EM2000S digital differential pressure gauge

User manual and supplementary specification | English edition

1. Product overview

The EM2000S measures air and other compatible nonflammable gases. A cast-aluminum housing provides multiple pressure connections, and the mounting dimensions match the standard EM2000 mechanical differential-pressure gauge. The LCD displays the measured pressure and selectable engineering units. The instrument provides a 4–20mA output and is calibrated before shipment.

2. Specifications in the Chinese manual

Parameter	Specification
Medium	Air and compatible nonflammable gases
Housing	Cast aluminum
Accuracy	±1%FS
Stability	±1%FS/year
Installation temperature	−7°C to 60°C
Pressure resistance	10psig, approximately 0.69bar
Supply	24VDC nominal, two-wire system
Output	4–20mA
Zero and span	Adjusted with digital keys
Electrical connection	Screw terminal block
Process tubing	1/8in inside diameter
Orientation	Vertical

3. Accessories

Two 1/8in male-thread hose-barb fittings, two 1/8in male-thread pressure-port plugs, and three surface-mounting lugs with screws.

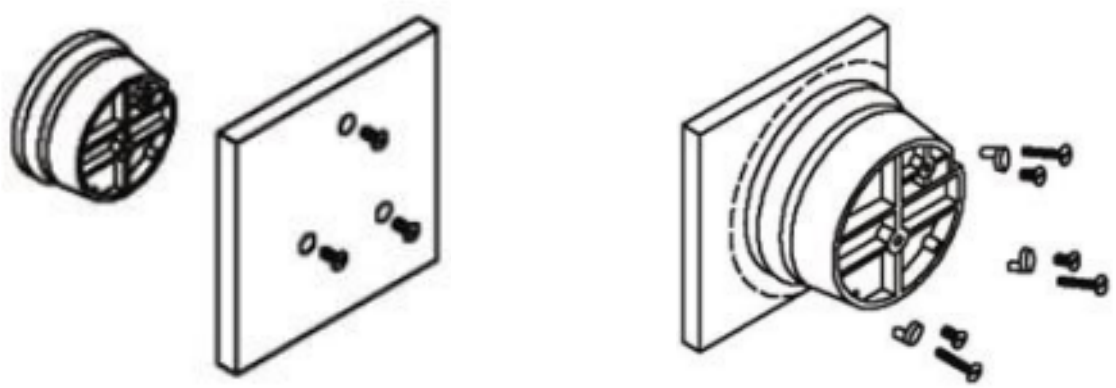
4. Choose the location and orientation

Install in a dry, clean, vibration-free location between −7°C and 60°C. The connection to the receiving device must remain within the permitted loop resistance. Long pressure tubing increases response time. All standard instruments are zeroed and span-calibrated vertically; keep the dial vertical during use.

5. Mounting

Surface mounting: Secure the gauge with suitable machine screws at three equally spaced positions around the mounting circle, 120° apart.
Flush mounting: Prepare the correct panel opening, insert the gauge and secure it using appropriate screws and mounting lugs. Pipe mounting requires a separate kit.

Pressure and electrical connections



Surface mounting, left; flush mounting, right. Original installation illustrations retained.

6. Connect the pressure lines

The housing has two pairs of high- and low-pressure ports with 1/8in NPT female threads. Select one pair and seal the unused duplicate pair with the supplied plugs. Install the brass hose-barb fittings and connect the pressure tubing. The fittings and plugs must be leak-tight.

Measurement	Connection
Differential pressure	Connect the higher pressure to HIGH PRESSURE and the lower pressure to LOW PRESSURE.
Positive gauge pressure	Connect the pressure source to HIGH PRESSURE and leave the low-pressure reference open to atmosphere.
Signed negative gauge pressure	Connect the vacuum source to HIGH PRESSURE and leave the low-pressure reference open to atmosphere, as stated in the Chinese manual. The differential pressure is negative.

For a positive vacuum-magnitude indication instead, the lower pressure can be applied to LOW while HIGH is vented, as described by the English revision. Select the convention matching the configured span. Do not seal the required atmospheric reference when plugging unused duplicate ports.

The installation-process text mentions flexible placement for clean gas and vertical pressure tapping for damp or dirty gas. The explicit vertical calibration requirement remains applicable; keep the instrument vertical and arrange tubing so contamination and condensate cannot enter the sensor.

7. Two-wire current loop

Lead	Function
Brown	Positive supply / loop input
Blue	Negative loop return

The Chinese manual specifies 24VDC nominal. The Chinese product page and the English manual revision specify a 10–35VDC supply range. Wire the current receiver in the two-wire loop and observe the permitted load at the selected supply voltage; the transmitter must retain its required operating voltage.

