

Hitachi Differential Pressure/Pressure Transmitter

Notice: For proper operation, follow the instruction manual when using the instrument.

Specifications in this catalog are subject to change with or without notice, as Hitachi High-Tech Solutions Corporation continues to develop the latest technologies and products for our customers.

HART® is a registered trademark of the HART Communication Foundation.

Hitachi High-Tech Solutions Corporation

<http://www.hitachi-hightech.com/hsl/>

■ Instruments & Control Systems Sales Div.

Harumi Triton Square Office Tower X

1-8-10, Harumi, Chuo-ku, Tokyo, 104-6031 Japan

Tel: +81-3-6758-2092 FAX: +81-3-5859-5764

■ Mito Manufacturing Div.

500, Miyu-cho, Mito-shi, Ibaraki-ken 319-0316 Japan

Tel: +81-29-257-5100 FAX: +81-29-257-5120

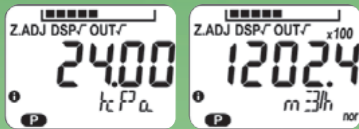
*For further information, please contact
your nearest sales representative.*



Hitachi Differential Pressure/Pressure Transmitter Series is based on our accumulated technology and is available in many types. This instrument is expected to be used in various fields.

Revamped the display functions of the LCD meter

- The display and text have been enlarged to improve visibility
- Unit display and bar graph display are concurrently shown
- The display orientation can be changed in line with the direction in which the meter has been installed



LCD display example

Performance has been improved by enlarging the area of the pressure receiver

- Improved precision: $\pm 0.2\% \Rightarrow \pm 0.075\%$ (varies according to model and the material with which target liquids is exposed)
- Range ability: 200:1 (In the case of range code 8000)

Provided with external adjustment and configuration functions

- No through-hole
- Non-contact magnets (lead relays)
- Zero-shift, span adjustments and range modifications can be carried out

Rear-side terminal

- The LCD meter and terminal constitute separate components

A cover flange structure has been adopted

- The same cover flange structure as the 75/85 series
- The diaphragm can be visually inspected and cleaned

Lineup

| | Application | Model | Product name | Remarks |
|------------------|-------------------------------------|-----------------------------------|--|--|
| Intelligent type | Measurement of flow rate | EDR-N8 | Differential pressure transmitter | There is also a high-precision type |
| | | EDR-N8H | Differential pressure transmitter for high working pressure | |
| | | EDR-N8C | Differential pressure transmitter with compensation function | |
| | Measurement of level (liquid level) | EDR-N8S | Differential pressure transmitter with remote-sealed diaphragm | |
| | | EDR-N8F | Liquid level transmitter | |
| | | EDR-N8FS | Liquid level transmitter with remote-sealed diaphragm | |
| | Measurement of pressure | EPR-N8 | Pressure transmitter | There is also a high-precision type |
| | | EPR-N8S | Pressure transmitter with remote-sealed diaphragm | |
| | Measurement of absolute pressure | EDR-N8A | Absolute pressure transmitter | |
| | | EDR-N8AS | Absolute pressure transmitter with remote-sealed diaphragm | |
| | | EDR-N8AF | Absolute pressure transmitter with flange | |
| | Sanitary type | EDR-N8SD | Sanitary differential pressure transmitter | |
| EDR-N8FD | | Sanitary liquid level transmitter | | |
| EPR-N8SD | | Sanitary pressure transmitter | | |
| Analog type | Measurement of flow rate | EDR-N6L | Differential pressure transmitter | Offering excellent radiation resistance, ideal for nuclear power plants. |
| | Measurement of level | EDR-N6SL | Differential pressure transmitter with remote-sealed diaphragm | |
| | Measurement of pressure | EPR-N6L | Pressure transmitter | |
| | Measurement of absolute pressure | EDR-N6AL | Absolute pressure transmitter | |

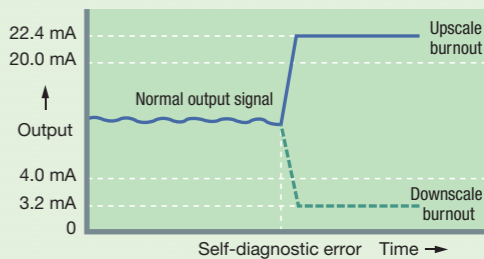
Hitachi Differential Pressure/Pressure Transmitter Series are a high-quality transmitters featuring reliability and ease of use.

