

KJ16 Intrinsically Safe Pressure Transmitter

Added high-pressure hydrogen application type
[KJ16-□□H]

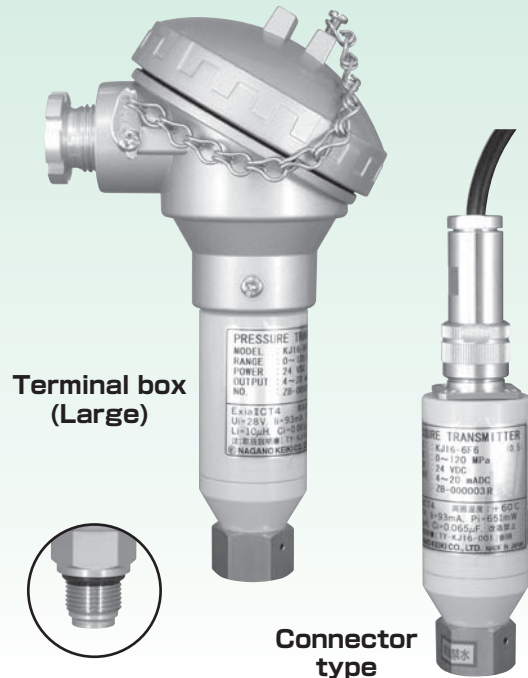
Overview

This product is a 2-wire intrinsically safe pressure transmitter with SS sensor. Conforming to the IEC intrinsically safe standard, it can be used in "ZONE 0" place where explosive gas always exists (Protection class: Exia IIC T4). Pressure measurement in a wide range of industrial process measurement is possible.

Features

- In combination with the insulated safety barrier, Type A intrinsically safe ground work is unnecessary.
- It can be used in "ZONE 0" place where explosive gas always exists.

Order separately for recommended safety barrier. If using a barrier other than recommended barrier, strictly observe the "Safety Maintenance Rating".



Terminal box (Large)



Flush diaphragm type (Up to 10MPa)

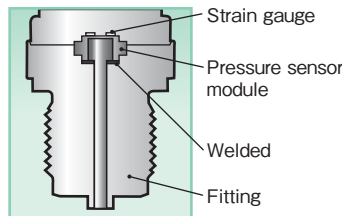
Connector type

RoHS

Features of sensor

Semiconductor Evaporated Type (SS) Sensor

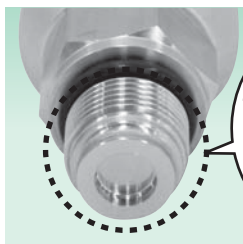
The semiconductor evaporated type (SS) sensor, which has been proven in various industrial fields, has an integrated construction achieved by welding the pressure sensing part and fitting together contributing for excellent durability and stability.



SS Sensor

Flush diaphragm type

Safe and reliable non liquid-sealed design !



Flush diaphragm type the sensing element is attached at the end of fitting. (Metal diaphragm type)

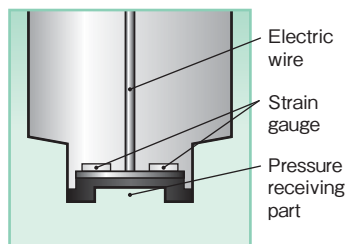


Diagram of the internal structure

- *Maximum range of flush diaphragm type is 10MPa.
- *Flush diaphragm type is only available in SUS630 diaphragm.

Applications

Standard

- Petrochemical plant
- Factories where there is a danger of explosive gas vapors existence
- LNG plant and facilities
- CNG station

High pressure hydrogen

- Hydrogen station
- Hydrogen manufacturing equipment
- High pressure hydrogen test facilities

Flush diaphragm

- Coating machine facilities (hazardous area)
- Ink manufacturing facilities

Specifications

Item	Description	
Media	Gas or Liquid (Compatible with wetted parts)	
Pressure range	-0.1 to 0.5, 1, 2MPa 0 to 0.5, 1, 2, 3.5, 5, 10, 20, 35, 50, 70, 100MPa (Maximum range of KJ16-□□G is 35MPa)	
Allowable maximum pressure	SUS630, Co-Ni	200% of pressure range (150% for 35, 50MPa 120% for 70, 100MPa)
	SUS316L	150% of rated pressure range (120% for 3.5 to 35MPa)
Total error band※1	±0.5%F.S. at 23°C	
Temperature coefficient (Zero, Span)	SUS630, Co-Ni	±0.05%F.S./°C (50MPa or lower), ±0.1%F.S./°C (70, 100MPa range)
	SUS316L	±0.1%F.S./°C
Connection	G1/4B, G3/8B, G1/2B, R1/8, R1/4, R3/8, R1/2, 9/16-18UNF (Equivalent to Auto clamp F250C)	
Wetted parts	Standard	Diaphragm: SUS630 (17-4PH) Fitting: SUS316
	Corrosion resistant	Diaphragm: SUS316L Fitting: SUS316L (Maximum 35MPa)
	High corrosion resistant	Diaphragm: Co-Ni alloy Fitting: SUS316
Power source	24V DC±10%	
Output	4 to 20mA DC (2 wire system) Response time: 1 ms or lower	
Load resistance	500Ω Maximum	
Enclosure rating	Case material: ADC12 Protection class: Equivalent to IP65	
Type	Connector type Terminal box type (Large, Small)	
Operating temperature and humidity	-10 to 60°C, 35 to 85%RH (No freezing or condensation)	
Storage temperature and humidity	-20 to 70°C, 35 to 85%RH (No freezing or condensation)	
Vibration resistance	55 to 500Hz Acceleration: 100m / s ² Test time: 1 oct/min 20cyc (JIS C 0040) Vibrating direction: x, y, z	
Shock resistance	Impact acceleration: 1000m / s ² Impact direction: x, y, z (50 times)	
Insulation resistance	50V DC 100MΩ or higher	
Applicable standard	EN61326/1997, A1/1998, A2/2001, A3/2003	
Mounting location	It is possible to install in outdoors. (Avoid direct sunlight)	
Weight	Connector type: Approx. 170g (Excluding cable) Terminal box type (Large): Approx. 410g Terminal box type (Small): Approx. 300g	

※1 Total error band includes linearity, hysteresis, and repeatability.

