ConST211

数字压力表

DIGITAL PRESSURE GAUGE

让校准更轻松！

Calibration can be easy!

ConST 211 DIGITAL PRESSURE GAUGE

User's Manual

CE Ex

Beijing ConST Instruments Technology Inc.

CONTENTS

1. Introduction

The ConST211 is designed to offer a truly compact, cost effective digital pressure gauge to cover a wide range of applications. Besides the pressure measure function, it can calibrate the standard pressure gauge, precision press–ure gauge, industry pressure gauge, blood–pressure meter and other pressure instruments.

Since the firmware of ConST211 is based on special micro–power consumption technology, one piece of Li–ion battery works up to 10000 hours (1.5 years).

The ConST211 digital pressure gauge has the excellent compatibility of electromagnetism (EMC), so it is applied in any complicated electromagnetism environment. In addition, it is approved European CE standard.

The ConST211 digital pressure gauge has been certified intrinsically safety by PCEC. The symbol of explosion–proof is Exia Ⅱ CT4. Intrinsically Safety and Non–incendive for Hazardous Locations: Field 0, 1, 2, Class Ⅱ (Groups A ,B and C), Temperature Code T1 ~ T4.

2. Specification

◆Pressure ranges

Pressure range	Reference Pressure		Isolation Film		Medium		Accuracy in 1 year (%FS)	Compensated Temperature	Burst Pressure
	gauge	absolute	Yes	No	gas	liquid			
(−100~0)kPa (0~40)kPa (0~60)kPa (0~100)kPa (0~160)kPa (0~250)kPa (0~400)kPa (0~600)kPa	●	●	●	●	●	●	0.05 0.1 0.2	0℃ to 50℃	3× & <10MPa
(0~1)MPa (0~1.6)MPa (0~2)MPa (0~2.5)MPa (0~4)MPa (0~6)MPa	●	●	●		●	●			
(0~10)MPa (0~16)MPa (0~20)MPa (0~25)MPa (0~30)MPa (0~40)MPa (0~60)MPa	*	●	●		●	●			3× & <100 MPa
(0~100)MPa	*		●		●	●	0.2	0℃ to 50℃	1.25×
(0~160)MPa	*		●		●	●			1.50×
(0~250)MPa	*		●		●	●			1.25×

Notes: Above * is sealed gauge pressure.

◆**Instrument type:** Basic type; intrinsically safe type;

◆**Pressure units:** kgf/cm^2 mmH_2O mmHg inH_2O inHg psi kPa MPa Pa mbar bar, total 11 units;

Remark: In order to avoid the readings overflow or too low to read, only some of pressure units are selected;

◆**Overpressure warning:** The screen will flash or glint if pressure over 120%FS;

◆**Measure speed:** User can set it, factory default is 3 times / s;

◆**Working environment:** a. Temperature: –10℃ to 50℃; b. Relative humidity: ＜95%;

c. Atmosphere pressure: (86 ~ 106) kPa;

◆**Compensated temperature:** 0℃ to 50℃;

◆**Storage temperature:** –20℃ ~ 70℃;

◆**Display:** Big FSTN LCD with blue backlight, 5–digit to display;

◆**Working time:** Up to 10000 hours (3 times/s); if battery power is very low, the ConST211will power off automatically;

◆**Power supply:**One piece 3.6V Primary Lithium Thionyl Chloride High Energy AA–size Bobbin Battery;

The recommend battery for intrinsical safety type ConST211 is SUNMOON 3.6V SIZE AA/ER14505;

◆**Re–calibration period:** One year (recommend);

◆**RS232 configuration:** Optional;

◆**Size:** ϕ 112mm × 35mm, total height is 178mm;

◆**Weight:** 0.58kg;

◆**Pressure connector:** M20x1.5 or custom–made;

◆**Additional functions:**

① Temperature measure: ± 1℃ resolution;

② Peak detection: Detect the maximum pressure value and minimum pressure value;

③ Pressure % indication: to display the current pressure percent value by using sector pointer;

④ Pressure swing: to indicate the swing degree between 2 contiguous pressure value by using one pointer;

