# Датчики давления серии CX-PRN

## Технические характеристики

По вопросам продаж и поддержки обращайтесь:


Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

**Россия** +7(495)268-04-70
**Казахстан** +(727)345-47-04
**Беларусь** +(375)257-127-884
**Узбекистан** +998(71)205-18-59
**Киргизия** +996(312)96-26-47

эл.почта: cxi@nt-rt.ru || сайт: https://cixi.nt-rt.ru/

# CX-PRN160S single / CX-PRN160D dual Pirani vacuum gauge

The PRN160 is a fully intelligent and economical Pirani vacuum gauge. PRN160 uses innovative intelligent technology and leading manufacturing technology to optimize the design, appearance and operation mode of low vacuum environment applications, making PRN160 reliable, easy to use and cost-effective. Unparalleled advantages.

Characteristics

Vacuum measurement: two-way (D-type) or single-way (S-type) Pirani regulation
Vacuum display: PG-160 Pirani gauge with full screen shielding design; compatible with traditional PG-YZJ52 resistance regulation tube

Control output: four single-pole double-throw (NO and NC) relay control, control points are freely set by buttons
Transmitting output: two-way analog signal output, optional 0~+10VDC, logarithm corresponding vacuum pressure
Serial communication: RS-485, support MODBUS-RTU protocol

Size ( mm )


## Main Specifications

| Model | CX-PRN160S | CX-PRN160D |
|---|---|---|
| Display | Single row of 5 green LEDs | Two rows (or menu row) of 5 green LEDs |
| Measuring range | $1.0\times10^{+4}$~ $1.0\times10^{+5}$ Pa | |
| Accuracy | $1.0\times10^{+4}$~ $1.0\times10^{+5}$ Pa:±50%, $1.0\times10^{-1}$~ $1.0\times10^{+4}$ Pa:±15% | |
| Measurement characteristics | Display accuracy:+/-10%; Zero drift:+/-5% | |
| Data collection | Reading Resolution:1%; response time:＜100ms; Display update rate :1second | |
| Information input | Four smart buttons: unit selection, atmospheric pressure and high vacuum calibration, degassing, control point settings, etc. | |
| Information output | RS485 transmission; analog voltage output | |
| Control unit | Four-way SNDT relay; Load: 3A/220VAC, no inductive load; Response time: < 1 second; Set to remove electrical memory | |
| Temp characteristics | Working temperature:0℃~+45℃; Storage temperature:-40℃~+75℃ | |
| Power supply | 85~265VAC/0.5A; Machine power consumption:＜10W | |
| Weight（KF25） | 0.5Kg（Includes 2 probes +3m cable） | |
| Chassis size | Panel 96mm*96mm*15mm; Chassis:89mm*89mm*75mm; | |
| Installation method | Embedded panel opening:90*90（+0.2/-0.0） mm | |

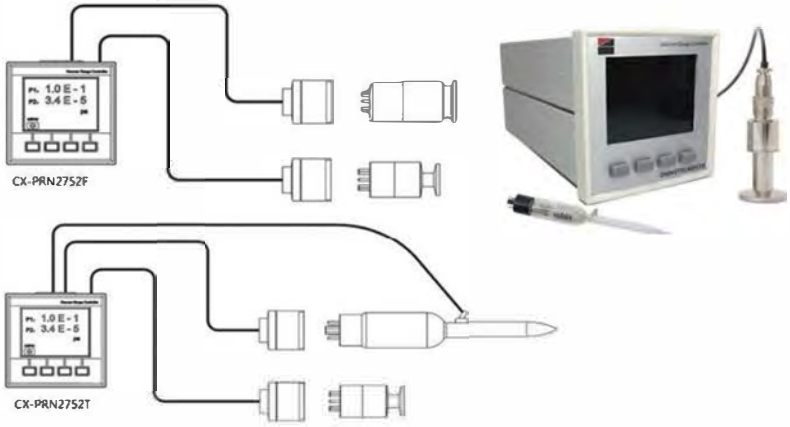
# CX-PRN2752 Pirani gauge + hot cathode ion ga composite Pirani vacuum gauge

The CX-PRN2752T dual-tube Pirani vacuum gauge is a fully intelligent composite Pirani vacuum gauge that is fully compatible with traditional domestic XJ series resistance gauges and hot cathode ion gauges.