Provided with external adjustment and configuration functions

As well as being able to make zero-point adjustments like before, you can now make LRV/URV adjustments and configure LRV/URV settings and damping settings (limited to units with an LCD meter).

Standard-equipped with burnout function

If an error occurs in a sensor, A/D,EEPROM or constant among self-diagnosis information, the output signal can be scaled out upward or downward.(only with intelligent type)



High-reliability absolute pressure gauges

Hitachi Absolute Pressure Transmitters ensure reliability and long-term stability through a unique construction of the sensor thus earning an excellent reputation in various plants.

High-temperature high-vacuum specifications based on unique construction

The high-temperature, high-vacuum specifications of the differential pressure/pressure transmitter fully cover 310°C, 13.3 Pa abs(≈0.1 Torr) through a unique construction, thus realizing stable measurement at high temperature and under high vacuum.

HART communications function (optional)

HART communication function can also be chosen instead of the communication function equipped standardly for the change of the setting information on a transmitter.

Enhanced hydrogen permeation measures

We offer a lineup of products with reinforced measures to deal with hydrogen permeation by incorporating a hydrogen-absorbing alloy in addition to the gold-plated diaphragm that has been a long-time hit among users.

In addition to the above, there are many features available

Transmitters for special purposes

High-temperature high-vacuum specifications based on unique construction

The high-temperature, high-vacuum specifications of the differential pressure/pressure transmitter fully cover 310°C, 13.3 Pa abs. (≈ 0.1 Torr) through a unique liquid-contacting construction, thus realizing stable measurement at high temperature and under high vacuum.

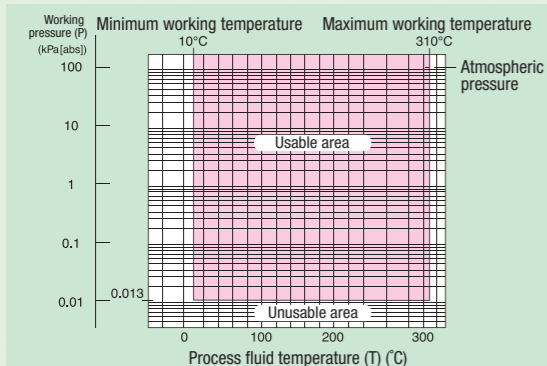
《Unique method of manufacturing》

- **Adoption of high-purity filled liquid** Impurities are eliminated from filled liquid by our own vacuum distillation method.
- **Adoption of high-temperature dry-cleaning method** The filled liquid chamber wall is cleaned in the high-temperature, high-vacuum atmosphere.
- **Adoption of high-temperature high-vacuum liquid filling method** ... Growth of air bubbles is prevented by filling liquid at high temperature under high vacuum.
- **High-temperature high-vacuum construction** Long-term stability is realized by optimizing the construction of the wetted part.

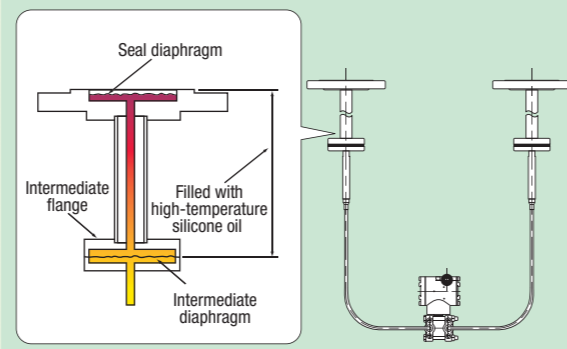


Wetted part-protruding type
[Differential pressure transmitter with remote-sealed diaphragm]
EDR-N8S-SVT

Working pressure and liquid-contact temperature



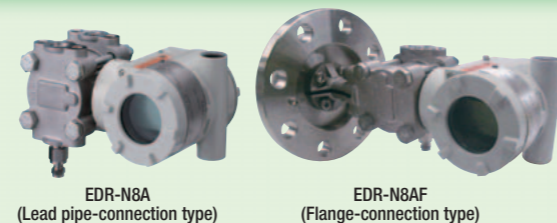
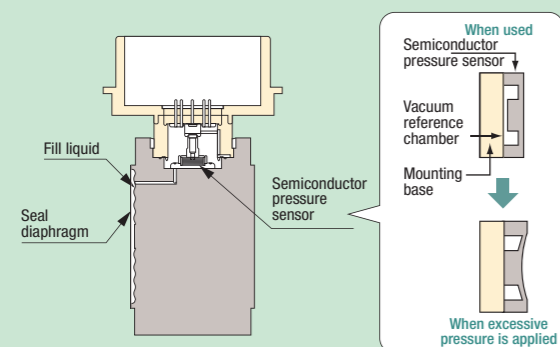
Construction of wetted part