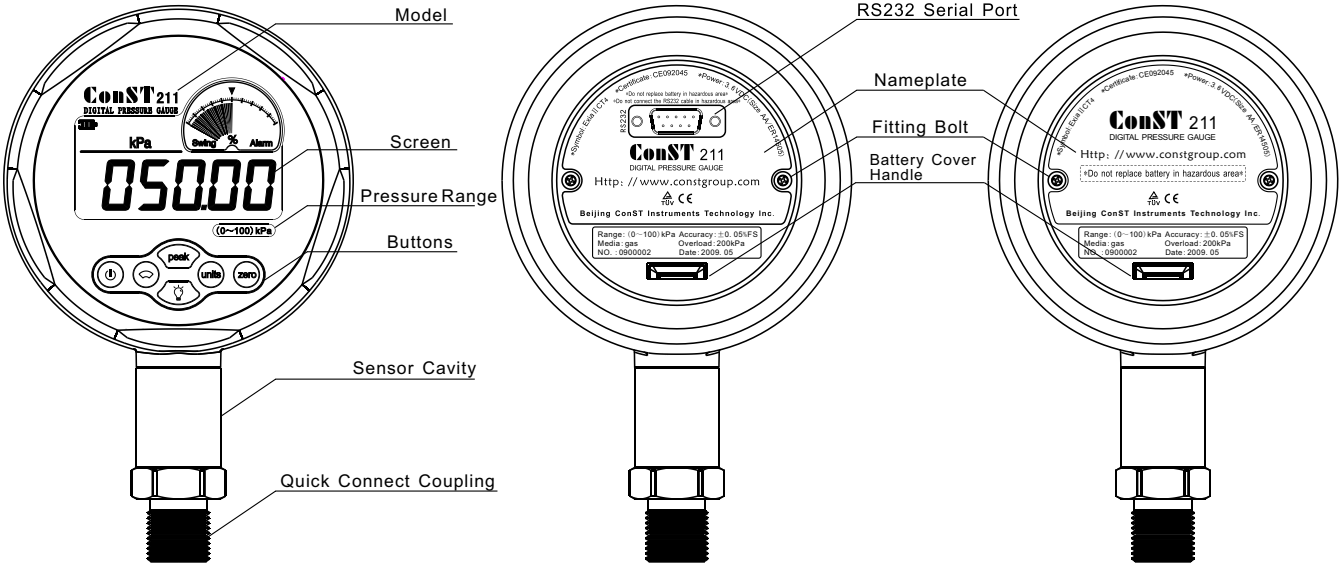
⑤ Overpressure alarm: using two pointers to show the low/high alarm limit; the 3th pointer shows the current % indication.

3. Warning

- The installation of ConST211 should be abide of the related regulations of GB3836.15–2000《electrical apparat––us in explosive gas atmospherespart 15:electrical installations in hazardous areas (except coal mine)》(eqv IEC 6007914：1996)；
- The ConST211 has the indication of battery level. Please replace the new battery if the gauge power off automat––ically; **Remark: Please replace the recommended battery in nonhazardous locations;**
- Do not connect the RS232 communication cable with ConST211 in a hazardous atmosphere;
- Don't change the components or structure of gauge. That could destroy the explosion–proof ability directly;
- ◆ To prevent damage, do not use ConST211 for long time with overpressure. Once the pressure over 120%FS, please release the pressure immediately;
- ◆ The ConST211 has 11 different pressure units to switch. However, in order to avoid the reading overflow or too low to read, only some of pressure units in selected;
- ◆ To prevent damage, do not use the imposition of torque between the shell and the pressure quick connect coupling.

N.B: The mark "" is only for ConST211 intrinsical safety type!

4. Basic structure



Front View

Back View (Serial Port)

Back View (Non–serial Port)

5. Pushbuttons introduction

(1) Operating instruction

Power ON/OFF

Analogue dial: Pressing it shortly to select the % indication, swing (fluctuation) and low/high alarm;

Pressing it longer to enter into the menu of adjusting low/high alarm;

peak Peak Value：Pressing it shortly to switch the indication among max Peak, min Peak and quit Peak;

Pressing it longer to enter the menu of MENU OPTION;

Backlight: Pressing it shortly to turn on of turn off the backlight;

Pressing it longer to select the backlight display time (10s, 20s and 30s), and loosen it for selection;

units Pressure units: Pressing it shortly to switch the different pressure units;

Pressing it longer to enter into the temperature display menu;

zero Zeroing:Pressing it for zeroing function (The absolute type ConST211 should be press longer).

(2)Data inputting introduction

① (←), units (→) Move decimal digit left and right;

② peak (↑), (↓) Increase/ decrease the pressure value;

③ zero (↙)Confirm the inputting data;

④ (ESC)Cancel the input data.

(3)Menu operation introduction

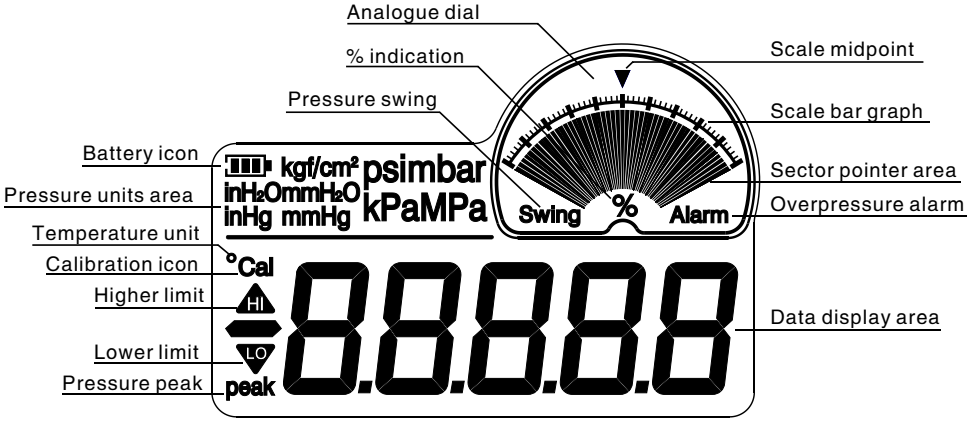
① peak (Menu)Pressing it longer to enter the MENU OPTION (calibration/setting);

② peak (↑), (↓) Move menu upper or down;

③ zero (↙): Enter function;

④ (ESC): Show the previous menu.

