
Type C	ASTM E988	0~2315	0~1000	±0.6	±0.7
			1000~1800	±0.8	±1.0
			1800~2315	±1.2	±1.5
Type D	ASTM E988	0~2315	0~100	±0.6	±0.6
			100~1100	±0.5	±0.6
			1100~2000	±0.8	±1.0
			2000~2315	±1.0	±1.4
Type G	ASTM E1751	0~2315	0~200	±2.4	±2.5
			200~400	±0.5	±0.6
			400~1400	±0.4	±0.6
			1400~2315	±0.8	±1.0
Type L	DIN43710	-200~900	-200~-100	±0.3	±0.5
			-100~400	±0.2	±0.3
			400~900	±0.5	±0.6

Type U	DIN43710	-200~600	-200~0	±0.5	±0.4
			0~600	±0.3	±0.5

Note: Thermocouple type C is WRe5-WRe26, Thermocouple type D is WRe3-WRe25.

### Measuring and Simulating RTD source temperature specifications using RTDs (ambient temperature(20±5)°C)

Thermocouple type	Reference	Temperature range (°C)	Tolerance applicable temperature range (°C)	Maximum permissible error (°C)		
				Measurement		Output
				3W	4W	
Pt1000 (385)	IEC751	-200~850	-100~200	±0.13	±0.08	±0.29
			200~600	±0.24	±0.13	±0.45
			600~840	±0.32	±0.19	±0.56
Pt500 (385)	IEC751	-200~850	-100~200	±0.22	±0.16	±0.35
			200~600	±0.35	±0.22	±0.56
			600~850	±0.39	±0.28	±0.69
Pt100 (385)	IEC751	-200~850	-100~200	±0.18	±0.14	±0.18
			200~600	±0.27	±0.18	±0.27
			600~850	±0.36	±0.29	±0.36
Pt100 (3926)	Minco Application Aid #18	-200~850	-100~200	±0.18	±0.14	±0.18
			200~600	±0.27	±0.18	±0.27
			600~850	±0.36	±0.29	±0.33
Pt100 (3916)	JIS1604	-200~850	-100~200	±0.18	±0.14	±0.18
			200~600	±0.27	±0.18	±0.27
			600~850	±0.35	±0.29	±0.35
Pt10 (385)	IEC751	-200~850	-100~200	±0.68	±0.64	±0.68
			200~600	±0.85	±0.82	±0.85
			600~850	±0.98	±0.89	±0.98
Cu100 (428)	JB/T8623—1997	-50~150	-50~150	±0.15	±0.10	±0.16
Cu50 (428)	JB/T8623—1997	-50~150	-50~150	±0.19	±0.17	±0.20
Cu10 (427)	Minco Application Aid #18	-100~260	-100~260	±0.65	±0.58	±0.65
Ni120 (672)	Edison curve #7	-70~270	-70~270	±0.08	±0.06	±0.08
Ni100 (618)	DIN43760	-70~190	-70~190	±0.10	±0.07	±0.10






## General Technical Indicators

<b>Display</b>	6-digit display
<b>Usage environment</b>	Ambient temperature: (-10~50)℃; Relative humidity: <90% non-condensing; Atmospheric pressure: (86~106)kPa.a
<b>Storage environment</b>	Ambient temperature: (-20~60)℃; Relative humidity: <90% non-condensing
<b>Power supply mode</b>	220VAC 50Hz
<b>Dimensions</b>	415mm(L) x 375mm(W) x 240mm(H)
<b>Weight</b>	7.6kg
<b>Warranty</b>	1 year



## Ordering Information

SPMK516T/SPMK517T/SPMK518T multifunction process calibrators.

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power adapter	1 pc	
3	Test leads	3 sets	
4	Pressure module connection cable (SPMK517T, SPMK518T only)	1 pc	
5	Dedicated short routes	1 pc	
6	User's manual	1 pc	
7	Test reports	1 pc	

## Optional Accessories

Serial number	Description	Picture
1	SPMK SDP Pressure Module (Only for SPMK517T, SPMK518T)	
2	RS232 communication cable	
3	SDP Pressure module test report	



## SDP Pressure Module

### (External device of SPMK518/7 Process Calibrator)

SDP pressure module is easy to carry and with wide pressure range.

It is external device working with SPMK517 / SPMK518 process calibrator for pressure testing and calibration of pressure transmitter, pressure switch, precision pressure gauge, general pressure gauge, pressure sensor and other pressure instruments.



### Main Feature

- Easy to carry;
- Tread of M20x1.5M, NPT, BSP optional;
- One process calibrator could with different range of SDP Pressure module;
- Stainless steel shell can be shielding electromagnetic interference.