Highly reliable absolute pressure transmitters

Hitachi Absolute Pressure Transmitters adopt an E type sensor and uniquely constructed capsule to ensure durability when an excessive pressure is applied. They realize excellent reliability and long-term stability, thus enjoying a good reputation in various plants.

Construction of capsule of absolute pressure transmitter



《Realization of high reliability》

If an excessive pressure is applied, the sensor unit is pressurized and brought into contact with the mounting base to prevent damage to the sensor unit.

《Long-term stability》

For the absolute pressure transmitter, it is important to make the vacuum reference chamber more stable. In Hitachi Absolute Pressure Transmitters, the semiconductor sensor is coupled with the mounting base at high temperature and under high vacuum by using special techniques. This coupling system allows you to obtain a dry, clean and stable vacuum reference chamber. Accordingly, the vacuum reference chamber is kept in high vacuum at any time to realize stable absolute pressure measurement with a minimum of drift in various plants.

Enhanced hydrogen permeation measures

A gold-plated diaphragm that is highly effective for impeding hydrogen permeation is available as an option. Hitachi's gold-plated diaphragm conforms to a reverse-side gold plating specification that should give rise to no concern that the plating will contaminate process fluids.

In addition, the incorporation of a hydrogen-absorbing alloy helps to extend the operating life of the transmitter by absorbing hydrogen molecules that could not be fully kept out by the gold-plated diaphragm.



Analog type transmitter

The analog type transmitter features smooth response characteristics and is provided with a function that compensates for the influence of static pressure to realize accurate measurement. The transmitter is suitable for an nuclear power plant because it is excellent in radiation resistance.



Allowable radiation dose:
51.6 C/kg
[Analog type differential pressure transmitter]
EDR-N6L

Sanitary type transmitter

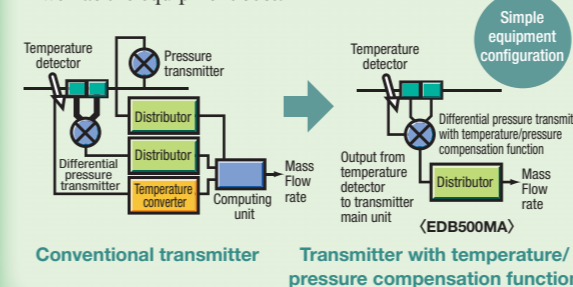
A sanitary type transmitter which allows IDF Ferrule connection is available for various measurements in food processes. The transmitter contributes to the lightening of washing work. (Propylene glycol can also be selected for the fill liquid.)



[Sanitary differential pressure transmitter]
EDR-N8SD

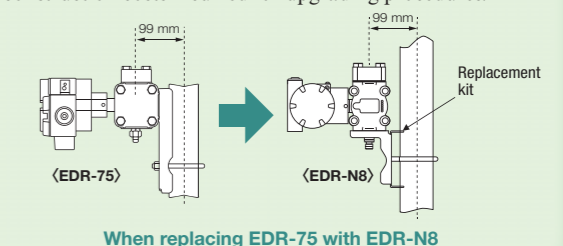
Differential pressure transmitter with compensation function

A temperature/pressure compensation function, which is convenient for measurement of vapor or gas is built in the transmitter. Utilizing this function reduces the total cost as well as the equipment cost.



Mounting plate for replacement

As transmitters become more miniaturized with each passing year, misalignments in the positions at which pipes are connected arise when older existing transmitters are renewed. The introduction of a mounting plate designed to eliminate misalignments will help reduce construction costs incurred for upgrading procedures.



