

CS

CODE AND SPECIFICATIONS SHEET

Pressure Transmitter with Diaphragm Displacement Device

EPR-N7S



EPR-N7S is intelligent transmitter equipped with semiconductor sensors and micro processors.

STANDARD SPECIFICATIONS

Model EPR-N7S

Pressure range

Range Code	Measuring Span	Settable Range Limits
G20 HG20	0.1 to 2MPa	$-98\text{kPa} \leq \text{LRV} \leq 2\text{MPa}$, $-98\text{kPa} \leq \text{URV} \leq 2\text{MPa}$
G100 HG100	1 to 10MPa	$-98\text{kPa} \leq \text{LRV} \leq 10\text{MPa}$, $-98\text{kPa} \leq \text{URV} \leq 10\text{MPa}$
G500* HG500	10 to 30MPa	$-98\text{kPa} \leq \text{LRV} \leq 30\text{MPa}$, $-98\text{kPa} \leq \text{URV} \leq 30\text{MPa}$

※ When working pressure is more than 30MPa in range code G500, please contact us separately.

Note) URV is the input pressure to give 100% (20mA DC) output.

LRV is the input pressure to give 0% (4mA DC) output.

Output 4 to 20mA DC
Power supply voltage 11.4 to 42.0V DC
Allowable load resistance 600 Ω (at 24V DC power supply voltage)
Communication line condition

Power supply voltage 16.7 to 42.0V DC

Load resistance 250 Ω to 1.2k Ω

(Refer to Fig. 1 for the relation between power supply voltage and load resistance)

Accuracy

Range Code	Accuracy
G20 HG20	$\pm 0.2\%$ X is more than 0.2MPa $\pm [0.1 + (0.1 \times 0.2/X)]\%$ X is less than 0.2MPa
G100 HG100	$\pm 0.2\%$
G500 HG500	$\pm 0.2\%$

Note) Accuracy is percent value against X, and X is the largest value among absolute value of URL, LRV and measuring span. Unit is Mpa.

Zero adjustment Externally adjustable within $\pm 100\%$ of measurement span.
Accidental burn out Can select any one among burn up, burn down and without burn out.
Dead time Approx. 0.4sec.
Damping time constant (Amplifier time constant) Adjustable from 0.2 to 102.4sec (0.1sec increment) electrically by the DCR or the HART® communicator.
Time constant Transmitter time constant equals sum of damping time constant (amplifier time constant) and dead time.
Storage temperature limits -40 to 85°C

Operating humidity limits 5 to 100%RH

Operating temperature limits

Ambient temperature limits -20 to 85°C

Wetted parts temperature limits -20 to 180°C

Working pressure limits Low pressure between the maximum working pressure of flange and the upper limit value of settable range limits
 Less than the maximum working pressure of flange. (See Fig.2 for negative pressure.)

Site vibration Less than 29.4m/s² continuous vibration

Temperature effect (at -20 to 60°C)

Range Code	Temperature Effect	
G20 HG20	Zero shift	$\pm [0.05 + (0.3 \times T/50)]\%$ X is more than 1.6MPa $\pm [0.05 + (0.15 + 0.15 \times 1.6/X) \times T/50]\%$ X is less than 1.6MPa
	General shift	$\pm [0.05 + (0.55 \times T/50)]\%$ X is more than 1.6MPa $\pm [0.05 + (0.4 + 0.15 \times 1.6/X) \times T/50]\%$ X is less than 1.6MPa
G100 HG100	Zero shift	$\pm [0.05 + (0.3 \times T/50)]\%$ X is more than 8MPa $\pm [0.05 + (0.15 + 0.15 \times 8/X) \times T/50]\%$ X is less than 8MPa
	General shift	$\pm [0.05 + (0.55 \times T/50)]\%$ X is more than 8MPa $\pm [0.05 + (0.4 + 0.15 \times 8/X) \times T/50]\%$ X is less than 8MPa
G500 HG500	Zero shift	$\pm [0.05 + (0.3 \times T/50)]\%$ X is more than 10MPa $\pm [0.05 + (0.15 + 0.15 \times 10/X) \times T/50]\%$ X is less than 10MPa
	General shift	$\pm [0.05 + (0.55 \times T/50)]\%$ X is more than 10MPa $\pm [0.05 + (0.4 + 0.15 \times 10/X) \times T/50]\%$ X is less than 10MPa

Note) Temperature effect is percent value against X, X is the largest value among absolute value of URV, LRV and measuring span, and unit is MPa.

T is temperature variation width (°C).

Material

Diaphragm SUS316L
 (Diaphragm material shall be selected considering corrosion resistance, hydrogen transmission, etc.)

Wetted parts other than diaphragm SUS316

Standard flange SUS304

Capillary tube SUS316 (with polyethylene cover)

Amplifier case Aluminium alloy

Mounting plate SPCC (acid resistant painting)

U bolt SUS304

Filled liquid	Silicone oil
Process connection	JIS 10K 80A RF (equivalent flange) wafer type
Flange extension length	0mm (connection diameter 80A)
Capillary tube length	5m
Electrical connection	G1/2
Check terminal	With output check terminal (output voltage 40 to 200mV DC)
Certifications	Degree of protection JIS C 0920 IP67
Surge absorber	Built-in transmitter Surge capacity : 1,000A (8/20 μ s) Impulse test voltage : 15,000V (1.2/50 μ s)
Finish	Light gray amplifier case (acid resistant coating)
Weight	Approx. 9.5kg
Installation	On 2-inch pipe with U bolt.
Accessories	2-inch pipe mounting bracket and U-bolt. Zero adjustment magnet.

ADDITIONAL SPECIFICATION

Communication method	HART [®] protocol
Structure	TIIS Ex explosion proof type Flameproof Exdo II CT4 Exdo II CT4X Note) X is for operating condition (as below) With meter : Abnormality code is displayed on meter to alert warning, so it is no need to build external alarm display system. Without meter : it is necessary to build external alarm display system, output exceeds 21mA Ambient temperature limits : -20 to 55°C Wetted parts temperature limits: -20 to 100°C Electrical connection X-RCAC type pressure resistant packing fixture must be used for using pressure resistant oil filled explosion proof type products. (also applicable to use SXBM-16B made by Shimada Electric Co., Ltd.)
FM explosion proof type	Explosion proof CLI, DIV 1, GPS B, C&D Dust-ignition proof CL II / III, GPS E, F&G Temperature Code T4 NEMA 4X Ambient temperature limits : -40 to 60°C Wetted parts temperature limits: -40 to 120°C
Indicator	Digital indicator 4.5 figures display (0 to 100% scale standard) (Can set to arbitrary scale within the range of -17,500 to 17,500) Scale plates for various units to be stucked are supplied.

Flange standard	JIS 20 K, ANSI 150, ANSI 300, JPI 150, JPI 300 Connection diameter 80A (3B) (extension length 0mm) 100A (4B) (extension length > 0mm)
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Flange extension length	50mm, 100mm, 150mm
Diaphragm cover (only for diameter 80A(3B) without extension)	FEP diaphragm cover (pressure : more than atmospheric pressure, working temperature : -10 to 120°C) When fitting diaphragm cover, accuracy shall be added $\pm 0.5\%$.
Capillary tube length	1 to 10m(1m unit) (less than 40A (1.5B) extension type is not available for more than 6m tube.)
Capillary taking out direction	Horizontal or vertical to diaphragm plane.

Wetted parts material	Diaphragm	Wetted Parts Other Than Diaphragm
	SUS316L	SUS316L
	Hastelloy C	Hastelloy C
	Tantalum	Tantalum
	SUS316L (with gold plate)	SUS316

Note) Tantalum is available only for 0mm extension length.