Cable with connector

Wiring side connector: TC1108-12A10-7F (Water proof type) (Made by Tajimi Electronics Co., Ltd.)

Cable type:

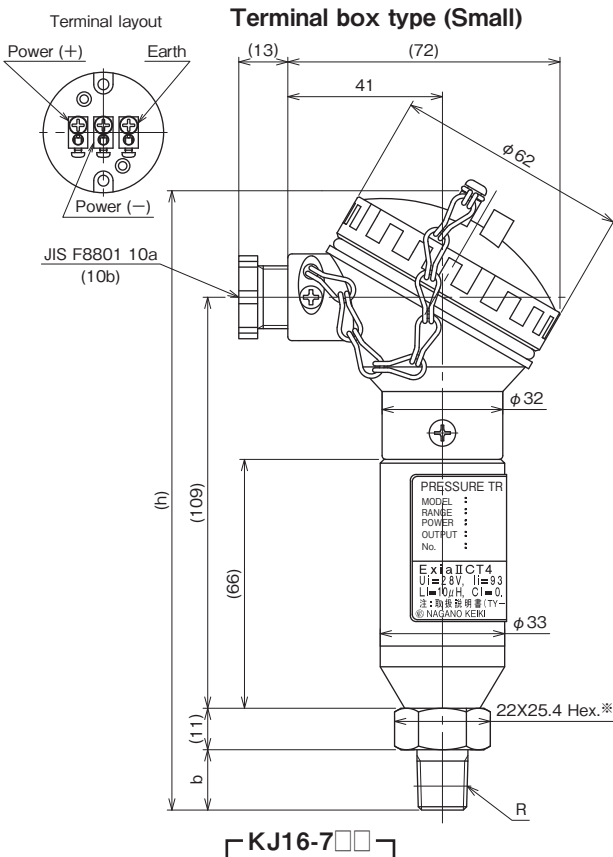
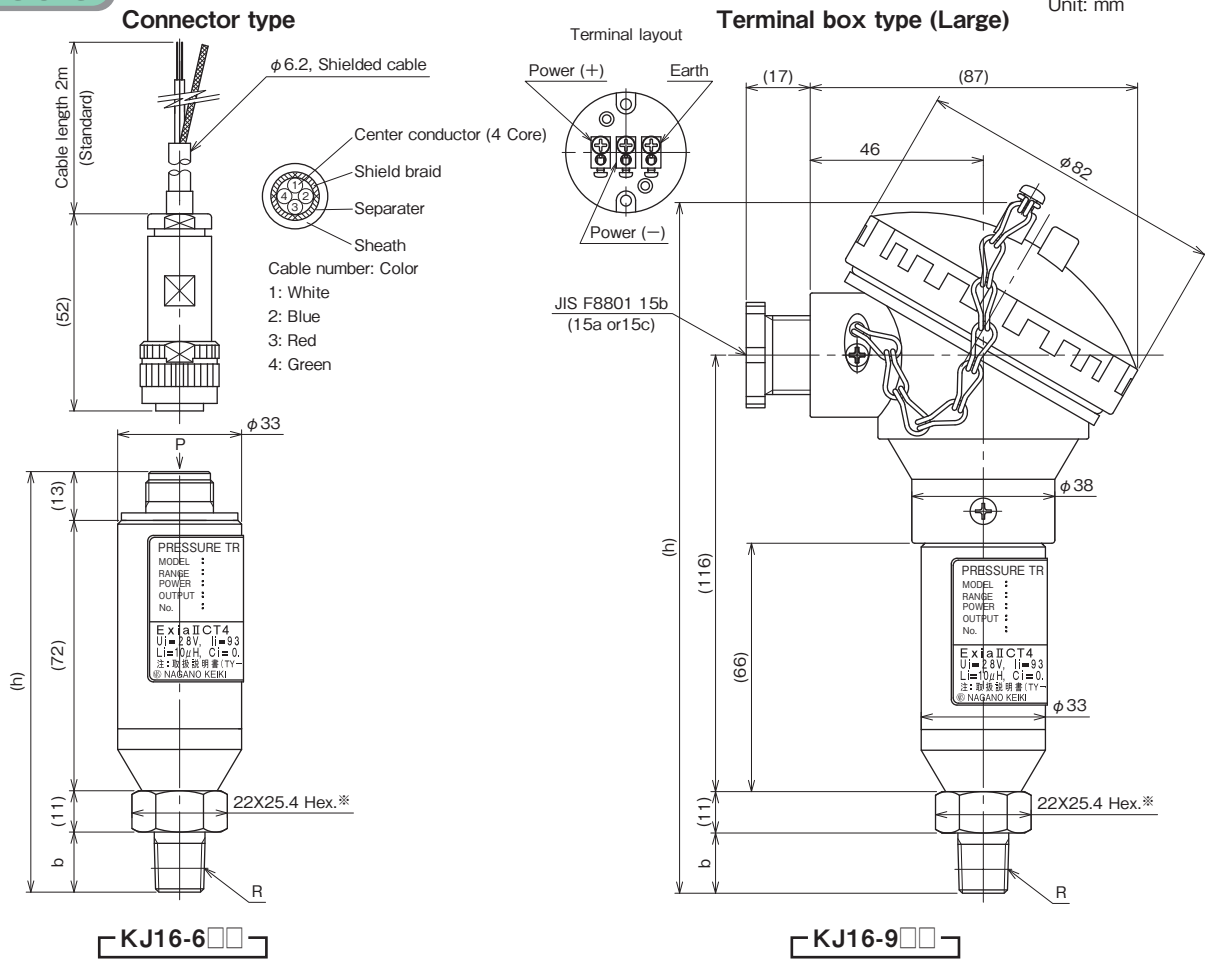
	Environmental temperature	Conductor		Cable outer diameter (mm)
		Cross-section area (mm ²)	Construction (Pcs./mm)	
Shielded cable (Standard)	-20 to 60°C	0.2	7/0.18	φ6.2
Heat resistant cable	-20 to 105°C	0.3	12/0.18	φ6.0
Cold resistant cable	-40 to 80°C	0.3	12/0.18	φ6.0