CX-PRN2752 Pirani gauge + hot cathode ion ga composite Pirani vacuum gauge

The CX-PRN2752T dual-tube Pirani vacuum gauge is a fully intelligent composite Pirani vacuum gauge that is fully compatible with traditional domestic XJ series resistance gauges and hot cathode ion gauges.


The CX-PRN2752F full-range Pirani vacuum gauge adopts a resistor gauge/hot cathode full-scale gauge, and is equipped with a traditional ZJ52 (or Pirani) regulator. The full range gauge is from atmospheric pressure up to 1.0*1.0-5Pa, which is not limited by the traditional double gauge protection locking pressure range.




## Main Specifications

| Model | Half range compound Pirani vacuum gauge | Full range compound Pirani vacuum gauge |
|---|---|---|
| Aisle 1 Measuring range | $1.0\times10^{-4}$~$1.0\times10^{+5}$ Pa | $1.0\times10^{-1}$~$1.0\times10^{+5}$ Pa |
| Aisle 2 Measuring range | $1.0\times10^{-5}$~$1.0\times10^{0}$ Pa | $1.0\times10^{-5}$~$1.0\times10^{+5}$ Pa |
| Measurement characteristics | Display accuracy:+/-10%; Zero drift:+/-5% | |
| Accuracy | $1.0\times10^{+4}$~$1.0\times10^{+5}$ Pa:±50%<br>$1.0\times10^{-2}$~$1.0\times10^{+4}$ Pa:±15%<br>$1.0\times10^{-5}$~$1.0\times10^{-2}$ Pa:±10% | |
| Data collection | Reading Resolution:1%; response time:<100ms; Display update rate:1 second | |
| Information input | Four smart buttons: unit selection, atmospheric pressure and high vacuum calibration, degassing, control point settings, etc. | |
| Information output | Large screen color matrix display; RS485 transmission; analog voltage output; wireless transmission (optional) | |
| Control unit | Control range:$1.0E^{-5}$~$1.0E^{+5}$Pa Four-way collector optical switch: response time:<1 second; | |
| Temp characteristics | Working temperature:0℃~+45℃; Storage temperature:-40℃~+75℃ | |
| Power supply | 85~265VAC/0.5A; Machine power consumption:<35W | |
| Weight（KF25） | 1.6Kg（Includes 3m cable） | 1.7Kg（Includes 3m cable） |
| Chassis size | panel 96mm*96mm; Chassis:90mm*90mm*210mm; | |
| Installation method | Embedded panel opening:91*91（+0.2/-0.0）mm; Desktop: bottom attached pad | |

