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Manual PCE-SH Series



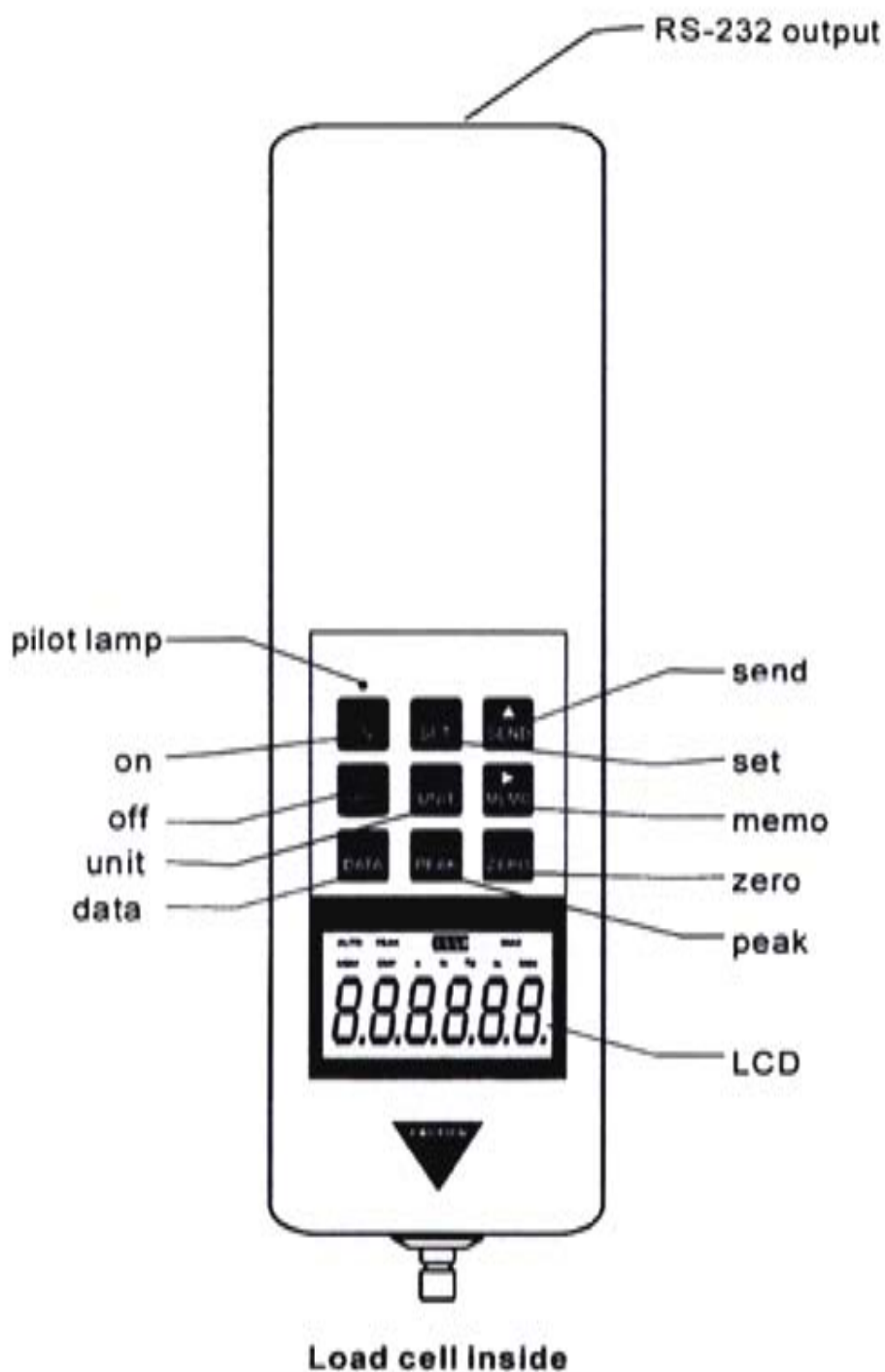
Catalog:

| | |
|---------------------------------|----|
| Parts description | 1 |
| Dimension | 2 |
| Parameter (inside load cell) | 3 |
| Parameter (outside load cell) | 4 |
| Maintenance | 5 |
| Functions | 6 |
| Specification | 6 |
| Screen description | 7 |
| Key function | 8 |
| Test | 10 |
| Memory data | 11 |
| Acceleration of gravity reset | 11 |
| RS-232C | 11 |
| Packing checklist | 12 |

