

KF Series

Differential Pressure Indicating Controller

Model KFD

OVERVIEW

The KF Series instruments are field installed type of pneumatic indicating controllers which are used to measure and control the various types of process variables such as differential pressures (flows), temperatures, pressures and liquid levels.

Model KFD Differential Pressure Indicating Controllers (adjustable range type) indicate and control a process variable by converting its differential-pressure change into mechanical displacement of a torque tube or a torque arm.

Indicating transmitters and indicating transmitting controllers also are available as well as indicating controllers. The controllers are available either in the local type to set the set-point value with the knob on the instrument or in the cascade type (remote type) to set the set-point value with a pneumatic signal.



FEATURES

- A wide variety of measuring elements and control mechanisms are available to meet various applications.
- A pneumatic circuit board and a heat-resistant weatherproof sturdy case are used, thereby greatly improving the durability and reliability.
- The pneumatic circuit board system allows to readily add or eliminate control mechanisms and units, thereby enhancing the system modifications and expansion flexibility
- Interchangeable parts are used to the maximum practicable extent, thereby reducing the number of parts to be kept in stock.
- The detecting section is identical with that of the pressure transmitter of PREX3000 Pneumatic Transmitter Series.

SPECIFICATIONS**Standard specification**

Item		Specifications							
Detector Section									
Model No.	Type of detector	Measuring range (continuously adjustable)	Process connection	Pressure limit	Overload protection	Suppression (max.)	Elevation (max.)		
11	Standard type	0-25 to 0-500 kPa {0-2,500 to 50,000 mm H ₂ O}	Rc ½ or ½ NPT internal thread {center to center: 54 mm}	-50 kPa to 10 MPa {-0.5 to 100 kgf/cm ² } (PVC cover; -10 kPa to 1 MPa{-0.1 to 10 kgf/cm ² })	To 10 MPa {100 kgf/cm ² } in either direction.	500 kPa {50,000 mm H ₂ O}	475 kPa {47,500 mm H ₂ O}		
22		0-2.5 to 0-53.9 kPa {0-250 to 5,500 mm H ₂ O}				53.9 kPa {5,500 mm H ₂ O}	51.4 kPa {5,250 mm H ₂ O}		
33		0-0.5 to 0-6 kPa {0-50 to 600 mm H ₂ O}	Rc ½ or ½ NPT internal thread (center to center: 54 mm, PVC cover : 71 mm)			-50kPa to +3.5 MPa {0.5 to 35 kgf/cm ² } (PVC cover; -10kPa to 1 MPa{-0.1 to 10 kgf/cm ² })	To 3.5 MPa {35 kgf/cm ² } in either direction.	6 kPa {600 mm H ₂ O}	5.5 kPa {550 mm H ₂ O}
44		0-0.1 to 0-1.2 kPa {0-10 to 120 mm H ₂ O}	Rc ½ or ½ NPT internal thread (center to center: 54 mm)			-1.5kPa to + 0.5 MPa {-150mm H ₂ O to +5 kgf/cm ² }	To 0.5 MPa {5 kgf/cm ² } in either direction.	1.2 kPa {120 mm H ₂ O}	1.1 kPa {110 mm H ₂ O}
61	Flange type	0-25 to 0-500 kPa {0-2,500 to 0-50,000 mm H ₂ O}	HP side: Flange Flush diaphragm type; 80 mm -JIS10K,30K(RF)equiv.flange 3 in. ANSI 150, 300(RF)equiv.flange Extended diaphragm type; 100 mm -JIS10K,30K(RF) equiv.flange 4 in.-ANSI150,300(RF) equiv.flange Length of extended part; 100 or 150 mm	-50 kPa {-0.5 kgf/cm ² } to maximum flange rated pressure.	To maximum flange rated pressure in either direction.	500 kPa {50,000 mm H ₂ O}	475 kPa {47,500 mm H ₂ O}		
62		0-2.5 to 0-53.9 kPa {0-250 to 0-5,500 mm H ₂ O}	LP side;Rc ½ or ½ NPT internal thread			53.9 kPa {5,500 mm H ₂ O}	51.4 kPa {5,250 mm H ₂ O}		
71	Remote seal diaphragm type	0-25 to 0-500 kPa {0-2,500 to 0-50,000 mm H ₂ O}	Flange connection(both HP and LP side) Flush diaphragm type ; 80mm -JIS10K,30K(RF) equiv.flange 3 in.- ANSI 150, 300(RF) equiv. flange Extended diaphragm type; 100 mm -JIS10K,30K(RF) equiv.flange 4 in.-ANSI150,300(RF)equiv.flange Length of extended part; 100 or 150 mm	-50 kPa {-0.5 kgf/cm ² } to maximum flange rated pressure. (PVC cover; -10 kPa to +1.5 Mpa {-0.1 to 15 kgf/cm ² } or maximum flange rated pressure.)	To maximum flange rated pressure in either direction.	500 kPa {50,000 mm H ₂ O}	475 kPa {47,500 mm H ₂ O}		
72		0-25 to 0-53.9 kPa {0-250 to 0-5,500 mm H ₂ O}				53.9 kPa {5,500 mm H ₂ O}	51.4 kPa {5,250 mm H ₂ O}		
81	High Static pressure type	0-25 to 0-500 kPa {0-2,500 to 0-50,000 mm H ₂ O}	• Rc ¼ or ¼ NPT internal thread (center to center : 64 mm) • When with manifold..... ½ in. socket welding (center to center : 110 mm)	-50 kPa to 42 MPa {-0.5 to 420 kgf/cm ² }	42 MPa {420 kgf/cm ² } in either direction.	500 kPa {50,000 mm H ₂ O}	475 kPa {47,500 mm H ₂ O}		
82		0-2.5 to 0-53.9 kPa {0-250 to 0-5,500 mm H ₂ O}				53.9 kPa {5,500 mm H ₂ O}	51.4 kPa {5,250 mm H ₂ O}		