# CX-PRN14 Pirani/CX-PRN15 Pirani hot cold cathode wide range integrated Pirani vacuum gauge

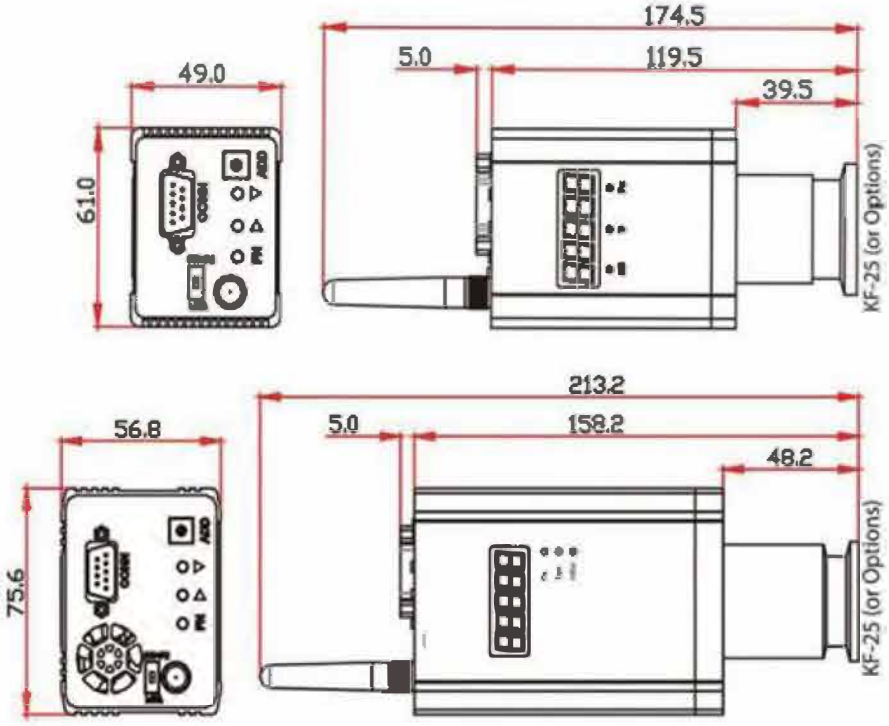
PRN15 Pirani / hot cathode composite integrated wide range Pirani vacuum gauge, PRN14 Pirani / cold cathode composite integrated wide range Pirani vacuum gauge. Both Measuring range from atmospheric pressure to 1.0E-5 Pa, Pirani filament and ion cathode achieve a seamless transition. The two Pirani vacuum gauges combine vacuum sensing, display and control, as well as analog outputs, RS485 and Wireless data transmission.

PRN15 Pirani / hot cathode composite integrated wide range Pirani vacuum gauge, PRN14 Pirani / cold cathode composite integrated wide range Pirani vacuum gauge. Both Measuring range from atmospheric pressure to 1.0E-5 Pa, Pirani filament and ion cathode achieve a seamless transition. The two Pirani vacuum gauges combine vacuum sensing, display and control, as well as analog outputs, RS485 and Wireless data transmission.

## Characteristics

- The probe comes with ambient temperature sensing for optimal temperature compensation
- Integrated regulation of filament Interlock protection to effectivaly protect against sudden atmospheric shock under high vacuum
- Intelligent function keys to achieve calibration, control point setting, measurement unit selection; with 16-bit dialing address setting, convenient system networking
- Analog voltage output; RS485 communication, remote data collection; Wireless data transmission distance up to 100 meters
- Dual optocoupler isolation control collector switch
- Full metal casing, excellent anti-electromagnetic interference; plug-in type regulation, easy to replace (standard DN25ISO-KF, can be customized)

Size ( mm )



## Output voltage/measureed pressure relationship

$P=10^{1.222(U-C)} \Longleftrightarrow U=C+0.818lgP$

P: Pressure
U: Voltage(V)
C: Constant
(Pressure Unit Dependent)

| U | P | C |
|---|---|---|
| (V) | Pa | 5.909 |
| (V) | mBar | 7.545 |
| (V) | Torr | 7.647 |

## Main Specifications

| Model | CX-PRN15 Pi+ Hot cathode wide range | CX-PRN14 Pi+ Cold cathode wide range |
|---|---|---|
| Measuring range | $1.0\times10^{-5}$~$1.0\times10^{+5}$ Pa（Air，N2）（other gas need to calibrate accordingly） | |
| Accuracy | $1.0\times10^{+4}$~$1.0\times10^{+5}$ Pa:±50%<br>$1.0\times10^{-2}$~$1.0\times10^{+4}$ Pa:±15%<br>$1.0\times10^{-5}$~$1.0\times10^{-2}$ Pa:±10% | $1.0\times10^{+4}$~$1.0\times10^{+5}$ Pa:±50%<br>$1.0\times10^{-2}$~$1.0\times10^{+4}$ Pa:±15%<br>$1.0\times10^{-4}$~$1.0\times10^{-2}$ Pa:±10%<br>$1.0\times10^{-5}$~$1.0\times10^{-4}$ Pa:±20% |
| Data collection | Resolution:1%; response time:＜100ms | |
| Temp characteristics | Working temperature:0℃~+45℃; Storage temperature:-40℃~+75℃ | |
| Maximum powe | Max.250℃ | Max.100℃ |
| Power supply | +24V（±20%）/1.5A | +24V（±20%）/0.5A |
| Maximum powe | 12.0W | 6.0W |
| Signal output | 5-bit segment code display; wireless transmission;<br>RS485 transmission; analog voltage output; | |
| Control unit | Dual optocoupler isolation control collector switch | |
| VacuumInterface | DN16ISO-KF（Other Interface customization）:<br>Cavity maximum pressure:＜$1.5\times10^{+5}$ Pa | |
| Wetted material | SS316L,tungsten,kovable,glass | SS316L,tungsten，<br>Molybdenum,95 porcelain, nickel |
| Ion cathode structure | Yttrium oxide cathode + grid anode | Magnetic inverted filamentless cathode |
| Weight | 650g | 450g |