※ Material shall be selected considering corrosion resistance. In case hydrogen is present in measuring fluid, it is possible hydrogen transmission can be generated through diaphragm.
If corrosion resistance is not so important, we recommend SUS316L or SUS316 with gold plating because hydrogen transmission value of these material is relatively low. (But it is difficult to prevent hydrogen transmission completely even if diaphragm of SUS316L with gold plating is applied).

Filled liquid	Fluorine oil	Wetted parts temperature limits: -20 to 120°C Specific gravity : 1.860 (at 20°C) (See Fig.3 for negative pressure.) For oxygen measurement, specify no-oil finish at the same time.
	Silicone oil for sanitary use	Wetted parts temperature limits: -20 to 150°C Specific gravity : 0.965 (at 25°C) (See Fig.4 for negative pressure.)
	Propylene glycol	Wetted parts temperature limits: -20 to 150°C Specific gravity : 1.037 (at 25°C) (not possible to use at negative pressure.)
Wetted parts finish		No oil finish or no-oil and no water finish
Replace fitting		Metal fittings for renewal of old type Hitachi transmitter are supplied

Process fluid condition

High temperature type	Liquid contact temperature : -10 to 310°C Ambient temperature : -10 to 85°C Specific gravity of filled liquid : 1.065 (at 25°C) (Operating pressure is more than atmospheric pressure)
Low temperature type	Liquid contact temperature : -70 to 60°C Ambient temperature : -20 to 60°C Specific gravity of filled liquid : 0.873 (at 25°C) (See Fig.5 for negative pressure)
Vacuum type	Liquid contact temperature : -20 to 180°C Ambient temperature : -20 to 85°C Filled liquid is the same as standard specification. (Workable pressure is different depending on temperature. Use after confirming Fig.2)
High vacuum type	Liquid contact temperature : -10 to 310°C Ambient temperature : -10 to 85°C Specific gravity of filled liquid:0.955 (at 25°C), but 1.065 at point parts. (Workable pressure is different depending on temperature. Use after confirming Fig.6)
High temperature and high vacuum type	Liquid contact temperature : 10 to 310°C Ambient temperature : -10 to 85°C Specific gravity of filled liquid : 0.955 (at 25°C) but 1.079 at point parts. Workable up to 0.0133kPa abs for negative pressure. (See Fig.7)

SPECIFICATION FOR SMALL DIAMETER FLANGE CONNECTION TYPE

Pressure range

Range Code	Measuring Span	Settable Range Limits
G20 HG20	0.2 to 2MPa	-98kPa ≤ LRV ≤ 2MPa, -98kPa ≤ URV ≤ 2MPa
G100 HG100	1 to 10MPa	-98kPa ≤ LRV ≤ 1MPa, -98kPa ≤ URV ≤ 1MPa
G500* HG500	10 to 30MPa	-98kPa ≤ LRV ≤ 30MPa, -98kPa ≤ URV ≤ 30MPa

※ When working pressure is more than 30MPa in range cod G500 and HG500, please contact us separately.

Accuracy

Diameter	Accuracy (more than measuring span)	Working Temperature Range		Extension Length
		Wetted Parts Temperature	Ambient Temperature	
25A(1B)	±0.5%	-20 to 180°C	-10 to 60°C	only E0 (not extensible)
40A(1.5B)	±0.5%	-20 to 180°C	-10 to 60°C	E0, E>0
50A(2B)	±0.2%	-20 to 180°C	-20 to 85°C	E0
	±0.5%		-10 to 60°C	E>0

Temperature characteristic
(±10°C variation)

Diameter	Temperature Characteristic	Extension Length
25A(1B)	Standard specification × 3	only E0
40A (1.5B)	Standard specification × 2	E0
	Standard specification × 3	E>0
50A (2B)	Same as standard specification	E0
	Standard specification × 2	E>0

Influence of temperature difference

Diameter	Influence Value		Extension Length
	Wetted Parts Temperature (±10°C variation)	Temperature Difference of Capillary Tube (1m, 10°C variation)	
25A(1B)	±1.6kPa	1.3kPa	only E0
40A (1.5B)	±0.6kPa	0.4kPa	E0
	±2.0kPa	1.3kPa	E>0
50A (2B)	±0.2kPa	0.1kPa	E0
	±0.8kPa	0.4kPa	E>0

Working temperature range Ambient temperature : -10 to 60°C
(-20 to 85°C for diameter 50A (2B) E0)
Wetted parts temperature : -20 to 180°C
-40 to 85°C

Temperature range for storage

Process connections JIS 10K, 20K, 30K, 63K
ANSI 150, 300
JPI 150, 300 etc.
Connection diameter 25A (1B), 40A (1.5B), 50A (2B), 80A (3B)

Flange extension length 0mm, 50mm, 100mm, 150mm
(only 0mm for 25A (1B))

Diaphragm with protection and adhesion preventive cover FEP diaphragm cover (pressure : more than atmospheric pressure, working temperature -10 to 120°C)
When fitting diaphragm cover, accuracy shall be added with ± 0.8%.

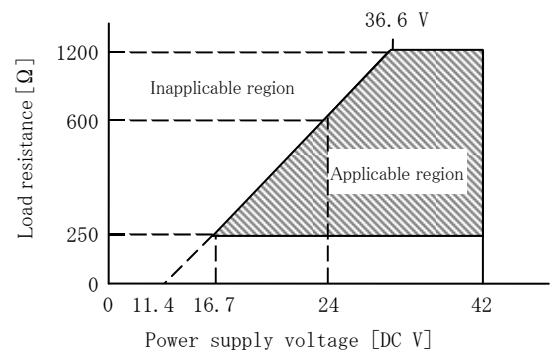
(only for diameter 50A (2B) without extension)

Process fluid condition

High temperature type Liquid contact temperature : -10 to 310°C
Ambient temperature : -10 to 85°C
Specific gravity of filled liquid : 1.065 (at 25°C)
(Operating pressure is more than atmospheric pressure)

Low temperature type Liquid contact temperature : -70 to 60°C
Ambient temperature : -20 to 60°C
Specific gravity of filled liquid : 0.873 (at 25°C)
(See Fig.5 for negative pressure)

Vacuum type Liquid contact temperature : -20 to 180°C
Ambient temperature : -20 to 85°C
Filled liquid is the same as standard specification (Workable pressure is different depending on temperature. Use after confirming Fig. 6)



A minimum load resistance of 250Ω shall be required to communicate by connecting to communicator.

Fig.1 Supply voltage / load resistance property of transmitter

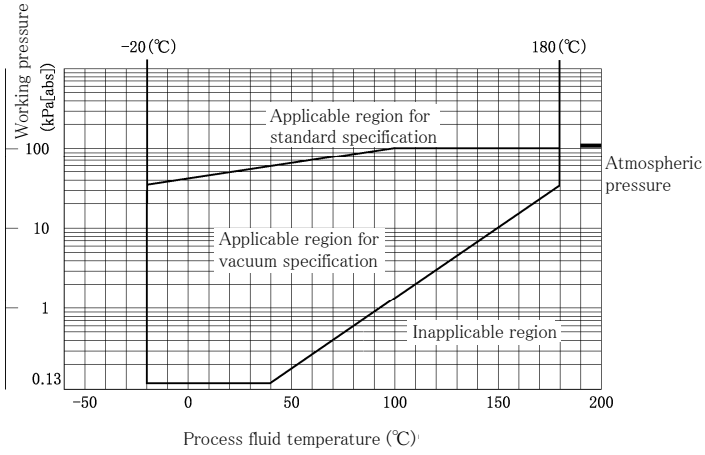


Fig.2 Working pressure and process fluid temperature (Specification for standard or vacuum type)