Note 1) Elevation + Span ≤ Maximum span, Suppression ≤ Maximum span.

2) Refer to the annexed table about Max. working pressure on Flange and remote seal type.

Max working pressure

Note 1 : Max working pressure depends on flange rating, flange materials and operating temperature. Please refer to the following data. Operating range of temperature depends on specification of transmitters.

Note 2 : In case of remote sealed type (KKP75, KFKB□□-75), Max working pressure depends on the smaller value of either 1.05 MPa or following data.

	JIS	JPI/ANSI
Carbon Steel	<p>The graph shows three curves for JIS ratings: 30 K (top), 20 K (middle), and 10 K (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. All curves show a slight decrease in pressure as temperature increases, with a more significant drop starting around 100°C.</p>	<p>The graph shows two curves for JPI/ANSI ratings: Class 300 (top) and Class 150 (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. Both curves show a decrease in pressure with increasing temperature, with Class 300 maintaining a higher pressure than Class 150.</p>
SUS304	<p>The graph shows three curves for JIS ratings: 30 K (top), 20 K (middle), and 10 K (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. The curves show a more pronounced decrease in pressure at higher temperatures compared to Carbon Steel.</p>	<p>The graph shows two curves for JPI/ANSI ratings: Class 300 (top) and Class 150 (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. The curves show a significant decrease in pressure as temperature increases, especially above 100°C.</p>
SUS316	<p>The graph shows three curves for JIS ratings: 30 K (top), 20 K (middle), and 10 K (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. The curves show a decrease in pressure with temperature, similar to SUS304.</p>	<p>The graph shows two curves for JPI/ANSI ratings: Class 300 (top) and Class 150 (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. The curves show a decrease in pressure with temperature, similar to SUS304.</p>
SUS316L	<p>The graph shows three curves for JIS ratings: 30 K (top), 20 K (middle), and 10 K (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. The curves show a decrease in pressure with temperature, similar to SUS316.</p>	<p>The graph shows two curves for JPI/ANSI ratings: Class 300 (top) and Class 150 (bottom). The y-axis is Max Working Pressure (MPa) from 0.0 to 6.0. The x-axis is Temperature (°C) from -50 to 300. The curves show a decrease in pressure with temperature, similar to SUS316.</p>