### Technical Data

- Pressure ranges up to 36,000 psi (2,500 bar), **Pressure range and accuracy refer to page 06;**
- Accuracy:  $\pm 0.05\%FS$  /  $\pm 0.1\%FS$  /  $\pm 0.02\%FS$
- Connection: M20×1.5, 1/4NPT / BSP, 1/2NPT / BSP optional;
- Signal output: RS232, 9600 baud rate, data length 8 digits, no stop bit;
- Communication distance: Wire diameter no less than 0.6mm, max distance 3-5m;
- Operation temperature: 0-50°C;
- Environmental Relative humidity:  $\leq 95\%R.H$ ;
- Atmospheric pressure: (86~106) kPa.a;
- Dimension:  $\varnothing 35 \times 133.5$ (mm);
- Net Weight: 0.28kg;
- Calibration period: 1 year.

# SPMK251 Intelligent Pressure Controller



## Product Description

SPMK251 Intelligent pressure controller uses digital control technology to quickly output high precision and high stability pressure.

It needs to connect with external pressure source (It can be Nitrogen cylinder, or SPMK211D Electric pressure generator, or other brand electrical pressure source with the suitable pressure range).

It can calibrate or test pressure gauge, Intelligent HART pressure transmitter, pressure switch and so on..

## Product characteristics

- Accuracy  $\pm 0.02\%$  and  $\pm 0.05\%$  F.S optional;
- 8-inch color touch screen;
- Chinese and English language available;
- Supports the step output method;
- Supports calibration of HART instruments;
- Supports measurement of voltage, current, pressure switch;
- Outputs mA and 24V;
- Built-in standard barometer for switching between gauge pressure and absolute pressure;
- Use of external SDP pressure module (optional);
- Warranty: 1 year.

## Technical parameters

Model	SPMK251-07	SPMK251-6	SPMK251-25	SPMK251-60
<b>Pressure control range</b>	(-95~700) kPa	(-0.09~ 6) MPa	(-0.09~25) MPa	(1~60) MPa
<b>Built-in pressure module</b>	(-100~700)kPa ±0.02/0.05%FS	(-0.1~6)MPa ±0.02/0.05%FS	(-0.1~25)MPa ±0.02/0.05%FS	(0~60)MPa ±0.02/0.05%FS
<b>External pressure module</b>	According to the inspection pressure instrument selection, the measurement range is not greater than the built-in pressure standard module external module selection, please refer to the <i>Pressure Range Selection Table</i> .			
<b>Pressure type</b>	Gauge pressure/ Absolute pressure	Gauge pressure/ Absolute pressure	Gauge pressure/ Absolute pressure	Gauge pressure
<b>Media</b>	Air/Nitrogen	Air/Nitrogen	Air	Mineral oil (Distilled water)
<b>External pressure source</b>	(-95 to 800) kPa	(-0.095 to 7) MPa	(-0.095 to 26) MPa	(0 to 800) kPa
<b>Control stability (30s)</b>	≤ 0.003%FS	≤ 0.003% FS	≤ 0.003% FS	≤ 0.003% FS
<b>Pressure control over (back) adjustment</b>	Not more than 0.1% of the absolute value of the target pressure			
<b>Target pressure stability duration</b>	Greater than 5 minutes			
<b>Control response time (without external load)</b>	30s			
<b>Function</b>	V, mV, mA, switching, calibration HART instrument with 24VDC output			
<b>Displaying the number of digits</b>	4/5/6 digit display optional			
<b>Pressure connections</b>	M20 x 1.5 female or NPT/BSP thread optional			
<b>Power supply</b>	220VAC			
<b>Power</b>	0.05 kW			
<b>Storage temperature</b>	(0 ~ 50)°C			
<b>Relative humidity</b>	<90% non-condensing			
<b>Dimension</b>	(375 x 460 x 180) mm			(520 x 460 x 210) mm
<b>Weight</b>	14 kg	14 kg	14 kg	40 kg
<b>Recommended purchase</b>	SPMK211D-8	SPMK211D-7	SPMK211D-25	SPMK211D-08

Note:① Temperature automatic compensation range is (-10~50)°C, 1 year accuracy.

② Modules can be customized, refer to *Module Selection Table* for specifications.

③ SPMK251-60 pressure controller needs to work with SPMK211D Pressure generator only.