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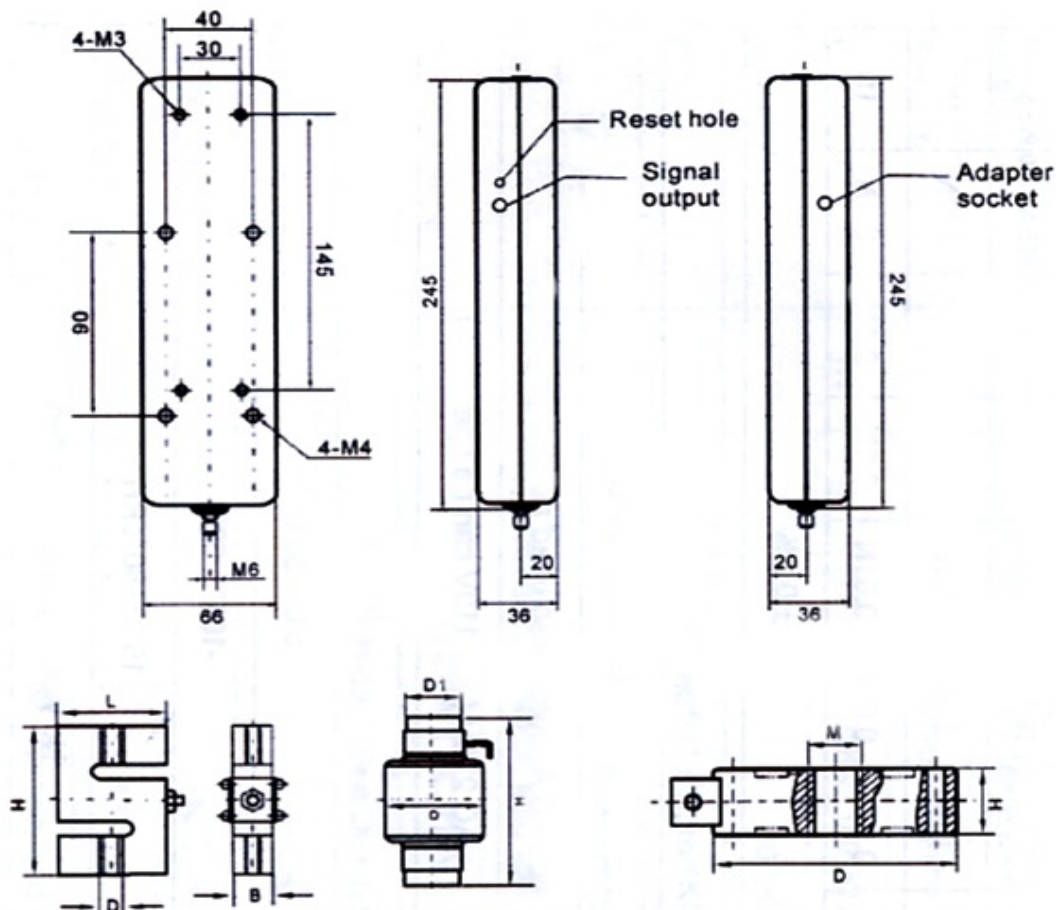
Parts of description



