REMOTE SEAL TYPE
PRESSURE TRANSMITTER

DATA SHEET FKB···5

The FCX-AIII pressure transmitter accurately measures gauge pressure and transmits a proportional 4 to 20mA signal.
The transmitter utilizes a unique micromachined capacitance silicon sensor with state-of-the-art microprocessor technology to provide exceptional performance and functionality.
Totally welded construction of the seals assures excellent reliability in high temperature and highly corrosive process conditions.

FEATURES

1. High accuracy
   0.2% accuracy for all calibrated spans is a standard feature for all GP models covering 1.3kPa {0.013bar} range to 50000kPa {500bar} high pressure range. 0.1% accuracy is available as option. Fuji's micro-capacitance silicon sensor assures this accuracy for all elevated or suppressed calibration ranges without additional adjustment.
2. Minimum environmental influence
   The "Advanced Floating Cell" design which protects the pressure sensor against changes in temperature, and overpressure substantially reduces total measurement error in actual field applications.
3. Fuji/HART® bilingual communications protocol and FOUNDATION™ fieldbus and Profibus™ compatibility
   FCX-AIII series transmitter offers bilingual communications to speak both Fuji proprietary protocol and HART®. Any HART® compatible devices can communicate with FCX-AIII. Further, by upgrading electronics FOUNDATION™ fieldbus and Profibus™ are also available.
4. Application flexibility
   Various options that render the FCX-AIII suitable for almost any process applications include:
   – Full range of hazardous area approvals
   – Built-in RFI filter and lightning arrester
   – 5-digit LCD meter with engineering unit
   – Stainless steel electronics housing
   – Wide selection of materials
   – High temperature, high vacuum seals
5. Burnout current flexibility (Under Scale: 3.2 to 4.0mA, Over Scale: 20.0 to 21.6mA)
   Burnout signal level is adjustable using Model FXW Hand Held Communicator (HHC) to comply with NAMUR NE43.
6. Dry calibration without reference pressure
   Thanks to the best combination of unique construction of mechanical parts (Sensor unit) and high performance electronics circuit (Electronics unit), reliability of dry calibration without reference pressure is at equal level as wet calibration.

SPECIFICATIONS

Functional specifications

Service: Liquid, gas, or vapour

Span, range, and overrange limit:

Type	Span limit [kPa]{bar}		Range limit [kPa]{bar}	Overrange limit [MPa] {bar}
	Min.	Max.		
FKB□□1	1.3 {0.013}	130 {1.3}	−100 to +130 {−1 to +1.3}	1 {10}
FKB□□2	5 {0.05}	500 {5}	−100 to +500 {−1 to +5}	1.5 {15}
FKB□□3	30 {0.3}	3000 {30}	−100 to +3000 {−1 to +30}	9 {90}
FKB□□4	100 {1}	10000 {100}	−100 to +10000 {−1 to +100}	15 {150}
FKB□□5	500 {5}	50000 {500}	−100 to +50000 {−1 to +500}	75 {750}

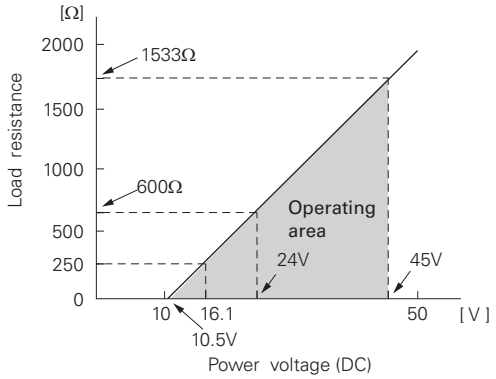
Remark: To minimize environmental influence, span should be greater than 1/40 of the max. span in most applications.

– Lower range limit (vacuum limit) ;
  Silicone fill sensor: See Fig. 1, Fig. 2
  Fluorinated fill sensor: Atmospheric pressure
– Conversion factors to different units;
  $1MPa=10^3kPa=10bar=10.19716kgf/cm^2=145.0377psi$
  $1kPa=10mbar=101.9716mmH_2O=4.01463inH_2O$

Output signal: 4 to 20mA DC with digital signal superimposed on the 4 to 20mA signal.

Power supply: Transmitter operates on 10.5V to 45V DC at transmitter terminals.
10.5V to 32V DC for the units with optional arrester.

Load limitations: see figure below



Note: For communication with HHC[1] (Model: FXW), min. of 250Ω is required.

Hazardous locations: SEE TABLE2

Zero/span adjustment:
Zero and span are adjustable from the HHC[1]. Zero and span are also adjustable externally from the adjustment screw (Span adjustment is not available with 9th digit code "L, P, Q, S").

Damping: Adjustable from HHC or local adjustment unit with LCD display.
The time constant is configurator between
0.06 to 32 seconds.

Zero elevation/suppression:
Zero can be elevated or suppressed within the specified range limit of each sensor model.

Normal/reverse action:
Selectable from HHC[1].

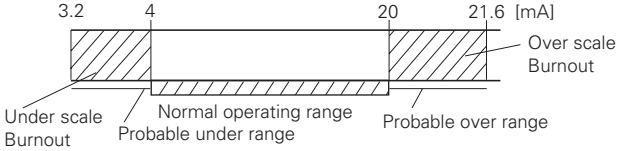
Indication: Analog indicator or 5-digit LCD meter, as specified.

Burnout direction: Selectable from HHC[1]
If self-diagnostic detect transmitter failure, the analog signal will be driven to either "Output Hold", "Output Overscale" or "Output Underscale" modes.

"Output Hold":
Output signal is hold as the value just before failure happens.

"Output Overscale":
Adjustable within the range 20.0mA to 21.6mA from HHC[1]

"Output Underscale":
Adjustable within the range 3.2mA to 4.0mA from HHC[1]



Output Limits comforming the NAMUR NE43 by order.

Loop-check output:
Transmitter can be configured to provide constant signal 3.2mA through 21.6mA by HHC[1].

Temperature limit:
Ambient: –40 to +85°C
(–20 to +80°C for LCD indicator)
(–40 to +60°C for arrester option)
(–10 to +60°C for fluorinated oil fill transmitter)
(–10 to +85°C for silicone oil "H", "S", "K") *)
(+20 to +85°C for silicone oil "J", "T") *)
*) In case of capillary length is more than 7m, max. temperature is +55°C.
For explosionproof units (flameproof or intrinsic safety), ambient temperature must be within the limits specified by each standard.