6. Screen area



Picture 6–1: Screen area

The definition of every area as following:

◆**Battery icon:** The battery icon  is the indication of full battery;

The battery icon  is the indication of low battery (<25%). However, the ConST211 can contin–

–ually work till it powered off automatically;

◆**Pressure unit area:** Total 11 units for selection;

In order to avoid the readings overflow or too low to read, only some of pressure units are selected;

◆**Calibration icon:** The mark or symbol of operating calibration;

◆**Pressure peak:** The mark or symbol of displaying peak value;

◆**Higher limit:** The mark or symbol of high limit pressure;

◆**Lower limit:** The mark or symbol of lower limit pressure;

◆**Temperature unit:** ℃;

◆**Data display area:** To display all data or menu;

◆**Analogue dial:** Includes 3 types indication: pressure % indication, pressure swing, overpressure alarm.

The content of the area as below:

① **% indication:** The current pressure percentage;

② **Pressure swing:** The indication of the pressure fluctuation;

③ **Overpressure alarm:** The alarm indication for overpressure (less or more the limit);

④ **Sector pointer area:** Including 51 segments bars or pointers;

⑤ **Scale bar graph:** It has different definitions under the different operation condition;

⑥ **Scale midpoint:** The middle position of Scale bar graph.

7. Basic function

7.1 Power on/off

Press ⏻ to turn on or turn off the ConST211. The instrument does a self test and then shows all applicable data. Figure 7–1shows the first screen.

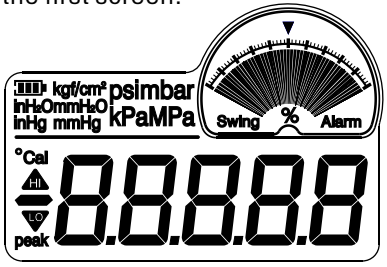


Figure 7–1: The first screen

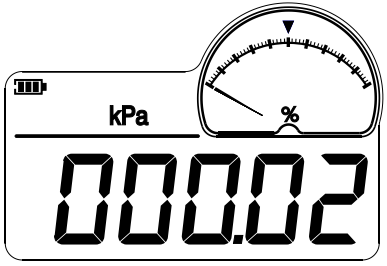


Figure 7–2: Pressure measurement interface

7.2 Pressure Measure

Press the buttons to enter the pressure measure menu, the displayed content includes:

・Battery icon ・Pressure measure value ・Pressure units ・Analogue dial indication

Remark: Initially, these register values are set to the factory calibration values. If the pressure is over 120%FS, the whole screen will flashes to alarm. To prevent damager of sensor, please release the pressure immediately. While the alarm happened, the measure speed of ConST211 automatically changes to 3 times/s for catching up the pressure changing. When the alarm is over, the speed will go back to normal.

Figure 7–2 shows the pressure measure menu.

7.3 Zeroing

(1)The type of gauge pressure:

First of all, please connect the ConST211 with atmosphere via connector coupling. If the current pressure is in the range of (–1% ~ 1%) FS, press zero button for zeroing step. Figure 7–3–1 shows the zeroing sequence of gauge pressure.

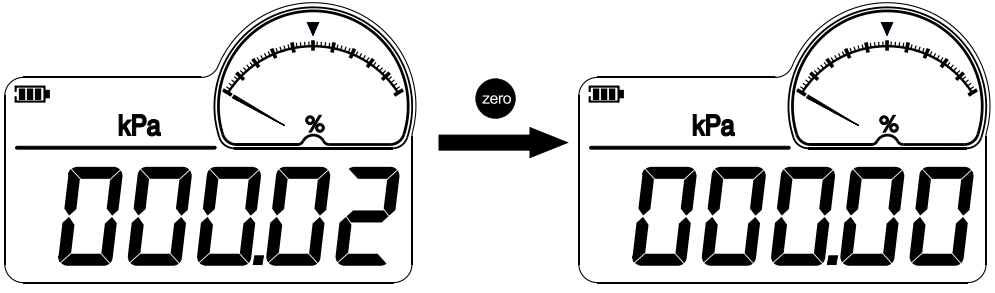


Figure 7–3–1: The zeroing sequence for gauge pressure ConST211

(2)The type of absolute pressure:

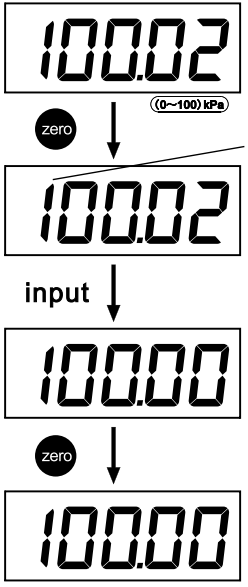
① Connect the ConST211 with atmosphere, user should know the current atmosphere pressure value (***Pstandard***);

② The actual pressure of ConST211 is (***Pmeasure***);

③ Pressing zero button longer to enter the data inputting state, then, please input the actual pressure (***Pstandard***);

④ In the menu of pressure measure, the measured pressure is changed to (***Pstandard***); it is same as the atmosphere pressure value. Now, the zeroing process is finished.