## Electrometric indicators

Signal	Range	Resolution	Accuracy
<b>Voltage</b>	(-30 ~ 30)V	0.1 mV	±(0.01%RD+0.005%FS)
<b>Current</b>	(-30 ~ 30) mA	0.1 µA	±(0.01%RD+0.005%FS)
<b>Switch</b>	If the switch is energized, voltage range (3 ~ 24) V		
<b>Current output</b>	(0 ~ 22) mA	1 µA	±(0.02%RD+0.005%FS)
<b>24VDC output</b>	(24±0.5)V, Maximum load 50mA		







Note: Ambient temperature is (25±5)°C, 1 year accuracy.

## Optional Calibration Solution




Program options		Option I (-100~700) kPa	Option II (-0.1~6) MPa	Option III (-0.1~25) MPa	Option IV (1~60) MPa	QT Y
Intelligent Pressure Controller	<b>Built-in pressure control module</b>	SPMK251/07 (-100~700)kPa ±0.02/0.05%FS	SPMK251/6 (-0.1~6)MPa ±0.02/0.05%FS	SPMK251/25 (-0.1~25)MPa ±0.02/0.05%FS	SPMK251/60 (0~60)MPa ±0.02/0.05%FS	1 pc
	<b>Dimension</b>	(375 x 460 x 180) mm			(520 x 460 x 210) mm	
	<b>Weight</b>	14 kg			40kg	
	<b>Power</b>	0.05 kW				
Pressure source	<b>Pressure output</b>	SPMK211D/08 (-95~800) kPa	SPMK211D 6 (-0.095~7) MPa	SPMK211D/25 (-0.095~26) MPa	SPMK211D/08 (0~800) kPa	1 pc
	<b>Dimension</b>	(560 x 490 x 580) mm			(560 x 490 x 580) mm	
	<b>Weight</b>	50 kg	70 kg	100 kg	50 kg	
	<b>Power</b>	1 kW		2 kW	0.5 kW	
Combination cabinets	<b>Dimension</b>	(615x600x1240) mm				1pc
	<b>Total weight</b>	75 kg	120 kg	150 kg	110 kg	
	<b>Total power</b>	1.05 kW	1 kW	2 kW	0.55 kW	
Pressure control module		(-2 to 2) kPa 0.05 (-5~5) kPa 0.02/0.05 (-10~10)kPa 0.05 (-100~100)kPa0.02/0.05 (0~250)kPa 0.02/0.05 (0~400) kPa 0.02/0.05	(-100~160)kPa 0.02/0.05 (0~250)kPa0.02/0.05 (0~600)kPa0.02/0.05 (0~1)MPa 0.02/0.05 (0~2.5)MPa 0.02/0.05 (0~4.0)MPa 0.02/0.05	(0~1)MPa 0.02/0.05 (0~2.5)MPa0.02/0.05 (0~6)MPa 0.02/0.05 (0~10)MPa 0.02/0.05	(0~10)MPa 0.02/0.05 (0~25)MPa 0.02/0.05 (0~40)MPa 0.02/0.05	Optional
Pressure manifold with 4 outputs		SPMK2000-10 Air pressure (-0.1~30)MPa			SPMK2000-10 Hydraulic (0~80)MPa	1 pc
Pressure adapter		SPMK2000-1 Set of adaptors, with 38 different threads				Optional

Note: SPMK251-60 pressure controller needs to work with SPMK211D Pressure generator only.

### Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power adapter	1 pc	
3	Test leads	2 sets	
4	Pressure module connection cable	1 pc	
5	SPMK2000-10 Pressure manifold with 4 outputs	1 pc	
6	RS232 communication cable	1 pc	
7	User's Manual	1 pc	
8	Test report	1 pc	

### Optional Accessories

Serial number	Description	Picture
1	SPMK2000-9 five outputs pressure manifold	
2	SPMK2000-3 high-pressure gas connection hose	
3	SPMK2000-4 high-pressure liquid connection hose	

## SPMK211 Series Automatic Pressure Generator

SPMK211 series electric pressure generator can quickly generate pressure to the setting range, and can easily complete the calibration of pressure instruments with the SPMK251 intelligent pressure controller and SPMK213G pressure reducer calibrator. It has the function of automatic pressure replenishment and over-pressure protection.

### SPMK211BD (-0.95~70)bar

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#### Main features

- Easy pressurization and fast output of highly stable pressure.
- With pressure storage, automatic replenishment function.
- Dual outputs, vacuum / pressure isolated outputs.
- Overvoltage protection.
- LED display, easy to carry.

### SPMK211D-08 / 7 / 25

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#### Main features

- The pressure range can be set within the rated pressure range.
- With pressure storage, automatic replenishment function.
- Dual outputs, vacuum/pressure isolated (SPMK211D-7 and SPMK211D-25 only).
- Overvoltage protection.
- LED screen display, easy to move.
- SPMK211D-08 can generate pressure up to 600bar.

