

## Portable electric pressure calibrator model SPP70



Portable electric pressure calibrator model SPP70

© 10/2024 WIKA Instrumentation Pte Ltd

All rights reserved.

WIKAR<sup>®</sup> is a registered trademark in various countries.

Prior to starting any work, read the operating instructions!

Keep for later use!

# Contents

<b>1. General information</b>	<b>5</b>
1.1. Warranty.	5
<b>2. Short overview</b>	<b>6</b>
2.1. Overview	6
2.2. Description	6
2.3. Scope of delivery	6
<b>3. Safety</b>	<b>7</b>
3.1. Intended use	7
3.2. Improper use	7
3.3. Responsibility and personnel qualification.	8
3.4. Labelling	9
<b>4. Transport, packaging and storage</b>	<b>9</b>
4.1. Transport	9
4.2. Packaging and storage.	9
<b>5. Design and function</b>	<b>10</b>
5.1. Design	10
5.2. Voltage supply	11
5.3. Pump	12
5.4. Display	12
<b>6. Commissioning, operation</b>	<b>13</b>
6.1. Installation before operation	13
6.2. Operation	13
6.2.1. Startup Mode	13
6.2.2. Setup Mode	13
6.2.3. Start/ Stop Pressure Point Test	15
6.2.4. Start/ Stop Vacuum Point Test	16
6.2.5. Pressure Switch Test	17
<b>7. Faults</b>	<b>20</b>
<b>8. Maintenance, cleaning and recalibration</b>	<b>20</b>
8.1. Maintenance	20
8.2. Cleaning	21
8.3. Recalibration	21
<b>9. Specifications</b>	<b>22</b>

# Contents

9.1. Portable electric pressure calibrator . . . . . 22

9.2. Dimensions . . . . . 22

9.3. Accessories. . . . . 22

# 1. General information

## 1. General information

- The portable electric pressure calibrator model SPP70 described in the operating instructions has been designed and manufactured using state-of-the-art technology. All components are subject to stringent quality and environmental criteria during production. Our management systems are certified to ISO 9001.
- These operating instructions contain important information on handling the instrument. Working safely requires that all safety instructions and work instructions are observed.
- Observe the relevant local accident prevention regulations and general safety regulations for the instrument's range of use.
- The operating instructions are part of the product and must be kept in the immediate vicinity of the instrument and readily accessible to skilled personnel at any time. Pass the operating instructions on to the next operator or owner of the instrument.
- Skilled personnel must have carefully read and understood the operating instructions prior to beginning any work.
- The general terms and conditions contained in the sales documentation shall apply.
- Subject to technical modifications.
- SAC-SINGLAS calibrations are carried out in accordance with international standards.
- Further information:
  - Internet address: [www.wika.com.sg](http://www.wika.com.sg)
  - Relevant data sheet: ST 24.01
  - Application consultant: Tel.: +65 6844 5506  
[info@wika.sg](mailto:info@wika.sg)