Process:

Fill fluid	Code in the 13th digit of "Code symbols"	Process temperature	Lower limit of static press.
Fluorinated oil	W, A and D	–20 to 120°C	Atmospheric pressure
Silicone oil	H	–15 to 250°C	
	J	20 to 300°C	
	Y and G	–40 to 180°C	2.7kPa abs {20mmHg abs}
	S	–15 to 250°C	
	T	20 to 300°C	
	K	–15 to 200°C	0.13kPa abs {1mmHg abs} or more

Storage: –40 to +90°C

Humidity limit: 0 to 100% RH

Communication: With HHC[1] (Model FXW, consult Data Sheet No. EDS8-47), following items can be remotely displayed or configured.
Note: HHC's version must be higher than 7.0 (or FXW □□□□1–□4), for FCX-AⅢ.

Local configurator with LCD display (option):
Local configurator with 3 push button and LCD display can support following items.

Items	By communication with FXW		By local configurator (with 3 push button)	
	Display	Set	Display	Set
Tag No.	*v*	*v*	*v*	*v*
Model No.	*v*	*v*	*v*	*v*
Serial No. & Software Version	*v*	—	*v*	—
Engineering unit	*v*	*v*	*v*	*v*
Range limit	*v*	—	*v*	—
Measuring range	*v*	*v*	*v*	*v*
Damping	*v*	*v*	*v*	*v*
Output mode	*v*	—	*v*	—
Burnout direction	*v*	*v*	*v*	*v*
Calibration	*v*	*v*	*v*	*v*
Output adjust	—	*v*	—	*v*
Data	*v*	—	*v*	—
Self diagnoses	*v*	—	*v*	—
Printer (In case of FXW with printer option)	*v*	—	—	—
External switch lock	*v*	*v*	*v*	*v*
Transmitter display	*v*	*v*	*v*	*v*
Linearize	*v*	*v*	—	—
Rerange	*v*	*v*	*v*	*v*
Saturate current	*v*	*v*	*v*	*v*
Write protect	*v*	*v*	*v*	*v*
History – Calibration history – Ambient temperature history	 *v* *v*	 *v* —	 *v* *v*	 *v* —

EMC Conformity: EN61326-1: 2006 CE

(Note) (1) HHC: Hand Held Communicator

Performance specifications

Reference conditions, silicone oil fill, 316SS isolating diaphragms, 4 to 20mA analog output in linear mode.

Accuracy rating: (including linearity, hysteresis, and repeatability)

(Standard)

For spans greater than 1/10 of URL: ±0.2% of span

For spans below 1/10 of URL:

$$\pm\left(0.1+0.1\ \frac{0.1\times \mathrm{URL}}{\mathrm{Span}}\right)\ \%\ \text{of span}$$

(Option) (Code; 21th digit H,K)

Not available for Max span 50000kPa model.

For spans greater than 1/10 of URL: ±0.1% of span

For spans below 1/10 of URL:

$$\pm\left(0.05+0.05\ \frac{0.1\times \mathrm{URL}}{\mathrm{Span}}\right)\ \%\ \text{of span}$$

Stability: ±0.2% of upper range limit (URL) for 10 years.

Temperature effect:

Effect per 28°C change between the limits of -40°C and +85°C

(Standard) Zero shift: $\pm\left(0.35\ \frac{\mathrm{URL}}{x}\right)\%$

Total effect: $\pm\left(0.5\ \frac{\mathrm{URL}}{x}\right)\%$

(Option) (Code; 21th digit J,K)

Zero shift:

±0.3% ($x \geq 1/4$ URL)

$\pm\left(0.1+0.2\ \frac{0.25\times \mathrm{URL}}{x}\right)\%$ ($x < 1/4$ URL)

Total effect:

±0.4% ($x \geq 1/4$ URL)

$\pm\left(0.2+0.2\ \frac{0.25\times \mathrm{URL}}{x}\right)\%$ ($x < 1/4$ URL)

Overrange effect: Zero shift; 0.2% of URL for any overrange to maximum limit

Supply voltage effect:

Less than 0.005% of calibrated span per 1V

Update rate: 60 msec

Step response: Time constant: 0.3s (at 23°C)
Dead time: 0.12s
(without electrical damping)

Dielectric strength:

500V AC, 50/60Hz 1 min., between circuit and earth.

Insulation resistance:

More than 100MΩ/500V DC.

Internal resistance for external field indicator:

12Ω or less

Physical specifications

Electrical connections:

G1/2, 1/2-14 NPT, Pg13.5, or M20 × 1.5 conduit, as specified.

Process connections:

JIS, ANSI, or DIN raised face flanges or screw connection JIS/ISO G1 external thread.
Refer to "Code symbols."

Process-wetted parts material:

Diaphragm: 316L stainless steel, Hastelloy-C Monel, Tantalum, Titanium or Zirconium

Flange face: 316 stainless steel, Hastelloy-C Monel, Tantalum, Titanium or Zirconium

Extension: 316 stainless steel, Hastelloy-C (Refer to "Code symbols")

Non-wetted parts material:

Electronics housing: Low copper die-cast aluminum alloy finished with polyester coating (standard), or 316 stainless steel (ASTM CF8M), as specified.

Capillary: In case of 11th code "D, E, L, F, M, N, P", PVC armored stainless steel.
In case of 11th code "Q, R, S, T, V, W, X", stainless steel armored stainless steel.

Mounting flange: 304 stainless steel or carbon steel, as specified

Fill fluid: Silicone oil (standard) or fluorinated oil

Mounting bracket: 304 stainless steel

Environmental protection:

IEC IP67 and NEMA 6/6P

Mounting: On 60.5mm (JIS 50A) pipe using mounting bracket, direct wall mounting

Mass {weight}: Transmitter approximately 8.2 to 11.2kg without options.

Add; 0.5kg for mounting bracket
4.5kg for stainless steel housing option
1.5kg per 50mm extension of diaphragm

Optional features

Indicator: A plug-in analog indicator (2.5% accuracy).
An optional 5-digit LCD meter with engineering unit is also available.

Local configurator with LCD display:
An optional 5 digits LCD meter with 3 push buttons can support items as using communication with FXW.

Arrester: A built-in arrester protects the electronics from lightning surges.
Lightning surge immunity:
4kV (1.2 × 50μs)

Oxygen service: Special cleaning procedures are followed throughout the process to maintain all process wetted parts oil-free.
The fill fluid is fluorinated oil.

Chlorine service: Oil-free procedures as above. Includes fluorinated oil for fill.

Degreasing: Process-wetted parts are cleaned, but the fill fluid is standard silicone oil. Not for use on oxygen or chlorine measurement.

Vacuum and high temperature service:
Special silicone oil and filling procedure are applied.
See Fig.1 and Fig.2.