KJ16

Intrinsically Safe Pressure Transmitter

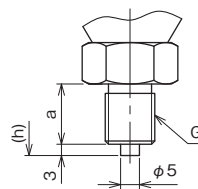
Standard

Dimensions



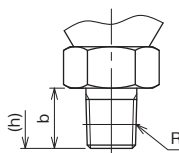
Connection

Parallel connection



	KJ16-□2□ (G1/4B)	KJ16-□3□ (G3/8B)	KJ16-□4□ (G1/2B)
KJ16-6□□	a: 16 h: 115	a: 18 h: 117	a: 20 h: 119
KJ16-7□□	a: 16 h: 168	a: 18 h: 170	a: 20 h: 172
KJ16-9□□	a: 16 h: 187	a: 18 h: 189	a: 20 h: 191

Taper screw



	KJ16-□6□ (R1/8)	KJ16-□7□ (R1/4)	KJ16-□8□ (R3/8)	KJ16-□9□ (R1/2)
KJ16-6□□	b: 14 h: 110	b: 16 h: 112	b: 18 h: 114	b: 20 h: 116
KJ16-7□□	b: 14 h: 163	b: 16 h: 165	b: 18 h: 167	b: 20 h: 169
KJ16-9□□	b: 14 h: 182	b: 16 h: 184	b: 18 h: 186	b: 20 h: 188

* When SUS316L wetted parts is the requirement, "LC" is engraved on hexagonal part.

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Intrinsically Safe Pressure Transmitter

Standard

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model																	
K J 1 6						1 1			X 0 X X								
Pressure Transmitter			①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮
Model number						Product specifications						Additional specifications (Optional)					
① Type		6	Connector type with shielded cable 2m (Standard)														
		7	Terminal box type (Small)														
		9	Terminal box type (Large)														
② Connection *1		2	G1/4B					7	R1/4 50MPa or lower is made								
		3	G3/8B					8	R3/8 50MPa or lower is made								
		4	G1/2B					9	R1/2 50MPa or lower is made								
		6	R1/8 50MPa or lower is made					Others (NPT etc.)									
③ Wetted parts		4	Diaphragm: SUS630 (17-4PH)					Fitting: SUS316									
		6	Diaphragm: Co-Ni alloy (High corrosion resistant)					Fitting: SUS316									
		G	Diaphragm: SUS316L (Corrosion resistant)					Fitting: SUS316L (Max. 35MPa)									
④ Pressure range		Diaphragm material															
⑤ Accuracy		SUS630/Co-Ni						SUS316L									
		④	Pressure range				⑤	Accuracy				⑤	Accuracy				
		5	-0.1 to 0.5MPa				5	±0.5%F.S. (Temperature coefficient: ±0.05%F.S./°C)				R	±0.5%F.S. (Temperature coefficient: ±0.1%F.S./°C)				
		6	-0.1 to 1MPa														
		7	-0.1 to 2MPa														
		E	0 to 0.5MPa														
		G	0 to 1MPa														
		J	0 to 2MPa														
		K	0 to 3.5MPa														
		L	0 to 5MPa														
		N	0 to 10MPa														
		Q	0 to 20MPa														
		R	0 to 35MPa				R	±0.5%F.S. (Temperature coefficient: ±0.1%F.S./°C)				—					
		S	0 to 50MPa														
		T	0 to 70MPa														
		U	0 to 100MPa				—		—		—						
⑥ Power source		1	24V DC ±10%														
⑦ Output		1	4 to 20mA DC (2 wire system)														
⑧ Outlet for electric wire		⑧	⑨	⑧ Outlet for electric wire				⑨ Cable kind									
⑨ Cable kind		Connector type (With 2m cable)															
		0	1	—				Shielded cable (Standard)									
		0	2	—				Heat resistant cable									
		0	3	—				Cold resistant cable									
		Terminal box type (Small) (No attached cable)															
		1	0	JIS 10a				—									
		2	0	JIS 10b				—									
		Terminal box type (Large) (No attached cable)															
		3	0	JIS 15a				—									
		4	0	JIS 15b				—									
		5	0	JIS 15c				—									
⑩ Treatment		0	Not required														
		1	Use no oil														
		2	Use no water														
		3	Use no oil & water														
⑫ Application		0	Standard spec.														
⑮ Documents		0	Not required														
		1	Required (Documents available upon request) Datasheet (Drawing / Specifications), Instruction manual, Calibration test report (One-part one sheet) Inspection / Traceability certificate														

Please specify pressure range and unit of measure along with corresponding ordering code.

