

DIFFUSED SILICON TRANSMITTER (DSTJ 8000) ELECTRONIC DIFFERENTIAL PRESSURE TRANSMITTER MODEL:KDI 11/22/23 (STANDARD TYPE, HIGH/MEDIUM DIFFERENTIAL PRESSURE RANGE)

Description

The DSTJ 8000 Differential Pressure and Process Pressure Transmitters employ diffused silicon sensors developed by the latest integrated circuit technology. In the DSTJ 8000, a variety of models which have high stability and accuracy, and cover a wide measurement range is available.

Features

• Simple Principle

Since the highly sensitive diffused silicon sensor converts pressure to current and mechanical linkages are eliminated, the resistance of the sensor against vibration, tilting and shock is much improved comparing to conventional sensors.

• Diffused Silicon Sensor Employing IC Technology

The resistance bridge of the sensor is integrally formed employing the diffusion technology for IC's. Therefore, it has no bonded layer and eliminates the fault caused by the inherent disadvantages of the element (the drift of zero-point by creep or slip) providing stable operation for a long period.

• Ideal Silicon Wafer

Silicon is an ideal elastic material, and has outstanding characteristics on hysteresis and repeatability.

• Ample Experience

Honeywell has marketed Class 41 differential pressure / process pressure transmitters employing diffused silicon sensors since 1972, and their excellent properties and reliability have been proved.

• Outstanding Temperature Effect

Since the temperature compensation is made through all operational ambient temperature ranges, an outstanding temperature effect of the sensor is obtained.

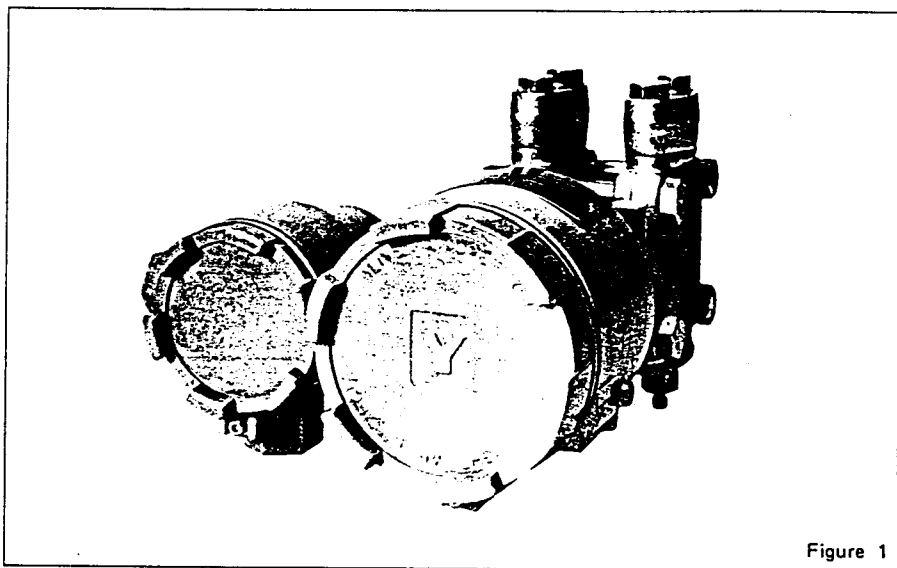


Figure 1

• High Accuracy

Excellent repeatability and resolution characteristics of the diffused silicon sensors satisfy the accuracy of $\pm 0.25\%$ FS.

• Compact and Light-weight

The small diffused silicon sensor enables the meter body to be compact and light.

• Complete Flame-proof Type Explosion-proof Enclosure Conforming to JIS d2G4

The DSTJ8000 Transmitters satisfy completely the requirement of JIS for the flame-proof type explosion-proof construction, and realized for the first time in the micro displacement type transmitters.

• Fully Welded Meter Body

The meter body is fully welded by electronic beam welding. Electric signals from the sensor is taken out through hermetic seal, and there is no fear of leakage of the fill fluid.

• Easy Maintenance

Zero and span adjustments or other maintenance work can easily be made from the front of the transmitter. Interference between zero and span adjustment has been largely reduced.