Optional tag plate:
An extra stainless steel tag for customer tag data is wired to the transmitter.

Coating of cell: Cell's surface is finished with epoxy/polyurethane double coating. Specify if environment is extremely corrosive.

ACCESSORIES

Hand-held communicator:
(Model FXW, refer to Data Sheet No. EDS8-47)

ORDERING INFOMATION

When ordering this instrument, specify.
1. CODE SYMBOLS
2. Measuring range.
3. Output orientation (burnout direction) when abnormality is occurred in the transmitter.
   Hold / Overscale / Underscale
   Unless otherwise specified, output hold function is supplied.
4. Indication method (indicated value and unit) in case of the actual scale (code D, H, P, S on 9th digit).
5. Tag No. (up to 14 alphanumerical characters), if required.

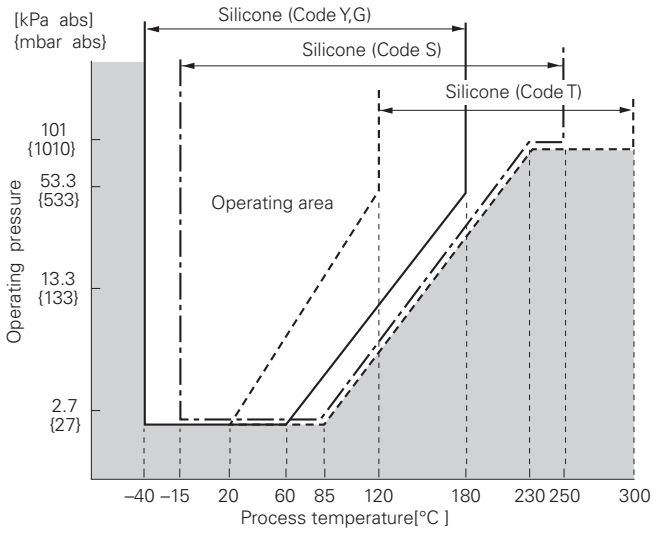


Fig. 1 Relation between process temperature and operating pressure

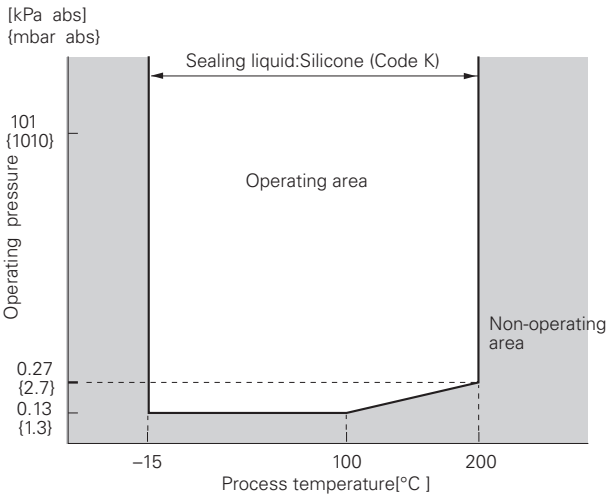


Fig. 2 Relation between process temperature and operating pressure

CODE SYMBOLS

Digit	Description			Note	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 21 ← Digit No. of code
4	<Conduit connection>				F K B 5 - -
	Conduit connection	Case type			
	G1/2	T type			5
	1/2-14NPT	T type			6
	Pg13.5	T type			7
	M20×1.5	T type			8
	G1/2	L type			S
	1/2-14NPT	L type			T
	Pg13.5	L type			V
	M20×1.5	L type			W
5	<Flanges>				
	Mounting flange	Flange size and rating	Ranges 1 2 3 4 5		
	304 stainless steel	JIS 10K 80A	* *		0
		JIS 10K 100A	* *		1
		ANSI/JPI 150LB "3"	* *		3
		ANSI/JPI 150LB "4"	* *		4
		DIN PN16/40 DN80	* *		6
		DIN PN16 DN100	* *		7
		JIS 20K 80A	* * *		9
		JIS 30K 80A	* * *		M
		ANSI/JPI 300LB 3B	* * *		S
		ANSI/JPI 600LB 3B	* * *		T
	Carbon steel	JIS 10K 80A	* *		A
		JIS 10K 100A	* *		B
		ANSI/JPI 150LB "3"	* *		D
		ANSI/JPI 150LB "4"	* *		E
		DIN PN16/40 DN80	* *		G
		DIN PN16 DN100	* *		H
		Screw type, JIS/ISO G1	* *		K
	316 stainless steel	ANSI/JPI 150LB 3B	* * *		V
		ANSI/JPI 150LB 4B	* * *		W
		ANSI/JPI 300LB 3B	* * *		X
		ANSI/JPI 300LB 4B	* * *		Y
		ANSI/JPI 600LB 3B	* * *		U
	None (wafer type)	3 inch wafer	* *		P
		4 inch wafer	* *		Q
6	<Span limit (*2) [kPa]{bar}>			Note 2	1
	1.3…130 {0.013…1.3}				1
	5…500 {0.05…5}				2
	30…3000 {0.3…30}				3
	100…10000 {1…100} } Available only with material code "V" (*1)			Note 1	4
	500…50000 {5…500} } Available only with material code "V" (*1)			Note 1	5
7	<Material/diaphragm extension>				
	Diaphragm	Flange face	Diaph. extension [mm]		
	316L stainless steel	316 stainless steel	0		V (*1)
			50 (*3)	Note 3	A
			100 (*3)	Note 3	B
			150 (*3)	Note 3	C
			200 (*3)	Note 3	D
	Hastelloy-C	Hastelloy-C	0		H
			50 (*3)	Note 3	F
			100 (*3)	Note 3	G
			150 (*3)	Note 3	K
			200 (*3)	Note 3	L
	316L stainless +Au coating	316 stainless steel	0		J
	Hastelloy C	316 stainless steel	0		W
	Monel	Monel	0		M
	Tantalum	Tantalum	0		T
	Titanium	Titanium	0 (*4)	Note 4	P
	Zirconium	Zirconium	0 (*4)	Note 4	R

Note1: (*1) If range 4 or 5 is selected, specify material "V" in any cases.
Note2: (*2) 100: 1 turn down is possible, but should be used at a span greater than 1/40 of the maximum span for better performance.
Note3: (*3) Available for 5th digit code "1","4","7","B","E","H","Q", "W", "Y", when 13th digit code "S", "T", "K".
Note4: (*4) Available for 6th digit code "2", "3" and 5th digit "0", "3", "6", "9", "A", "D", "G", "P", "M", "S", "T", "U", "V", "X".