# CX-PRN10 Pirani vacuum transmitter gauge

One-button smart calibration: automatic identification of atmosphere and high vacuum

Temperature monitoring corrects vacuum, accuracy is not affected by ambient temperature

Analog and digital dual output form, wide range of applications

KF16 standard flange and RJ45 electrical plugs are used for easy installation and wiring.


Inter Highly compatible with the interface of international mainstream brands, the division is seamlessly replaced i

All stainless steel measuring chamber is suitable for high clean ultra high vacuum environment -

The shape is exquisite and compact, saving equipment space.

It has stable performance and long service life.

Application

Pre-sta vacuum pressure monitoring

Safety circuit in vacuum system

Vacuum measurement and control in the low and medium vacuum range For example: Analytical Instruments Vacuum Furnace Vacuum Packaging Vacuum Coating Low Vacuum Pump Testing Cisarument

## Main Specifications

| | |
|---|---|
| Wetted material | SS316L，tungsten， kovable，glass |
| Measuring range | $1.0\times10^{-1}$~$1.0\times10^{+5}$ Pa（Air，N2）（other gas need to calibrate accordingly） |
| Accuracy | $1.0\times10^{-1}$~$1.0\times10^{+4}$ Pa:±15%<br>$1.0\times10^{+4}$~$1.0\times10^{+5}$ Pa:±50% |
| Repetition | $1.0\times10^{-1}$~$1.0\times10^{+3}$ Pa:±2%<br>$1.0\times10^{+3}$~$1.0\times10^{+5}$ Pa:±5% |
| Data collection | Resolution:%;response time:＜100ms |
| Temp characteristics | Working temperature:0℃~+45℃； Storage temperature:-40℃~+75℃ |
| Probe Baking temperature | 180℃Max.（Removal of electronic control unit） |
| Maximum powe | 1.5 Max. |
| Power supply | +24V（±20%）/0.5A（Apply to: +5.0VDC -- +32VDC） |
| Electric signal Interface | RJ45 Network port（Analog voltage, RS485, power input, type identification terminal） |
| Vacuum chamber | Interface:DN16ISO-KF（other optional）； maximum pressure:1.5×10+5 Pa |
| Weight | 95g （DN16ISO-KF flange） |

# CX-PRN11 Voltage Pirani composite vacuum transmission gauge

RN11 is composed of differential pressure MEMS piezoelectric sensor and Pirani sensor. Thetwo sensors realize seamless transition in measurement. It has integrated electronic control.circuit, digital communication system, analog voltage output and two setting points as process control. Continuous vacuum process equipment typically uses a vacuum lock as the interface for continuously evacuating the main chamber.

When the vacuum lock is at atmospheric pressure or high vacuum, a separate actuator is required to indicate the opening direction of the indicator valve.


The PRN11 combines the advantages of MEMS piezoelectric and Pirani to form an integrated, compact component that achieves high-precision, fast-response, high-repetition pressure measurement of atmospheric pressure accessories, and a wide range of atmospheric pressures up to 0.001 Pa. The vacuum lock controls the pressure sensor.