* 1 Consult us for 9/16-18UNF.

Order separately for recommended safety barrier. If using a barrier other than recommended barrier, strictly observe the "Safety Maintenance Rating".

Diaphragm seal type is also available. Please contact us.

Treatment against wetted parts

■ Use no oil

Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

■ Use no water

Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

■ Use no oil & water

Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.

* Specify code "X" to refer N/A

For "High-pressure hydrogen type" or "Flush diaphragm type", please select from the dedicated model number configuration.

For High Pressure Hydrogen [KJ16-□□H]

Specifications

Item	Description
Media	Hydrogen
Pressure range	0 to 35, 50, 70, 100, 120MPa
Allowable maximum pressure	35 and 50MPa pressure ranges: 150% 70, 100, 120MPa range: 120%
Total error band ※1	±0.5%F.S. at 23°C
Temperature coefficient (Zero, Span)	±0.1%F.S./°C
Connection	G1/4B (Up to 50MPa), G3/8B (Up to 50MPa), G1/2B, 9/16-18UNF (Equivalent to Auto clave F250C)
Wetted parts	Diaphragm: SUH660 (A286) Fitting: SUS316L
Power source	24V DC±10%
Output	4 to 20mA DC (2 wire system) Response: 1ms or lower
Load resistance	500Ω Maximum
Enclosure rating	Case material: ADC12 Protection class: Equivalent to IP65
Type	Connector type Terminal box type (Large, Small)
Operating temperature and humidity	-10 to 60°C, 35 to 85%RH (No freezing or condensation)
Storage temperature and humidity	-20 to 70°C, 35 to 85%RH (No freezing or condensation)
Vibration resistance	55 to 500Hz Acceleration: 100m / s ² Test time: 1 oct/min 20cyc (JIS C 0040) Vibrating direction: x, y, z
Shock resistance	Impact acceleration: 1000m / s ² Impact direction: x, y, z (50 times)
Insulation resistance	50V DC 100MΩ or higher
Applicable standard	EN61326/1997, A1/1998, A2/2001, A3/2003
Mounting location	It is possible to install in outdoors. (Avoid direct sunlight)
Weight	Connector type: Approx. 170g (Excluding cable) Terminal box type (Large): Approx. 410g Terminal box type (Small): Approx. 300g

※1 Total error band includes linearity, hysteresis, and reproducibility.

* Use no oil treatment and water and He leak is given.

Cable with connector

Wiring side connector: TC1108-12A10-7F (Water proof type) (Made by Tajimi Electronics Co., Ltd.)

Cable type:

	Environmental temperature	Conductor		Cable outer diameter (mm)
		Cross-section area (mm ²)	Construction (Pcs./mm)	
Shielded cable (Standard)	-20 to 60°C	0.2	7/0.18	φ 6.2
Heat resistant cable	-20 to 105°C	0.3	12/0.18	φ 6.0
Cold resistant cable	-40 to 80°C	0.3	12/0.18	φ 6.0

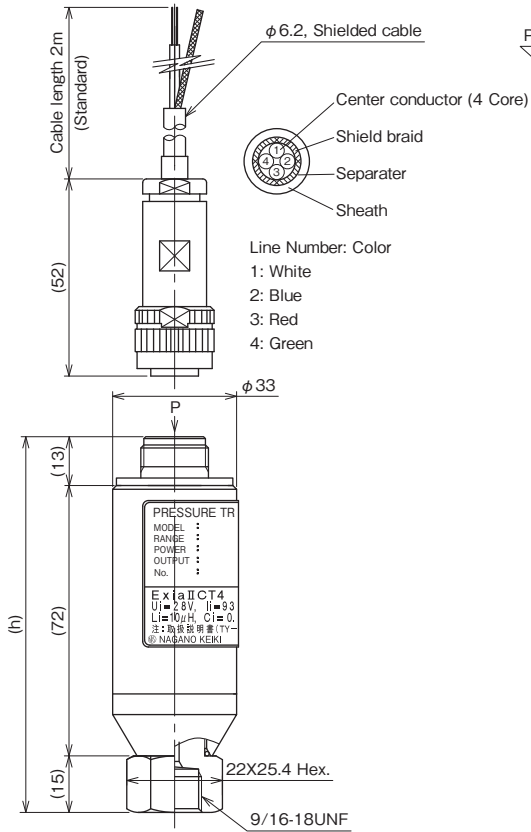
KJ16

Intrinsically Safe Pressure Transmitter

For High Pressure Hydrogen [KJ16-□□H]

Dimensions

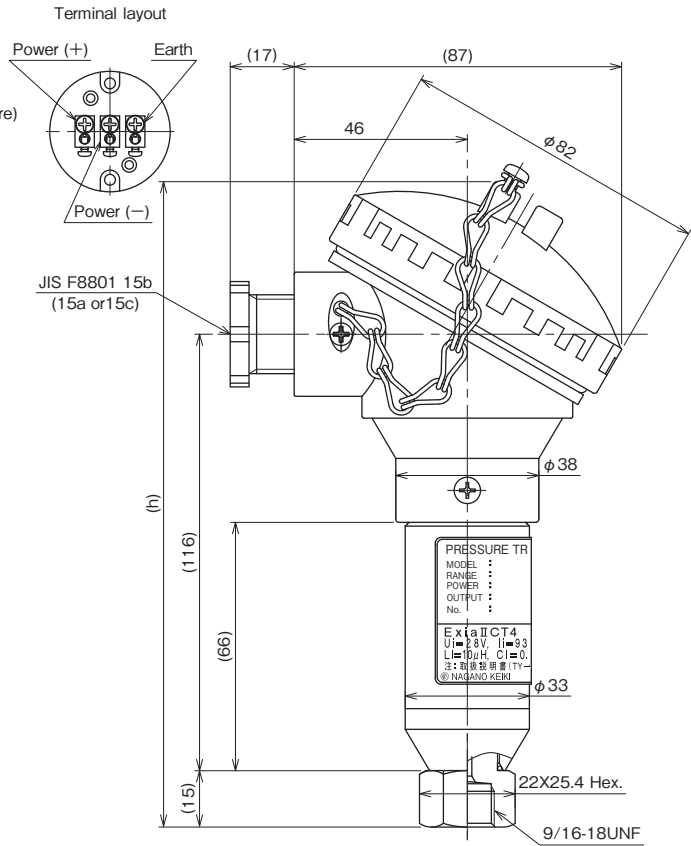
Connector type



[KJ16-6FH]