Digit	Description				Note	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 21 ← Digit No. of code
						F K B 5 - - - -
9	<Indicator and arrester>					
	Indicator		Arrester			
	None		None			A
	Analog, 0 to 100% linear scale		None			B
	Analog, custom scale		None			D
	None		Yes			E
	Analog, 0 to 100% linear scale		Yes			F
	Analog, custom scale		Yes			H
	Digital, 0 to 100% linear scale		None			L
	Digital, custom scale		None			P
	Digital, 0 to 100% linear scale		Yes			Q
	Digital, custom scale		Yes			S
	Digital, 0 to 100% linear scale (Local configurator unit with LCD display)		None			1
	Digital, custom scale (Local configurator unit with LCD display)		None			2
	Digital, 0 to 100% linear scale (Local configurator unit with LCD display)		Yes			4
	Digital, custom scale (Local configurator unit with LCD display)		Yes			5
10	<Approvals for hazardous locations>					
	None (for ordinary locations)					A
	TIIS, Flameproof (Conduit seal) (*11)				Note 11	B
	TIIS, Flameproof (Cable gland seal) (*11)				Note 11	C
	TIIS, Intrinsic safety					G
	FM, Flameproof (or explosionproof) (*12)				Note 12	D
	FM, Intrinsic safety and nonincentive					H
	FM Combined of flameproof and intrinsic safety (*12)				Note 12	V
	ATEX Flameproof (*13)				Note 13	X
	ATEX Intrinsic safety					K
	ATEX Type n					P
	ATEX Combined of flameproof and intrinsic safety (*13)				Note 13	M
	IECEx Scheme, Flameproof (*13)				Note 13	R
	IECEx Scheme, Intrinsic safety					T
	CSA, Flameproof (or explosionproof) (*14)				Note 14	E
	CSA, Intrinsic safety and nonincentive					J
	NEPSI, Flameproof (or exprosionproof) (*12)				Note 12	F
	NEPSI, Intrinsic safety (Entity)					S
	NEPSI, Combined of flameproof and intrinsic safety (*12)				Note 12	U
11	<Capillary and mounting bracket>					
	Capillary	Mounting bracket	Armor of capillary			
	1.5 m	304 Stainless steel	PVC	(*5)	Note 5	D
	3	304 Stainless steel	PVC	(*5)	Note 5	E
	5	304 Stainless steel	PVC	(*5)	Note 5	L
	6	304 Stainless steel	PVC	(*5)	Note 5	F
	7	304 Stainless steel	PVC	(*5)	Note 5	M
	8	304 Stainless steel	PVC	(*5)	Note 5	N
	10	304 Stainless steel	PVC	(*5)	Note 5	P
	1.5	304 Stainless steel	Stainless steel	(*6)	Note 6	Q
	3	304 Stainless steel	Stainless steel	(*6)	Note 6	R
	5	304 Stainless steel	Stainless steel	(*6)	Note 6	S
	6	304 Stainless steel	Stainless steel	(*6)	Note 6	T
	7	304 Stainless steel	Stainless steel	(*6)	Note 6	V
	8	304 Stainless steel	Stainless steel	(*6)	Note 6	W
	10	304 Stainless steel	Stainless steel	(*6)	Note 6	X
12	<Options>					
	Extra SS tag plate		Stainless steel elec. housing		Coating of cell	
	None		None		None	Y
	Yes		None		None	B
	None	(*7)	None		Yes	M
	Yes		None		Yes	N
	None		Yes (*8)		Yes	P
	Yes		Yes (*8)		Yes	Q

Note5: (*5) Available for 13th digit code "Y, W, G, A, D". Inquire about in case of 13th other code.
Note6: (*6) Available for all 13th digit code.
Note7: (*7) Customer tag number can be engraved on standard stainless steel name plate. If extra tag plate is required, select "Yes".
Note8: (*8) Not available for 10th digit code "B", "C".
Note11: (*11) Available for 4th digit code "5", "S".
Note12: (*12) Not available for 4th digit code "8", "W".
Note13: (*13) Available for 4th digit code "6", "8", "T", "W".
Note14: (*14) Available for 4th digit code "6", "T".

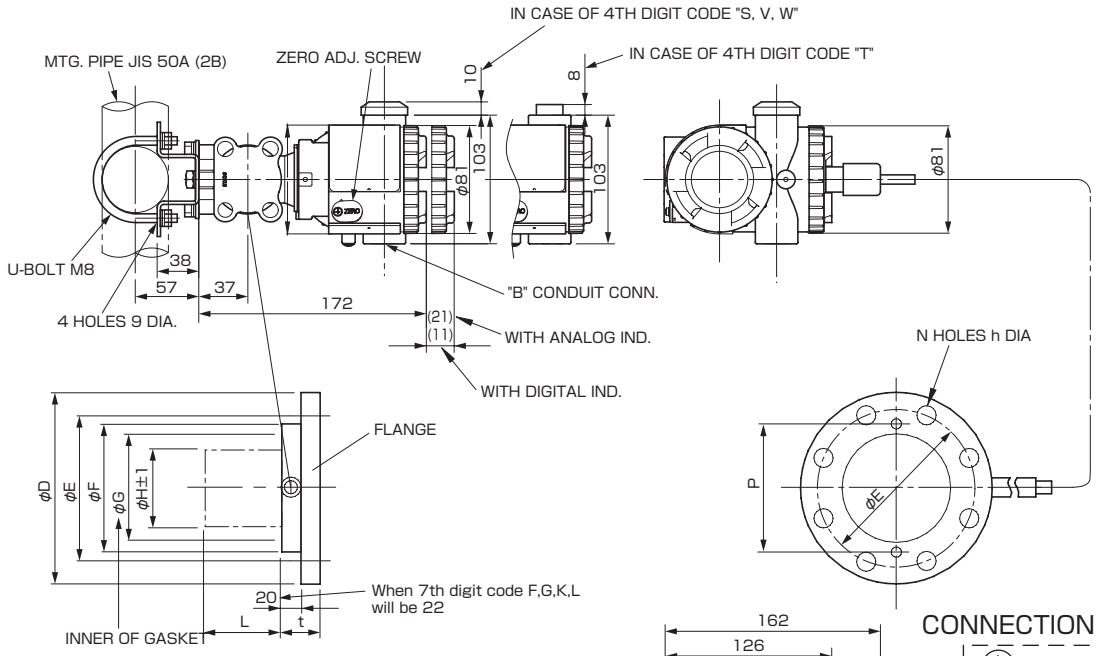
Digit	Description	Note	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 21 ← Digit No. of code
13	<Special applications and fill fluid> Treatment / Fill fluid Standard / Silicone oil Standard / Fluorinated oil Degreasing / Silicone oil Oxygen service / Fluorinated oil (7th digit code "V", "A", "B", "C" and "D") Chlorine service / Fluorinated oil (7th digit code "H", "F", "G", "K", "L" and "T") High temp. 250°C / Silicone oil High temp. 300°C / Silicone oil High temp. and vacuum (250°C) / Silicone oil High temp. and vacuum (300°C) / Silicone oil High temp. and high vacuum / Silicone oil Available for 7th digit code "V", "A", "B", "C", "D", "H", "F", "G", "K" and "L". (*15) Available for 6th digit code "1", "2" or "3". In case of 13th digit code "S", "T", "K", available for 6th digit code "2", "3" only.	Note 15	F K B 5 – – – Y W G A D H J S T K
14	<Teflon membrane> None Yes (Available for the 5th digit code "0", "3", "6", "A", "D", "G", "P" and 7th digit code "V", "H", "M", "T", "P", "R". Not available for the 13th digit code "H", "J", "S", "T", "K".)		Y C
15	<Bolt/nut> (*9) None (6th digit code "1", "2", "3") Cr-Mo alloy hexagon socket head cap screw/carbon steel nut (6th digit code "4", "5") Cr-Mo alloy hexagon bolt/carbon steel unit (6th digit code "4", "5") 304 stainless steel/304 stainless steel (6th digit code "4") 630 stainless steel/304 stainless steel (6th digit code "5") 316 stainless steel/316 stainless steel (6th digit code "4")	Note 9	Y A B E F U
21	<Other options> (*10) High accuracy type / Instruction manual attached Low temperature effect type / Instruction manual attached H+J / Instruction manual attached Instruction manual unattached High accuracy type / Instruction manual unattached Low temperature effect type / Instruction manual unattached T+U / Instruction manual unattached	Note 10	H J K L T U V

