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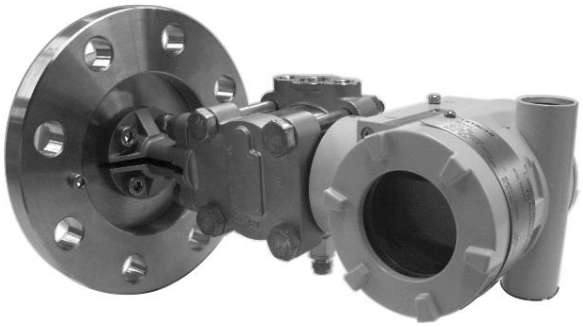
CODE AND SPECIFICATIONS SHEET

Intelligent Absolute Pressure Transmitter with Flange

EDR-N8AF



EDR-N8AF Absolute Pressure Transmitter with Flange incorporates semiconductor sensors and a microcomputer and converts measured differential pressures to 4 to 20mA DC signals with high accuracy.
EDR-N8AF is suitable for measuring absolute pressures of process lines and also supports various installation environments such as explosion-prevented areas.

STANDARD SPECIFICATIONS

Model EDR-N8AF

Pressure range

Range Code	Measuring Span	Settable Rnage Limits
1000	13.3 to 133 kPa abs.	0≦LRV≦133kPa abs., 0≦URV≦133kPa abs.
6000	107 to 800 kPa abs.	0≦LRV≦800kPa abs., 0≦URV≦800kPa abs.

Note) URV is the input differential pressure to give 100% output (20mA DC)
LRV is the input differential pressure to give 0% output (4mA DC)

Output signal 4 to 20mA DC

Output signal range 3.6 to 21.6mA DC (-2.5 to 110%)

Power supply voltage 11.4 to 42.0V DC

Allowable load resistance 600Ω (at 24V DC power supply voltage)

Communication protocol Hitachi communication

Communication line conditions

Power supply voltage: 16.7 to 42.0V DC

Load resistance: 250 to 1.2kΩ
See Fig. 1 for the relationship between power supply voltage and load resistance.

External adjustment /configuration Zero point adjustment (±100% of measured span), LRV and URV adjustment and configuration and damping time constant are configurable (however, only with indicator and when the function is enabled).

Burn-out at error Burn-up, burn-down or no burn-out can be selected. (No burn-out is configured at shipment.)

Accuracy ±0.5%
Accuracy is the percentage to the absolute value of URV, LRV or the biggest value of measured span.

Response time

Dead time: 0.15s(Minimum)

Damping time constant (Amplifier time constant): Electrically configurable from 0.1 to 102.4s (at 0.1s step) by using a communicator.
・Response time is the sum of damping time constant (amplifier time constant) and dead time.

Storage temperature range -40 to 85℃

Operating humidity range 0 to 100%RH

Operating temperature range

Ambient temperature range: -20 to 85℃

Wetted parts temperature range: -20 to 180℃

Maximum operating pressure The highest or below operating pressure Range (See Fig. 2 negative pressure.)

Withstanding pressure 1.0MPa

Site vibration Continuous vibration below 29.4m/s^2

Ambient temperature effect ±0.5%/25±25℃ of span
(Zero-shift at Maximum span)

Wetted parts temperature effect ±0.05kPa abs. /10℃
(±0.1kPa abs. /10℃ for aperture 50A(2B))

Materials

Diaphgram: SUS316L

Wetted parts other than diaphgram: SUS316

Sensor body flange bolt: SCM435

Standard flange: SUS304 or SUSF304

Amplifier case: Aluminum alloy

Sealed liquid Silicone oil
(Relative density: 0.955 at25℃)

Process connection JIS 10K 80A RF (similar flange)

Length of protruding part of flange 0mm

Wire connection G1/2

Check terminal Current output (Ampere meter is required for measurement.)