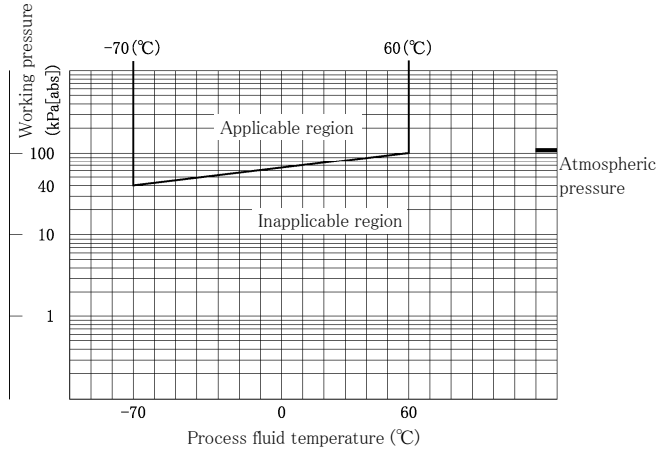


Fig.5 Working pressure and process fluid temperature (Specification for low temperature type)

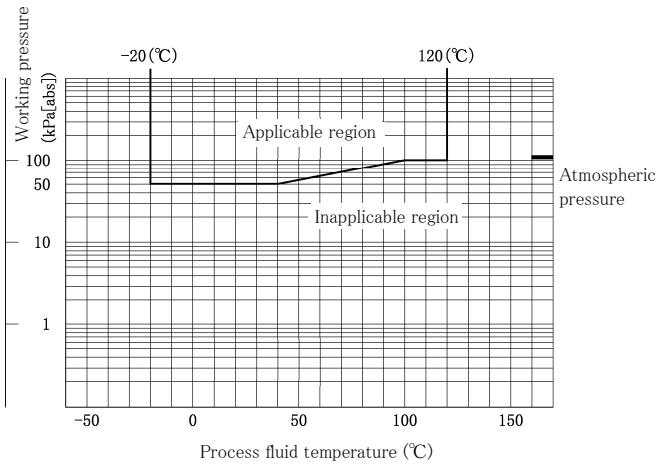


Fig.3 Working pressure and process fluid temperature (Filled liquid : Fluorine oil)

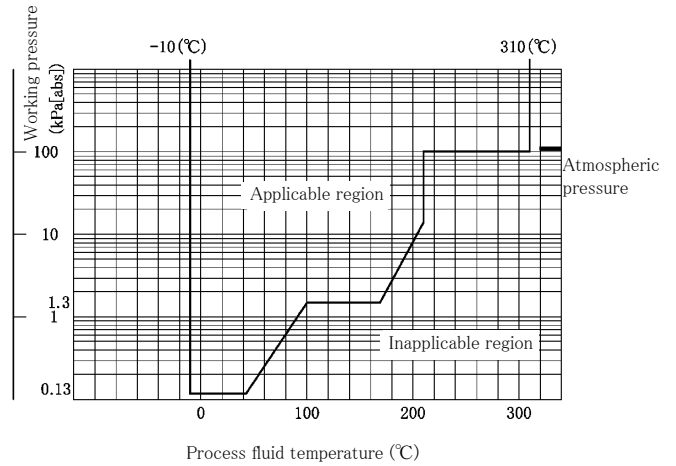


Fig.6 Working pressure and process fluid temperature (Specification for high vacuum type)

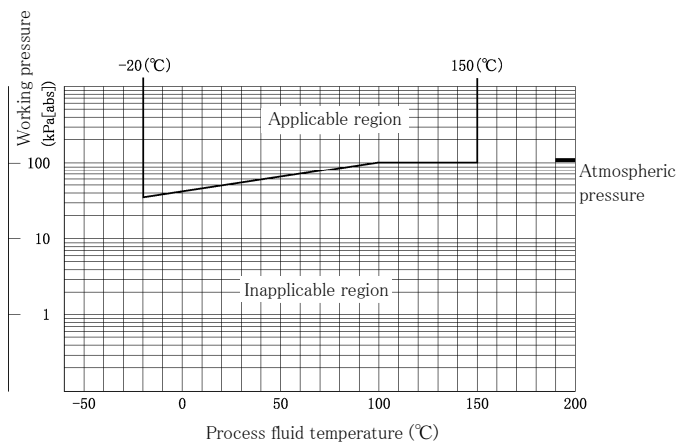


Fig.4 Working pressure and process fluid temperature (Filled liquid : Silicone oil for sanitary use)

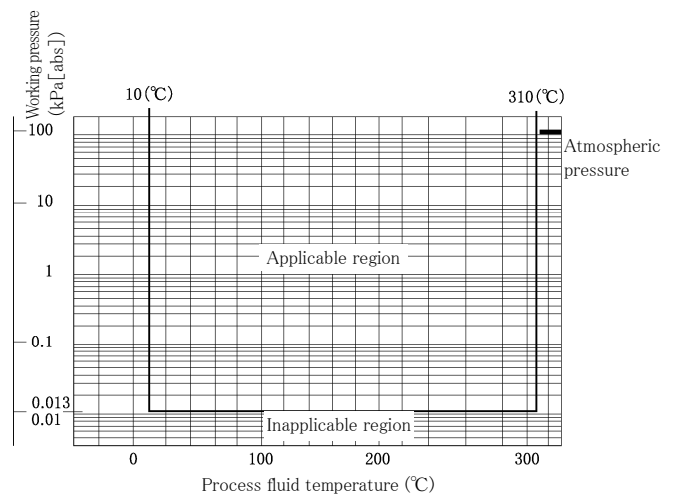
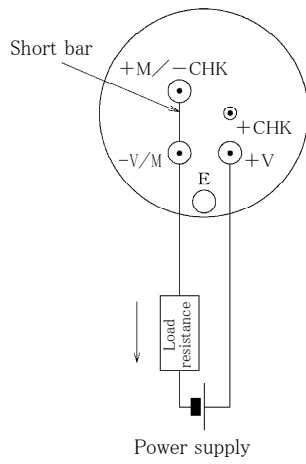


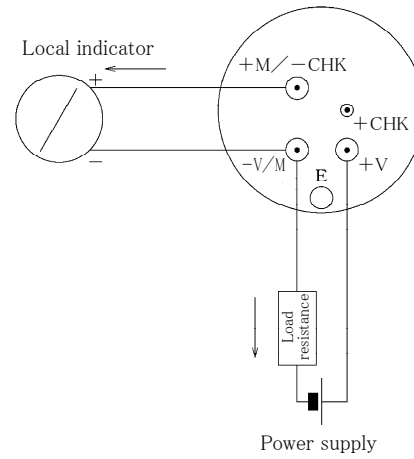
Fig.7 Working pressure and process fluid temperature (Specification for high temperature and high vacuum type)