Figure 7–3–2 shows the zeroing sequence for absolute pressure ConST211.



1.Contact with atmosphere;
Measured pressure of ConST211 is 100.02kPa;
Actual atmosphere is 100.00kPa.

2.The fisrt digit is flashing for data inputting.

3.Input the actual atmosphere value 100.00kPa.

4.In the menu of pressure measure, the measured value of ConST211 is 100.00kPa.

Figure 7–3–2: Zero process of absolute pressure

Remark: A. Please select third item 3CLr in the menu of MENU OPTION to cancel the zeroing operation.

B. Make sure the instrument is upright while zeroing.

7.4 Pressure units

Press units button to switch different pressure units. The sequence is Pa > kPa > kgf/cm^2 > inH_2O > mmH_2O > inHg > mmHg > psi > mbar > bar > MPa. The conversion relation of all pressure units is as following table 7–4–1.

Pa	**kPa**	kgf/cm^2	inH_2O	mmH_2O	inHg	mmHg	psi	mbar	bar	MPa
1000	**1**	0.010197	4.01463	102.047	0.2953	7.50061	0.1450377	10	0.01	0.001

Table 7–4–1：Pressure units' conversion relation

Remark: In order to avoid the readings overflow or too low to read, only some of pressure units are selected.

Figure 7–4 shows the methods to switch the different pressure units.

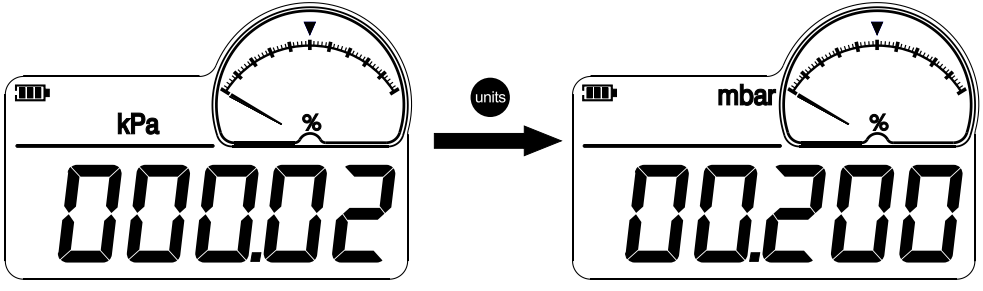


Figure 7–4: Switching method

7.5 Peak detection

(1) Record maximum/minimum peak value

Press peak button to record the peak value.

HI ----------Show the maximum pressure

LO ----------Show the minimum pressure

<No Icon>--------- Automatically record the actual pressure value.

(2) Reset the peak values

Press zero to cancel the previous peak value and save the current peak value.

Figure 7–5 shows the display of peak value.

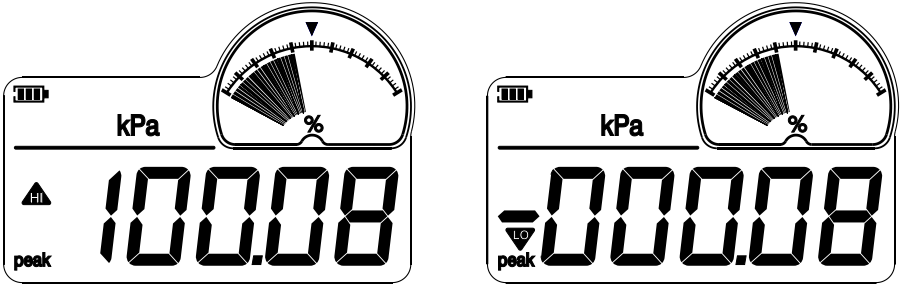


Figure 7–5: Display peak value

7.6. Backlight

Press  button to power on/off the backlight. The selectable time is 10 seconds, 20 seconds and 30 seconds.

The selection method is as below:

(1) Press  button to display the following sequence for selection.

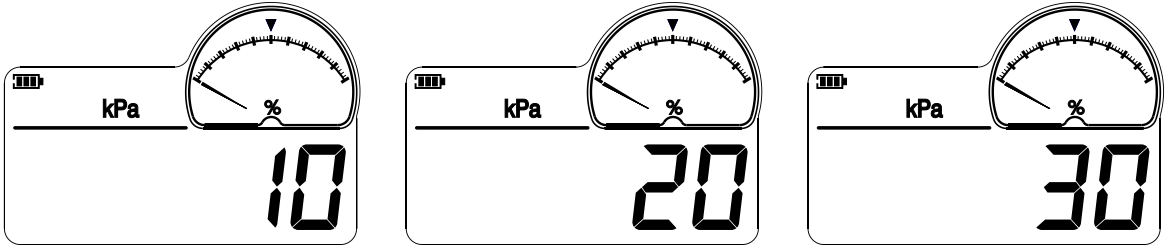


Figure 7–6: The time selection sequence for backlight

(2) Release  the button to select the suitable time and ConST211 will save it automatically.