Protection grade JIS C 0920 IP67

Surge absorber Incorporated into power input circuit
Surge tolerance:1,000A (8/20μs)
Impact test voltage:15,000V (1.2/50μs)

Color Light gray (anti-acid painting)

Weight Approx. 10kg

Mounting Directly mounted on tank

Accessories External adjustment/configuration magnet

ADDITIONAL SPECIFICATIONS

Communication protocol HART communication

TIIS flameproof, Oil-immersion

Applicable Standard: Exdo II CT4 X Note)
Available for use at Zone1, Zone2 groups of hazardous place.

Note) If the indicator is not equipped, please construct an external alarm indication system by scaling out of the output signal.

Operating temperature range: Ambient temperature range: −20 to 55℃
Wetted parts temperature range: −20 to 100℃

Wire connection: Please use X-EXRCA pressure proof packing brackets (or EXPC-16B by Shimada Electric Co.,Ltd)

FM explosionproof approval (Arranging)

Applicable Standard: Explosionproof CLI,DIV 1,GPS B,C&D
Dust-ignition proof CL Ⅱ/Ⅲ,GPS E,F&G
Temperature Code T4

Operating temperature range: Ambient temperature range: −40 to 60℃
Wetted parts temperature range: −40 to 120℃

NEPSI explosionproof approval (Arranging)

Applicable Standard: Explosionproof Ex d ⅡC T4

Operating temperature range: Ambient temperature range: −40 to 60℃
Wetted parts temperature range: −40 to 120℃

Indicator Digital indicator
Indication 5 digits, unit 7 digits, bar graph
Indication items
Individual enable/disable indication of the following items:
Automatic switching when selecting the items
Differential pressure%,
Differential pressure value,
Actual scale of differential pressure,
Static pressure%,
Static pressure value
Actual scale
Unit is selected from pressure, flow volume, height or discretionary configuration.
Configuration range:−99,999 to 99,999
Ambient temperature range:−20 to 85℃

Flange standard JIS 20K, ANSI 150, ANSI 300, JPI 150, JPI 300, etc.
Connection aperture 80A (3B), 100A (4B)
(See Code table for details.)

Length of protruding part of flange 50 mm, 100 mm, 150 mm

Bolt material Sensor body flange bolt:SUS304

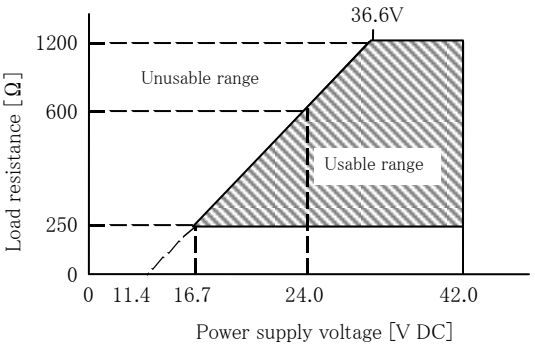
Wetted parts materials

Material Code	Diaphragm	Wetted parts except for diaphragm
316L	SUS316L	SUS316L
HC	Hastelloy C	Hastelloy C
TA	Tantalum	Tantalum

Note) Protruding part length of 0mm is only manufactured for the Material Code TA.

* Select a material considering the anti-corrosion characteristics.
Using gold-plated diaphragm (Code: Z52) or embedded with gold-plated diaphragm + hydrogen absorbing alloy (Code: Z72)is recommended if there is any concern about the error caused by hydrogen permeation of diaphragm due to hydrogen in the measured fluid, etc. (However, it is difficult for Z52 and Z72 to completely prevent the error caused by hydrogen permeation.)

Wetted parts finish Oil prohibitive or oil and water prohibitive finish



The minimum load resistance of 250Ω is required to communicate by connecting the communicator.