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Dimension



Load cell outside

| Capacity | M | H | C | B | D | D1 | Load cell |
|----------|---------|-------|-------|------|------|-----|------------------------------------|
| 5KN | M12 | 51 | 76.2 | 19.1 | | | S Beam compressive and tensile |
| 10KN | M12 | 51 | 76.2 | 25.4 | | | |
| 50KN | M20*1.5 | 76.2 | 100.4 | 31.8 | | | |
| 100KN | M30*2 | 177.8 | 125 | 50.8 | | | |
| 200KN | | 139.8 | | | Φ76 | Φ40 | Disk type compressive and tensile |
| 500KN | | 150 | | | Φ84 | Φ44 | |
| 200KN | M36*2 | 45 | | | Φ155 | | Spoke type compressive and tensile |
| 300KN | M42*2 | 58 | | | Φ180 | | |
| 500KN | M42*2 | 64 | | | Φ205 | | |
| 1000KN | M70*3 | 90 | | | Φ280 | | |

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Parameter (Load cell inside)

| Model | PCE-SH-2 | PCE-SH-5 | PCE-SH-10 | PCE-SH-20 | PCE-SH-50 | PCE-SH-100 | PCE-SH-200 | PCE-SH-500 | PCE-SH-1000 |
|-----------------------|---|----------|-----------|-----------|-----------|------------|------------|------------|-------------|
| Capacity | 2N | 5N | 10N | 20N | 50N | 100N | 200N | 500N | 1KN |
| Resolution | 0.001N | 0.001N | 0.01N | 0.01N | 0.01N | 0.1N | 0.1N | 0.1N | 1N |
| Accuracy | ±0.5% | | | | | | | | |
| Units | kgf, lbf, N | | | | | | | | |
| RS-232C | Connect to PC | | | | | | | | |
| Power | Nicc AC Adaptor, also used as charging source | | | | | | | | |
| Working voltage | AC 220V (AC 110V can be specified) | | | | | | | | |
| Load cell | Inside | | | | | | | | |
| Working temperature | 5°C~35°C | | | | | | | | |
| Transport temperature | -10°C~60°C | | | | | | | | |
| Relative moisture | 15%~80%RH | | | | | | | | |
| Working environment | No vibrancy and no cautery | | | | | | | | |

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Parameter (Load cell outside)

| | | | | | | | | | |
|-----------------------|--|----------|-----------|-----------|-----------|------------|------------|------------|-------------|
| Model | PCE-SH2K | PCE-SH5K | PCE-SH10K | PCE-SH20K | PCE-SH50K | PCE-SH100K | PCE-SH200K | PCE-SH500K | PCE-SH1000K |
| Capacity | 2KN | 5KN | 10KN | 20KN | 50KN | 100KN | 200KN | 500KN | 1000KN |
| Resolution | 1N | 1N | 0.01KN | 0.01KN | 0.01KN | 0.1KN | 0.1KN | 0.1KN | 1KN |
| Accuracy | ±0.5% | | | | | | | | |
| Units | kgf(Mg/t), lbf(Klb), N(KN) | | | | | | | | |
| RS-232C | Connect to PC | | | | | | | | |
| Power | NiccD AC Adaptor, also used as charging source | | | | | | | | |
| Working voltage | AC 220V (AC 110V can be specified) | | | | | | | | |
| Load cell | Outside(S Bead/Disk type /Spoke type) | | | | | | | | |
| Working temperature | 5°C ~ 35°C | | | | | | | | |
| Transport temperature | -10°C ~ 60°C | | | | | | | | |
| Relative moisture | 15% ~ 80% RH | | | | | | | | |
| Working environment | No vibrancy and no cauterly | | | | | | | | |

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WARNING:


DO NOT OVERLOAD CAPACITY , TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

→ Warning and maintenance

- ▶ When you test the shock load, please select the max load value, which should be one time bigger than the measuring shock load , or it may be destroy the device or lead to grave accident.
- ▶ Great care should be taken on the scattering pieces being measured. In break down or shear test, wear protective mask to protect you from scattering pieces being tested.
- ▶ Do not use the damaged or warped hook. The damaged or warped hook may be off or broken and heavy measuring pieces may fall on your foot.
- ▶ Do not apply excessive load than rated, should load cell be damaged ,and further heavy load is applied, parts may be broken, which may cause accident. It will make an alarm when the sensor load exceed 5%, please reduce the load immediately.
- ▶ Do not use other adapter, which is not provided with the gauge, it may be cause fire.
- ▶ Do not charge or operate the gauge in other voltage, which may be cause fire.
- ▶ Clean dirt and dust from gauge with soft cloth. After dipping cloth in the Neutral detergent water and squeeze out water, and clean dirt with the Cloth.
- ▶ Never disassemble, repair, and remodel the gauge by yourself, or it may cause other malfunction.