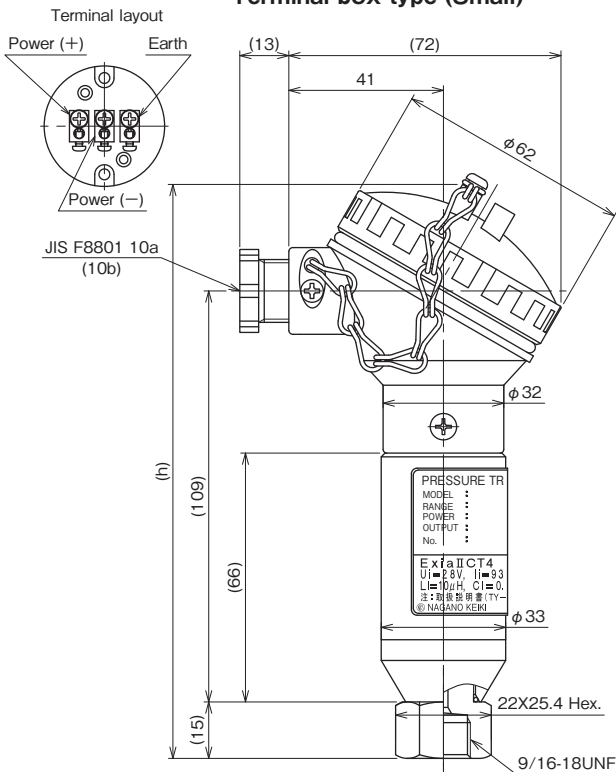
Terminal box type (Large)

Unit: mm



[KJ16-9FH]

Terminal box type (Small)



[KJ16-7FH]

9/16-18UNF
(Equivalent to Auto clamp F250C)

	KJ16-□□H (9/16-18UNF)
KJ16-6FH	h: 100
KJ16-7FH	h: 153
KJ16-9FH	h: 172

* For other connection, please refer to P3

KJ16

Intrinsically Safe Pressure Transmitter

For High Pressure Hydrogen [KJ16-□□H]

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

K J 1 6 — **□ □ H** — **□ □ □ □ □ □ □ □ □ □ □ □ □ □ □**

Pressure Transmitter ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

Model number		Product specifications		Additional specifications (Optional)	
① Type	6	Connector type with shielded cable 2m (Standard)			
	7	Terminal box type (Small)			
	9	Terminal box type (Large)			
② Connection	2	G1/4B			
	3	G3/8B			
	4	G1/2B			
	F	9/16-18UNF female Equivalent to Auto clave F250C			
③ Wetted parts	H	Diaphragm: SUH660 (A286) Fitting:nSUS316L			
④ Pressure range	R	0 to 5MPa			
	S	0 to 50MPa			
	T	0 to 70MPa		G1/2B, 9/16-18UNF female only	
	U	0 to 100MPa		G1/2B, 9/16-18UNF female only	
	V	0 to 120MPa		G1/2B, 9/16-18UNF female only	
⑤ Accuracy	R	±0.5%F.S. Temperature coefficient: ±0.1%F.S./°C (Zero, Span)			
⑥ Power source	1	24V DC ±10%			
⑦ Output	1	4 to 20mA DC (2 wire system)			
⑧ Outlet for electric wire ⑨ Cable type	⑧	⑨	⑧ Outlet for electric wire	⑨ Cable type	
	Connector type (With attached cable 2m)				
	0	1	—	Shielded cable (Standard)	
	0	2	—	Heat resistant cable	
	0	3	—	Cold resistant cable	
	Terminal box type (Small) (No attached cable)				
	1	0	JIS 10a	—	
	2	0	JIS 10b	—	
	Terminal box type (Large) (No attached cable)				
	3	0	JIS 15a	—	
4	0	JIS 15b	—		
5	0	JIS 15c	—		
⑩ Treatment	3	Use no oil & water			
⑫ Application	7	【Standard】 Air tightness test report (Helium leak test)			
	A	A Proof pressure, leak test report (Additional document)			
⑮ Documents	0	Not required			
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications), Instruction manual, Calibration test report (One-part one sheet), Inspection / Traceability certificate			

Please specify pressure range and unit of measure along with corresponding ordering code.

Treatment against wetted parts

■ Use no oil

Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

■ Use no water

Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

■ Use no oil & water

Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.

Order separately for recommended safety barrier. If using a barrier other than recommended barrier, strictly observe the "Safety Maintenance Rating".