Standard Specification (Continued)

Item	Specification
Function	
Model no.	Measuring range kPa (mmH ₂ O)
Accuracy	
KFDB□□ 11	0 - 25 to 0-less than 50 {0-2,500 to 0-less than 5,000} 0 - 50 to 0 - 500 {0 - 5,000 to 0 - 50,000}
KFDB□□ 22	0 - 2.5 to 0-less than 5 {0-250 to 0-less than 500} 0 - 5 to 0 - 53.9 {0 - 500 to 0 - 5,5000}
Transmitting / Indicating	± 0.75 / ±1.0 (±1.25) % FS ^{*1} ± 0.5 / ± 1.0 % FS
KFDB□□ 33	0 - 0.5 to 0-less than 1 {0-50 to 0-less than 100} 0 - 1 to 0 - 6 {0 - 100 to 0 - 600}
KFDB□□ 44	0 - 0.1 to 0-less than 0.2 {0-10 to 0-less than 20} 0 - 0.2 to 0 - 0.2 {0 - 20 to 0 - 20}
KFDB□□ 61, 71, 81	0 - 25 to 0-less than 50 {0-2,500 to 0-less than 5,000} 0 - 50 to 0 - 500 {0 - 5,000 to 0 - 50,000}
KFDB□□ 62, 72, 82	0 - 2.5 to 0-less than 5 {0-250 to 0-less than 500} 0 - 5 to 0 - 53.9 {0 - 500 to 0 - 5,5000}
Transmitting / Indicating	± 1.0% FS / ±1.5 % FS ± 0.5% FS / ± 1.0% FS
Note) *1 ; When with elevation or suppression.	
Repeatability	Within 0.3% FS
Dead Band	Within 0.2% FS
Indication	
Angle	44 degrees
Scale length	150 mm
Pointer	Process variable ; Red, Setpoint value ; Green
Output indicator (40 mm)	Scale range ; 0 to 200 kPa {0 to 2 kgf/cm ² } Indicator accuracy ; ± 3% FS
Set-point Section	
Local setting	Internal or external setting by setting knob.
Remote setting	Pneumatic pressure setting of 20 to 100 kPa {0.2 to 1.0 kgf/cm ² }
Setting range	0 to 100% FS
Controller	
Control action	P+ Manual reset, PI, PID, PD + Manual reset, PI + Batch, On-Off, Differential gap, P+ External reset, PD, + External reset
Proportional band (P)	5 - 500% (direct or reverse action)
Integral (I)	0.05 to 30 min.
Derivative (D)	0.05 to 30 min.
Differential gap	1 to 100% FS, adjustable
Batch setting pressure	60 to 110 kPa { 0.6 - 1.1 kgf /cm ² }, adjustable
External reset pressure	20 to 100 kPa { 0.2 - 1.0 kgf /cm ² }, adjustable
Manual reset	0 to 100% FS, adjustable (by pneumatic pressure setting)
General Specification	
Output	20 to 100 kPa {0.2 to 1.0 kgf /cm ² }, 0 or Corresponding to supply air pressure (on-off, differential gap)
Minimum load	I.D. 4 mm x 3 m + 20 cm ³
Supply air pressure	140 ± 14 kPa {1.4 ± 0.14 kgf/cm ² }
Air consumption (50% output balanced)	Indicating transmitter (A0) ; 5 L/min [N] Indicating controller (A1, A3) ; 9 L/min [N] Indicating transmitting controller (A2, A4) ; 9 L/min [N] Manual controller (M) ; 3 L/min [N]
Saturated air supply capacity	Transmitter output ; 40 L/min [N] Controller output ; 40 L/min [N] Manual controller output ; 30 L/min [N]
Air connection	Rc ¼ or ¼ NPT internal thread
Ambient temperature	At meter body (process fluid) ; -40 to 120 °C (PVC cover; 0 to 55 °C) At transmitter (ambient) ; -30 to 80 °C
Relative humidity	10 to 90% RH
Case, Door	Enclosure ; Rain-tight and dust-tight, meets JIS F 8001 class 3 splash-proof, NEMA 3, IEC IP 54 Materials ; Case..... Aluminum die-case Door..... Polyester with fiberglass Door glass..... Reinforced glass (3 mm thick) Case finish ; Acryl baking finish (for corrosion-resistant and silver finish, refer to the optional specification)
Mounting	Panel, 2 in. pipe or flange mounting.
Weight	11.8 kg (when model KFDB12-221122A1P-X)