Fig. 1 Power supply voltage / load resistance characteristics

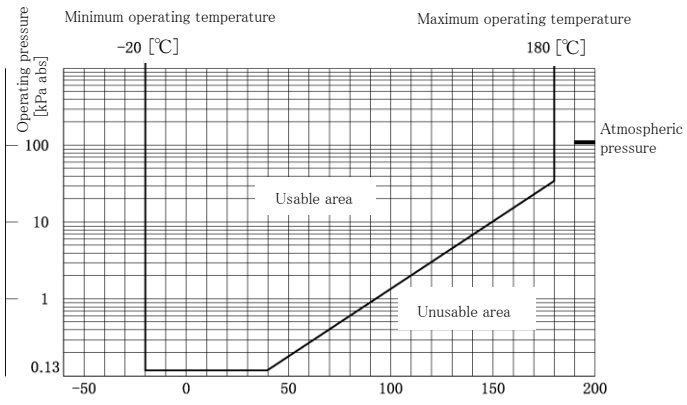
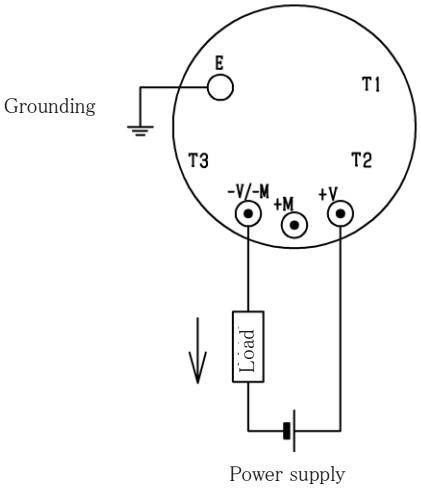


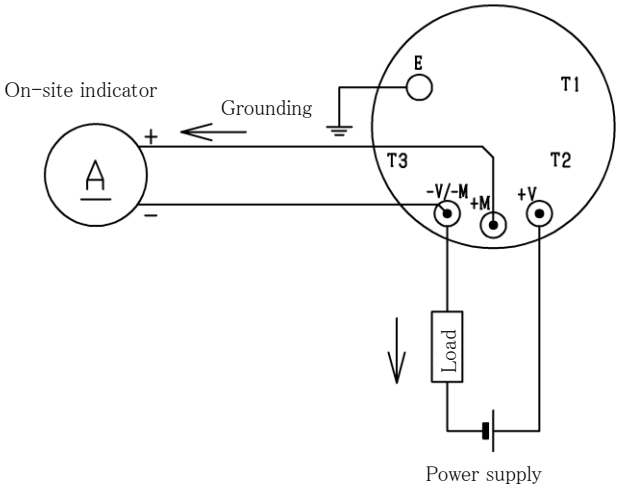
Fig. 2 Operating pressure and wetted parts temperature

EXTERNAL CONNECTION DRAWING

Without on-site indicator



Connected with on-site indicator



Note1) Perform Class D grounding work (ground resistance of 100Ω or less) for grounding.

Note2) Ground either the transmitter or the receiving instrument. Be careful not to be dual-grounded.

Note3) Grounding terminals on the transmitter are located inside the terminal box and outside the amplifier case. You can use either of the groundings.

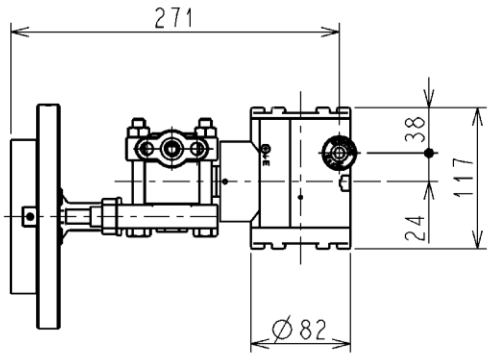
Note4) T1, T2 and T3 terminals are not connected.

Note5) The resistance value needs to be 20Ω or less including wire resistance to connect an on-site indicator.