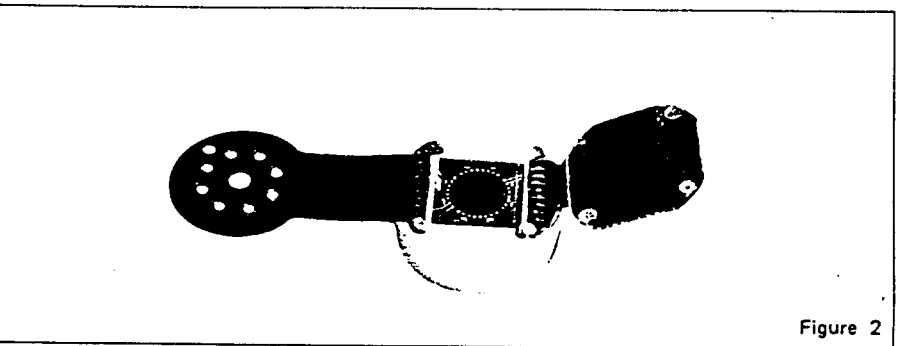


Figure 2

Standard Specifications

Item	Specifications
Measuring range (Continuously adjustable)	KDI11: 0 - 2,500 to 0 - 25,000 mmH ₂ O KDI22: 0 - 650 to 0 - 6,500 mmH ₂ O KDI23: 0 - 500 to 0 - 2,600 mmH ₂ O
Process connection	PT 1/2 (ISO R7 1/2") or NPT 1/2" tap thread
Electrical conduit connection	PF 1/2 (ISO R228 1/2") tap thread
Power supply	21.6 - 44V DC
Output	4 - 20 mA DC (External load; 575 ohms at 24V, 1475 ohms at 42V)
Accuracy	±0.25% FS
Dead band	Within 0.01% FS
Temperature effect	KDI 11/22: ±0.25% FS/55°C KDI 23: ±0.30% FS/55°C (Value of zero shift at maximum span.)
Operating pressure range	-1 to +140 kg/cm ² G
Operating temperature conditions	Amplifier: -30 to + 80°C Meter body: -40 to +120°C (Process fluid)
Operating temperature limits	Amplifier: -40 to + 93°C Meter body: -40 to +120°C (Process fluid)
Transportation and storage conditions	-50 to +120°C
Operating humidity conditions	10 - 90% RH
Overload protection	Up to 140 kg/cm ² G in either direction
Damping adjustment (Electrically continuously adjustable).	KDI11: Approx. 0.05 ~ 2.9 sec KDI22: Approx. 0.06 ~ 3.9 sec KDI23: Approx. 0.1 ~ 6.8 sec } Time constant at maximum span.
Electronics housing	Flame-proof type explosion-proof construction*: Class d2G4 of JISC0903 code approved. (JISF8001 Class 3 splash-proof included.) Also suitable for NEMA 4 and NEC Class 1, Group D, Division 1. (*Operating temperature: -10 to +70°C) Intrinsic safety construction*: Class i3nG4 of JISC0903 code approved. (Also suitable for above explosion and splash-proof construction.) (*Power supply: 23 to 27.5VDC, Operating temperature: -10 to +60°C)
Zero adjustment ranges (Use within the ranges; Elevation + Span) (≤ Max. Span, and Suppression ≥ Span)	KDI11: Elevation side; Up to 2,000 mmH ₂ O, Suppression side; Up to 4,500 mmH ₂ O KDI22: Elevation side; Up to 600 mmH ₂ O, Suppression side; Up to 1,500 mmH ₂ O KDI23: Elevation side; Up to 400 mmH ₂ O, Suppression side; Up to 1,400 mmH ₂ O
Material	Meter body cover (Pressure chamber): Carbon steel (SF 45A), 316 SS, Monel (Max. operating pressure: 70 kg/cm ² G), Rigid PVC (with reinforced plate, operating pressure; -0.1 to + 15 kg/cm ² G and operating temperature; 0 - 55°C) Measuring element; 316 SS (Diaphragm; 316L SS), 316L SS, Monel, Tantalum Wet part gasket; Teflon Transmitter case; Aluminum alloy Center body; 316 SS
Finish	Acryl baking finish Color: Light beige (Munsell 4Y 7.2/1.3)
Mounting	Mounting on 2-inch horizontal or vertical pipe. (Also available direct mounting on process piping as specified.)
Net weight	Approx. 6 kg