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- **Parts description (Page 1)**
- **Dimension (Page 2)**
- **Parameter load cell inside (Page 3)**
- **Parameter load cell outside (Page 4)**
- **Function**

PCE-SH Series Digital force gauge is an efficient testing equipment. It with facility, high resolution, peak hold, large memory, inductive background light three units advantages, which is used not only for simple measurement of tension/compression force, but also used for various testing purpose; such as electric, lighter industry, textile, zipper button, scientific research institution, and fracture test. It also with an analysis software to get synchronous graph.

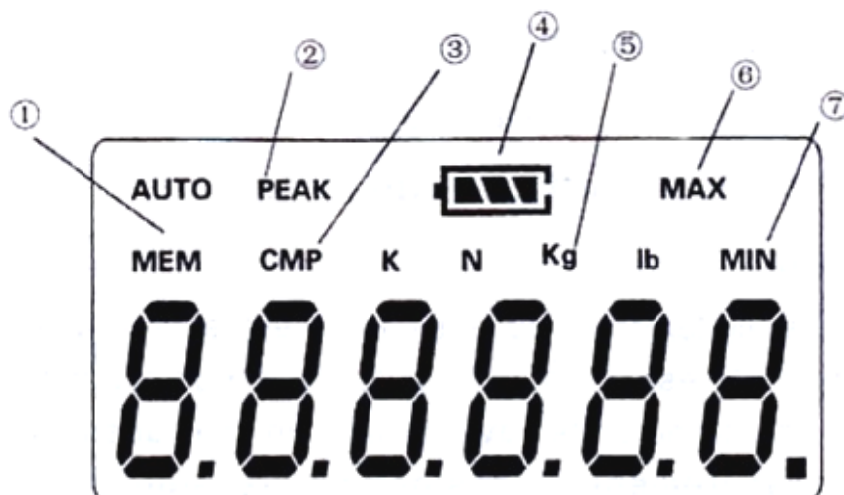
→ **Specification**

- ▶ high accuracy and resolution;
- ▶ peak hold function;
- ▶ peak automatic clearance function;
- ▶ Tolerance limit(up and down limit);
- ▶ automatic power off function;
- ▶ 3 units available: N,kgf,lbf;
- ▶ full range 150% overload;
- ▶ reset acceleration of gravity function;
- ▶ 2 sets of different installation size;
- ▶ LCD screen turn direction function;
- ▶ large memory;
- ▶ inductive background light;
- ▶ RS-232C port to usb port;
- ▶ Match synchronous analysis software, which can connect to PC to get synchronous graph, and also can reserve, print, analysis and so on.

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→ Screen description



①. MEM

MEM will light up when memory data exist, press “DATA ” to look over the value data.


②. PEAK

3 modes: PEAK, AUTO PEAK ,TRACK. When on PEAK mode, the value won’ t disappear until press ZERO key; When on AUTO PEAK mode, the value will disappear 1-9 seconds ; when on TRACK mode, it can get real-time value.

③. CMP

CMP will light up when comparator is on.

④.

 Will flash when battery voltage falls below 7.0V. If so, connect Meter to AC adaptor.

⑤. UNIT

3 units available: N, Kg, lb, above PCE-SH-10K : KN, Kkg, Klb.

⑥. MAX

Above up limit , MAX shows.