Note9: (*9) In case of tropical use, select stainless bolts and nuts.
Note10: (*10) If other option is not necessary, 21st digit code is blank.
In case of 21st digit code is blank, instruction manual attached.
Note15: (*15) Treatment; Standard

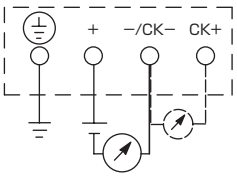
OUTLINE DIAGRAM (Unit:mm)

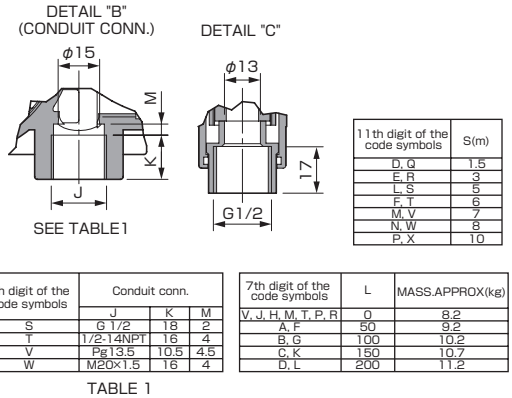
< CODE SYMBOLS : FKB [S V / T W] [0 4 D P / 1 A E Q / 3 B K] [1 / 2 / 3] □5-□□□□□-□□-□>

< Flange type >



CONNECTION DIAGRAM



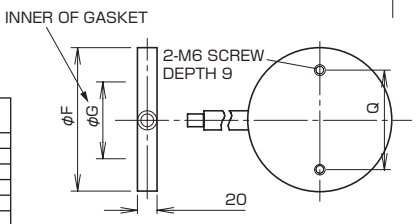


11th digit of the code symbols	S(m)
D, Q	1.5
E, R	3
L, S	5
F, T	6
M, V	7
N, W	8
P, X	10

4th digit of the code symbols	Conduit conn.		
	J	K	M
S	G 1/2	18	2
T	1/2-14NPT	16	4
V	Pg13.5	10.5	4.5
W	M20×1.5	16	4

7th digit of the code symbols	L	MASS.APPROX(kg)
V, J, H, M, T, P, R	0	8.2
A, F	50	9.2
B, G	100	10.2
C, K	150	10.7
D, L	200	11.2

TABLE 1



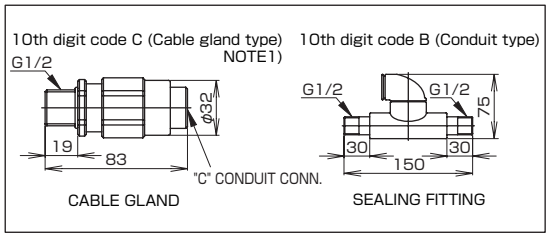
<WAFER TYPE>

	Q
80A, 3B	116
100A, 4B	141

NOTE) The measurments "t" will be added 2mm to each measurements in case of 7th digit of F,G,L,K.

5th digit of the code symbols	φD	φE	φF	φG	φH±1	t NOTE)	P	N-φh	FLANGE
0, A	185	150	126	100	73	38	116	8-19	JIS-10K-80A
9	200	160	126	100	73	42	116	8-23	JIS-20K-80A
M	210	170	126	100	73	48	116	8-23	JIS-30K-80A
1, B	210	175	151	103	96	38	141	8-19	JIS-10K-100A
3, D, V	191	152.5	126	100	73	44	116	4-20	ANSI 150LB 3B
S, X	210	168	126	100	73	49	116	8-23	ANSI 300LB 3B
T, U	210	168	126	100	73	52	116	8-23	ANSI 600LB 3B
4, E, W	229	190.5	151	103	96	44	141	8-20	ANSI 150LB 4B
Y	254	200	151	103	96	52	141	8-23	ANSI 300LB 4B
6, G	200	160	126	100	73	44	116	8-18	DIN PN40 DN80
7, H	220	180	151	103	96	40	141	8-18	DIN PN16 DN100