EXTERNAL CONNECTION

Without local indicator



With local indicator connected



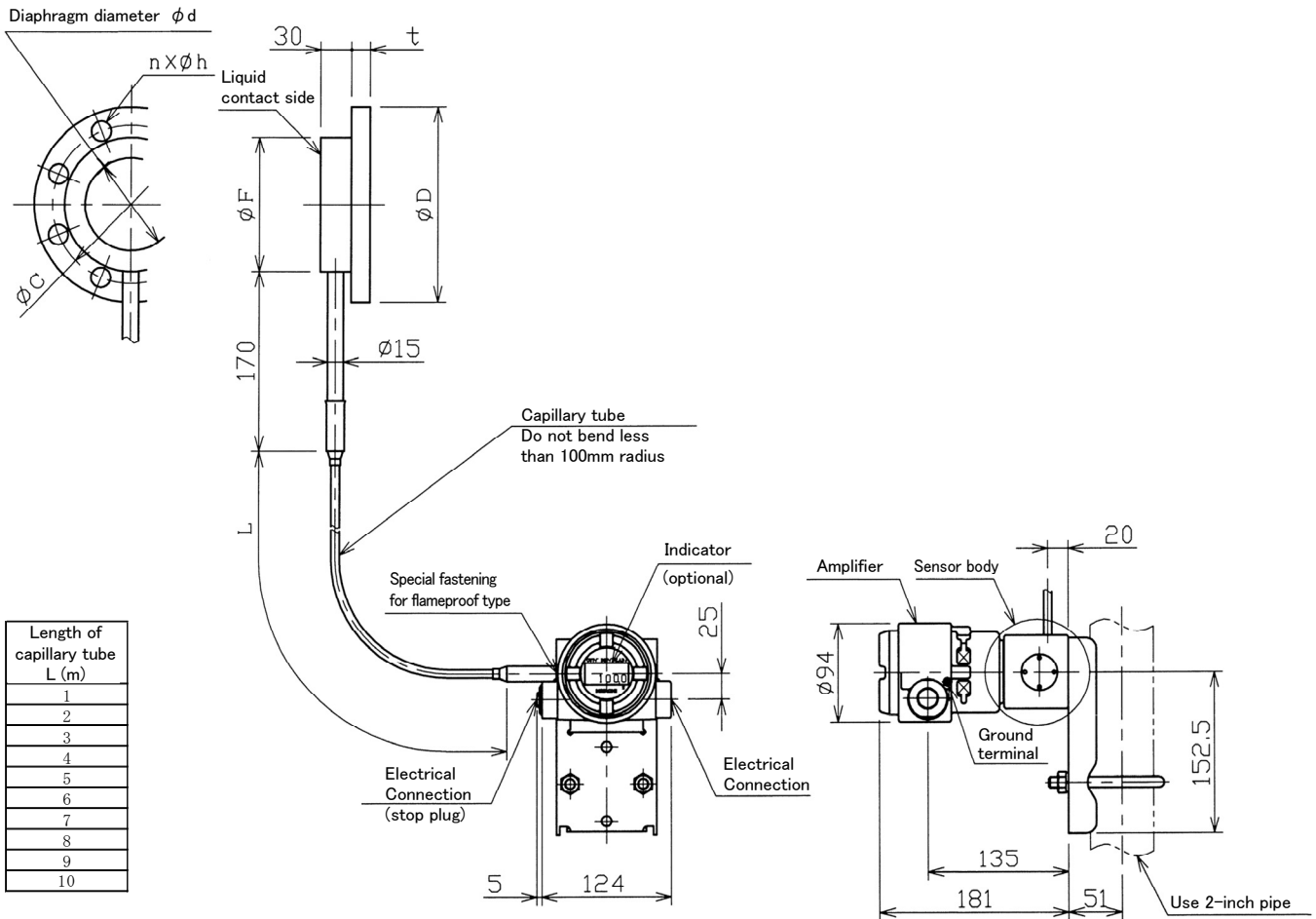
Notes:

- (1) Grounding shall be done according to class D grounding practice (grounding resistance less than $100\ \Omega$)
- (2) Grounding shall be done at one point either transmitter side or receiver instrument side. Give attention to avoid grounding at two points.
- (3) Grounding terminals on transmitter side are furnished inside of terminal box and outside of amplifier case. Either of them can be utilized.

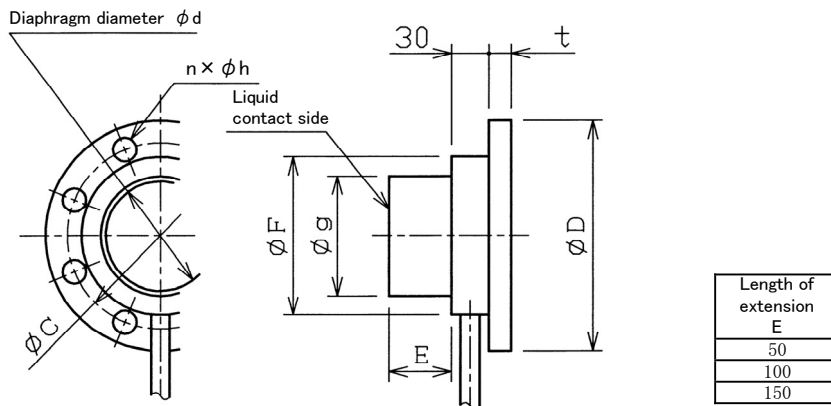
DIMENSIONS (Unit : mm)

Wafer type

● Without extension (E0)



● With extension (E50, E100, E150)



Wafer type

Without extension (E0)

Flange standard (equivalent flange)		φ D	φ F	φ d	φ C	n × φ h	t
JIS10K 80A RF <standard specification>		185	127	88	150	8 × 19	18
25A	JIS10K	125	63	30	90	4 × 19	14
	JIS20K	125	63	30	90	4 × 19	16
	JIS30K	130	63	30	95	4 × 19	20
	JIS40K	130	63	30	95	4 × 19	22
	JIS63K	140	63	30	100	4 × 23	27
40A	JIS10K	140	80	42	105	4 × 19	16
	JIS20K	140	80	42	105	4 × 19	18
	JIS30K	160	80	42	120	4 × 23	22
	JIS40K	160	80	42	120	4 × 23	24
	JIS63K	175	80	42	130	4 × 25	32
50A	JIS10K	155	98	64	120	4 × 19	16
	JIS20K	155	98	64	120	8 × 19	18
	JIS30K	165	98	64	130	8 × 19	22
	JIS40K	165	98	64	130	8 × 19	26
	JIS63K	185	98	64	145	8 × 23	34
80A	JIS20K	200	127	88	160	8 × 23	22
	JIS30K	210	127	88	170	8 × 23	28
	JIS40K	210	127	88	170	8 × 23	32
	JIS63K	230	127	88	185	8 × 25	40
	JIS10K	210	154	88	175	8 × 19	18
100A	JIS20K	225	154	88	185	8 × 23	24
	JIS30K	240	154	88	195	8 × 25	32
	JIS40K	250	154	88	205	8 × 25	36
	JIS63K	270	154	88	220	8 × 27	44
	25A (1B)	ANSI150	108	63	30	79.4	4 × 16
ANSI300		124	63	30	88.9	4 × 20	17.5
ANSI600		124	63	30	88.9	4 × 20	17.5
ANSI900		149	63	30	101.6	4 × 26	29
ANSI1500		149	63	30	101.6	4 × 26	29
40A (1.5B)	ANSI150	127	80	42	98.4	4 × 16	17.5
	ANSI300	156	80	42	114.3	4 × 23	21
	ANSI600	156	80	42	114.3	4 × 23	22.5
	ANSI900	178	80	42	123.8	4 × 29	32
	ANSI1500	178	80	42	123.8	4 × 29	32
50A (2B)	ANSI150	152	98	64	120.6	4 × 20	19.5
	ANSI300	165	98	64	127	8 × 20	22.5
	ANSI600	165	98	64	127	8 × 20	25.5
	ANSI900	216	98	64	165.1	8 × 26	38.5
	ANSI1500	216	98	64	165.1	8 × 26	38.5
80A (3B)	ANSI150	191	127	88	152.4	4 × 20	24
	ANSI300	210	127	88	168.3	8 × 23	29
	ANSI600	210	127	88	168.3	8 × 23	32
	ANSI900	241	127	88	190.5	8 × 26	38.5
	ANSI1500	267	127	88	203.2	8 × 32	48
100A (4B)	ANSI150	229	154	88	190.5	8 × 20	24
	ANSI300	254	154	88	200	8 × 23	32
	ANSI600	273	154	88	215.9	8 × 26	38.5
	ANSI900	292	154	88	235	8 × 32	44.5
	ANSI1500	311	154	88	241.3	8 × 35	54
ANSI2500	356	154	88	273	8 × 42	76.5	

※ JPI flange is the same size as ANSI flange.

※ φ d is for diaphragm material SUS316L.