7.7. Analogue dial

Includes three indications: % indication, pressure swing and overpressure alarm.

Press the key  to switch each other.

The analogue dial includes:

① Percent pressure (%) ② Pressure swing ③ Overpressure alarm

④ Sector pointer area ⑤ Scale bar graph ⑥ Scale midpoint

7.7.1 Percent pressure

◆% indication: show the current pressure percentage;

◆Sector pointer area: show the pressure range as sector shape;

◆Scale bar graph: 0%~100%, the minimum scale is 2%;

◆Scale midpoint: point to 50%.

Example: As for the ConST211with (0~100) kPa, if the current pressure value is 50kPa, the % indication is 50%, as figure 7–7–1.

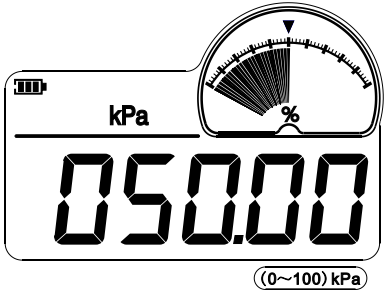


Figure 7–7–1: Pressure % indication

7.7.2 Pressure swing

◆Pressure swing icon: The indication of the pressure fluctuation;

◆Sector pointer area: By using 1 pointer, to show the fluctuation degree of 2 seriate pressure value;

◆Scale bar graph: Range is (–0.25%~0.25%) FS, the min scale is 0.01%FS;

◆Scale midpoint: Point to 0.00%FS position

Example: As for the ConST211 with (0~100) kPa, if current pressure reading is 50.01kPa and previous pressure is 50.11kPa,The fluctuation degree for 2 seriate pressure is – 0.1%FS, as following figure 7–7–2.

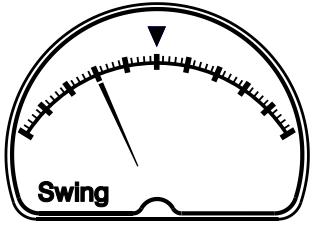


Figure7–7–2:Pressure swing indication

7.7.3 Overpressure alarm

◆Overpressure alarm icon: The indication of the overpressure;

◆Sector pointer area: By using 2 pointers to show the high/low alarm limit, the 3rd pointer to show the current pressure%;

◆Scale bar graph: (0%~100%) FS, minimum scale is 2%FS;

◆Scale midpoint: Point to 50%.

Example: As for the ConST211 with (0~100) kPa, if the current pressure reading is 50.00kPa (50%FS) and higher limit is 80kPa (80%FS) and lower limit is 40kPa (40%FS), the analogue dial shows as following figure 7–7–3.

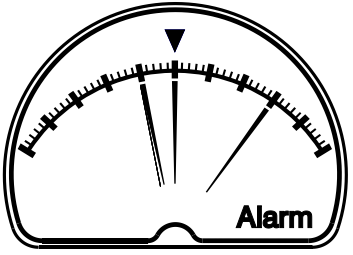


Figure 7–7–3: Overpressure Alarm

When the current pressure is beyond the range of lower/higher limit, the whole screen will flash to warn the users adjust pressure. Meanwhile, display updated to 3 times per seconds automatically for catching up the changing. Once the alarm is over, the display goes back to normal speed.

7.7.4 Set alarm limit

The setting process as follows:

(1) Press button to display the higher limit HI and lower limit LO in turn, please move the cursor left or right direction by pressing the peak ;

(2) By pressing buttons units or zero to adjust the alarm higher limit HI or lower limit LO.

(3) After the high limit is adjusted, the menu will automatically enter the lower limit, and then to quit the menu. The sequence is: High limit > Low limit > Quit.

(4) The ConST211 automatically check the validity for inputting data. If there is some problem, the setting is not eff–ective. Figure 7–7–4 shows the setting menu.

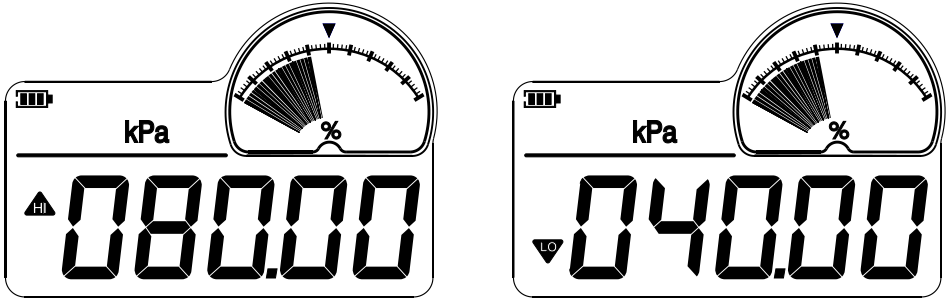


Figure 7–7–4: The setting menu of high limit and lower limit

7.8. Temperature measure

Press button units longer to enter the menu of temperature measure, press units again to go back to the pressure measure menu.The temperature measure range is –30℃ ~ 90℃, the minimum resolution is ± 0.1℃.