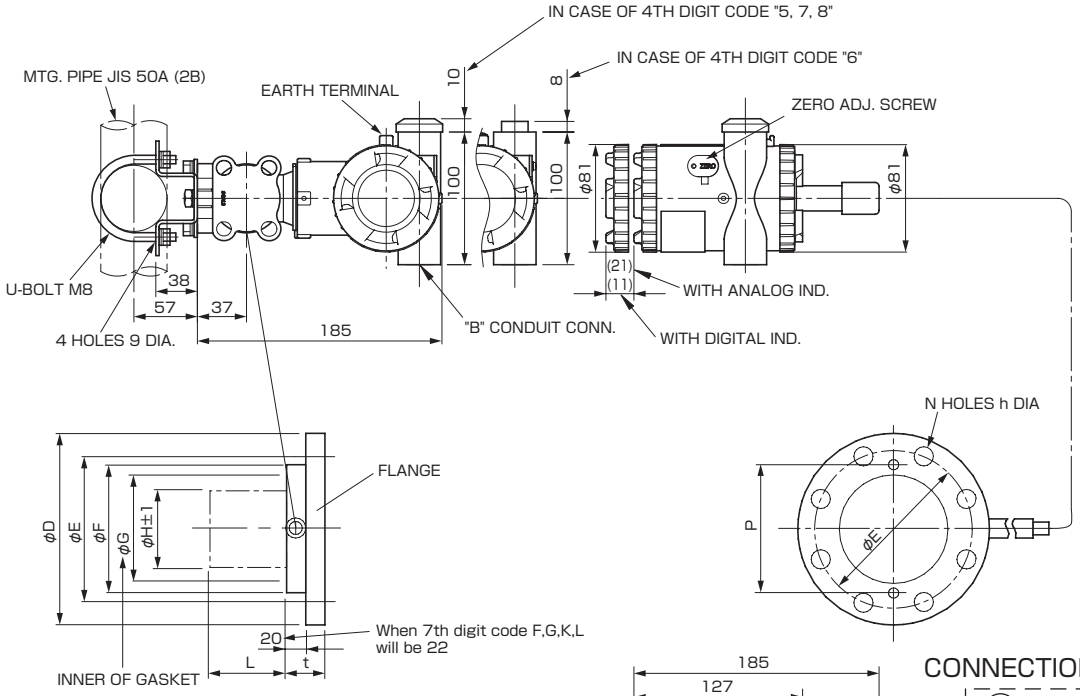
OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE1) IN CASE OF 10TH CODE "C", φ11 CABLE IS SUITBLE.

< CODE SYMBOLS : FKB [5 7 / 6 8] [0 4 D P / 1 A E Q / 3 B K] [1 / 2 / 3] □5-□□□□□-□□-□>

< Flange type >



11th digit of the code symbols	S(m)
D, Q	1.5
E, R	3
L, S	5
F, T	6
M, V	7
N, W	8
P, X	10

4th digit of the code symbols	Conduit conn.		
	J	K	M
5	G 1/2	18	2
6	1/2-14NPT	16	4
7	Pg13.5	10.5	4.5
8	M20×1.5	16	4

TABLE 1

7th digit of the code symbols	L	MASS.APPROX(kg)
V, J, H, M, T, P, R	0	8.2
A, F	50	9.2
B, G	100	10.2
C, K	150	10.7
D, L	200	11.2

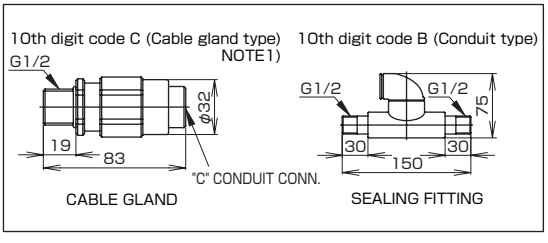
NOTE) The measurments "t" will be added 2mm to each measurements in case of 7th digit of F,G,L,K.

5th digit of the code symbols	φD	φE	φF	φG	φH±1	NOTE) t	P	N-φh	FLANGE
0, A	185	150	126	100	73	38	116	8-19	JIS-10K-80A
9	200	160	126	100	73	42	116	8-23	JIS-20K-80A
M	210	170	126	100	73	48	116	8-23	JIS-30K-80A
1, B	210	175	151	103	96	38	141	8-19	JIS-10K-100A
3, D, V	191	152.5	126	100	73	44	116	4-20	ANSI 150LB 3B
S, X	210	168	126	100	73	49	116	8-23	ANSI 300LB 3B
T, U	210	168	126	100	73	52	116	8-23	ANSI 600LB 3B
4, E, W	229	190.5	151	103	96	44	141	8-20	ANSI 150LB 4B
Y	254	200	151	103	96	52	141	8-23	ANSI 300LB 4B
6, G	200	160	126	100	73	44	116	8-18	DIN PN40 DN80
7, H	220	180	151	103	96	40	141	8-18	DIN PN16 DN100

<WAFER TYPE>

	Q
80A, 3B	116
100A, 4B	141

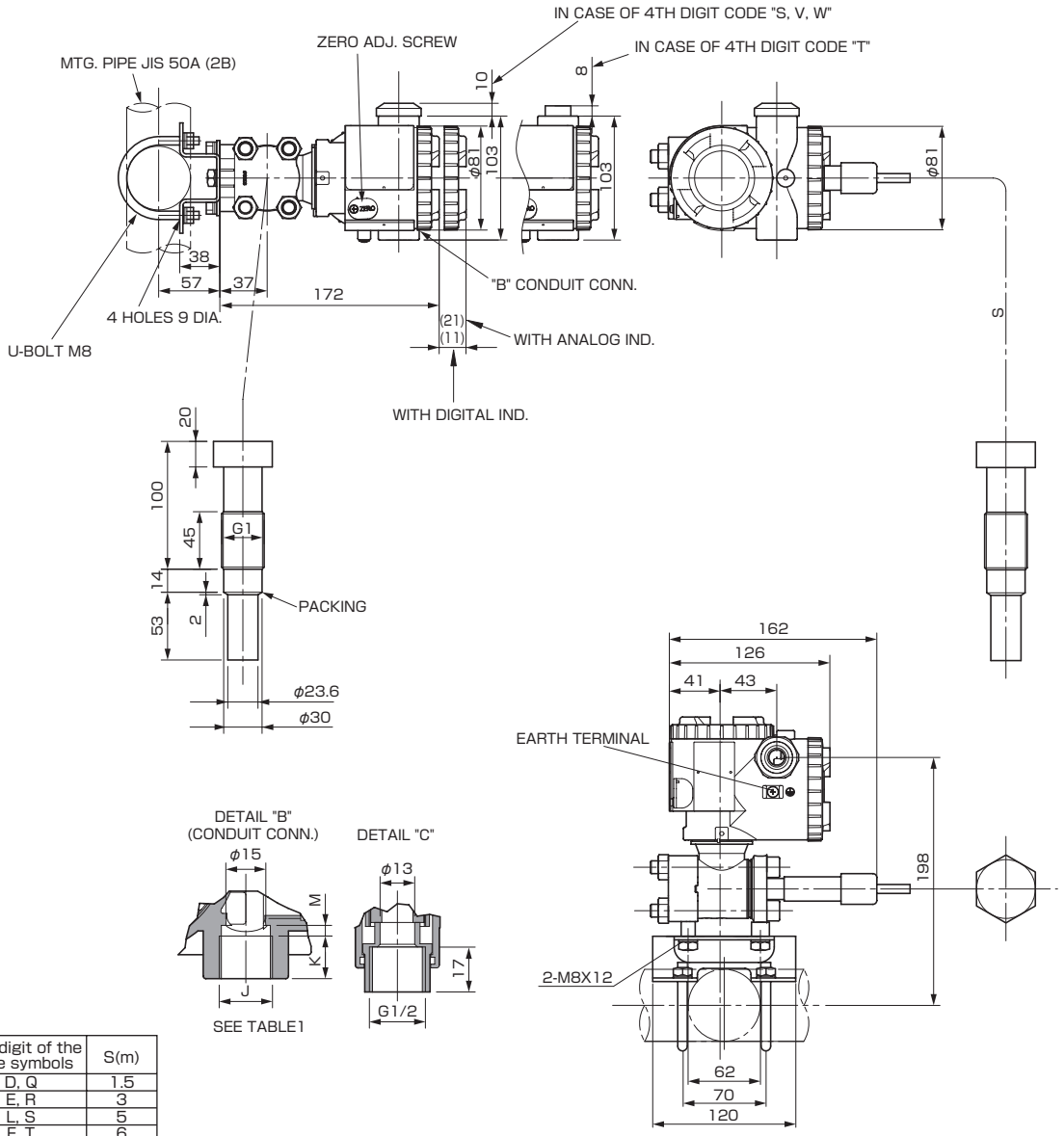
OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE1) IN CASE OF 10TH CODE "C", φ11 CABLE IS SUITBLE.

