Sino Instruments
华 信 仪 表

Intelligent Pressure Calibrator

hx601B

Operation Manual

Hua xin Instrument(BeiJing)Co., Ltd

Claim:

Due to the limitation of the editing time, rapid market change, and constantly upgrading and updating of the product, the manual will be updated without notice; The Company reserves the right to amend the content. Any errors, please point out timely. If there is any other suggestion, please feel free contact with us!

Catalogue

SUMMARY

HX601B is a high-precision single-range digital pressure gauge, which is composed of high-precision measurement chips, DC24V power supply, rechargeable battery protection circuit and single-range pressure modules and so on. This unit can be used for real-time measurement of pressure value and the calibration of the pressure transmitters, differential pressure transmitters, pressure transducers and pressure gauges.

TECHNICALSPECIFICATION

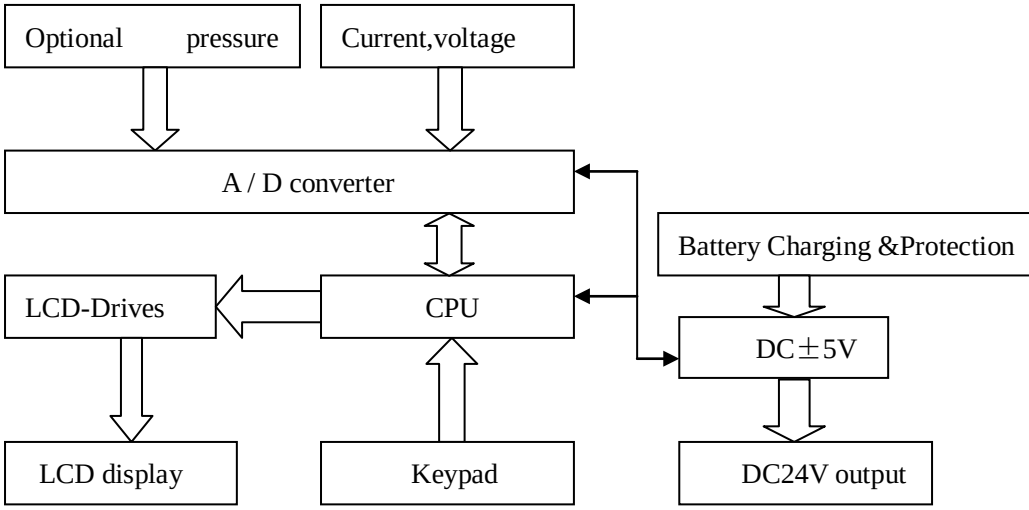
★ Pressure measurement range: depend on the range of the modules. accuracy: ±0.05%F.S
★ current measurement: range(0~25)mA sensitivity0.1μA
input impedance less than 40kΩ
accuracy: ±(0.03%RD+0.02%F.S)
★ voltage measurement: range: (0~25)V sensitivity0.1mV
Input impedance above 90KΩ
accuracy: ±(0.03%RD+0.02%F.S)
★ DC output: DC24V output (≤30mA) accuracy: ±1%F.S
★ Power supply:2 lithium batteries.
★ Weight: 0.7kg

★ Dimension: 171.5mm×110m m×44mm

FEATURES

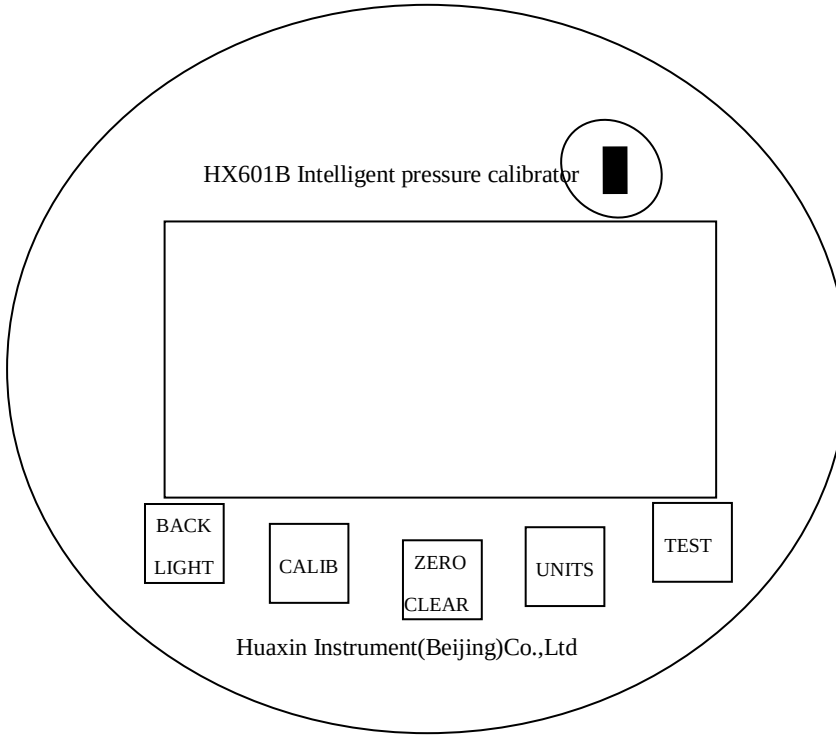
- Microprocessor in HX601B will be able to make automatic adjustment and compensation of nonlinear and zero drift. The high-stability pressure transducer and 24-bit A/D converter will insure the precision and the reliability of the unit.
- Fast on data collecting, USB communication and easy operation.
- Small in size, auto charging rechargeable lithium battery, suitable for both on-spot and lab calibrations.
- HX601B can be used as standard device, it applies to on-spot and lab calibrations in many fields including power industry, metallurgy industry, petroleum industry and chemical industry and so on.