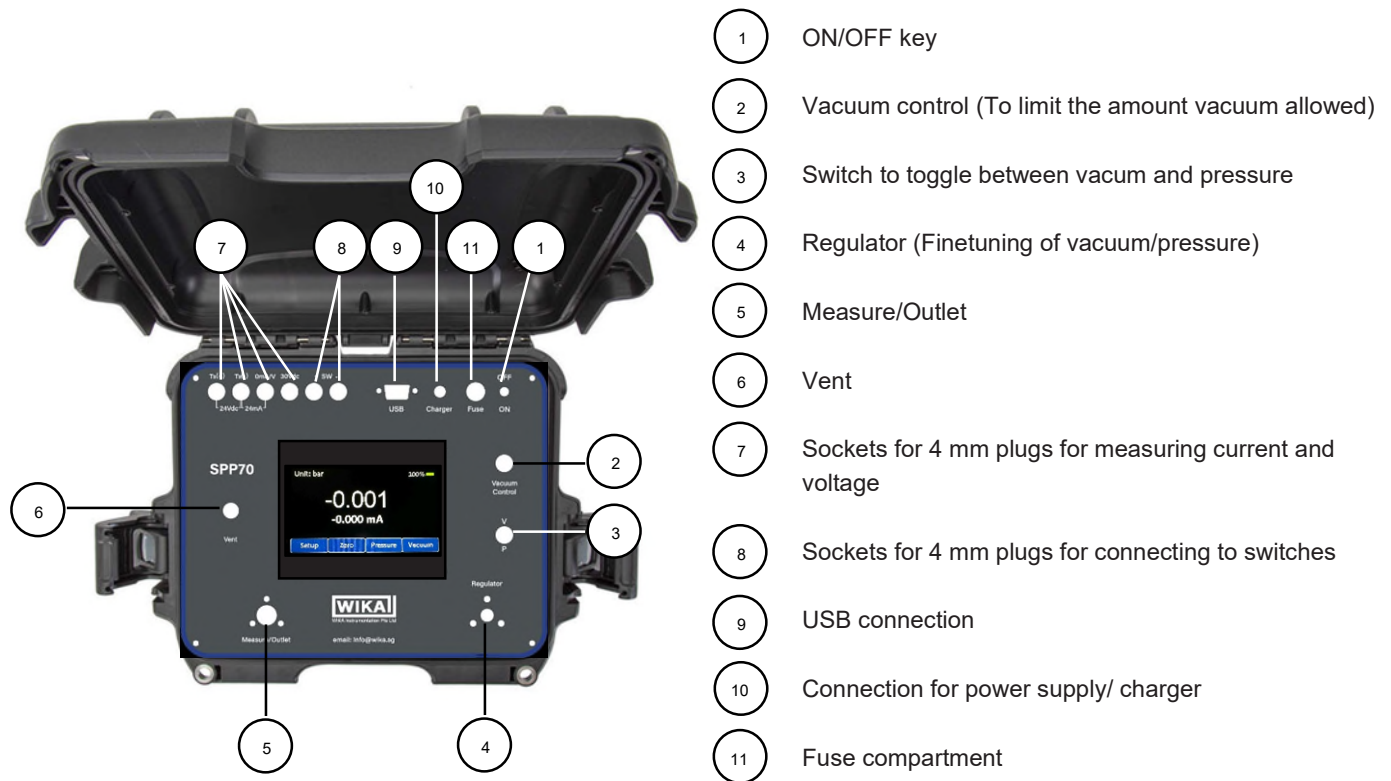
### 1.1 Warranty

WIKA Instrumentation Pte Ltd warrants its products to conform or exceed the specifications as set forth in its catalogues in use at the time of sale and reserves the right, at its own discretion, without notice and without making similar changes in articles previously manufactured, to make changes in materials, designs, finish, or specifications. WIKA Instrumentation Pte Ltd warrants products of its own factory against defects of material or workmanship for a period of one year from date of shipment.

Liability of WIKA Instrumentation Pte Ltd under this warranty shall be limited to replacing, free of charge (FOB Singapore), any such parts proving defective within the period of this warranty, but will not be responsible for transportation charges or consequential damages.

## 2. Short overview

### 2.1 Overview



### 2.2 Description

The model SPP70 is a battery-powered, precise, portable calibrator for the on-site calibration and checking of analogue pressure measuring instruments, pressure transmitters and process transmitters. Furthermore, pressure switches can be checked and the switch point determined. With the SPP70, not only can transmitters be checked, but also tested.

The integrated electric pump enables you to generate vacuum up to a pressure of up to 70 bar [1,015 psi]. This pressure can be measured by means of an integrated pressure sensor.

### 2.3 Scope of delivery

- Portable electric pressure calibrator model SPP70
- Operating instruction
- 1 x charging/ power supply adaptor
- set of red and black test leads
- 1 set of of ½ NPT female to G ½ male, ¼ NPT female to G ½ male, and G ¼ female to G ½ male
- SAC-SINGLAS calibration certificate

## 3. Safety

### 3. Safety

#### 3.1 Intended use

The model SPP70 portable electric pressure calibrator is a portable multi-function calibrator for the calibration of a variety of measuring instruments. An integrated electrical pump enables you to generate pressures up to 70 bar [1,015 psi]; an integrated electrical module also enables you to supply transmitters or sensors with a current of max. 30 mA (voltage (idling) = DC 24 V), in addition to the typical measurement of current and voltage signals.

The instrument has been designed and built solely for the intended use described here and may only be used accordingly.

The technical specifications contained in these operating instructions must be observed. Improper handling or operation of the instrument outside of its technical specifications requires the instrument to be taken out of service immediately and inspected by an authorized WIKA service personnel.

Handle electronic precision measuring instruments with the required care (protect from humidity, impacts, strong magnetic fields, static electricity and extreme temperatures, do not insert any objects into the instrument or its openings). Plugs and sockets must be protected from contamination.

The manufacturer shall not be liable for claims of any type based on operation contrary to the intended use.

#### 3.2 Improper use



##### **DANGER!**

##### **Danger to life from explosion!**

Improper use of the pressure calibrator causes a risk of explosion that can result in death.

- The pressure calibrator should not be thrown into fire, since the built-in battery can explode.



##### **WARNING!**

##### **Injuries, material and environmental damage due to an improper use of the pressure calibrator!**

Improper use of the pressure calibrator causes a risk of explosion that can result in death.

- Improper use of the pressure calibrator causes a direct danger to life.
- Do not throw the pressure calibrator into water → this can result in the destruction of the safety circuit, in heat generation, in inflammation, in the formation of oxyhydrogen or corrosion and in the generation of electrolytes.
- Overcharging, reverse charging and too high charging currents can result in fire or excessive gas formation.
- The use of incorrect, unsuitable power supply units can lead to overheating, fire and to the destruction of the rechargeable battery.
- Crushing due to mechanical damage may result in the escape of electrolytes, in an internal short circuit, in heating or fire.