Item	Specifications		
(1) External SP setting knob (for local setting)	A setting knob is mounted on the door. SP can be adjusted from outside.		
(2) Built-in manual controller (with auto-manual transfer switch)	Consist of manual control regulator, two position transfer switch and balance check button.		
(3) With manifold valve (except type 6□ / 7□ detector)	Manifold valve		Direct Mounting type
	KFD	Without Extension type	With Extension type
	KFD□□-11		✓
	" -22		✓
	" -33		✓
	" -44	✓	✓
	" -81		✓
" -82		✓	
High pressure type NZ16			
(4) Elevation , Suppression	Elevation ; The lower limit of input range is above zero. Suppression ; The lower limit of input range is below zero.		
(5) Pressure regulator with filter (hot applicable to panel mounting type)	Pressure regulator with filter plus 40 mm pressure gauge. (supply pressure ; 200 to 970 kPa {2 to 9.9 kgf/cm ² }, output; 140 kPa {1.4 kgf/cm ² }, pressure gauge; 0 to 200 kPa {0 to 2 kgf/cm ² })		
(6) High accuracy type (applicable model KFDB□□-11-22)	Model no.	Measuring span kPa{mmH ₂ O}	
	KFDB□□ -11	50 to less than 500 {5,000 to less than 50,000}	±0.25 (±0.375)*1
	KFDB□□ -22	5 to less than 53.9 {500 to less than 5,500}	
	KFDB□□ -11	25 to less than 50 {2,500 to less than 5,000}	±0.5 (±0.75)*1
KFDB□□ -22	2.5 to less than 5 {250 to less than 500}		

Note) *1: When with elevation or suppression.