Characteristic

Piezoelectric differential pressure unit and Pirani composite wide range.
Built-in temperature compensation, high precision
Dual control point setting switch
One-button atmosphere/vacuum calibration
Voltage analog output
Support RS485 communication Modbus-RTU protocol

## Main Specifications

| | |
|---|---|
| Measuring range | $1.0\times10^{-2}$ ~ $1.5\times10^{+5}$ Pa |
| Accuracy | $3.0\times10^{+3}$ ~ $1.5\times10^{+5}$ Pa:±1% Reading (piezoresistive segment)<br>$1.0\times10^{-1}$ ~ $3.0\times10^{+3}$ Pa:±5% Reading (Pirani segment)<br>$1.0\times10^{-2}$ ~ $3.0\times10^{-1}$ Pa:±10% Reading (Pirani segment) |
| Repeatability | ±1% Full range |
| Maximum withstand voltage (absolute pressure) | $2.0\times10^{+5}$ Pa |
| response time | 100ms |
| Working conditions | Working temperature:0℃~+50℃; Storage temperature:5℃~+85℃ (No condensation) |
| Signal output | RS485 Modbus-RTU (Non isolation), Baud rate 9600 bps<br>Analog output 0.0V~+10.3VDC, Minimum impedance 10Ω |
| Power supply | +16 VDC to +30VDC/0.5A,Maximum powe1.5W |
| Vacuum system connection | Default DN16 ISO-KF (Other needs to be customized) |
| Weight | 120g (standard DN16ISO-KF flange) |
| Wetted material | SS304,SS316L, tungsten filament, kovable alloy, glass |

# CX-PRN12 Digital Pirani vacuum gauge pvd vacuum coating

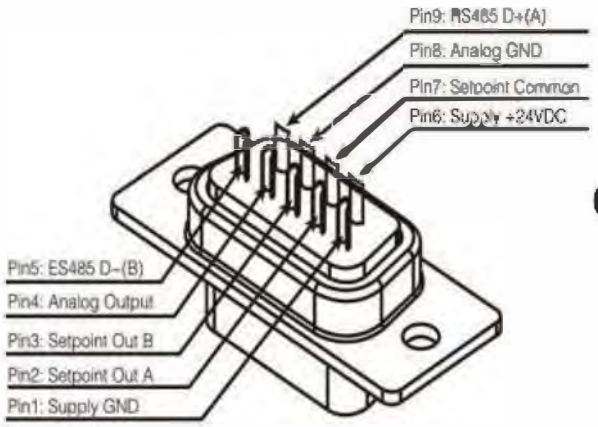
PRN12 is a highly integrated Pirani vacuum gauge that integrates vacuum sensing,display, control, wired RS485, wireless data transmissions and other functions.

Characteristic

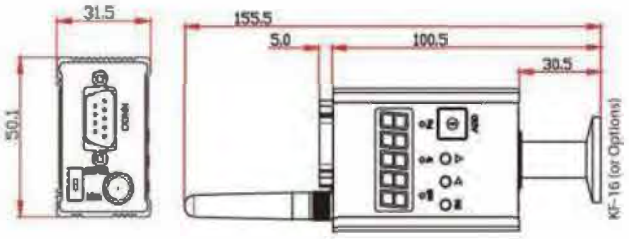
High brightness blue LED segment digital display vacuum degree

Smart function keys to achieve calibration, control point settings, unit selection. The panel comes with 16 bits of code address settings to facilitate networking. User selects Pa, mBar, Torr unit display.

**D-SUB 9 core plug (female) wiring, welding side**




Size ( mm )




**Output voltage/measureed pressure relationship**

$P=10^{(U-C)} \Longleftrightarrow U=C+lgP$

P: Pressure
U: Voltage(V)
C: Constant
(Pressure Unit Dependent)

| U | P | C |
|---|---|---|
| (V) | Pa | 3.5 |
| (V) | mBar | 5.5 |
| (V) | Torr | 5.625 |