## 3. Safety



### **WARNING!**

#### **Injuries through improper use**

Improper use of the instrument can lead to hazardous situations and injuries.

- ▶ Refrain from unauthorised modifications to the instrument.
- ▶ There must be no external pressure acting on the SPP70.
- ▶ Only dry, clean air can be used as medium for the SPP70.
- ▶ It is forbidden to open up the instrument.
- ▶ Do not apply a voltage greater than the specified voltage to the instrument.
- ▶ Make sure that the test probes never contact a voltage source while the test leads are connected to the terminals.
- ▶ Do not use the SPP70 if it is damaged. Before using the pressure calibrator, check that there are no cracks or missing plastic parts on the case. Pay particular attention to the insulation of the connectors.
- ▶ Select the proper function and correct measuring range for the measurement.
- ▶ When using the electrical module, set the measurement type first and then connect the connection cables.
- ▶ Only tighten the vent valve by hand, as it is a needle valve. Tightening with excessive force can result in a damage of the needle valve or the sealing.
- ▶ Inspect the test leads for damaged insulation or exposed metal. Check the continuity of the leads. Damaged test leads should be replaced before using the pressure calibrator.
- ▶ When using test probes, keep fingers away from the test probe contacts. Keep your fingers behind the test probes' finger guards. ▶ First connect the common lead, and then the live lead. When disconnecting, remove the live test lead first.
- ▶ Disconnect test leads before changing to another measurement.
- ▶ When the battery indicator lights up red, recharge the battery of the SPP70, in order to avoid an incorrect display.
- ▶ To avoid any damage to the pressure calibrator or to the inspection equipment, always use the proper connection cable, function and area for the respective measuring application.
- ▶ The switch valve can be switched from positive pressure to vacuum or from vacuum to positive pressure only in depressurized state.
- ▶ Only use the accessories specified and authorized by WIKA.
- ▶ If pressure is applied over a long period of time, the pump can be damaged.



The electrical module can generate max. 30 mA and DC 24 V and measure max. 30 mA and DC 30 V. With the electric pump, pressures from -1 ... +70 bar [-14.5 ... +1,015 psi] can be generated.

Any use beyond or different to the intended use is considered as improper use.

### **3.3 Responsibility and personnel qualification**

The instrument is used in the industrial sector. The operator is therefore responsible for legal obligations regarding safety at work.

The safety instructions within these operating instructions, as well as the safety, accident prevention and environmental protection regulations for the application area must be maintained.

The operator is obliged to maintain the product label in a legible condition.



### **WARNING!**

#### **Risk of injury should qualification be insufficient**

Improper handling can result in considerable injury and damage to equipment.

- ▶ The activities described in these operating instructions may only be carried out by skilled personnel who have the qualifications described below.



## 3. Safety

### Skilled personnel

Skilled personnel, authorised by the operator, are understood to be personnel who, based on their technical training, knowledge of measurement and control technology and on their experience and knowledge of country-specific regulations, current standards and directives, are capable of carrying out the work described and independently recognising potential hazards.

Special operating conditions require further appropriate knowledge, e.g. of aggressive media.

### 3.4 Labelling

#### 3.4.1 Product label for portable electric pressure calibrator model SPP70

The product label is located on the under-side of the case lid.



## 4. Transport, packaging and storage

### 4. Transport, packaging and storage

#### 4.1 Transport

Check the instrument for any damage that may have been caused by transport.  
Obvious damage must be reported immediately.



#### CAUTION!

##### Damage through improper transport

With improper transport, a high level of damage to property can occur.

- ▶ When unloading packed goods upon delivery as well as during internal transport, proceed carefully and observe the symbols on the packaging.
- ▶ With internal transport, observe the instructions in chapter 4.2 "Packaging and storage"

If the instrument is transported from a cold into a warm environment, the formation of condensation may result in instrument malfunction. Before putting it back into operation, wait for the instrument temperature and the room temperature to equalise.

#### 4.2 Packaging and storage

The pressure calibrator SPP70 is delivered in a plastic case. This will provide optimum protection during transport (e.g. change in installation site, recalibration).

#### Avoid exposure to the following factors:

- Direct sunlight or proximity to hot objects
- Mechanical vibration, mechanical shock (putting it down hard)
- Soot, vapour, dust and corrosive gases
- Hazardous environments, flammable atmospheres

## 5. Design and function

The model SPP70 is a battery-powered, precise, portable calibrator for the on-site calibration and checking of analogue pressure measuring instruments, pressure transmitters and process transmitters. Furthermore, pressure switches can be checked and the switch point determined. With the SPP70, not only can transmitters be checked, but also tested.

The SPP70 can be operated by means of a clearly structured touchscreen. The integrated rechargeable battery allows the SPP70 to be used daily in the field.

### 5.1 Design

The integrated electric pump enables you to generate vacuum up to a pressure of up to 70 bar [1,015 psi]. This pressure can be measured by means of an integrated pressure sensor.

Transmitter output signals can simultaneously be measured via an electrical module, thus enabling the simultaneous display of the reference and test item value on the screen. This allows a complete transmitter calibration to be carried out with just the SPP70.