Optional Specifications

Item	Specifications			
(1) High elevation and high suppression (Use within the ranges; Elevation + Span) (≤ Max. Span, and Suppression ≥ Span)	Zero adjustment range (mmH ₂ O)			
	High elevation		High suppression	
	Elevation side	Suppression side	Elevation side	Suppression side
KDI11:	Up to 20,000	Up to 4,500	Up to 2,000	Up to 25,000
KDI22:	Up to 5,850	Up to 1,500	Up to 600	Up to 6,500
KDI23:	Up to 2,100	Up to 1,400	Up to 400	Up to 2,600

- (2) Integral orifice assembly
- (3) Flame-proof packing type cable connecting adapter
- (4) Induction lightning arrester
- (5) Ammeter

Measurable Flow Rate:
 Liquid; 1.3 – 2000 ℓ/h (15°C, 1 atm.) in water equivalent.
 Gas; 0.04 – 50 Nm³/h (0°C, 1 atm.) in air equivalent.

For low voltage cable work in the division 1 location (JIS d2G4).

Built-in semi-conductor lightning arrester.

Built-in wide-angle, easy-to-observe indicator.

Semi-standard Specifications

Item	Specifications
(1) Oil free (Y 21I)	Measuring element material: 316SS Sealing liquid: Fluorine oil Operating temperature: -10 to +60°C (Both amplifier and meter body)
(2) For chlorine (Y 21N)	Measuring element material: Tantalum Sealing liquid: Fluorine oil Operating temperature: -10 to +60°C (Both amplifier and meter body)
(3) With steam block (Y29G)	Max. operating pressure: 50 kg/cm ² G Max. operating temperature: 250°C (Meter body temperature is within 120°C)
(4) 304SS body bolts (Y 66G)	Max. operating pressure: 70 kg/cm ² G
(5) Corrosion-resistant and silver finish (Y 138A – D)	Y138A Corrosion-resistant (Acryl baking) finish; Resistance for corrosive gases. Y138B Corrosion-proof (Epoxy baking) finish; Resistance for corrosive liquids. Y138C Silver-normal (Acryl baking) finish; Protection for temperature rise of device caused by direct sun light, radiation heat, etc. Y138D Silver-corrosion-resistant (Acryl baking) finish; Protection for above-mentioned temperature rise and resistance for corrosive geses. (Note: Silver finish is not applicable for alkaline gases.)
(6) High damping adjustment (Y 169A)	Applicable up to approx. 2 times the standard damping adjustment.
(7) 10–50 mA DC output (Y 170A) (Available for the explosion-proof construction type only.)	Power supply; 30 – 85V DC Allowable load resistance; Max. 1100 Ω (Varies with the supply voltage)
(8) Rear process connecting type (Y 171A)	Applicable for carbon steel or 316 SS cover material. (Transmitter is mounted only on 2 inch horizontal pipe)