## Technical Parameters

Model	SPMK211BD	SPMK211D-08	SPMK211D-7	SPMK211D-25
Pressure range	(-0.095 ~ 7)MPa	0.8 MPa	(-0.095 ~ 7)MPa	(-0.095 ~ 26)MPa
Pressurization time	1 minute and 30 seconds			3 minutes
Display	LED display			
Connection	M20 x 1.5 standard female thread			
Dimensions	(300 x 245 x 390) mm	(560x 490x 580)mm		
Weight	20 kg	50 kg	70 kg	100 kg
Power supply	220 volts alternating current			
Power	0.15 kW	1 kW		2 kW
Storage Environment	(-20~70)℃ <90% non-condensing			
Use Environment	(-10~50)℃ <90% non-condensing			

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1pc	
2	Power adaptor	1pc	
3	Seal (only for SPMK211BD )	20pcs	
4	6mm Connecting hose (only for SPMK211D-08)	1pc	
5	SPMK2000-4 High Pressure Hose (only for SPMK211D-7 and SPMK211D-25)	1pc	
6	User's Manual	1pc	

# SPMK281 Rapid Pressure Gauge Calibrator



**Pneumatic Version**



**Hydraulic Version**

## Product Description

SPMK281 rapid pressure gauge calibrator adopts the newly developed adjustment system, which can quickly output high precision and high stability pressure. It can realize automatic pressure control and manual pressure control, which can complete the rapid calibration of pressure gauges, pressure transmitters and other instruments.

## Product characteristics

- It can calibrate 4-5 units of pressure device at the same time;
- High-resolution 7-inch touch screen, Chinese and English language available;
- Precise proportional adjustment system (pneumatic version), air-driven hydraulic servo pressure regulation technology (hydraulic version), hand-adjustable knob is easy and smooth;
- Customizable pressure values within the pressure range;
- Gas-liquid separation filtration system (pneumatic version) and built-in liquid filtration system (hydraulic version);
- Recommend SPMK223 pressure calibrator, which can calibrate pressure transmitter and pressure switch (optional);
- Recommend SPMK211D electrical pressure generator with the correct pressure range.







## Technical Indicators



Model	SPMK281-6	SPMK281-60
Measurement range	Measurement pressure:(0~6)MPa	Measurement pressure:(0~60)MPa
	Measurement accuracy:±0.02%FS	Measurement accuracy:±0.02%FS
Output range	Output pressure:(0~6)MPa	Output pressure:(1~60)MPa
	Measurement accuracy: ±0.02%FS, ±0.05%FS	Measurement accuracy: ±0.02%FS, ±0.05%FS
Working medium	Air or Nitrogen	Mineral oil
External standard device	Range not greater than the built-in pressure standard module, external standard device range (0 ~ 2.5MPa, 0 ~ 1MPa, 0 ~ 600kPa, 0 ~ 250kPa), ±0.02%FS	Range is not greater than the built-in pressure standard module, the range of the external standard device range (0 ~ 6MPa, 0 ~ 25MPa), ±0.02%FS
External pressure source	7MPa (optional)	0.7MPa<Pressure source range <1MPa
	Dimension:(500x490x580)mm	Dimension:(500x490x580)mm
	Weight:70kg	Weight:50kg
Automatic (manual) pressure control stabilization and acquisition time	≤20S (according to the accuracy and pressure data acquisition of the under tested device)	
Control stability	≤ 0.003% full scale	
Pressure-controlled over (back) adjustment volume	Not more than 0.1% of the absolute value of the target pressure value	
Pressure output stabilization time	Continuous output of more than 5 min	
Minimum controllable fineness adjustment	0.1 kPa	0.01MPa
Screen size	7-inch touchscreen display	7-inch touchscreen display
Pressure Input Connector	M20 x 1.5 or NPT/BSP Male Optional	6mm standard test hose
Pressure Output Connector	Five M20x1.5 or NPT/BSP Female Optional	Four M20x1.5 or NPT/BSP Female Optional

<b>Working environment</b>	Ambient temperature: (0~50)℃; Relative humidity: not more than 90%	
<b>Power supply</b>	220 VAC	220 VAC
<b>Dimension</b>	(600x350x210) mm	(610x360x370) mm
<b>Weight</b>	17 kg	34 kg

### Accessories(included)

Serial number	Description	QTY	Pictures
1	Main product	1pc	
2	Power adaptor	1pc	
3	2 meter high pressure hose	1pc	
4	Seal (14 x 3.1)		
5	Pressure output Plugs		
6	User's Manual	1pc	
7	Test report	1pc	
8	Packing list	1pc	

### Optional Accessories

Serial number	Description	Pictures
1	SPMK211D Electric pressure generator	
2	SPMK223 pressure calibrator (optional according to the range)	

# SPMK213G-D Pressure Regulator Calibrator with Electronic Pressure Generator



## Product Description

The pressure source of the SPMK213G-D electric pressure reducer calibrator uses digital control technology to generate high-stability pressure quickly. The required pressure is controlled by the precision valve on the console to meet the requirements of field and laboratory calibration works, which also can test gas pressure reducers, ordinary pressure gauges, pressure transmitters, and pressure switches.