## Main Specifications

| | |
|---|---|
| Wetted material | SS316L,tungsten,kovable,glass |
| Measuring range | $1.0\times10^{-1}$~$1.0\times10^{+5}$ Pa（Air，N2）(other gas need to calibrate accordingly) |
| Accuracy | $1.0\times10^{-1}$~$1.0\times10^{+4}$ Pa:±15%<br>$1.0\times10^{+4}$~$1.0\times10^{+5}$ Pa:±50% |
| Repetition | $1.0\times10^{-1}$~$1.0\times10^{+3}$ Pa:±2%<br>$1.0\times10^{+3}$~$1.0\times10^{+5}$ Pa:±5% |
| Data collection | Resolution:1%; response time:<100ms |
| control unit | Dual optocoupler isolation control collector switch |
| Temp characteristics | Working temperature:0℃~+45℃; Storage temperature:-40℃~+75℃ |
| Maximum powe | 2.0 Max. |
| Power supply | +24V（±20%）/0.5A |
| Electric signalInterface | DSUB 9, 9-pin male（Analog voltage. RS485, control port, power input） |
| Vacuum chamber | Interface:DN16ISO-KF（other optional); maximum pressure:1.5×10+5 Pa |
| Weight | 155g （DN16ISO-KFflange） |

# CX-PRN13-Handheld Pirani Vacuum Gauge

The PRN13 handheld Pirani vacuum gauge comes with a battery. It can work continuously for more than 40 hours with one-time charge. The data communicates with ordinary computers through wireless. It is an ideal vacuum measurement tool for on-site maintenance and field work.

Features


High brightness blue LED segment digital vacuum display

Efficient built-in lithium battery guarantees continuous operation

Wireless communication facilitates data collection and storage

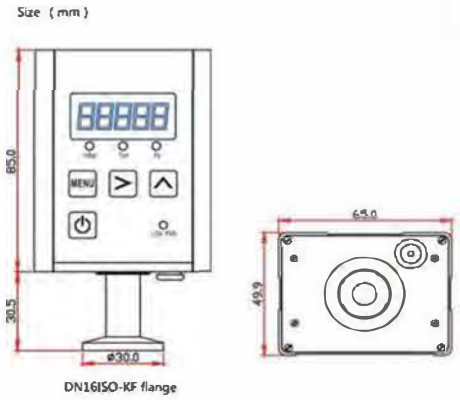
Pa, mBar, Torr pressure units

## Basic operation


- Pressure unit: Pa/mBar/Torr
- Select to start wireless digital transmission
- Atmospheric pressure calibration
- High vacuum pressure calibration

Press  : Power on ;

Press  for 3 seconds: Power off




## Main Specifications

| | |
|---|---|
| Wetted material | SS316L,tungsten, kovable, glass |
| Measuring range | $1.0\times10^{-1}$ ~ $1.0\times10^{+5}$ Pa (Air, N2) (other gas need to calibrate accordingly) |
| Accuracy | $1.0\times10^{-1}$ ~ $1.0\times10^{+4}$ Pa: ±15%<br>$1.0\times10^{+4}$ ~ $1.0\times10^{+5}$ Pa: ±50% |
| Repetition | $1.0\times10^{-1}$ ~ $1.0\times10^{+3}$ Pa: ±2%<br>$1.0\times10^{+3}$ ~ $1.0\times10^{+5}$ Pa: ±5% |
| Data collection | Resolution: 1%; response time: <100ms |
| Temp characteristics | Working temperature: 0°C~+45°C; Storage temperature: -40°C~+75°C |
| Power supply | Built-in lithium battery; with +8.4V 3A charger; full charge continuous operation for more than 40 hours |
| Wireless data transmission | Built-in antenna; with ordinary computer USB transceiver module and application software |
| Vacuum chamber | Interface: DN16ISO-KF (other optional); maximum pressure: 1.5×10+5 Pa |
| Weight | 480g (DN16ISO-KF flange) |

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

**Россия** +7(495)268-04-70
**Казахстан** +(727)345-47-04
**Беларусь** +(375)257-127-884
**Узбекистан** +998(71)205-18-59
**Киргизия** +996(312)96-26-47

эл.почта: cxi@nt-rt.ru || сайт: https://cixi.nt-rt.ru/