Figure 7–8 shows the temperature measure menu.

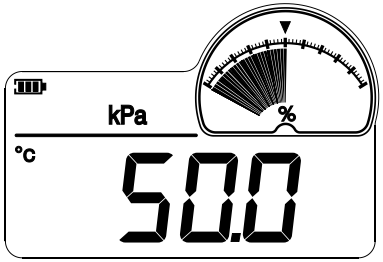


Figure 7–8: Temperature measure menu

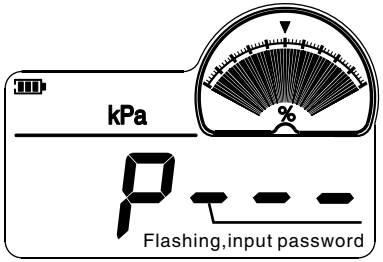


Figure 8–1–1: Enter the password menu

8. Menu Option (calibration/setting)

8.1. Enter the Menu

The password to enter the menu is “211”. The operation steps as follows:

(1) Press longer to enter into the password menu, as Figure 8–1–1.

(2) Input password “211”.

N.B: If the password is wrong, the menu will return to the previous menu.

8.2. Menu option

There are 6 options, as Figure 8–2–1.

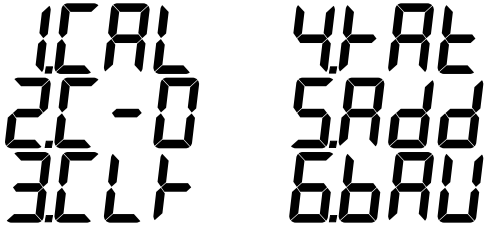


Figure 8–2–1: Six menu options

Details as below:

(1) 1.CAL To enter into the calibration menu;

(2) 2.C-1 The ConST211 have been calibrated already;

2.C-0 The ConST211 haven't been calibrated yet;

If implement this step, all pressure calibration will be cancelled. Please be careful to use this operation;

(3) 3.CLr To cancel the previous zeroing operation;

(4) 4.rAt To set measure speed (or display update);

(5) 5.Add To set the address of RS232;

(6) 6.bAU To set the baud rate of RS232;

Attention: As to the ConST211 without serial port, there aren't 5th and 6th items in the menu option.

8.3. Enter/cancel the calibration

1CAL To enter the calibration;

2C-1 To cancel the calibration.

8.4. Cancel the wrong zeroing

3CLr To cancel the previous zeroing operation.

8.5. Set measure speed

Please select 4rAt to enter the selectable menu of measure speed, as follows:

1—3 (3 times/ 1sec) 1—2 (2 times /1sec) 1—1 (1 times /1 sec) 2—1 (1 times /2sec)

3—1 (1 times /3 sec) 4—1 (1 times /4 sec) 5—1 (1 times /5sec) 6—1 (1 times /6 sec)

7—1 (1 times /7 sec) 8—1 (1 times /8sec) 9—1 (1 times /9 sec) 10—1 (1 times /10sec)

The factory default is 3 times / 1 sec.

8.6. Set RS232 address

Select 5Add to set the RS232 address from the range 1 to 112. The factory default is 1.

8.7. Set RS232 baud rate

Select 6bAU to set the RS232 baud rate from the options of 2400 and 4800 and 9600. The factory default is 9600.

9. Calibration function

It is recommended the ConST211 is re–calibrated once a year by the skillful professional. Otherwise, the random operation may be effects the inner parameter and weaken the measure performance. The ConST211 should be pre––ssurized to full scale and release all pressure. In order to achieve the best calibration condition, please do the pre–pressurizing three times at least.If the calibration process is irregular, please use the cancellation function.

Notice: the calibration must according to the standard conditions.

9.1. Calibration conditions

(1) Environment:Temperature: 20℃ ± 2℃; Relative humidity: (45–75) %; Atmosphere pressure: (86~106) kPa.

(2) Standard pressure source.

9.2. Calibration process

Select Menu to enter the calibration menu. There are 2 different pressure gauges:

(1) Single scale gauge: Two–point pressure calibration, the default is higher/lower limit. The sequence is higher limit > lower limit.

(2) Dual scale gauge: Three–point pressure calibration, the default is lower/high limit and zero. The sequence is higher lower limit > zero > higher limit.

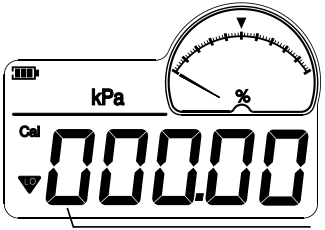
The calibration point can be modified if it is meet following conditions:

(1) The first point value is less than 2nd point;

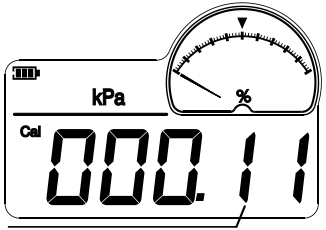
(2) Or, the 2nd point value is less than 3rd point.