When replacing EDR-75 with EDR-N8

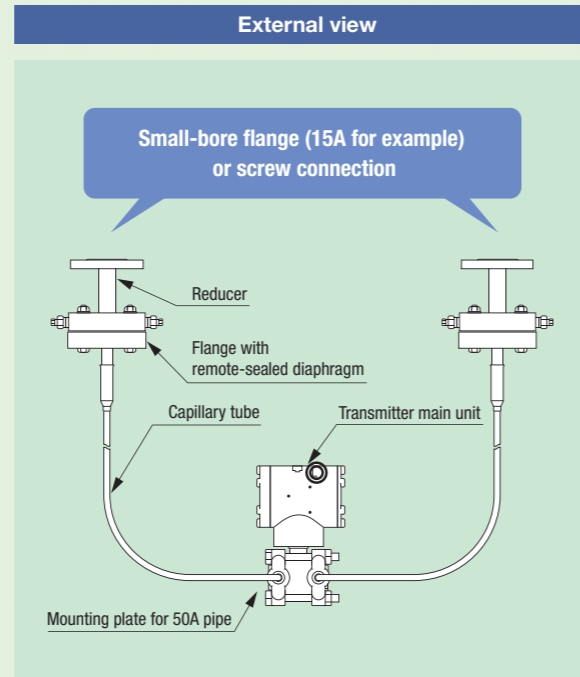
Lead pipe-free type Differential pressure transmitter

For measurement of the flow rate in a manufacturing process, a reducer is attached to the flange section of the transmitter to enable direct connection of the process pipe.

《Features》

- Can directly connect to the process pipe
- Adaptable to various applications (corrosive fluid, high temperature, high vacuum, etc.)
- Maintenance work including "elimination of clogging" reduced

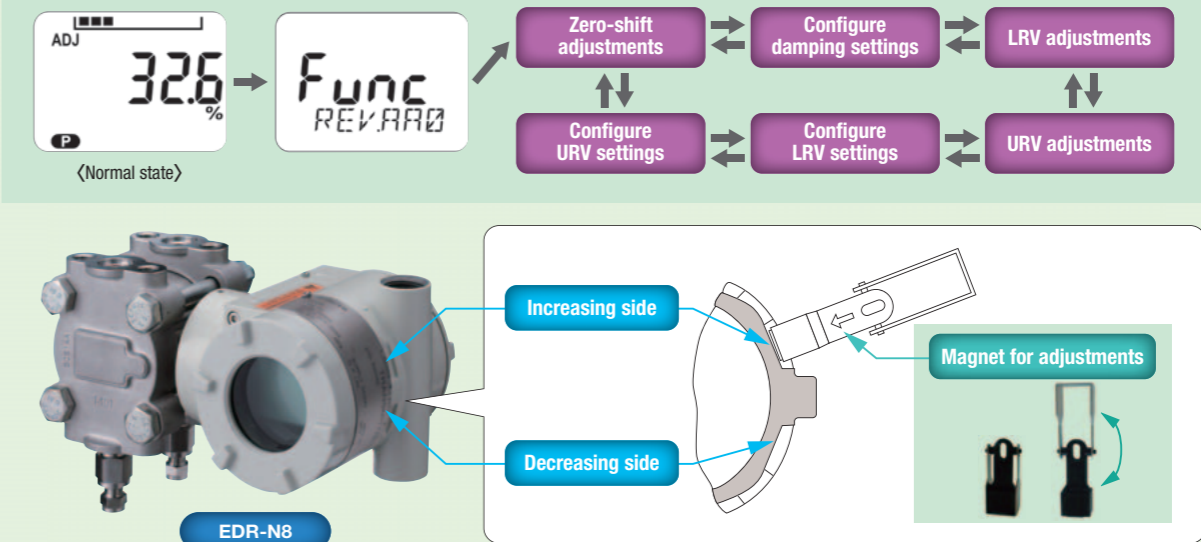
Reduction in total cost



External adjustment and configuration functions

For the external adjustment and configuration functions, we added the following adjustment functions that users can make use of in addition to making zero-point adjustments (zero shifting) as conventional type did before. You can change adjustment items and carry out adjustments simply by bringing attached magnets in contact with the adjustment recesses.

*With these functions, you can also disable the external adjustment function with a DCR-type communicator.



Coupled Flange type differential pressure transmitter

For pressure measurement of kPa order in a manufacturing process, the flanges on the high and low-pressure side of the differential pressure transmitter with remote-sealed diaphragm are coupled to enable measurement of the range which cannot be measured with a pressure transmitter.

《Features》

- Flange on low-pressure side out of the way
- Influence of temperature change minimized owing to capillary tubes on high and low-pressure sides in same environment

Pressure measurement in low range with high accuracy ($\pm 0.15\%$)