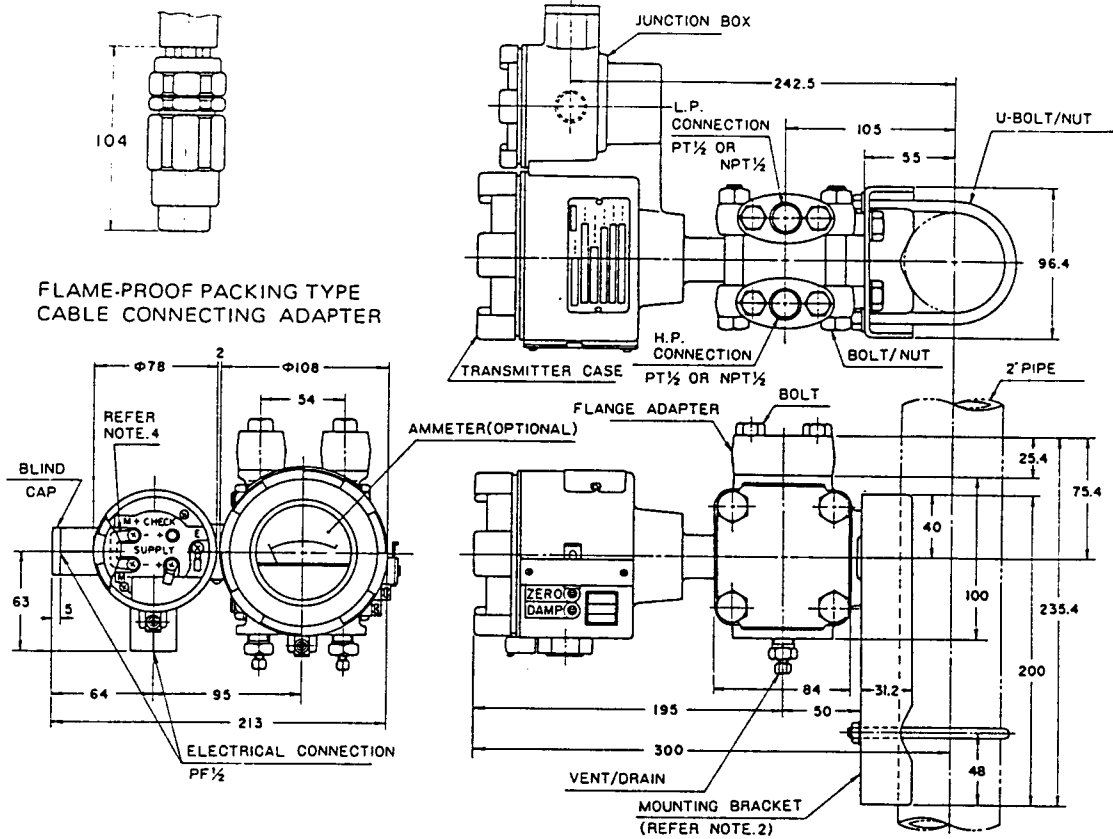
Model Number Table

Ex: KDI 11-2222E-5, A, M

Basic Model No.	Cover Material		Measuring Element Material		Housing	Option	Description
	H.P	L.P	H.P	L.P			
KDI11							Measuring range 0 – 2,500 to 0 – 25,000 mmH ₂ O
KDI22							Measuring range 0 – 650 to 0 – 6,500 mmH ₂ O
KDI23							Measuring range 0 – 500 to 0 – 2,600 mmH ₂ O
						-1	Carbon steel (SF 45)
						-2	316SS
						-3	Monel *
						-5	Rigid PVC
		1					Carbon steel (SF 45)
		2					316 SS
		3					Monel *
		5					Rigid PVC
			2				316 SS (Diaphragm; 316L SS)
			3				Monel
			4				Tantalum
			8				316L SS
				2			316 SS (Diaphragm; 316L SS)
				3			Monel
				4			Tantalum
				8			316L SS
					E		Explosion-proof type
					H		Intrinsic safety type
						-5	High elevation
						-6	High suppression
						-12	Integral orifice assembly
						-A	With one flame-proof packing type cable connecting adapter
						-B	With two flame-proof packing type cable connecting adapters
						-L	Built-in induction lightning arrester
						-M	Built-in ammeter

Note: 1) * . . . Scheduled to be released shortly.
 2) When ordering "Y" options, please write as: KDI11Y-2222E-5, A, M (Y □). When two or more "Y" options are needed, please consult us.

Dimensions



- Note: 1) The process connection can be made in any of two positions of top or bottom. (Rear connection is available as specified.) When connection is changed, replace the flange adapter and the vent/drain plug.
- 2) This transmitter can be mounted in various ways using the holes of the mounting bracket. (The above drawing shows an example of typical mounting.)
- 3) Mount the transmitter vertically.
- 4) To use an external indicating meter, disconnect the jumper bar from the M terminals and connect in its place the lead-wires of the external indicating meter.

Figure 3

Ordering Information

When ordering, please specify;

- 1) Model no.
- 2) Measuring range
- 3) Optional specifications

* Reference instruction manual OM2-521-110

*Specifications are subject to change without notice.

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