With extension (E50, E100, E150)

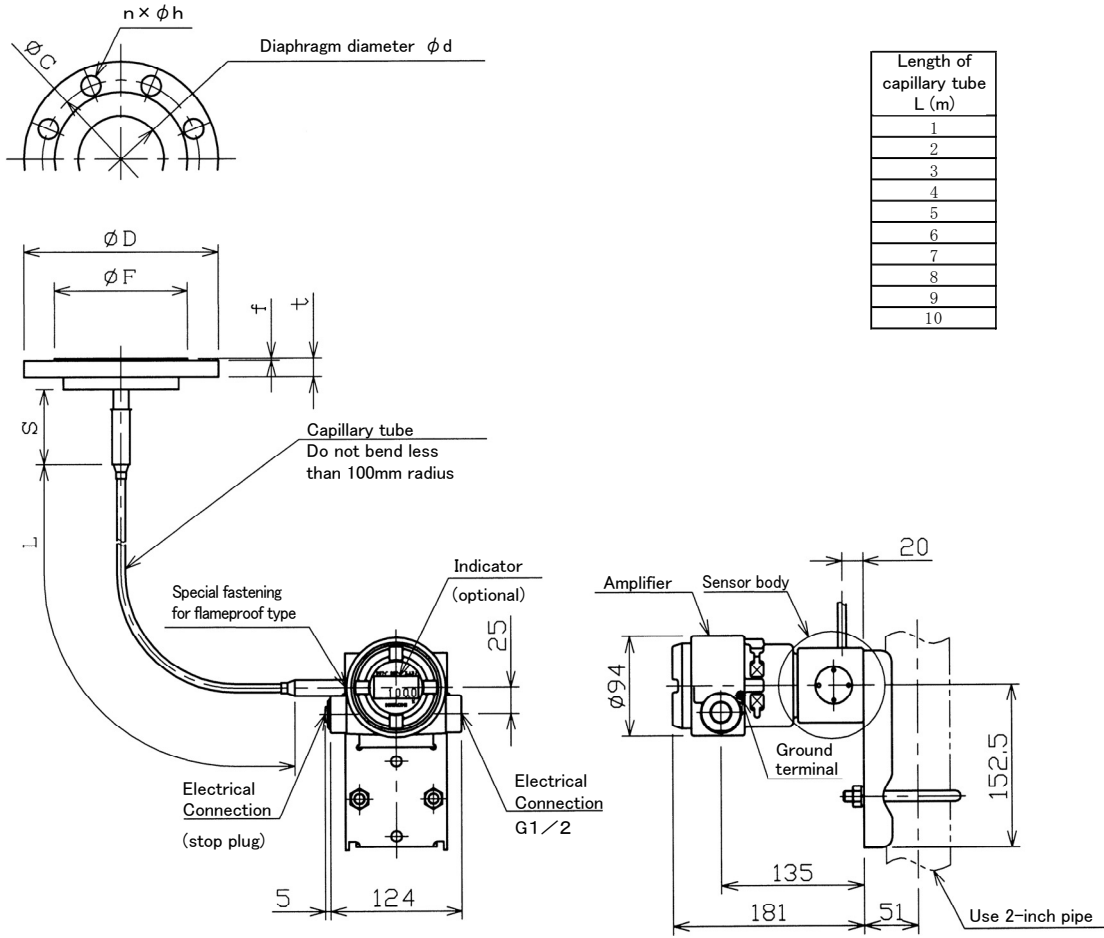
Flange standard (equivalent flange)		φ D	φ F	φ g	φ d	φ C	n × φ h	t
JIS10K 100A RF <standard specification>		210	154	96	88	175	8 × 19	18
40A	JIS10K	140	80	37	30	105	4 × 19	16
	JIS20K	140	80	37	30	105	4 × 19	18
	JIS30K	160	80	37	30	120	4 × 23	22
	JIS40K	160	80	37	30	120	4 × 23	24
	JIS63K	175	80	37	30	130	4 × 25	32
50A	JIS10K	155	98	48	42	120	4 × 19	16
	JIS20K	155	98	48	42	120	8 × 19	18
	JIS30K	165	98	48	42	130	8 × 19	22
	JIS40K	165	98	48	42	130	8 × 19	26
	JIS63K	185	98	48	42	145	8 × 23	34
80A	JIS10K	185	127	72	64	150	8 × 19	18
	JIS20K	200	127	72	64	160	8 × 23	22
	JIS30K	210	127	72	64	170	8 × 23	28
	JIS40K	210	127	72	64	170	8 × 23	32
	JIS63K	230	127	72	64	185	8 × 25	40
100A	JIS20K	225	154	96	88	185	8 × 23	24
	JIS30K	240	154	96	88	195	8 × 25	32
	JIS40K	250	154	96	88	205	8 × 25	36
	JIS63K	270	154	96	88	220	8 × 27	44
	40A (1.5B)	ANSI150	127	80	37	30	98.4	4 × 16
ANSI300		156	80	37	30	114.3	4 × 23	21
ANSI600		156	80	37	30	114.3	4 × 23	22.5
ANSI900		178	80	37	30	123.8	4 × 29	32
ANSI1500		178	80	37	30	123.8	4 × 29	32
50A (2B)	ANSI150	152	98	48	42	120.6	4 × 20	19.5
	ANSI300	165	98	48	42	127	8 × 20	22.5
	ANSI600	165	98	48	42	127	8 × 20	25.5
	ANSI900	216	98	48	42	165.1	8 × 26	38.5
	ANSI1500	216	98	48	42	165.1	8 × 26	38.5
80A (3B)	ANSI150	191	127	72	64	152.4	4 × 20	24
	ANSI300	210	127	72	64	168.3	8 × 23	29
	ANSI600	210	127	72	64	168.3	8 × 23	32
	ANSI900	241	127	72	64	190.5	8 × 26	38.5
	ANSI1500	267	127	72	64	203.2	8 × 32	48
100A (4B)	ANSI150	229	154	96	88	190.5	8 × 20	24
	ANSI300	254	154	96	88	200	8 × 23	32
	ANSI600	273	154	96	88	215.9	8 × 26	38.5
	ANSI900	292	154	96	88	235	8 × 32	44.5
	ANSI1500	311	154	96	88	241.3	8 × 35	54
ANSI2500	356	154	96	88	273	8 × 42	76.5	

※ JPI flange is the same size as ANSI flange.

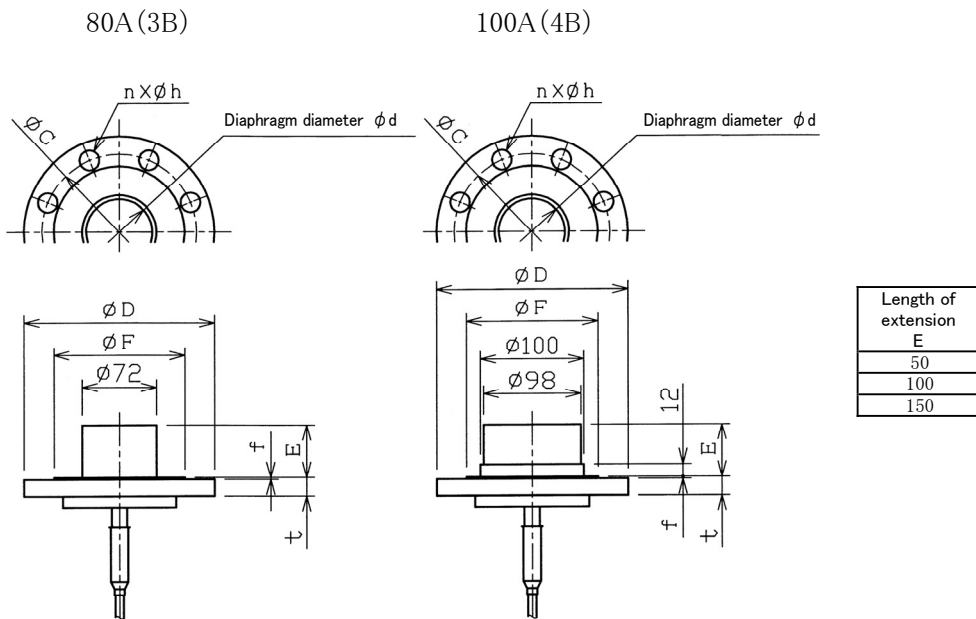
※ φ d is for diaphragm material SUS316L.