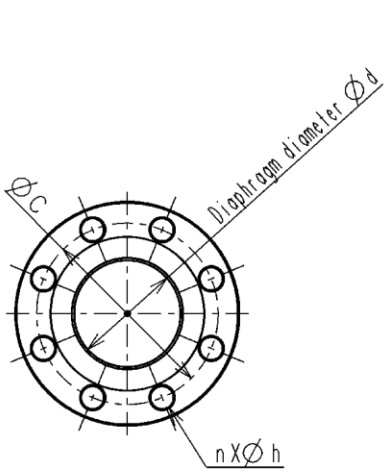
DIMENSIONS (Unit : mm)

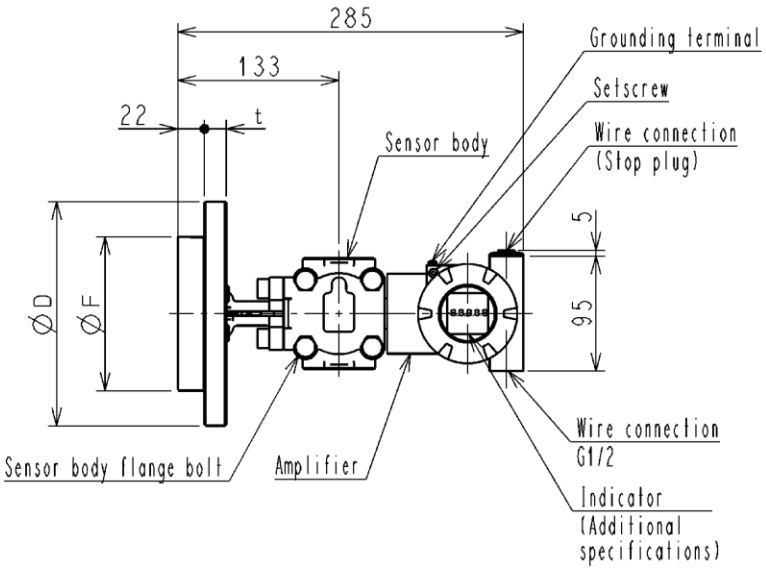
No protruding part (E0)

Flange standard (similar flange)	ϕD	ϕF	ϕd	ϕC	n× ϕh	t
JIS 10K 50A RF	155	98	64	120	4×19	16
JIS 20K 50A RF	155	98	64	120	8×19	18
JIS 10K 80A RF	185	127	88	150	8×19	18
JIS 20K 80A RF	200	127	88	160	8×23	22
JIS 10K 100A RF	210	154	88	175	8×19	18
JIS 20K 100A RF	225	154	88	185	8×23	24
ANSI 150 2 RF	152	98	64	120.6	4×20	19.5
ANSI 300 2 RF	165	98	64	127	8×20	22.5
ANSI 150 3 RF	191	127	88	152.4	4×20	24
ANSI 300 3 RF	210	127	88	168.3	8×23	29
ANSI 150 4 RF	229	154	88	190.5	8×20	24
ANSI 300 4 RF	254	154	88	200	8×23	32

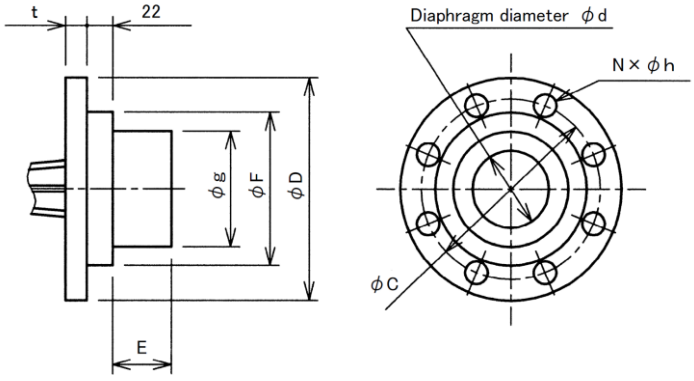


*JPI flange is the same size as ANSI flange.
*ϕd is for diaphragm material of SUS316L.





With protruding part (E50, E100, E150)



Flange standard (similar flange)	ϕD	ϕF	ϕg	ϕd	ϕC	n× ϕh	t
JIS 10K 80A RF	185	127	72	64	150	8×19	18
JIS 20K 80A RF	200	127	72	64	160	8×23	22
JIS 10K 100A RF	210	154	96	88	175	8×19	18
JIS 20K 100A RF	225	154	96	88	185	8×23	24
ANSI 150 3 RF	191	127	72	64	152.4	4×20	24
ANSI 300 3 RF	210	127	72	64	168.3	8×23	29
ANSI 150 4 RF	229	154	96	88	190.5	8×20	24
ANSI 300 4 RF	254	154	96	88	200	8×23	32

*JPI flange is the same size as ANSI flange.
*ϕd is for diaphragm material of SUS316L.