* Specify code "X" to refer N/A

KJ16

Intrinsically Safe Pressure Transmitter

Flush diaphragm [KJ16-□V4]

Specifications

Item	Description
Media	Gas or Liquid (Compatible with wetted parts)
Pressure range	0 to 1, 2, 3.5, 5, 10MPa
Allowable maximum pressure	200% of pressure range
Connection	G3/8A (Tightening torque: 30N · m)
Wetted parts	Diaphragm: SUS630 (17-4PH) Fitting: SUS316 O-ring: NBR (Compatible with EPDM, Fluorine, Neoprene, etc.)
Operating temperature and humidity	-10 to 60°C (No freezing or condensation)
Power source	24V DC±10%
Output	4 to 20mA DC (2 wire system) Response: 1 ms or lower
Load resistance	500Ω Maximum
Type [Case construction]	Mounting location: It is possible to install in outdoors. (Avoid direct sunlight) Connector type (Equivalent to IP65) Terminal box (Large) (Equivalent to IP65) Terminal box (Small) (Equivalent to IP65)
Transmission method	(2 wire system)
Accuracy	±1.0%F.S.
Temperature coefficient (Zero, Span)	±0.1%F.S./°C
Applicable Standard	EN61326/1997, A1/1998, A2/2001, A3/2003
Weight	Approx. 170g (Connector type)

*Use a safety barrier in hazardous area.

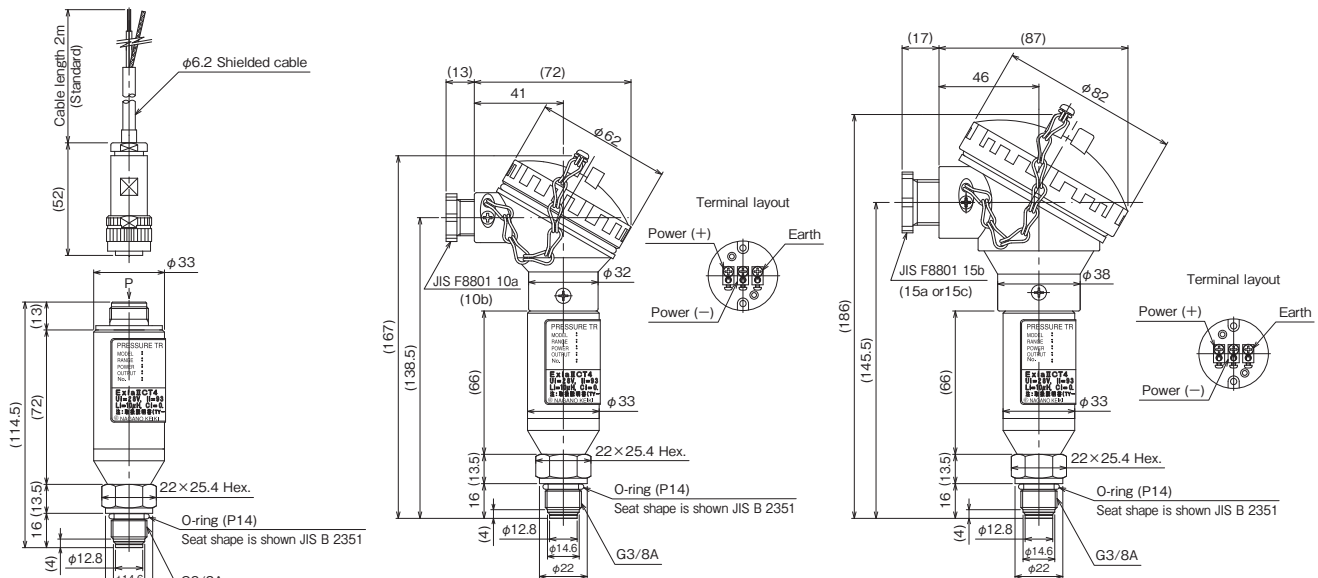
Dimensions

Unit: mm

KJ16-6V4 (Connector type)

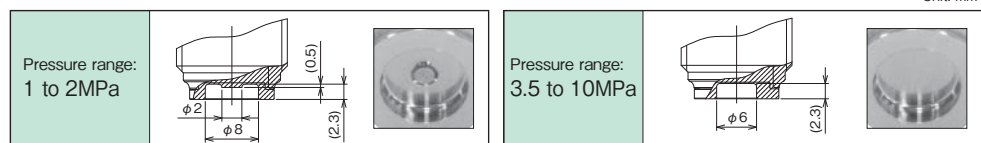
KJ16-7V4 (Terminal box, Small)

KJ16-9V4 (Terminal box, Large)



External dimensions of flush diaphragm

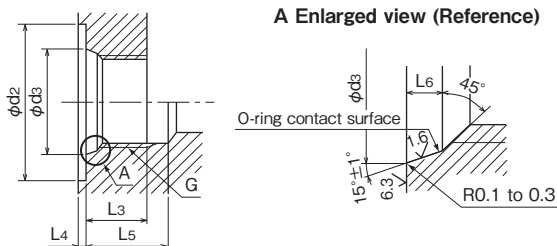
Unit: mm



Shape and size of the partner port and parallel screw attachment end fittings form (JIS B 2351-1 Appendix Table 7 excerpt)

O type (How to type O-ring seal)

Unit: mm



Screw nominal size G	d2±0.3	d3 +0.1 0	L3 (Min.)	L4 (Max.)	L5 (Min.)	L6 +0.4 0	Identification nominal number of applicable O-ring
	O type						
3/8	28	18.6	12	2	18	2.5	P14

- Screw G is class A parallel pipe screw of JIS B 0202.
- O-ring contact surface of the O type, there must be no scratches in the axial direction or spiral-shaped tool marks.
- Surface of the pocket of the d2 has to be flat and perpendicular to the axis of the screw.

Flush diaphragm [KJ16-□V4]

Model number configuration


Please specify the model number, each specs and the range for ordering.