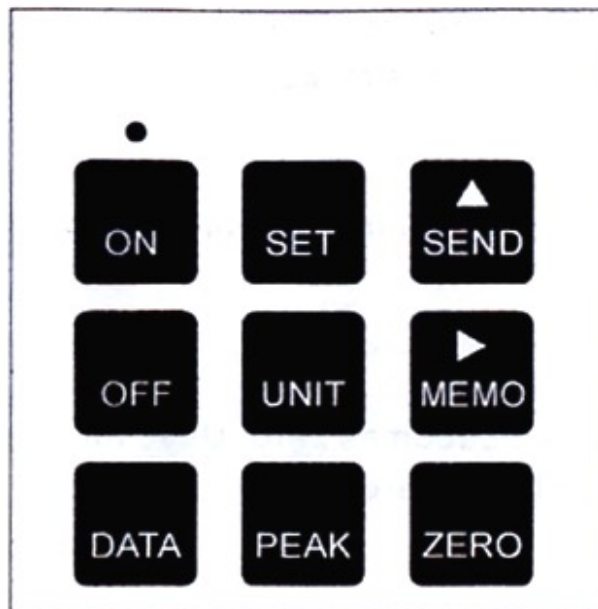
⑦. MIN

Above low limit , MIN shows.

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→ Key function



ON

Turn on the power, before testing press ZERO key first.

OFF

Power is switched off.

MEMO

Press MEMO key to save value data; Press DATA key to look over saved value data; Press ZERO key to clear and press SEND key to output.

UNIT

3 units available: N, Kg, lb, above PCE-SH-10K : KN, Kkg, Klb.

PEAK

3 modes convert automatic: PEAK ,AUTO PEAK, TRACK.

DIGITAL FORCE GAUGEwww.warensortiment.de**SEND**

Press SEND key to change the direction of the reading. On the mode of SET, the function is forward.

DATA

Press DATA key to look over the memory data, and press ZERO key to exit.

ZERO

Displayed load value becomes zero. Used for clearing test data and setting load value to zero.

SET

Press SET key 1 time , it will show "TEST" , 2 seconds later it will shows testing window; press "TEST" key 2,3,4,5,6,7 times, it will shows " AODT" , "LODT" , "HIDT" , "CPDT" , "LIGHT" , "OFFT" one by one , after 2 seconds it will shows relevant information , using SEND key(forward) and MEMO key (rightward) to adjust, when "SETEND" shows on LCD , then you can start to test.

0000 load track mode
0001 standard test mode
0002 push pull test mode
0003 pull peak mode

0004 push peak mode
0005 contact point hold mode
0006 hold contact point mode

▶ **AODT peak capture line**

Press SET key 2 times , AODT shows on LCD, using SEND key to adjust the data after 2 seconds. When you set the capture line as Fa, the gauge only can memory the value which above the peak capture line.

▶ **LODT low limit**

Press SET key 3 times, LODT shows on LCD, using SEND key to

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adjust the data after 2 seconds. When the testing value lower than the low limit, MIN will show on LCD.

▶ **HIDT high limit**

Press SET key 4 times, HIDT shows on LCD, using SEND key to adjust the data after 2 seconds. When the testing value higher than the high limit, MAX will show on LCD.

▶ **CPDT comparison value setting**

Press SET key 5 times, CPDT shows on LCD, using SEND key to adjust the data after 2 seconds later. When testing value exceed the comparison value, it will make hum alarm.

▶ **LigHt inductive background light**

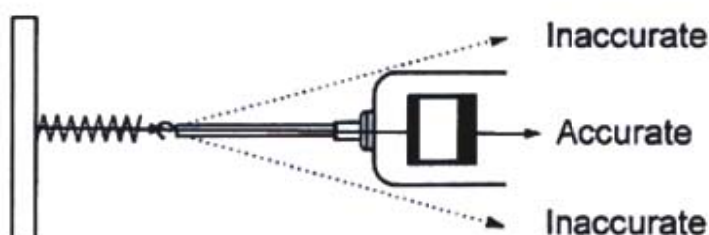
Press SET key 6 times, LIgHt shows on LCD, using SEND key to adjust it (yes or no can be select) after 2 seconds.

▶ **OFFT power off time setting**

Press SET key 7 times, OFFT shows on LCD, using SEND key to adjust it (10-90 minutes can be select) after 2 seconds.

→ **Test**

- ▶ Turn on force gauge;
- ▶ Choose a suitable grip;
- ▶ Hold or fix the force gauge on the test stand tightly;
- ▶ In order to get more precision result, please put the force gauge and the tested sample co-line.
- ▶ Turn off the power source after test, then clear and put the parts and accessories into the packing box.