Optional Semi-standard and Special Specification

Item	Applicable Models	Specifications																				
(1) Vacuum use (Y23)	KFDB□□ - 11, 22, 6□, 7□, 8□ (Fig 1.) KFDB□□ - 7□ (Fig 2.)	<p>Relation of Process temperature and Pressure</p> <p>Figure 1: Pressure (kPa/ Torr) vs. Temperature (°C). Operable range from 40°C to 120°C. Pressure values: 3.2 (24) kPa, 101.3 (760) kPa.</p> <p>Figure 2: Pressure (kPa/ Torr) vs. Temperature (°C). Operable range from 40°C to 120°C. Pressure values: 13.3 (100) kPa, 101.3 (760) kPa.</p> <p>Figure 3: Pressure (kPa/ Torr) vs. Temperature (°C). Operable range from 10°C to 280°C. Pressure values: 50.7 (380) kPa, 101.3 (760) kPa.</p> <p>Figure 4: Pressure (kPa/ Torr) vs. Temperature (°C). Operable range from 10°C to 280°C. Pressure values: 26.7 (200) kPa, 101.3 (760) kPa.</p> <p>For details, please contact your Yamatake-Honeywell agent.</p>																				
(2) High temperature use (Y62)	KFDB□□ - 7□ (Fig 3.)																					
(3) High temperature-Vacuum use (Y62+Y23)	KFDB□□ - 7□ (Fig 4.)																					
(4) Steam block (Y29)	KFDB□□-11, 23, 33 (except PVC and monel cover)	<p>Max. operating pressure ; 5 MPa {50 kgf/cm²}</p> <p>Max. operating temperature; 250 °C (below 120 °C at meter body)</p> <p>Steam piping connection; PT ¼ or ¼ NPT internal thread</p> <p>Material; Carbon steel (SF45A)</p>																				
(5) Stainless steel bolts (Y66)	KFDB□□-11, 22, 33, 6□, 8□	<p>SUS304 stainless steel is used for meter body fixing bolts.</p> <p>Max. operating pressure; [MPa]</p> <table border="1" data-bbox="847 768 1422 882"> <thead> <tr> <th></th> <th>SF45A</th> <th>SUS316</th> <th>Monel</th> <th>PVC</th> </tr> </thead> <tbody> <tr> <td>KFDB□□ - 11, 22, 6□</td> <td>6</td> <td>6</td> <td>6</td> <td>1.5</td> </tr> <tr> <td>" - 33</td> <td>2.5</td> <td>2.5</td> <td>2.5</td> <td>1</td> </tr> <tr> <td>" - 8□</td> <td>23</td> <td>23</td> <td>-</td> <td>-</td> </tr> </tbody> </table>		SF45A	SUS316	Monel	PVC	KFDB□□ - 11, 22, 6□	6	6	6	1.5	" - 33	2.5	2.5	2.5	1	" - 8□	23	23	-	-
	SF45A	SUS316	Monel	PVC																		
KFDB□□ - 11, 22, 6□	6	6	6	1.5																		
" - 33	2.5	2.5	2.5	1																		
" - 8□	23	23	-	-																		
(6) Corrosion resistant and silver finish (Y138)	All the KFD models	<p>Corrosion-resistant finish with baked acryl (Y138A) ; Resistant against corrosive gases.</p> <p>Corrosion-proof finish with baked epoxy resin (Y138B) : Resistant against corrosive liquids.</p> <p>Regular silver finish with baked acryl (Y138C) : To suppress temperature rise caused by direct sunlight or other cause.</p> <p>Corrosion-resistant silver finish with baked acryl (Y138D) : To suppress temperature rise caused as above and to be resistance against corrosive gases.</p> <p>(note: silver finish is not resistant against alkaline gases.)</p>																				
(7) Variable damping mechanism (Y169)	KFDB□□-11, 22, 33, 6□, 7□, 8□ (when measuring element material is SUS316 or SUS316L.)	<p>Time Constant:</p> <table border="1" data-bbox="828 1227 1433 1368"> <thead> <tr> <th rowspan="2">Model no.</th> <th colspan="2">Time constant (continuously variable)</th> </tr> <tr> <th>Min.</th> <th>Max.</th> </tr> </thead> <tbody> <tr> <td>KFDB□□ -11, 22, 8□</td> <td>0.5 sec. or less</td> <td>30 sec. or over</td> </tr> <tr> <td>KFDB□□ -33, 6□</td> <td>2 sec. or less</td> <td>30 sec. or over</td> </tr> <tr> <td>KFDB□□ - 7□</td> <td>6 sec. or less</td> <td>50 sec. or over</td> </tr> </tbody> </table> <p>Note: KFDB□□-44 is with min.2 sec. or less and max. 15 sec. or over</p>	Model no.	Time constant (continuously variable)		Min.	Max.	KFDB□□ -11, 22, 8□	0.5 sec. or less	30 sec. or over	KFDB□□ -33, 6□	2 sec. or less	30 sec. or over	KFDB□□ - 7□	6 sec. or less	50 sec. or over						
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KFDB□□ - 7□	6 sec. or less	50 sec. or over																				
(8) Rear connection for process piping (Y171)	KFDB□□-11, 22	<p>Applicable only when cover material is carbon steel or SUS 316 (installation method is limited to that on a 2-inch horizontal pipe)</p>																				
(9) For oxygen measurement (Y182)	All the KFD models (when measuring element material is SUS316 or SUS316L.)	<p>Liquid fill ; Fluorine oil</p> <p>Operating temperature (both fluid and ambient); -10 to 60 °C</p> <p>Wet-part treatment; Treated for degreasing</p>																				
(10) For chlorine gas measurement (Y183)	KFDB□□-11, 22, 33, 6□, 7□, 8□ (when measuring element material is tantalum.)	<p>Liquid fill ; Fluorine oil</p> <p>Operating temperature (both fluid and ambient); -10 to 80 °C</p> <p>Wet-part treatment; Treated for degreasing</p>																				
(11) Special order items (the items mentioned in the right are available as special order item.)	All the KFD models	<ol style="list-style-type: none"> 1) Door lock 2) Stainless steel tag plate 3) AUTO/MAN switch viewing window 4) Pressure gauge (40 mm) for transmitting signal 																				