#### 5.1.1 Electrical connections

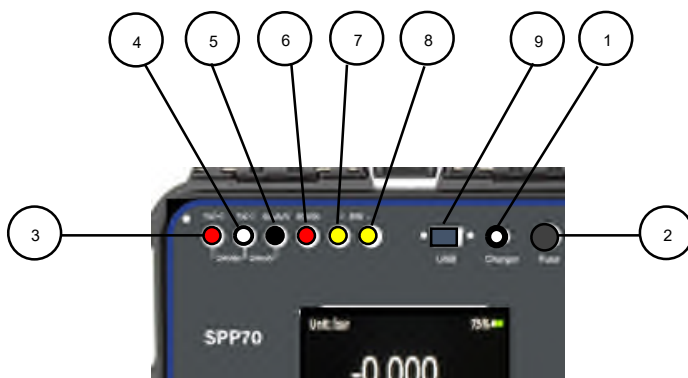


#### **DANGER!**

#### **Danger to life due to misadhering to explosion protection**

Improper use of the pressure calibrator causes a risk of explosion that can result in death.

- The pressure calibrator should not be thrown into fire, since the built-in battery can explode.



- ① Connection for power supply/ charger
- ② Replaceable fuse
- ③ Tx (+) – Socket for 4 mm plugs: Connection for measuring voltages (DC 24 V)
- ④ Tx (-) – Socket for 4 mm plugs: Connection for ground
- ⑤ 0mA/V – Socket for 4 mm plugs: Connection for measuring current (30 mA)
- ⑥ 30Vdc - Socket for 4 mm plugs: Connection for 30 V DC supply
- ⑦ SW (+) – Socket for 4 mm plugs: Connection for switch positive
- ⑧ SW (-) – Socket for 4 mm plugs: Connection for switch negative
- ⑨ USB – Socket for USB plug



Any external circuit connected to this instrument must be protected against electrical shock by additional insulation or insulation enhanced against potential dangerous active voltages.

## 5. Design and function

### 5.1.2 Mechanical connections



10 1/8" NPT female



In order not to put a strain on the case, it is recommended to hold the pressure connection on the SPP70 by means of an open-ended spanner.

### 5.2 Voltage supply



#### **DANGER!**

#### **Danger to life due to misadhering to explosion protection**

Improper use of the pressure calibrator causes a risk of explosion that can result in death.

- ▶ Only use the power supply unit which came along with the SPP70!
- ▶ The operation with an external power supply is not permitted in hazardous areas!
- ▶ Charging the integrated battery pack is not permitted in hazardous areas!
- ▶ The ambient temperature range during charging is limited to 0 °C to +40 °C

The internal Lithium-Ion battery, which can be easily charged with the battery charger supplied with the equipment, serves as the voltage supply for the instrument.

To charge the SPP70 rechargeable batteries, the mains plug of the power supply unit must always be plugged in to a mains socket and accessible, so that one can always remove it from the mains socket without difficulty.

To avoid incorrect measurements, recharge the battery as soon as the battery indicator flashes. If the battery discharges too much, the SPP70 will automatically turn off.

The battery life is up to 8 hours in continuous operation (without backlighting and the electrical module does not supply voltage/current).

In the upper right corner of the display there is a symbol for the battery capacity.

#### 5.2.1 Rechargeable battery



The integrated lithium-ion battery is subject to the requirements of the Dangerous Goods Directive. Special requirements for packaging and labelling must be observed when shipping. A dangerous goods expert must be consulted when preparing the package. Do not ship the SPP70 if the rechargeable battery is damaged or defective. Observe the different dangerous goods requirements relative to the respective modes of transport and any other national regulations.

The rechargeable battery is permanently installed in the model SPP70 process calibrator.

The battery can be charged only using the power supply unit included in the scope of delivery. Typical charging time is < 7 hours.

## 5. Design and function

### 5.3 Pump



#### CAUTION!

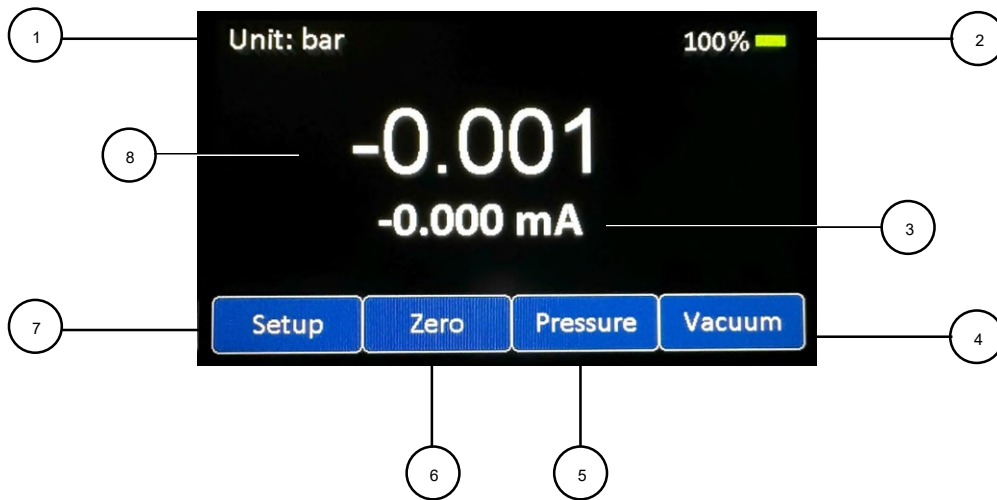
##### Physical injuries and damage to property and the environment

Improper handling of the electric pump can damage the pressure calibrator.