WORKING PRINCIPLE



Instructions: the tested pressure signal acts on the pressure module to output corresponding electrical signal which would be magnified firstly then converted by A/D converter. The microprocessor will sequentially collect data and then make revision to the data, the current and voltage measurement signal will be led into via the terminal on the panel, after the A/D conversion and the simply processing by microprocessor, the final result would be displayed on the LCD screen.

PANEL



Keypad instructions

(1) “UNITS”: starting unit is kPa, press this key to switch unit circularly among mmHg、mmH2O、bar 、mbar、psi、kgf、MPa and Pa.

(2) “ZERO CLEAR”: press this key to clear current value as zero drift value. Then this gauge would be already in a cleared condition when you start it up again.

(3) “TEST”: press this key to switch circularly between current measurement and voltage measurement, default status is current measurement.

(4) “CALIB”: press this key for zero point calibration and linear revision to insure the accuracy.(DON’T USE THE KEY WHEN THERE ARE NO NECESSARY CALIBRATION EQUIPMENTS AVAILABLE)

Connection terminals: including terminals for current measurement, voltage measurement, DC24V output and a public terminal.

- Two-line LCD display screen.

MEASUREMENT

Pressure Measurement

(1) Connect the pressure gauge with the pressure generator; check the pressure module before increasing pressure.
(2) Increase pressure up to full scale slowly, after maintaining it for 1 to 2 minutes, relieves the pressure until it falls back to zero. After that, redo the process two more times before measurement.
(3) Press “ZERO CLEAR” key when the pressure falls back to zero.
(4) Press “UNITS” key to select pressure unit.
Note: An alert indicates a pressure overload, pressure relief is required immediately.

Voltage Measurement

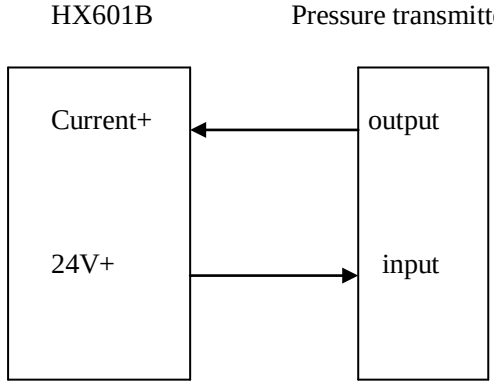
Lead the tested voltage to the terminals for voltage measurement with a testing line. (Mind the reversal of the polarities), press “TEST” key to switch to voltage measurement, you can do the measurement when the second line of the display screen says “00.0000 V”
Note: An alert indicates a voltage overload, voltage relief is required immediately.

Current Measurement

(1)Lead the tested current to the terminals for current measurement with a testing line. (Mind the reversal of the polarities), press “TEST” key to switch to current measurement, you can do the measurement when the second line of the display screen says “00.0000 mA”

(2)To do two-wire system measurement, a two-wire system pressure transmitters’ connection should be as below:

Note: An alert indicates a current overload, current relief is required immediately.



CALIBRATION

 The calibration should be carried out under a standard calibration condition, which includes standard environment, standard temperature and necessary equipments. The calibrator has a password to protect this kind of "not allowed" access. Please operating the items according to our manual, or we will not responsible for the bad result.

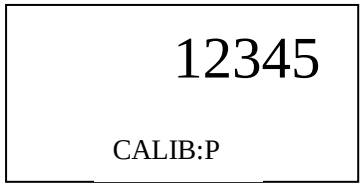
pressure calibration

1. Input the code

Operations: press “ZERO CLEAR” to select positions and “TEST” to select numbers. After that, press “CALIB” to confirm.

2. Calibration items selection

Press “ZERO CLEAR” to select among pressure, voltage and current.



P=pressure V=voltage I=current

Press “CALIB” to confirm.

3. Calibration modes selection

S.1--------zero point and full scale calibration

S.2--------pressure linear revision mode

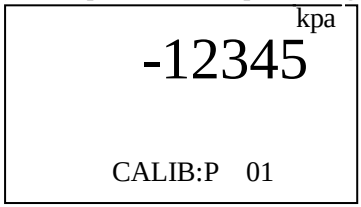
Press “ZERO CLEAR” to select and “CALIB” to confirm.