Example: The ConST211 with (0~100) kPa

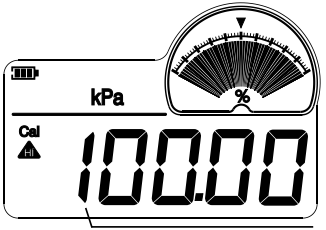
(1)Select CAL and press zero to display the calibration value of lower limit, as figure 9–2–1. If use needs to modify this calibration value, please input the desired value. Otherwise, please press zero to confirm.



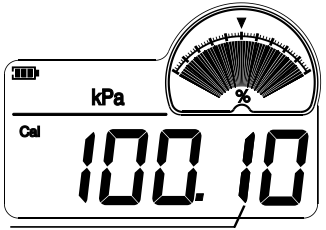
lower limit point display menu
Picture 9–2–1



lower limit calibration menu
Picture 9–2–2



higher limit point display menu
Picture 9–2–3



higher limit calibration menu
Picture 9–2–4

(2)To calibrate lower limit point: Press zero to confirm till the actual pressure value is stable. As Figure 9–2–2.

(3)Display higher limit point: As Figure 9–2–3, please input the desired data if user needs to modify the calibration value. Otherwise, press zero to confirm.

(4)To calibrate higher limit point: Press zero to confirm till the actual pressure value is stable. As Figure 9–2–4.

(5)The screen returns to the calibration menu, the 2nd option changes to 2C-1.That shows the calibration is fini–shed and effective.

Remark: Three–point pressure calibration is mostly same as the two–point.The only difference is icons HI LO display together while zero is calibrated.

9.3. Cancel calibration

Select 2C - 1 and push the button ⏻ to cancel the calibration ,then the screen displays 2C -0.

10. Replace the battery

◆Please replace the spare battery if the ConST211 power off automatically;

◆Replace the approved battery in non–hazardous locations;

◆Approved battery: SUNMOON 3.6V SIZE AA/ER14505;

◆Unscrew the bolt and remove the battery cover, Install the new battery.

Remark: There is a spare battery for the ConST211 of Non–RS232 type.

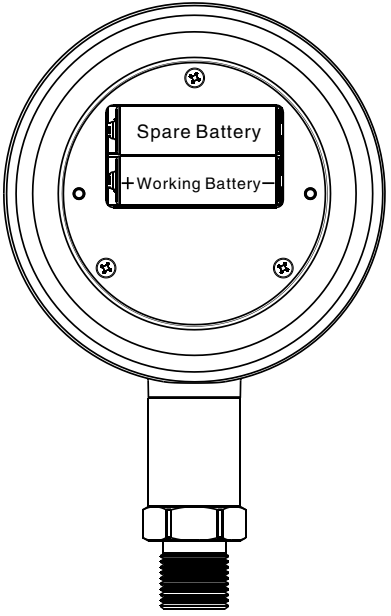


Figure 10–1: Spare battery location

11.Contact with us

The product specifications and other information contained this manual are subject without notice.ConST group has made a concerted effort to provide complete and current information for the proper use of the equipment. If there are questions, contact Const:

Tel: 0086–10–82782288

Fax: 0086–10–82782266

Website: www.constgroup.com

Email: sales@constgroup.com

Appendix I: Communication protocols

1.Instructions format

1.1 PC machine's send format

A：X：Knnnn: C0：C1：C2：C3：C4+ Eos (End of symbol)

A：1 byte, the communication address of ConST211

X：1 byte, only for W (write) or R (read)

K：1 byte, M (for measure operation), F (for file operation), O (other operation)

nnnn：2–5 bytes, the item operated by K instruction

C0:C1:C2:C3:C4： Parameter, refer the specified instruction introduction

Eos： 0x0(Hex)

1.2 Return format of the ConST211

A：X：Knnnn：C0：C1：C2：C3：C4+Eos，hereinto：

A：Communication address of the ConST211

X：E or F, E: error information of this frame data; F: feedback information.

Knnnn：It is same as the instructions from upper machine

C0，C1：Feedback data or error information

Eos：0x0(Hex)

1.3 Error information code instruction

1000: Receive the overflow from buffer zero.

1001: User has no right to do this operation

1004: The numeric character string has the irregular wrong character

1005: The pressure unit is unavailable

1007: The set parameter is irregular

1016: The current data is not the range of zeroing

1017: The digits of set parameter are not enough

1018: This instruction is unavailable

1019: The length of operation code is overflowed

1020: The r/w of instruction is wrong

1024: The set pressure unit is irregular

1025: The serial port's address is overflowed

1026: The baud rate is wrong

1029: Some parameter's character is overflowed

1.4 The series port's communication collocation

Communication Address	Baud rate	Data length	Stop bit	Parity bit	Flow control
1 ~ 112	2400 4800 9600	8	2	N/A	N/A