- ▶ Do not use the electric pump when the pressure connection is not properly tightened.
- ▶ Extensive pumping when there is a major leak will cause damage to the electric pump.

The pump is replaceable. Regular maintenance is recommended every 2 years to remove excessive contaminants and dirt. Under normal use conditions, the service life typically lasts more than a year.

### 5.4 Display



- ① Unit: Selected measurement unit of the SPP70 reference sensor
- ② Battery level
- ③ Measured analogue output
- ④ Vacuum: To switch on internal vacuum pump for vacuum control
- ⑤ Pressure: To switch on internal pump for pressurizing
- ⑥ Zero: To zero the internal pressure sensor. Note: must open the vent valve
- ⑦ Setup: Measuring unit selection, mA / V / Pressure switch test selection or EXIT
- ⑧ Pressure or vacuum reading of the SPP70 reference sensor

## 6. Commissioning, operation

### 6.1 Installation before operation

- 6.1.1 Connect the U.U.T. (Pressure Transmitter, Gauge) onto the front panel outlet port, 1/8" FNPT. Use a adapting connector if required.
- 6.1.2 Switch on the instrument by switching the power ON/OFF switch to "ON"
- 6.1.3 Upon power-up, display show SPP70 information (Model, Serial Number and etc) for 3 seconds.

### 6.2 Operation

#### 6.2.1 Startup Mode

After initialization, the display will go into Main menu.

Battery voltage is displayed at the right top corner of the display. Charge the unit when the battery voltage drops below 50%.

If pressure transmitter 2 wires is connected to the front panel sockets marked "TX+" and TX-", it should read about 4.00 mA. "TX+" and "TX-" sockets supply 24Vdc loop power to the pressure transmitter as well as reading the mA feedback signal from the transmitter.

In Main menu, select any of the 4 soft-keys as require. See below.

Setup Mode: Engineering units selection, mA / Volt / Pressure Switch Test Selection or EXIT.

Zero Mode: To zero the internal pressure sensor. Note: must open the Vent valve.

Pressure Mode: To run the test in manual mode.

Vacuum: To switch on internal vacuum pump for vacuum control.



In VENT mode. Zero the Display before proceeding.



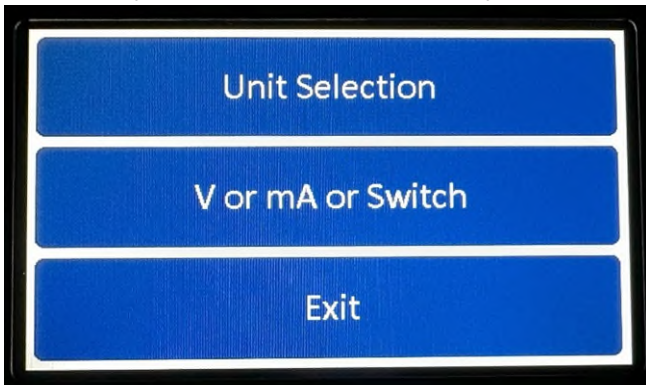
#### 6.2.2 Setup Mode

In Setup Mode, user can perform the following;

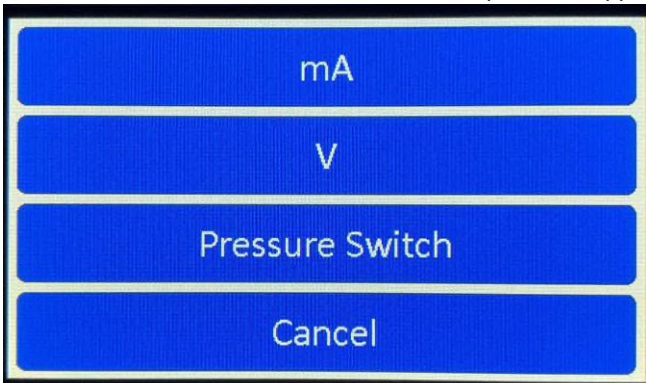
- Engineering units selection; psi, bar, kPa and etc.
- Pressure Switch Test – Volt or mA selection
- Resolution of display
- Exit to main menu

## 6. Commissioning, operation

To select any mode, press the appropriate key.



To select Pressure Switch Test – Volt or mA, press the appropriate key.