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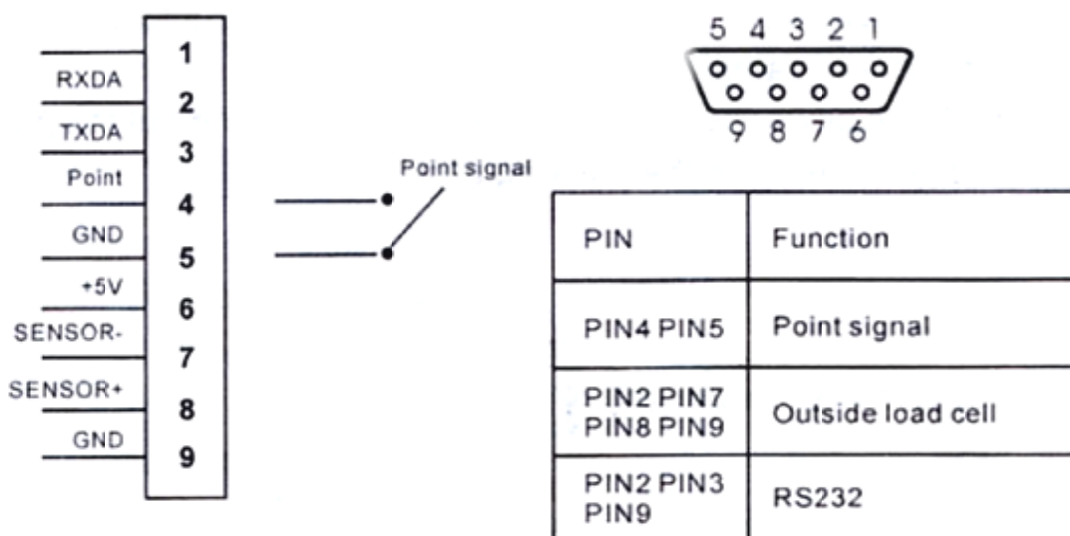
→ Memory data

- ▶ **Memory data** On the mode of PEAK, After testing ,press MEMO key value date will be saved; Press DATA key to look over the memory data, number will show first , value data will show 2 seconds later, press PEAK key to exit and start to next test. It can save 896 value data, “O.E” shows on LCD, it means the no. 897 value data won’ t be saved.
- ▶ **Clear memory** Press ZERO key for 4 seconds, whole value date will be cleared , “MEM” will disappear.
- ▶ PCE-SH Series force gauge can connect to PC, outputting the value data to PC for analysis with RS-232 to USB cable.

→ Acceleration of gravity reset

- ▶ Before turn on the gauge, please press PEAK key for long time, then press ON key, next you can input your local acceleration of gravity, then press SET key the gauge will turn off.

→ RS-232 output (9 pins)



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→ Packing checklist

| Model | Parts | | pressure grip | Tensile grip | extensive shaft | assistant connector | RS-232 Cable | Screws | user manual | calibration certificate | Adapter | Software |
|-------------|----------|----------------|---------------|--------------|-----------------|---------------------|--------------|--------|-------------|-------------------------|---------|----------|
| | Quantity | | | | | | | | | | | |
| PCE-SH2 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH5 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH10 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH20 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH50 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH100 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH200 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH500 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH1000 | 4 | | | | | | | 8 | 1 | 1 | 1 | 1 |
| PCE-SH2K | 3 | | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH5K | 3 | | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH10K | 3 | | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH20K | 3 | | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH50K | 3 | | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH100K | | include sensor | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH200K | | include sensor | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH500K | | include sensor | | | | | | - | 1 | 1 | 1 | 1 |
| PCE-SH1000K | | include sensor | | | | | | - | 1 | 1 | 1 | 1 |



In this direction will find a vision of the measurement technique:
<http://www.industrial-needs.com/measuring-instruments.htm>

NOTE: "This instrument doesn't have ATEX protection, so it should not be used in potentially explosive atmospheres (powder, flammable gases)."