4. Operations:

S.1 Mode: (zero point and full scale calibration)

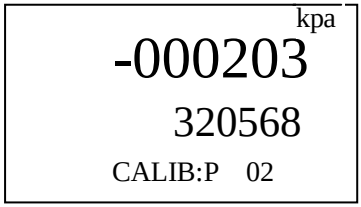
Four steps as below:

(1) zero-point without pressure gain



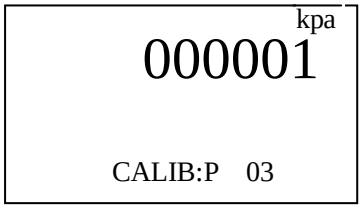
Press “CALIB” to confirm.

(2) full scale without pressure gain



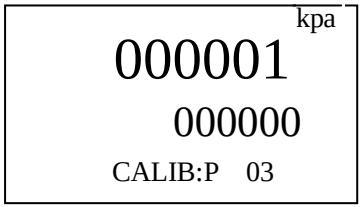
Press “CALIB” to confirm.

(3) full scale with pressure gain



Press “CALIB” to confirm.

(4) zero-point with pressure gain

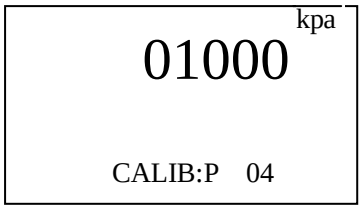


Press “CALIB” to confirm.

(5)

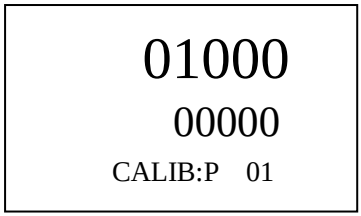
To input module range, press “ZERO CLEAR” to select position and “TEST” to select numbers, press “CALIB” to confirm, then it will go back to “calibration items selection” interface as below:

.

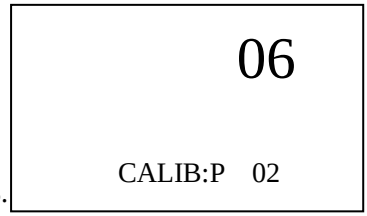


S.2 Mode: (pressure linear revision)

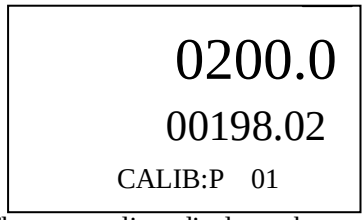
1. Input the upper limit and lower limit, press “ZERO CLEAR” to select position and “TEST” to select numbers, then press “CALIB” to confirm.



2. Input revision points number, press “ZERO CLEAR” to select position and “TEST” to select numbers.

3. 

Press “CALIB” to confirm and move on to the next point’s revision.



The upper line displays the pressure value the testing pump inputs.

The lower line displays the current measured value.

The bottom line says it’s the 1st point being revised.

Revision process as below: (suppose there are 9 test points for 1.6MPa)

01-------pressure falls backs to zero point, press “CALIB” to confirm, the bottom line says “02”.

02-------pressure rises up to 200Kpa, press “CALIB” to confirm,

the bottom line says “03”

03-------pressure rises up to 400Kpa, press “CALIB” to confirm, the bottom line says “04”

……

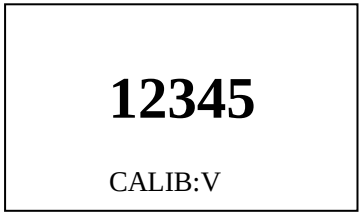
09-------pressure rises up to 1.6Mpa, press “CALIB” to confirm, the whole revision is done.

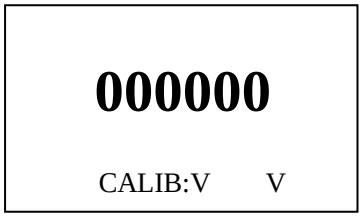
current/voltage calibration

Current full scale: 25mA, voltage full scale 25V

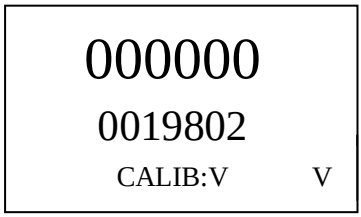
Press “ZERO CLEAR” to switch between current and voltage, press “CALIB” to confirm.

After the voltage/current zero calibration, press “CALIB” to confirm.





After the voltage/current full-scale calibration (input voltage full scale25V/25mA), press “CALIB” to confirm.



ATTENTION

1. The built-in rechargeable Li-ion battery, if there is an under voltage indicating, please charge it in time.
2. The right code is needed before the calibration of the pressure module.

Contact

Huaxin Instruments(Beijing)Co.,Ltd.
Add:No.408 of the Fourth Floor,No.2 Building,No.11 Chuang Xin Road,Technology Park,Chang Ping District,Beijing
E-mail:sales-huaxin@comeonhs.com
Web:http://www.sino-instruments.com
Tel:+86-10-62392087/
Fax:+86-10-6234518