To select engineering unit, press the appropriate key followed by "OK" to confirm the selection.





## 6. Commissioning, operation

To select the resolution, press the appropriate key.



### 6.2.3 Start/ Stop Pressure Point Test

- Vent the internal pressure by opening Vent metering valve. (anti-clockwise)
- Zero the instrument if needed
- Connect the UUT/ DUT device output to the front panel
- Switch the Pressure/ Vacuum selector to Pressure side (RHS)
- Close the Vent metering valve (clockwise)
- To perform pressure point test, press the Pressure Button (Below picture), follow by START Button.
- To stop the internal pump, press the STOP button. User may re-start the internal pump by pressing the START button. To fine adjust the pressure, use Fine Regulator. Stop the pump if found leaking

Main menu



Pressure point test



## 6. Commissioning, operation

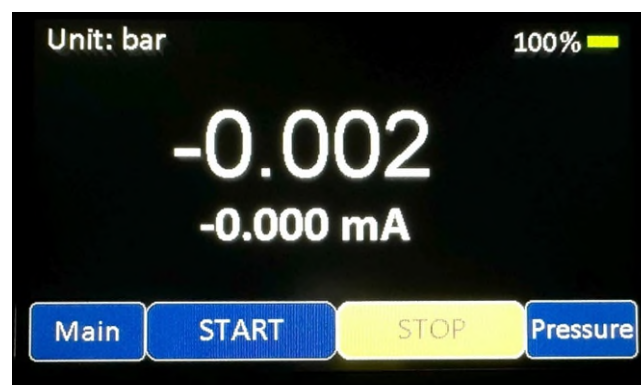
### 6.2.4 Start/ Stop Vacuum Point Test

- Vent the internal pressure by opening Vent metering valve. (anti-clockwise)
- Zero the instrument if needed
- Connect the UUT/ DUT device output to the front panel
- Switch the Pressure/ Vacuum selector to Vacuum side (LHS)
- Close the Vent metering valve (clockwise)
- Close the Vacuum Control Valve (clockwise)
- To perform Vacuum point test, press the Vacuum Button, follow by START Button.
- Open the Vacuum Control Valve (anti-clockwise) to control/ increase vacuum level. Close the valve when it is near the setpoint, User may or may not stop the vacuum pump, use regulator for fine adjustment. To decrease the vacuum level, use Vent metering valve.
- The regulator is not sensitivity for vacuum level higher than -0.9 barg. Using the Vacuum control metering valve may have better adjustment control.

Main menu



Vacuum point test

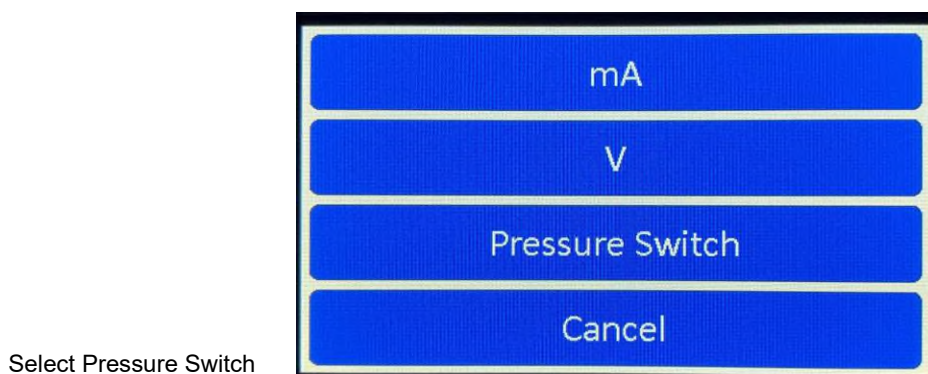
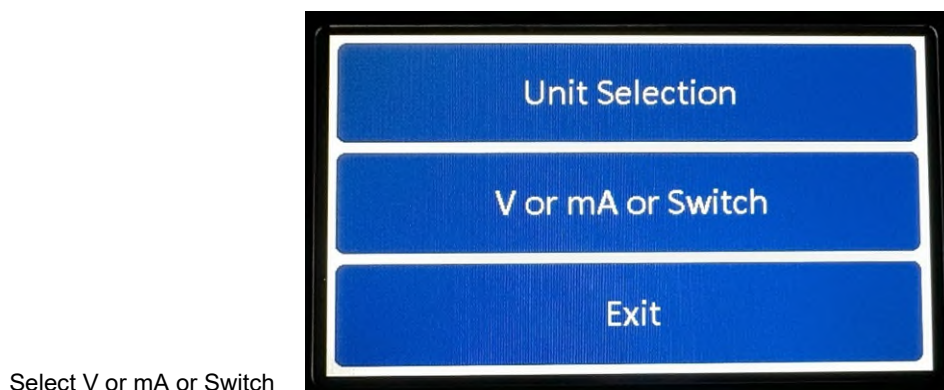




## 6. Commissioning, operation

### 6.2.5 Pressure Switch Test

- Vent the internal pressure by opening Vent metering valve. (anti-clockwise)
- Zero the instrument if needed
- Connect the UUT/ DUT device output to the front panel
- Connect the switch 2 wires (non-voltage type) N.O or N.C to front panel
- Switch the Pressure/ Vacuum selector to Pressure side (RHS)
- Close the Vent metering valve (clockwise)
- To perform switch test, click Setup, V/ mA/ Switch and Pressure Switch keys.