< CODE SYMBOLS : FKB [S V / T W] K [4 / 5] V5-□□□□□-□□-□>

< Screw type >

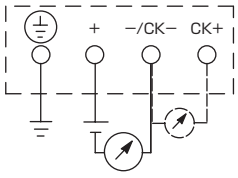


11th digit of the code symbols	S(m)
D, Q	1.5
E, R	3
L, S	5
F, T	6
M, V	7
N, W	8
P, X	10

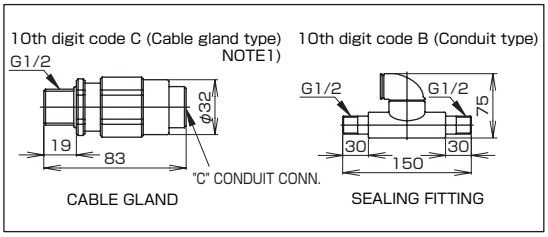
4th digit of the code symbols	Conduit conn.		
	J	K	M
S	G 1/2	18	2
T	1/2-14NPT	16	4
V	Pg13.5	10.5	4.5
W	M20×1.5	16	4

TABLE 1

CONNECTION DIAGRAM



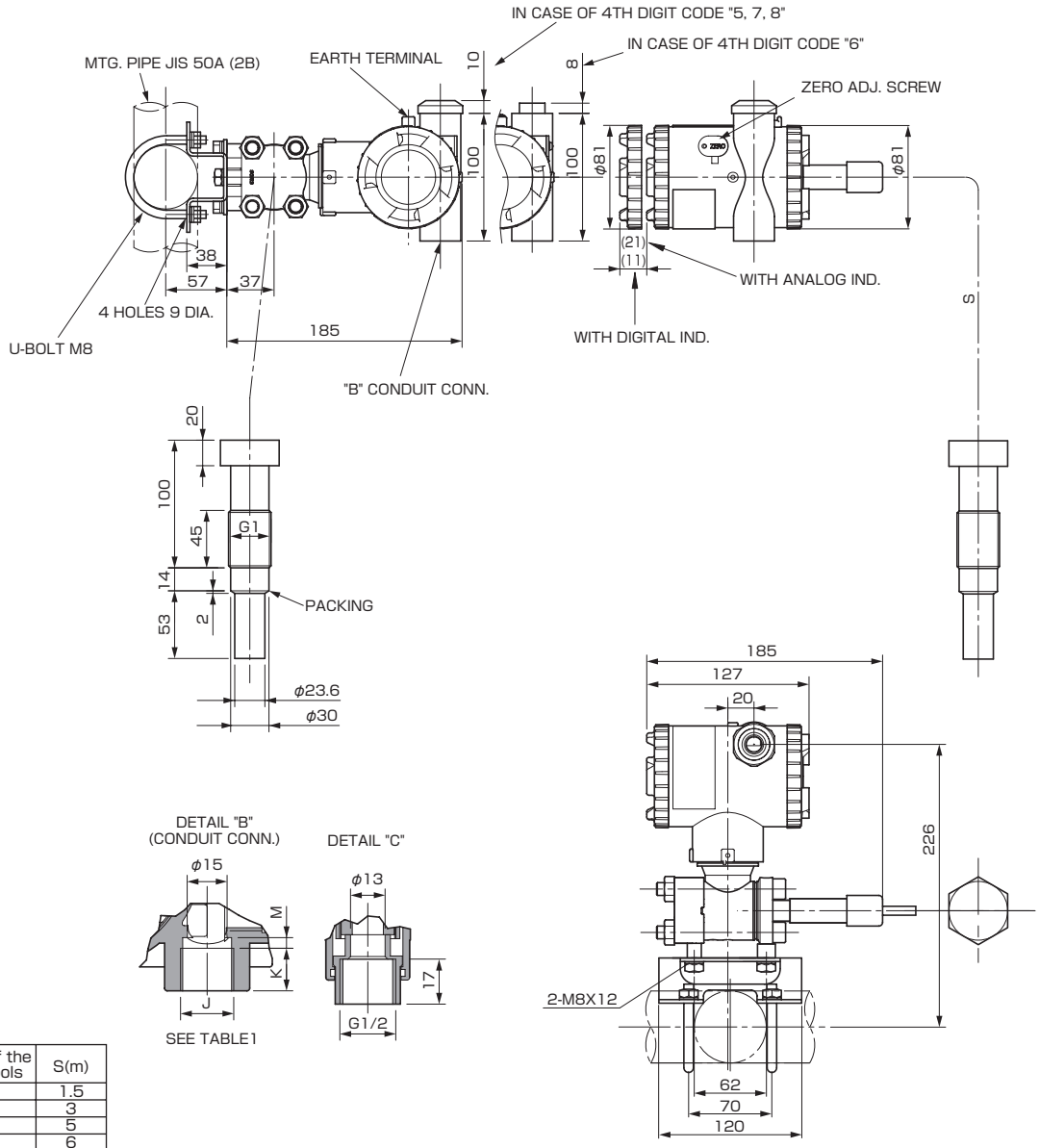
OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE1) IN CASE OF 10TH CODE "C", ϕ11 CABLE IS SUITBLE.