Model
K J 1 6 — **V 4** — **7 1 1** — **0** × ×

Flush Diaphragm Pressure Transmitter

Model number		Product specifications		Additional specifications (Optional)	
① Type	6	Connector type with shielded cable 2m (Standard)			
	7	Terminal box type (Small)			
	9	Terminal box type (Large)			
② Connection	V	G3/8A			
③ Wetted parts	4	Flush diaphragm: SUS630 (17-4PH) Fitting: SUS316			
④ Pressure range	G	0 to 1MPa			
	J	0 to 2MPa			
	K	0 to 3.5MPa			
	L	0 to 5MPa			
	N	0 to 10MPa			
⑤ Accuracy	7	±1.0%F.S.			
⑥ Power source	1	24V DC ±10%			
⑦ Output	1	4 to 20mA DC (2 wire system)			
⑧ Outlet for electric wire ⑨ Cable kind	⑧	⑨	⑧ Outlet for electric wire	⑨ Cable kind	
	Connector type (With attached cable 2m)				
	0	1	—	Shielded cable (Standard)	
	0	2	—	Heat resistant cable	
	0	3	—	Cold resistant cable	
	Terminal box type (Small) (No attached cable)				
	1	0	JIS 10a	—	
	2	0	JIS 10b	—	
	Terminal box type (Large) (No attached cable)				
	3	0	JIS 15a	—	
	4	0	JIS 15b	—	
	5	0	JIS 15c	—	
⑩ Treatment	0	Not required			
	1	Use no oil			
	2	Use no water			
	3	Use no oil & water			
⑪ O-ring	0	Hard NBR (Standard)			
	1	EPDM			
	2	Neoprene			
	3	Silicone			
	4	Fluorine-contained rubber			
	9	Others			
⑫ Use	0	Standard spec.			
⑮ Documents	0	Not required			
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications), Instruction manual, Calibration test report (One-part one sheet), Inspection / Traceability certificate			

Please specify pressure range and unit of measure along with corresponding ordering code.



Flush diaphragm

Treatment against wetted parts

- **Use no oil**
Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.
- **Use no water**
Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.
- **Use no oil & water**
Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.

Order separately for recommended safety barrier. If using a barrier other than recommended barrier, strictly observe the "Safety Maintenance Rating".

* Specify code "X" to refer N/A

Specification of intrinsically safe construction

Item	Description																	
Type approval number	Technology Institution of Industrial Safety Intrinsically safe explosion-proof construction approved product <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Type approval number</th> <th>Pressure range (MPa)</th> </tr> </thead> <tbody> <tr> <td>No. TC17811</td> <td>-0.1 to 0.5, 1, 2 0 to 0.5, 1, 2</td> </tr> <tr> <td>No. TC17810</td> <td>0 to 3.5, 5, 10, 20, 35, 50, 70, 100, 120</td> </tr> </tbody> </table>	Type approval number	Pressure range (MPa)	No. TC17811	-0.1 to 0.5, 1, 2 0 to 0.5, 1, 2	No. TC17810	0 to 3.5, 5, 10, 20, 35, 50, 70, 100, 120											
Type approval number	Pressure range (MPa)																	
No. TC17811	-0.1 to 0.5, 1, 2 0 to 0.5, 1, 2																	
No. TC17810	0 to 3.5, 5, 10, 20, 35, 50, 70, 100, 120																	
Intrinsically safe construction type	<table style="margin-left: 20px;"> <tr> <td style="text-align: center;">Exia</td> <td style="text-align: center;">IIC</td> <td style="text-align: center;">T4</td> <td></td> </tr> <tr> <td colspan="2" style="text-align: center;">└──┬──┬──</td> <td></td> <td style="text-align: right;">Temperature class</td> </tr> <tr> <td colspan="2" style="text-align: center;">└──┬──┬──</td> <td></td> <td style="text-align: right;">Gas group</td> </tr> <tr> <td colspan="4" style="text-align: center;">└──┬──┬──┬──</td> <td style="text-align: right;">Technological standard intrinsically safe explosion-proof construction</td> </tr> </table>	Exia	IIC	T4		└──┬──┬──			Temperature class	└──┬──┬──			Gas group	└──┬──┬──┬──				Technological standard intrinsically safe explosion-proof construction
Exia	IIC	T4																
└──┬──┬──			Temperature class															
└──┬──┬──			Gas group															
└──┬──┬──┬──				Technological standard intrinsically safe explosion-proof construction														
Safety maintenance rating	Allowable voltage of intrinsically safe circuit (Ui): 28V Allowable current of intrinsically safe circuit (Ii): 93mA Allowable power of intrinsically safe circuit (Pi): 651mW Internal inductance of intrinsically safe circuit (Li): 10 μH Internal capacitance of intrinsically safe circuit (Ci): 0.065 μF Ambient temperature: 60°C																	
External transmission cable	Allowable inductance: 2.5mH Allowable capacitance: 0.015 μF (Varies depending on the barrier used.)																	
Withstand voltage	500V AC, 1min.																	

Combination of conditions related to safety rating

Safety maintenance rating of KJ16	Combination condition	Safety maintenance rating of safety barrier
Allowable voltage of intrinsically safe circuit (Ui)	≧	Maximum voltage of intrinsically safe circuit (Uo)
Allowable current of intrinsically safe circuit (Ii)	≧	Maximum current of intrinsically safe circuit (Io)
Allowable power of intrinsically safe circuit (Pi)	≧	Maximum power of intrinsically safe circuit (Po)

Combination of conditions on parameters

Parameters of KJ16 and wiring	Combination condition	Parameters of safety barrier
Input inductance of KJ16 (Li) + Inductance of the wiring (Lw)	≦	Allowable inductance intrinsically safe circuit (Lo)
Input capacitance of KJ16 (Ci) + Capacitance of the wiring (Cw)	≦	Allowable capacitance intrinsically safe circuit (Co)

Recommended safety barrier

* The safety barrier can be selected by the customer.