## 6. Commissioning, operation

- In switch test mode, switch status is display.



Default switch status

- Press PRESSURE, START key or Enter Pressure Test point to perform the switch test.
- If START key is chosen, the pump will automatic stop upon change of switch status. That is the pressure switch point. User need to press the Stop key to stop pressure generation. Otherwise, it will pump to max 70 bar and may damaged the switch device.
- If User enter the pressure point, it will either automatically stop the pump upon change of switch status, or automatically stop the pressure pump upon reaching of entered pressure point.
- To measure the 1st reset pressure point, open the VENT valve slowly (about 50 counts drops / second)
- Once the reset point hit, close the VENT valve. It will display the 1st reset pressure point as below picture.



1st switch satus: close at 9.927 bar

- Repeat the number of Test cycle as require but always VENT the pressure in-between every cycle. The trip and reset average points will display.
- To clear the switch status readings, press the Clear Average button.
- To return to the main menu, press return button.

## 6. Commissioning, operation



1st switch status: open at 9.332 bar



2nd close



2nd open



3rd close



3rd open



Press Clr Avg to clear switch data

## 7. Faults / 8. Maintenance, cleaning and recalibration

### 7. Faults

**Personnel:** Skilled personnel



#### **DANGER!**

##### **Danger to life from explosion**

Through working in flammable atmospheres, there is a risk of explosion which can cause death.

- ▶ Only rectify faults in non-flammable atmospheres!



#### **CAUTION!**

##### **Physical injuries and damage to property and the environment**

If faults cannot be eliminated by means of the listed measures, the pressure calibrator must be taken out of operation immediately.

- ▶ Ensure that pressure or signal is no longer present and protect against accidental commissioning.
- ▶ Contact the manufacturer.
- ▶ If a return is needed, please use the contact details in chapter 1 "General information".
- ▶ Fluid from UUT/ DUT can contaminate the equipment and degrade or damaged the equipment, using liquid trap filter if in doubt.

Faults	Measures
No Display upon power up	Blown Fuse located near On-Off Switch Replace a new fuse with same rating
Pressure generation too slow	Check for air leak within the connection
Control pressure is unable to reach set point after few minutes	Check for air leak within the connection and fitting or hoses.
Measurement not accurate	Vent and zero the unit before testing

### 8. Maintenance, cleaning and recalibration

**Personnel:** Skilled personnel



For contact details see chapter 1 "General information" or the back page of the operating instructions.

#### **8.1 Maintenance**

The model SPP70 pressure calibrator is maintenance-free.

The same does not apply to the integrated pump. The pump must be serviced at regular intervals by the manufacturer.

Repairs must only be carried out by the manufacturer.



The pumping unit is a consumable. Regular maintenance is recommended after 100,000 pump cycles at the latest. Under normal use conditions, this corresponds to a service life of 2 years.

## 8. Maintenance, cleaning and recalibration

### 8.2 Cleaning



**CAUTION!**

**Physical injuries and damage to property and the environment**

Improper cleaning may lead to physical injuries and damage to property and the environment. Residual media at the dismantled instrument can result in a risk to persons, the environment and equipment.

- Carry out the cleaning process as described below.

1. Prior to cleaning, vent and switch off the instrument.
2. Clean the instrument with a moist cloth.

Electrical connections must not come into contact with moisture!



**CAUTION!**

**Damage to the instrument**

Improper cleaning may lead to damage to the instrument!

- Do not use any aggressive cleaning agents.
- Do not use any pointed and hard objects for cleaning.
- Do not use solvents or abrasives for cleaning.

### 8.3. Recalibration

**SAC-SINGLAS certificate - official certificates:**

We recommend that the instrument is regularly recalibrated by the manufacturer, with time intervals of approx. 12 months. The basic settings will be corrected if necessary.

## 9. Specifications

### 9. Specifications

#### 9.1 Portable electric pressure calibrator model SPP70

##### Sensor technology

Measuring range	-0.9 ... 70 bar
System Overpressure safety	1.4 times
Accuracy	0.02% FS
Resolution	Up to 6-digit
Temperature compensation range	15 ... 35 °C [59 ... 95 °F]
Warm up time	15 mins
Control stability	0.01% of range
Engineering units	psi, kPa, bar, Mpa, kg/cm, mmH2O@20C, mmH2O@4C, inH2O@20C, inH2O@4C, cmH2O@20C, Torr, inHg.mH2O@4C, mH2O@20C, ftH2O@4C, ftH2O@20C, mmHg@0C, inHg@0C, inSW.mSW, cmHg@0C, HPa, ftSW
Measuring input, current	
Measuring range	0 ... 24 mA
Accuracy	0.015% of full scale (load resistance not exceeding 750 ohms) With or without internal 24 Vdc loop power (Short circuit protected)
Resolution	Up to 6 digits
Measuring input, voltage	
Measuring range	DC 0 ... 30 V
Accuracy	0.05% of full scale
Resolution	Up to 6 digits
Switch input	N.C or N.O, non-voltage input