2. Instructions details

Instructions									Function Introduction	Right return value
A	X	Knnnn	C0	C1	C2	C3	C4	Eos		
		OVER	–	–	–	–	–	0x0	Read the software's version number	A：F：OVER：version # +Eos
		OTYPE	–	–	–	–	–	0x0	Read the instrument's model number	A：F：OVOK：model # +Eos
		OCODE	–	–	–	–	–	0x0	Read instrument's serial number	A：F：OCODE：OK+Eos
		OPRDA	–	–	–	–	–	0x0	Read instrument's manufacture date	A：F：OPRDA：OK+Eos
	W	OBLAC	0 (close) 1 (open)	–	–	–	–	0x0	Turn on/off backlight	A：F：OBLAC：OK+Eos
	W	OBLAT	10/20/30	–	–	–	–	0x0	Set the time of backlight turn off	A：F：OBLAT：OK+Eos
	W	OLEDC	0 ~ 100					0x0	Set backlinght conteast,0% ~ 100%	A：F：OLEDC：OK+Eos
	W	OKEY	0 (close) 1 (open)	–	–	–	–	0x0	On/off keypad	A：F：OKEY：OK+Eos
	R	OBATV	–	–	–	–	–	0x0	Read the barry level 0(low battery) 1(left 1/4) 2(full)	A：F：OBATV：battary icon +Eos
	R	ORAN	–	–	–	–	–	0x0	Read instrument's pressure range Pressure type:0(gauge) 1(absolute)	A：F：ORAN：min Pressure: max Pressure: pressure unit:+Eos
	R	MRMD	–	–	–	–	–	0x0	Read the actual pressure value	A：F：MRMD：pressure value: unit: +Eos
	R	OTEMP						0x0	Read the environment temperature	A：F：OTEMP：temperature：℃+Eos
	W	MZERO	–	–	–	–	–	0x0	zero the sxcursion value while the zeroing is operating	A：F：MZERO：OK+Eos
	W	OZERO	–	–	–	–	–	0x0	Zero the pressure value	A：F：OZERO：OK+Eos
	W	OCONT	0 (close) 1 (open)	1	–	–	–	0x0	instrument end the measure data, see format (5)	A：F：OCONT：OK+Eos
	W	OUNIT	Unit shortening	–	–	–	–	0x0	Switch the pressure units	A：F：OUNIT：OK+Eos
	R	OUINF	–	–	–	–	–	0x0	Read the code of optional units;	A：F：OUINF：：unit info code +Eos
	R	OPEAK	–	–	–	–	–	0x0	Read pressure peak value	A：F：OPEAK：max Peak value： min pear value：pressure unit +Eos
	W	OPKZE	–	–	–	–	–	0x0	Zero pressure peak value to actual measured pressure value	A：F：OPKZE：OK+Eos
	R	OADDR	–	–	–	–	–	0x0	Read series port address(1-112)	A：F：OADDR：address +Eos
	W	OADDR	Address	–	–	–	–	0x0	Set up the series port address	A：F：OADDR：OK+Eos
	W	OBAUD	Baud rate	–	–	–	–	0x0	Set the baud rate (2400,4800,9600)	A：F：OBAUD：OK+Eos
	W	OFALT	–	–	–	–	–	0x0	Cancel the pressure parameter to operation, go back to factory default	A：F：OFALT：OK+Eos

Instructions									Function Introduction	Right return value
A	X	Knnnn	C0	C1	C2	C3	C4	Eos		
	W	OCPS	–	–	–	–	–	0x0	Entrance instruction of calibration	A：F：OCPS：OK+Eos
	W	OCP	Z (zero) M(middle) F (full scale point)	Standard pressure of calibration point	–	–	–	0x0	Input the standard pressure value and calibration points, for calibration	A：F：OCP：OK+Eos
	W	OCPOK	1(save) 2(unsaved)	–	–	–	–	0x0	Quit the pressure calibration process	A：F：OCPOK：OK+Eos
	W	ALARM	High limit	lower limit	Pressure unit	–	–	0x0	Set the alarm limit	A：F：ALARM：OK+Eos
	R	ALARM	–	–	–	–	–	0x0	Read alarm limit	A：F：ALARM：High limit+lower limit + pressure unit
	W	MRATE	D0	D1	–	–	–	0x0	Set measure D1 times/ D0 second	A：F：MRATE：OK+Eos
	R	MRATE	–	–	–	–	–	0x0	Read the measured times per second	A：F：MRATE：seconds: times+Eos
	W	ODIAL	0(%) 1(swing) 2(alarm)	–	–	–	–	0x0	Set the work mode on the analog dial	A：F：ODIAL：OK+Eos

3.Pressure units shortening

Shortening	KGF	INH2O	H2O	INHG	HG	PSI	MBAR	BAR	PA	KPA	MPA
Standard	Kgf/cm^2	inH_2O	mmH_2O	inHg	mmHg	psi	mbar	bar	Pa	kPa	MPa

4.Pressure units code

The data is read by OUINF is algorism; please check the selected pressure units after it is changed to hex data with 2 bytes. The selectable pressure code is represented by 2 bytes. 1(this unit is available); 0(This unit is unavailable).

Kgf/cm^2	inH_2O	mmH_2O	inHg	mmHg	psi	mbar	bar	Pa	kPa	MPa

MSB–10 LSB–0

5.Data automatically transmit format

Total data length is 16 bytes, plus an end symbol after the data. Example: *P 0.0364 MPA.

THE END THANKS

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Beijing ConST Instruments Technology Inc.