< CODE SYMBOLS : FKB [5 7 / 6 8] K [4 / 5] V5-□□□□□-□□-□>

< Screw type >

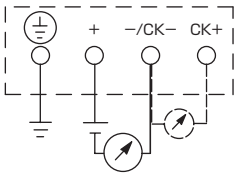


11th digit of the code symbols	S(m)
D, Q	1.5
E, R	3
L, S	5
F, T	6
M, V	7
N, W	8
P, X	10

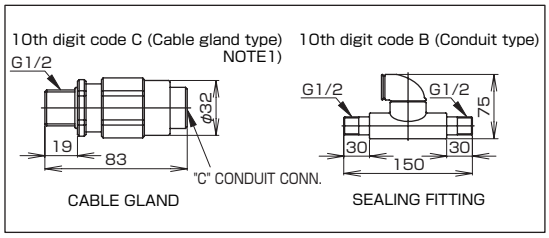
4th digit of the code symbols	Conduit conn.		
	J	K	M
5	G 1/2	18	2
6	1/2-14NPT	16	4
7	Pg13.5	10.5	4.5
8	M20×1.5	16	4

TABLE 1

CONNECTION DIAGRAM



OPTION PARTS FOR FLAMEPROOF OF TIIS (JAPAN)



NOTE1) IN CASE OF 10TH CODE "C", ϕ11 CABLE IS SUITBLE.

TABLE 2

Authorities	Intrinsic safety
ATEX	Ex II 1 G Ex ia IIC T5 Tamb = –40°C to +50°C Ex ia IIC T4 Tamb = –40°C to +70°C Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=26nF (Without Arrester), Li=0.6mH (Without analog indicator), Ci=36nF (With Arrester), Li=0.7mH (With analog indicator)
Factory Mutual (pending)	Class I II III Div.1 Groups A, B, C, D, E, F, G T4 Entity Type 4X Model code / 9th digit / 13th digit / Tamb A,B,D / Y,G,H,J,S,T,K / –40°C to +85°C L,P,1,2 / Y,G,H,J,S,T,K / –20°C to +80°C Q,S,4,5 / Y,G,H,J,S,T,K / –20°C to +60°C E,F,H / Y,G,H,J,S,T,K / –40°C to +60°C – / W,A,D / –10°C to +60°C Entity Parameters: Vmax=42.4V, Imax=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH
CSA	Class I Div.1 Groups A, B, C, D Class II Div.1 Groups E, F, G Class III Div.1 Temp Code T5 Tamb max = +50°C Temp Code T4 Tamb max = +70°C Entity Parameters: Vmax=28V, Imax=94.3mA, Ci=25nF (Without Arrester), Ci=36nF (With Arrester),Li=0.6mH (Without analog meter), Li=0.7mH (With analog meter)
TIIS	Ex ia IIC T4 Tamb max = +60°C Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=38.4nF, Li=0.694mH
IECEx Scheme	Ex ia IIC T4 Tamb = –40°C to +70°C Ex ia IIC T5 Tamb = –40°C to +50°C Entity Parameters: Ui=28V, Ii=94.3mA, Pi=0.66W, Ci=26nF (Without Arrester), Li=0.6mH (Without analog indicator), Ci=36nF (With Arrester), Li=0.7mH (With analog indicator)
NEPSI	Ex ia IIC T4 Ex d IIB+H_2 T6 / Ex ia IIC T4 Model code / 9th digit / 13th digit / Tamb A,B,D / Y,G,H,J,S,T,K / –40°C to +85°C L,P,1,2 / Y,G,H,J,S,T,K / –20°C to +80°C Q,S,4,5 / Y,G,H,J,S,T,K / –20°C to +60°C E,F,H / Y,G,H,J,S,T,K / –40°C to +60°C – / A,W,D / –10°C to +60°C Entity Parameters: Ui=42.4V, Ii=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH

Authorities	Flameproof
ATEX	Ex II 2 GD Ex d IIC T6 IP66/67 T85°C Tamb = –40°C to +65°C Ex d IIC T5 IP66/67 T100°C Tamb = –40°C to +85°C
Factory Mutual	Class I Div.1 Groups B, C, D T6 Type 4X Class II III Div.1 Groups E, F, G T6 Type 4X Tamb max = +60°C
CSA	Class I Div.1 Groups C, D Class II Div.1 Groups E, F, G Class III Div.1 Note) "Seal Not Required" enclosure is allowed.
TIIS	Ex do IIB+H_2 T4 Tamb max = +60°C Maximum process temp. = +120°C
IECEx Scheme	Ex d IIC T5 IP66/67 Tamb = –40°C to +85°C Ex d IIC T6 IP66/67 Tamb = –40°C to +65°C
NEPSI	Ex d IIB+H_2 T6 Tamb = –40°C to +60°C

Authorities	Type n Nonincendive
ATEX	Ex II 3 GD EEx nL IIC T5 Tamb = –40°C to +50°C EEx nL IIC T4 Tamb = –40°C to +70°C Specific Parameters: Model without arrester: Ui=42.4V, Ii=113mA, Pi=1W, Ci=25.18nF, Li=0.694mH Model with arrester: Ui=32V, Ii=113mA, Pi=1W, Ci=35.98nF, Li=0.694mH EEx nAL IIC T5 Tamb = –40°C to +50°C EEx nAL IIC T4 Tamb = –40°C to +70°C Specific Parameters: Model without arrester: Umax=42.4V, Imax=113mA, Pmax=1W Model with arrester: Umax=32V, Imax=113mA, Pmax=1W
Factory Mutual (pending)	Class I II III Div.2 Groups A, B, C, D, F, G T4 Entity Type 4X Model code / 9th digit / 13th digit / Tamb A,B,D / Y,G,H,J,S,T,K / –40°C to +85°C L,P,1,2 / Y,G,H,J,S,T,K / –20°C to +80°C Q,S,4,5 / Y,G,H,J,S,T,K / –20°C to +60°C E,F,H / Y,G,H,J,S,T,K / –40°C to +60°C – / W,A,D / –10°C to +60°C
CSA	Class I Div.2 Groups A, B, C, D Class II Div.2 Groups E, F, G Class III Div.2 Temp Code T5 Tamb max = +50°C Temp Code T4 Tamb max = +70°C Entity Parameters: Vmax=28V, Ci=25.18nF (Without Arrester), Ci=35.98nF (With Arrester), Li=0.694mH

⚠ Caution on Safety

*Before using this product, be sure to read its instruction manual in advance.

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