##### Base instrument

Pressure supply	-0.9 ... 70 bar [-13 ... 1,015 psi], via integrated electric pump
Pressure connection	1/8" FNPT Female
Permissible media	For dry, clean and non-aggressive gases
Communication	Mini USB
Display	4.3" TFT Color Touch Screen
Power supply	Lithium-ion Battery
Case	
Material	NK-7 High Impact Polypropylene / Nylon 66 / 304 Stainless Steel / EPDM
Front panel	Aluminium, laminated silk-screen
Dimensions	L318 x W257 x H152 mm
Weight	5.5 kg

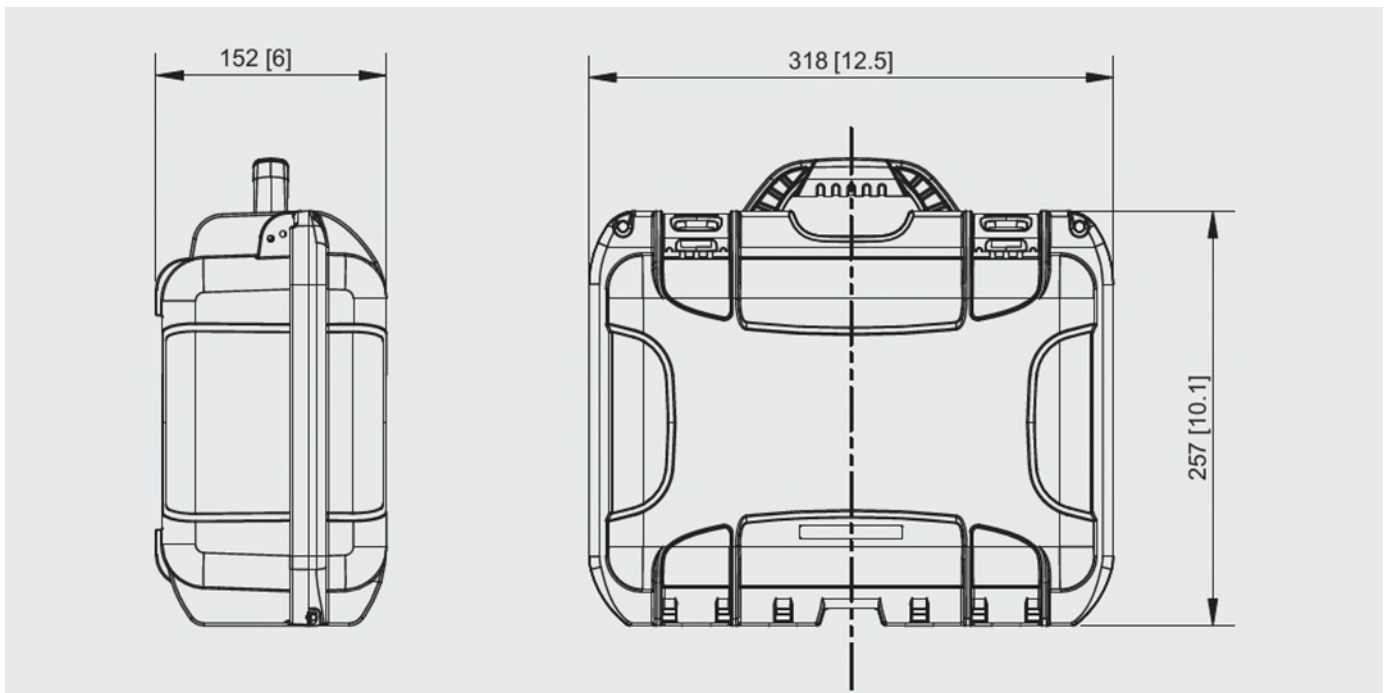
##### Charger

Input voltage	AC 100 ... 240 V, 50 ... 60 Hz
Output voltage	14.8 Vdc @ 10 Amp






## 9. Specifications

### 9.2 Dimensions in mm [in]



### 9.3 Accessories

	Special features	Order code
	<b>Test cable set</b> <ul style="list-style-type: none"> <li>■ 1 x black</li> <li>■ 1 x red</li> </ul>	-A-
	<b>Adaptor set "standard"</b> Consisting of 1/2 NPT female to G 1/2 male, 1/4 NPT female to G 1/2 male, and G 1/4 female to G 1/2 male	-B-
	<b>Sealing set</b> Consisting of: <ul style="list-style-type: none"> <li>■ 2 x G 1/2 USIT seals</li> <li>■ 2 x G 1/4 USIT seals</li> </ul>	-C-