Insulated type

Item	Description		
Manufacturer	• Pepperl + Fuchs K.K.	• Cooper Industries Japan K.K.	IDEC CORPORATION
Type	KFD2-STC4-Ex1	MTL5541	D5014S (Input signal 1ch) D5014D (Input signal 2ch)
Type approval number	No. TC16232	No. TC19435	No. TC21005
Intrinsically safe construction type	Exia IIC	Exia IIC	Exia IIC

※Earth of intrinsically safe regulation is unnecessary because an insulated barrier is isolated from intrinsically safe circuit.

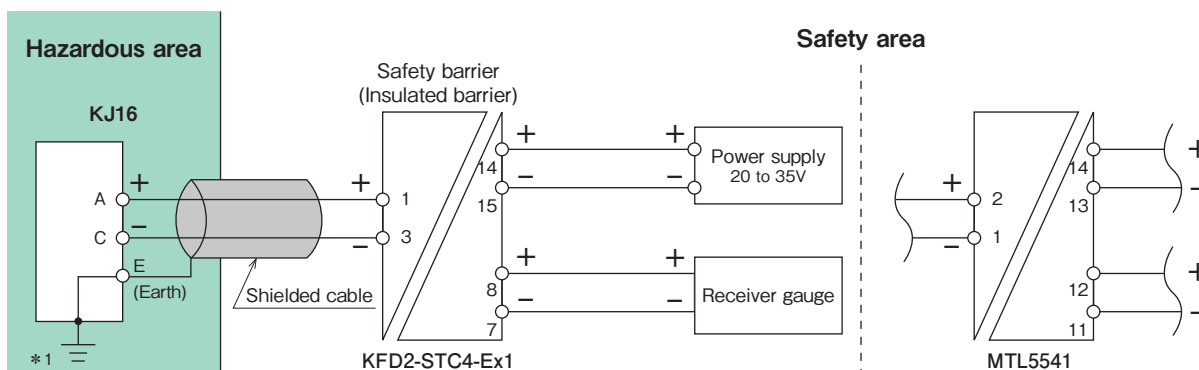
Zener type

Item	Description
Manufacturer	• Cooper Industries Japan K.K.
Type	MTL7787+
Type approval number	No. TC16447
Intrinsically safe construction type	Exia IIC

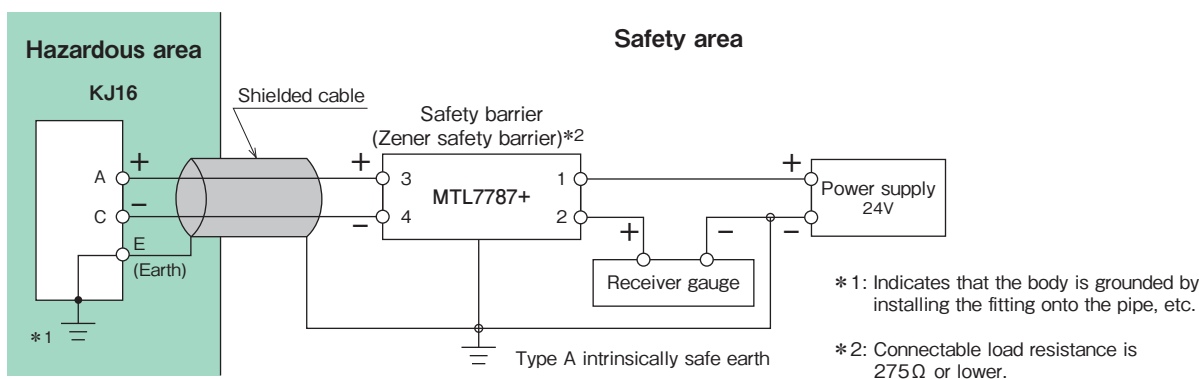
※Zener safety barrier is required Type A intrinsically safe earth.

System layout

When using the isolated barrier



When using the Zener safety barrier



Reference data

• Classification of applicable to hazardous area (Whole range)

Hazardous area	Contents
Zone 0	A place where hazardous atmosphere is continuously present or present for a long period under ordinary circumstances.
Zone 1	A place where hazardous atmosphere is likely to occur under ordinary circumstances.
Zone 2	A place where hazardous atmosphere is likely to occur under abnormal circumstances.

• Ignition point of gas or steam which T4 can apply (Within bold-line rectangle)

Ignition point of gas or steam	Applicable temperature class					
Higher than 450°C	T1	T2	T3	T4	T5	T6
Higher than 300°C	—	T2	T3	T4	T5	T6
Higher than 200°C	—	—	T3	T4	T5	T6
Higher than 135°C	—	—	—	T4	T5	T6
Higher than 100°C	—	—	—	—	T5	T6
Higher than 85°C	—	—	—	—	—	T6

• Example of gas or steam which can apply Exia IIC T4 (Within bold-line rectangle)

Temperature class	T1	T2	T3	T4	T5	T6
II A	Acetone Ammonia Carbon monoxide Ethane Propane Methanol Methane	Ethanol 1-butanol Butane	Hexane Gasoline Oil naphtha Coal tar naphtha	Acetaldehyde Ethyl ether		
II B	Coal gas	Ethylene Ethylene oxide	DME	Ethyl methyl Ether		
II C	Hydrogen Water gas	Acetylene			Carbon bisulfide	Nitric acid ethyl