Backside type

● Without extension (E0)



● With extension (E50, E100, E150)



Backside type

Without extension (E0)

Flange standard (equivalent flange)		φ D	φ F	φ d	φ C	n × φ h	t	f
JIS10K 80A RF <standard specification>		185	127	88	150	8 × 19	18	2
50A	JIS10K	155	96	64	120	4 × 19	16	2
	JIS20K	155	96	64	120	8 × 19	18	2
	JIS30K	165	105	64	130	8 × 19	22	2
	JIS40K	165	105	64	130	8 × 19	26	2
	JIS63K	185	105	64	145	8 × 23	34	2
80A	JIS20K	200	127	88	160	8 × 23	22	2
	JIS30K	210	127	88	170	8 × 23	28	2
	JIS40K	210	127	88	170	8 × 23	32	2
	JIS63K	230	127	88	185	8 × 25	40	2
100A	JIS10K	210	151	88	175	8 × 19	18	2
	JIS20K	225	160	88	185	8 × 23	24	2
	JIS30K	240	160	88	195	8 × 25	32	2
	JIS40K	250	165	88	205	8 × 25	36	2
50A (2B)	JIS63K	270	165	88	220	8 × 27	44	2
	ANSI150	152	92	64	120.6	4 × 19	19.1	1.6
	ANSI300	165	92	64	127	8 × 19	22.4	1.6
	ANSI600	165	92	64	127	8 × 19	31.8	6.4
	ANSI900	216	92	64	165	8 × 26	44.5	6.4
80A (3B)	ANSI1500	216	92	64	165	8 × 26	44.5	6.4
	ANSI2500	235	92	64	171.4	8 × 29	58	6.4
	ANSI150	191	127	88	152.4	4 × 20	23.9	1.6
	ANSI300	210	127	88	168.1	8 × 23	28.5	1.6
	ANSI600	210	127	88	168.1	8 × 23	38.3	6.4
100A (4B)	ANSI900	241	127	88	190.5	8 × 26	44.5	6.4
	ANSI1500	267	127	88	203.2	8 × 32	54.2	6.4
	ANSI2500	305	127	88	228.6	8 × 35	73	6.4
	ANSI150	229	157	88	190.5	8 × 20	23.9	1.6
	ANSI300	254	157	88	200.2	8 × 23	31.8	1.6
50A (2B)	ANSI600	273	157	88	215.9	8 × 26	44.5	6.4
	ANSI900	292	157	88	235	8 × 32	50.9	6.4
	ANSI1500	311	157	88	241.3	8 × 35	60.4	6.4
	ANSI2500	356	157	88	273	8 × 42	82.6	6.4

※ JPI flange is the same size as ANSI flange.

※ φ d is for diaphragm material SUS316L.

Item	Code	S
Condition of liquid contact	no additional specification	70
	HT	170
	LT	120
	V	70

With extension (E > 0)

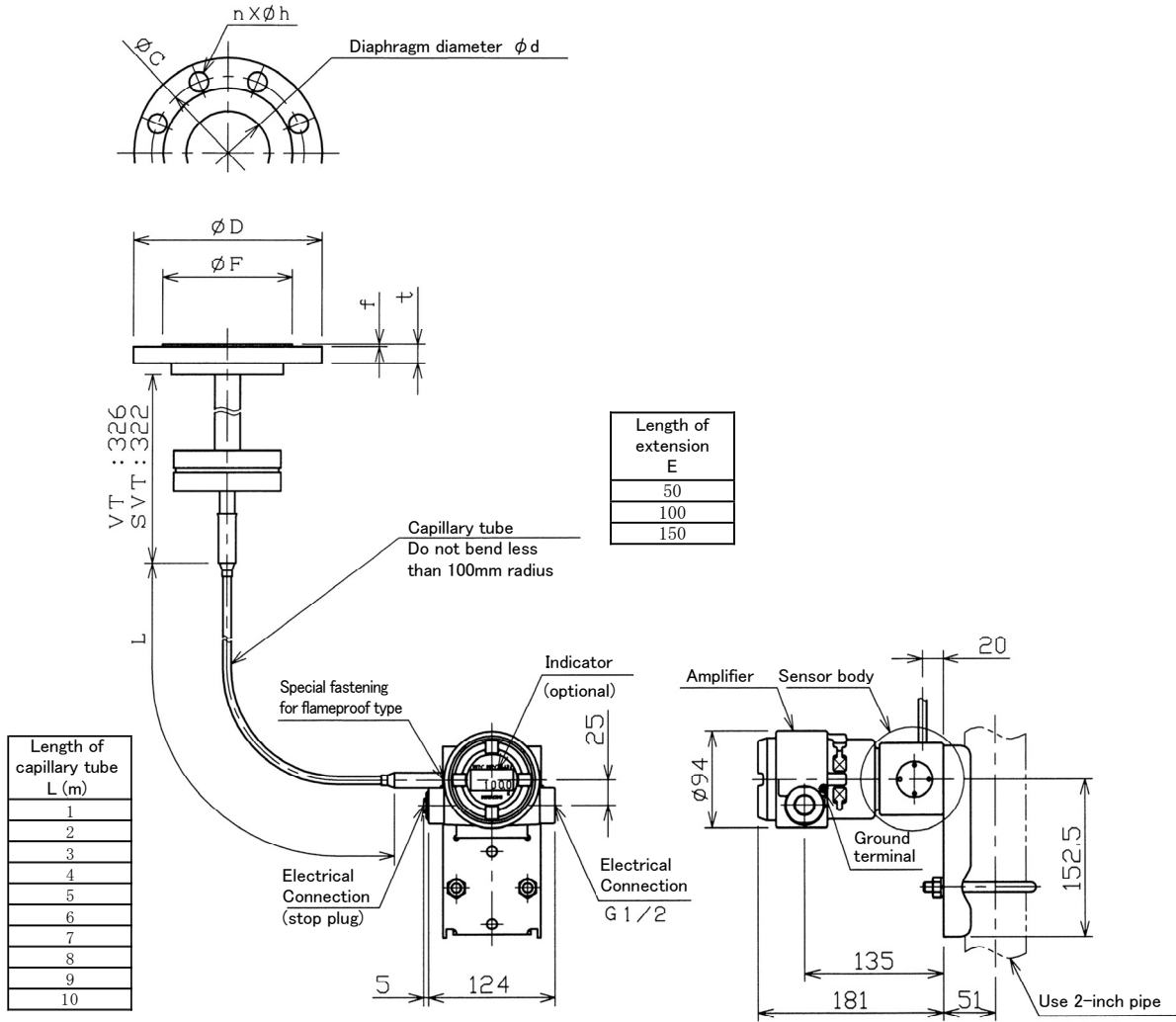
Flange standard (equivalent flange)		φ D	φ F	φ d	φ C	n × φ h	t	f
JIS10K 100A RF <standard specification>		210	151	88	175	8 × 19	18	2
80A	JIS10K	185	127	64	150	8 × 19	18	2
	JIS20K	200	127	64	160	8 × 23	22	2
	JIS30K	210	127	64	170	8 × 23	28	2
	JIS40K	210	127	64	170	8 × 23	32	2
	JIS63K	230	127	64	185	8 × 25	40	2
100A	JIS20K	225	160	88	185	8 × 23	24	2
	JIS30K	240	160	88	195	8 × 25	32	2
	JIS40K	250	165	88	205	8 × 25	36	2
	JIS63K	270	165	88	220	8 × 27	44	2
80A (3B)	ANSI150	191	127	64	152.4	4 × 20	23.9	1.6
	ANSI300	210	127	64	168.1	8 × 23	28.5	1.6
	ANSI600	210	127	64	168.1	8 × 23	38.3	6.4
	ANSI900	241	127	64	190.5	8 × 26	44.5	6.4
	ANSI1500	267	127	64	203.2	8 × 32	54.2	6.4
100A (4B)	ANSI2500	305	127	64	228.6	8 × 35	73	6.4
	ANSI150	229	157	88	190.5	8 × 20	23.9	1.6
	ANSI300	254	157	88	200.2	8 × 23	31.8	1.6
	ANSI600	273	157	88	215.9	8 × 26	44.5	6.4
	ANSI900	292	157	88	235	8 × 32	50.9	6.4
50A (2B)	ANSI1500	311	157	88	241.3	8 × 35	60.4	6.4
	ANSI2500	356	157	88	273	8 × 42	82.6	6.4

※ JPI flange is the same size as ANSI flange.