Note: SPMK213G reducer calibrator can also work with Nitrogen cylinder as pressure source instead of SPMK211D Electronic Pressure generator.

SPMK213G Pressure regulator calibrator and SPMK211D Pressure Generator can be ordered separately.

## Product Characteristics

- Automatically output pneumatic pressure continuously;
- Pressure reducer can be calibrated as a whole set without disassemble the pressure gauge;
- It can check and detect the tightness of the gas pressure reducer;
- It can detect the low pressure and high pressure of the gas pressure reducer to determine whether the high and low pressure chambers are connected;
- The safety valve of the gas pressure reducer can be tested;
- The high and low pressure control systems are independent of each other to avoid damage to the low pressure gauge caused by improper operation;
- It is suitable for the calibration of pressure instruments within (0-25) MPa.




## Technical Indicators

Project	Parameters
Range	High pressure (0~25)MPa; Low pressure (0~6)MPa
Fine adjustment	10kPa
Medium	Air
Pressure connection	M20 x 1.5 standard female thread or optional
Usage environment	Operating Temperature:(20±5)°C; Relative Humidity:≤85%
Dimension	213G: (740×420×570) mm (includes handle and intake joint and protective cover)
Weight	38.20 kg

## Ordering Information

SPMK213G-D Electric Pneumatic Pressure Regulator Calibration Device  
 SPMK213G Pressure reducer calibrator and SPMK211D Pressure Source can be ordered separately.

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Seals	20 pcs	
3	Oxygen low-pressure connection hose	1 pc	
4	Acetylene low pressure connection hose	1 pc	
5	SPMK2000-4 high pressure connecting hose	2 pcs	
6	Oxygen adapter	1 pc	
7	Acetylene adapter	1 pc	
8	Propane adapter	1 pc	
9	Transition adapters	2 pcs	
10	User's manual	1 pc	
11	Test reports	1 pc	

## SPMK991T Automatic Pressure Calibration Bench



### Product Description

SPMK991T series intelligent pressure calibration bench can generate stable pressure automatically during the pressure calibration process. It is widely used in calibration of pressure (differential pressure) transmitters, precision (ordinary) pressure gauges, vacuum gauges, electrical contact pressure gauges and other pressure instruments.

SPMK991T Pressure calibration bench is an ideal instrument for pressure measurement and calibration industry.

### Product characteristics

- Auto pressure generator, dynamic balance tech, Instant pressure stabilization without leakage;
- High-precision pressure regulating valve;
- Pneumatic type can test 2 gauges, hydraulic type can test 3 gauges at the same time;
- Small noise and easy to operate.
- Warranty:1 year.

### Technical parameters

Model	SPMK991T-Vacuum	SPMK991T-4	SPMK991T-60
Pressure range	(-0.095~0)MPa at standard atmospheric pressure	(0 ~ 4) MPa	(0 ~ 60) MPa
Minimum controllable adjustment	0.01 kPa	0.1 kPa	0.01 MPa
Media	Air		Mineral oil

<b>Stability</b>	<0.05%F.S/3S	
<b>Pressure connection</b>	M20 x 1.5F or BSP /NPT * 3 outputs	M20 x 1.5F or BSP /NPT * 4 outputs
<b>Pressure control mode</b>	Imported high-precision servo regulator control	
<b>Dimension</b>	(700 x 620 x 1050) mm	
<b>Weight</b>	45 kg	65 kg
<b>Power</b>	0.75 kW	
<b>Usage environment</b>	Temperature (0~35)℃; Relative humidity≤85%RH	
<b>Power supply mode</b>	(220V±10%) AC	

Note: There must be reliable grounding, and its grounding resistance should be less than 50Ω

## Ordering Information

SPMK991T-Vacuum/ SPMK991T-4/SPMK991T-60 automatic calibration bench

## Accessories(included)

Serial number	Description	QTY	Picture
1	Main product	1 pc	
2	Power adapter	1 pc	
3	Seals	20 pc	
4	User's Manual	1 pc	
5	Test reports	1 pc	

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