Protruding length E
50
100
150

CODE TABLES

EDR-N8AF Intelligent Absolute Pressure Transmitter with Flange

Model				
EDR-N8AF				
No.	Item	Code		Remarks
1	Range Code	1000		Measuring span 13.3 to 133kPa abs.
		6000		Measuring span 107 to 800kPa abs.
2	Communication	–		Hitachi communication
		H		HART communication
3	Functional safety	–		None
4	Adjustment range	–		Adjust between 0 and Maximum range
		C( )		Describe adjustment range and unit sign in ( )
5	Certification	–		None
		XC		TIIS flameproof, Oil-immersion
		FM		FM explosionproof approval (Arranging)
		NEPSI		NEPSI explosionproof approval (Arranging)
6	Indicator	–		None
		M		With digital indicator (Indication 0 to 100%)
		MJ( )		With digital indicator, describe indication scale and unit sign in actual scale indication ( )
7	Flange standard	JIS	50J10	Flange standard JIS 10K 50A RF-equivalent Only E0
			50J20	Flange standard JIS 20K 50A RF-equivalent Only E0
			80J10	Flange standard JIS 10K 80A RF-equivalent E0/E50 to E150
			80J20	Flange standard JIS 20K 80A RF-equivalent E0/E50 to E150
			100J10	Flange standard JIS 10K 100A RF-equivalent E0/E50 to E150
			100J20	Flange standard JIS 20K 100A RF-equivalent E0/E50 to E150
		ANSI	50A150	Flange standard ANSI 150 2B RF-equivalent Only E0
			50A300	Flange standard ANSI 300 2B RF-equivalent Only E0
			80A150	Flange standard ANSI 150 3B RF-equivalent E0/E50 to E150
			80A300	Flange standard ANSI 300 3B RF-equivalent E0/E50 to E150
			100A150	Flange standard ANSI 150 4B RF-equivalent E0/E50 to E150
			100A300	Flange standard ANSI 300 4B RF-equivalent E0/E50 to E150
		JPI	50JP150	Flange standard JPI 150 2B RF-equivalent Only E0
			50JP300	Flange standard JPI 300 2B RF-equivalent Only E0
			80JP150	Flange standard JPI 150 3B RF-equivalent E0/E50 to E150
			80JP300	Flange standard JPI 300 3B RF-equivalent E0/E50 to E150
			100JP150	Flange standard JPI 150 4B RF-equivalent E0/E50 to E150
			100JP300	Flange standard JPI 300 4B RF-equivalent E0/E50 to E150
8	Protruding flange part	E0		Length of protruding part 0mm
		E50		Length of protruding part 50mm Apperture 50A, 2B cannot be used
		E100		Length of protruding part 100mm Apperture 50A, 2B cannot be used
		E150		Length of protruding part 150mm Apperture 50A, 2B cannot be used
9	Material	–		Diaphragm: SUS316L Wetted part: SUS316
		316L		Diaphragm: SUS316L Wetted part: SUS316L
		HC		Diaphragm: Hastelloy C Wetted part: Hastelloy C
		TA		Diaphragm: Tantalum Wetted part: Tantalum Only E0
10	Bolt material	–		Sensor body flange bolt : SCM435
		S304		Sensor body flange bolt: SUS304
11	Oil prohibition	–		No finish
		NL		Oil prohibitive finish
		NLW		Oil and water prohibitive finish

Example of Code description : EDR-N8AF-1000-XC-M-80J10-E0

●HART® is a registerd trademark of the Field Comm Group.
●Please read the "Instruction Manual" carefully before use.
●Appearance and specifications are subject to change partially for improvement.