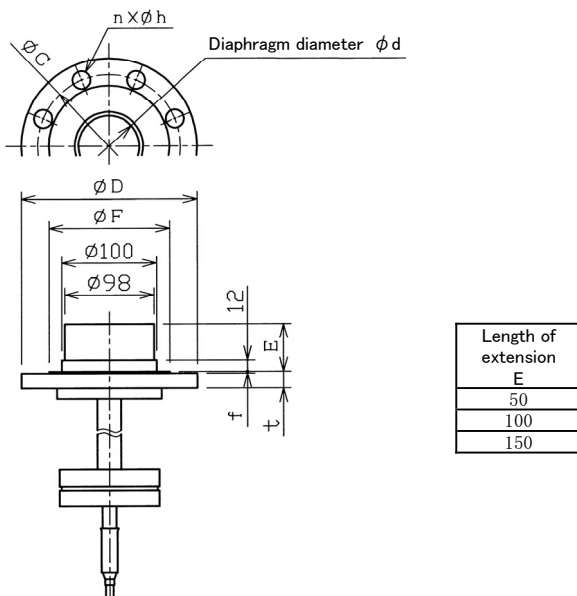
※ φ d is for diaphragm material SUS316L.

VT, SVT type

● Without extension (E0)



● With extension (E50, E100, E150)



VT, SVT type

Without extension (E=0)

Flange standard (equivalent flange)		ϕD	ϕF	ϕd	ϕC	$n \times \phi h$	t	f
JIS10K 80A RF <standard specification>		185	127	88	150	8×19	18	2
80A	JIS20K	200	127	88	160	8×23	22	2
	JIS30K	210	127	88	170	8×23	28	2
	JIS40K	210	127	88	170	8×23	32	2
	JIS63K	230	127	88	185	8×25	40	2
100A	JIS10K	210	151	88	175	8×19	18	2
	JIS20K	225	160	88	185	8×23	24	2
	JIS30K	240	160	88	195	8×25	32	2
	JIS40K	250	165	88	205	8×25	36	2
80A (3B)	JIS63K	270	165	88	220	8×27	44	2
	ANSI150	191	127	88	152.4	4×20	23.9	1.6
	ANSI300	210	127	88	168.1	8×23	28.5	1.6
	ANSI600	210	127	88	168.1	8×23	38.3	6.4
	ANSI900	241	127	88	190.5	8×26	44.5	6.4
	ANSI1500	267	127	88	203.2	8×32	54.2	6.4
100A (4B)	ANSI2500	305	127	88	228.6	8×35	73	6.4
	ANSI150	229	157	88	190.5	8×20	23.9	1.6
	ANSI300	254	157	88	200.2	8×23	31.8	1.6
	ANSI600	273	157	88	215.9	8×26	44.5	6.4
	ANSI900	292	157	88	235	8×32	50.9	6.4
	ANSI1500	311	157	88	241.3	8×35	60.4	6.4
ANSI2500	356	157	88	273	8×42	82.6	6.4	

※ JPI flange is the same size as ANSI flange.

※ ϕd is for diaphragm material SUS316L.

With extension (E>0)

Flange standard (equivalent flange)		ϕD	ϕF	ϕd	ϕC	$n \times \phi h$	t	f
JIS10K 100A RF <standard specification>		210	151	88	175	8×19	18	2
100A	JIS20K	225	160	88	185	8×23	24	2
	JIS30K	240	160	88	195	8×25	32	2
	JIS40K	250	165	88	205	8×25	36	2
	JIS63K	270	165	88	220	8×27	44	2
100A (4B)	ANSI150	229	157	88	190.5	8×20	23.9	1.6
	ANSI300	254	157	88	200.2	8×23	31.8	1.6
	ANSI600	273	157	88	215.9	8×26	44.5	6.4
	ANSI900	292	157	88	235	8×32	50.9	6.4
	ANSI1500	311	157	88	241.3	8×35	60.4	6.4
	ANSI2500	356	157	88	273	8×42	82.6	6.4

※ JPI flange is the same size as ANSI flange.

※ ϕd is for diaphragm material SUS316L.

CODE TABLE

No. Item	1	5	6	7	2~4,8~11	Description	
Model	Range code	Flange standard	Flange extension	capillary length	Option code		
EPR-N7S						Water-proof, diaphragm material ; SUS316L, wetted parts other than diaphragm ; SUS316, without indicator.	
	G20						
	G100						
	G500						
	HG20						HART® communication type
	HG100						
HG500							
		80J10				Flange standard ; JIS 10K 80A RF wafer type equivalent flange	
			E0			Flange extension length : 0mm	
				5		Capillary tube length : 5m	
					- □ - □	Select a necessary code alone among those in the optional code table below.	