8. Basic key operation

The instrument has ▼, SET and ▲ keys. On startup, the LCD shows the measured differential pressure. Press SET to open the menu, use ▼/▲ to choose an item, then press SET to edit its value. Use ▼/▲ to change the value and press SET to save and return to measurement. Five seconds without key input automatically saves and exits. Hold ▲ for more than six seconds to zero the instrument; vent both ports first.

Complete menu table

Code	Function / procedure	Default
HI	Pressure corresponding to 20mA output	Range dependent
Lo	Pressure corresponding to 4mA output	Range dependent
4mA	Check/calibrate the 4mA output	—
8mA	Check/calibrate the 8mA output	—
12mA	Check/calibrate the 12mA output	—
16mA	Check/calibrate the 16mA output	—
20mA	Check/calibrate the 20mA output	—
PDN	Decimal places, 0–3	0
CS	Small-signal cutoff, 0–5%FS; values below the selected threshold display zero	0
CLO	Zero the instrument to remove installation offset	—
SUC	Save settings: 88880 appears; press ▲ until 88888 is displayed to complete saving	—
FDS	Factory reset: 55550 appears; press ▲ until 55555 is displayed to restore factory data	—
FSC	Temperature display: 1 = show, 0 = hide	—
Sn	Sensor-range code, 1–6	—
SOF	Zero-offset calibration	—
UNI	Select Pa, kPa, mbar, in.WC or mmWC	—

A dash indicates that no default value is given in the Chinese table. HI and Lo define output scaling within the fitted sensor range. Calibration menus change the instrument calibration and should be used with suitable reference equipment.

9. Inspection-certificate template

The source includes a factory inspection-certificate template for a digital differential-pressure gauge, model EM2000S, inspector 05. Its Chinese standard and manufacturing-date cells are blank, and it states that the product has passed inspection and is released for shipment. This is a reproduced template statement, not a new inspection of any individual instrument.

The Chinese leaflet is dated 2024.11.02. The English revision carries document code VN-EM2000S-260511-YE and lists JB/T 7392-2006 in the certificate template. The English revision’s reduced menu table does not replace the complete Chinese menu table translated above.

Source publisher

ELECALL trademark holder and manufacturer: Yueqing ELECALL Electric Co., Ltd. No. 246 Weishi Road, Yueqing Economic Development Zone, Zhejiang, China. Telephone: 0577-62792850, also written +86 (577) 62792850. Chinese website: www.elecall.cn; English revision: www.elecall.com. The Chinese source carries recycling and crossed-out wheeled-bin symbols.

Supplementary technical data

Additional range and physical configurations are listed below. Their ratings apply to the stated configuration.

Parameter	English datasheet entry
Ranges	Bipolar selections include ±30, ±60, ±125, ±250, ±500 and ±1000Pa, with further selections up to ±10000Pa. Unipolar selections include 0–60, 0–125, 0–250, 0–500 and 0–1000Pa, with further selections up to 0–10000Pa.
Medium	Dry air and other nonflammable, noncorrosive gases
Pressure resistance	10psi / approximately 0.69bar
Accuracy / stability	±1%FS / typically ±1%FS/year
Operating current	Less than 40mA, as listed
Operating temperature	−7°C to 60°C
Output refresh	2.5Hz
Display	Five-digit LCD
Zero/span adjustment	Internal keys
Load resistance	0–1250Ω; usable load depends on supply and transmitter voltage requirement
Process tubing	Ø8mm outside × Ø5mm inside
Housing	Cast aluminum
Weight	Approximately 424g
Orientation	Vertical
Supply	11–35VDC, two-wire, as listed in this datasheet
Output	4–20mA

Applications in the datasheet include cleanrooms in pharmaceutical and electronics production, HVAC, purification air conditioners, clean benches, air showers and clean-air filter monitoring.

Translation and configuration notes

The ±3000Pa configuration uses 10–35VDC, Ø8×5mm tubing, a 120.65×55.6mm body and approximately 424g mass. Use the -7–60°C installation envelope described in this manual.

The English manual table gives −20°C to 60°C, while its installation section also gives −7°C to 60°C. The English datasheet's 11–35VDC and wider range selections remain separately identified. A listed 1250Ω maximum load is not available at every supply voltage. The datasheet repeats the 250Pa range; that duplicate is consolidated.

The maximum pressure is 10psig, approximately 0.69bar. The hose connection option is 1/8in inside diameter. Vented differential measurement provides a gauge reference, not an absolute-pressure reference.