OPTION CODE

No.	item	code	Description		
2	Adjustable range	C()	Enter adjustable range and unit in parenthesis		
3	Certification	XC	TIIS Explosion proof standard approval		
		FM	FM explosion proof approval		
4	Indicator	M	With Digital indicator		
		MJ()	Digital indicator and actual scale display Fill in () with scale and unit mark		
5	Flange standard	JIS	25J10	Flange standard JIS 10K 25A RF equivalent wafer type (only for E0)	
			25J20	Flange standard JIS 20K 25A RF equivalent wafer type (only for E0)	
			25J30	Flange standard JIS 30K 25A RF equivalent wafer type (only for E0)	
			25J40	Flange standard JIS 40K 25A RF equivalent wafer type (only for E0)	
			25J63	Flange standard JIS 63K 25A RF equivalent wafer type (only for E0)	
			40J10	Flange standard JIS 10K 40A RF equivalent wafer type	
			40J20	Flange standard JIS 20K 40A RF equivalent wafer type	
			40J30	Flange standard JIS 30K 40A RF equivalent wafer type	
			40J40	Flange standard JIS 40K 40A RF equivalent wafer type	
			40J63	Flange standard JIS 63K 40A RF equivalent wafer type	
			50J10	Flange standard JIS 10K 50A RF equivalent wafer type	
			50J20	Flange standard JIS 20K 50A RF equivalent wafer type	
			50J30	Flange standard JIS 30K 50A RF equivalent wafer type	
			50J40	Flange standard JIS 40K 50A RF equivalent wafer type	
			50J63	Flange standard JIS 63K 50A RF equivalent wafer type	
			80J20	Flange standard JIS 20K 80A RF equivalent wafer type	
			80J30	Flange standard JIS 30K 80A RF equivalent wafer type	
			80J40	Flange standard JIS 40K 80A RF equivalent wafer type	
			80J63	Flange standard JIS 63K 80A RF equivalent wafer type	
			100J10	Flange standard JIS 10K 100A RF equivalent wafer type	
			100J20	Flange standard JIS 20K 100A RF equivalent wafer type	
			100J30	Flange standard JIS 30K 100A RF equivalent wafer type	
			100J40	Flange standard JIS 40K 100A RF equivalent wafer type	
			100J63	Flange standard JIS 63K 100A RF equivalent wafer type	
			ANSI	25A150	Flange standard ANSI 150 1B RF equivalent wafer type (only for E0)
				25A300	Flange standard ANSI 300 1B RF equivalent wafer type (only for E0)
				25A400	Flange standard ANSI 400 1B RF equivalent wafer type (only for E0)
				25A600	Flange standard ANSI 600 1B RF equivalent wafer type (only for E0)
		25A900		Flange standard ANSI 900 1B RF equivalent wafer type (only for E0)	
		25A1500		Flange standard ANSI 1500 1B RF equivalent wafer type (only for E0)	
		25A2500		Flange standard ANSI 2500 1B RF equivalent wafer type (only for E0)	
		40A150		Flange standard ANSI 150 1.5B RF equivalent wafer type	
		40A300		Flange standard ANSI 300 1.5B RF equivalent wafer type	
		40A400		Flange standard ANSI 400 1.5B RF equivalent wafer type	
		40A600		Flange standard ANSI 600 1.5B RF equivalent wafer type	
		40A900		Flange standard ANSI 900 1.5B RF equivalent wafer type	
		40A1500		Flange standard ANSI 1500 1.5B RF equivalent wafer type	
		40A2500		Flange standard ANSI 2500 1.5B RF equivalent wafer type	
		50A150		Flange standard ANSI 150 2B RF equivalent wafer type	
		50A300		Flange standard ANSI 300 2B RF equivalent wafer type	
		50A400		Flange standard ANSI 400 2B RF equivalent wafer type	
		50A600		Flange standard ANSI 600 2B RF equivalent wafer type	
		50A900		Flange standard ANSI 900 2B RF equivalent wafer type	
		50A1500		Flange standard ANSI 1500 2B RF equivalent wafer type	
		50A2500		Flange standard ANSI 2500 2B RF equivalent wafer type	
		80A150		Flange standard ANSI 150 3B RF equivalent wafer type	
		80A300		Flange standard ANSI 300 3B RF equivalent wafer type	
		80A400		Flange standard ANSI 400 3B RF equivalent wafer type	
		80A600		Flange standard ANSI 600 3B RF equivalent wafer type	
		80A900		Flange standard ANSI 900 3B RF equivalent wafer type	
		80A1500		Flange standard ANSI 1500 3B RF equivalent wafer type	
		80A2500		Flange standard ANSI 2500 3B RF equivalent wafer type	
		100A150		Flange standard ANSI 150 4B RF equivalent wafer type	
		100A300		Flange standard ANSI 300 4B RF equivalent wafer type	
		100A400		Flange standard ANSI 400 4B RF equivalent wafer type	
		100A600		Flange standard ANSI 600 4B RF equivalent wafer type	
100A900	Flange standard ANSI 900 4B RF equivalent wafer type				
100A1500	Flange standard ANSI 1500 4B RF equivalent wafer type				
100A2500	Flange standard ANSI 2500 4B RF equivalent wafer type				

			25JP150	Flange standard JPI 150 1B RF equivalent wafer type	(only for E0)
			25JP300	Flange standard JPI 300 1B RF equivalent wafer type	(only for E0)
			25JP400	Flange standard JPI 400 1B RF equivalent wafer type	(only for E0)
			25JP600	Flange standard JPI 600 1B RF equivalent wafer type	(only for E0)
			25JP900	Flange standard JPI 900 1B RF equivalent wafer type	(only for E0)
			25JP1500	Flange standard JPI 1500 1B RF equivalent wafer type	(only for E0)
			25JP2500	Flange standard JPI 2500 1B RF equivalent wafer type	(only for E0)
			40JP150	Flange standard JPI 150 1.5B RF equivalent wafer type	
			40JP300	Flange standard JPI 300 1.5B RF equivalent wafer type	
			40JP400	Flange standard JPI 400 1.5B RF equivalent wafer type	
			40JP600	Flange standard JPI 600 1.5B RF equivalent wafer type	
			40JP900	Flange standard JPI 900 1.5B RF equivalent wafer type	
			40JP1500	Flange standard JPI 1500 1.5B RF equivalent wafer type	
			40JP2500	Flange standard JPI 2500 1.5B RF equivalent wafer type	
			50JP150	Flange standard JPI 150 2B RF equivalent wafer type	
			50JP300	Flange standard JPI 300 2B RF equivalent wafer type	
			50JP400	Flange standard JPI 400 2B RF equivalent wafer type	
			50JP600	Flange standard JPI 600 2B RF equivalent wafer type	
			50JP900	Flange standard JPI 900 2B RF equivalent wafer type	
			50JP1500	Flange standard JPI 1500 2B RF equivalent wafer type	
			50JP2500	Flange standard JPI 2500 2B RF equivalent wafer type	
			80JP150	Flange standard JPI 150 3B RF equivalent wafer type	
			80JP300	Flange standard JPI 300 3B RF equivalent wafer type	
			80JP400	Flange standard JPI 400 3B RF equivalent wafer type	
			80JP600	Flange standard JPI 600 3B RF equivalent wafer type	
			80JP900	Flange standard JPI 900 3B RF equivalent wafer type	
			80JP1500	Flange standard JPI 1500 3B RF equivalent wafer type	
			80JP2500	Flange standard JPI 2500 3B RF equivalent wafer type	
			100JP150	Flange standard JPI 150 4B RF equivalent wafer type	
			100JP300	Flange standard JPI 300 4B RF equivalent wafer type	
			100JP400	Flange standard JPI 400 4B RF equivalent wafer type	
			100JP600	Flange standard JPI 600 4B RF equivalent wafer type	
			100JP900	Flange standard JPI 900 4B RF equivalent wafer type	
			100JP1500	Flange standard JPI 1500 4B RF equivalent wafer type	
			100JP2500	Flange standard JPI 2500 4B RF equivalent wafer type	
6	Flange extension length	E50	Extension length 50mm		
		E100	Extension length 100mm		
		E150	Extension length 150mm		
		E0TDS	Extension length 0mm with FEP Diaphragm cover		
7	Capillary tube length	1	1m		
		2	2m		
		3	3m		
		4	4m		
		6	6m		
		7	7m		
		8	8m		
		9	9m		
		10	10m		
		1U	1m Back-drawn capillary type		
		2U	2m Back-drawn capillary type		
		3U	3m Back-drawn capillary type		
		4U	4m Back-drawn capillary type		
		5U	5m Back-drawn capillary type		
		6U	6m Back-drawn capillary type		
		7U	7m Back-drawn capillary type		
		8U	8m Back-drawn capillary type		
		9U	9m Back-drawn capillary type		
		10U	10m Back-drawn capillary type		
8	Material	316L	Diaphragm ; SUS316L, Other wetted parts ; SUS316L		
		HC	Diaphragm ; Hastelloy C, Other wetted parts ; Hastelloy C		
		TA	Diaphragm ; Tantalum, Other wetted parts ; Tantalum(only for E0)		
		AU316	Diaphragm ; SUS316L with gold plate, Other wetted parts ; SUS316		
9	Filled liquid	F0	Fluorine oil		
		100CS	Silicone oil for sanitary use		
		PG	Propylene glycol		
10	No oil	NL	No-oil finish		
		NLW	No-oil and dehydrating finish		
11	Process fluid conditions	HT	High temperature type		
		LT	Low temperature type		
		V	Vacuum type		
		VT	High temperature and vacuum type		
		SVT	High temperature and high vacuum type (Diaphragm material : Hastelloy C)		

Note) Please select the material of the diaphragm in consideration of corrosion resistance.

Hastelloy C might generate the hydrogen permeation by the galvanizing steel pipe piping and the water quality, etc., and cause the output shift and the transformation of the diaphragm.

Please select small SUS316L of the hydrogen permeation when there is no problem in corrosion resistance.

- HART® is a registered trademark of the HART Communication Foundation.
- Be sure to read the User's Manual to ensure correct, safe use.
- Some specifications and design are subject to change with or without notice for improvement of quality and performance.