MODEL SELECTION

Basic model no.			Selections										Options	
Type	Function	Control action	Type of detector	Cover or flange ^{*1} material		Pressure element material		Flange rating	Capillary tube length	Length of extended part of flange	Air connection	Pressure unit / Output		Mounting method
				HP ^{*2}	LP ^{*3}	HP	LP							
KFD	I	II	III	IV	V	VI	VII	VIII	IV	X	XI	XII	XIII	XIV

I	B0	Indicating transmitter	
	B1	Indicating controller (local type)	
	B2	Indicating transmitting controller (local type)	
	B3	Indicating controller (cascade type)	
	B4	Indicating transmitting controller (cascade type)	

II	0	No selection	5	PI + Batch
	1	P + Manual reset	6	On-Off
	2	PI	7	Differential gap
	3	PID	8	P + External reset
	4	PD + Manual reset	9	PD + External reset

III	11	Standard type	025 to 0500 kPa {02,500 to 0 50,000 mm H ₂ O}
	22	Standard type	02.5 to 053.9 kPa {0250 to 0 50,000 mm H ₂ O}
	33	Standard type	00.5 to 06 kPa {050 to 0 600 mm H ₂ O}
	44	Standard type	00.1 to 01.2 kPa {010 to 0 120 mm H ₂ O}
	61	Flange type	025 to 0500 kPa {02,500 to 0 50,000 mm H ₂ O}
	62	Flange type	02.5 to 053.9 kPa {0250 to 0 5,500 mm H ₂ O}
	71	Remote seal diaphragm type	025 to 0500 kPa {02,500 to 0 50,000 mm H ₂ O}
	72	Remote seal diaphragm type	02.5 to 053.9kPa {0250 to 0 5,500 mm H ₂ O}
	81	High static pressure type	025 to 0500 kPa {02,500 to 050,000 mm H ₂ O}
	82	High static pressure type	025 to 053.9 kPa {0250 to 0 5,500 mm H ₂ O}

IV	1	Carbon steel (SF45A)	
	2	SUS316 (applicable type 11, 22, 33, 44, or 8□ detector.)	
	3	Monel lining (base SUS316) (applicable to type 11, 22, or 33 detector.)	
	5	Rigid PVC (applicable type 11, 22, 33 detector.)	
	7	SUS304 (applicable to type 6□ or 7□ detector.)	

V	1	Carbon steel (SF45A)	
	2	SUS316 (applicable type 11, 22, 33, 44, 6□ or 8□ detector.)	
	3	Monel lining (base SUS316) (applicable to type 11, 22, 33 or 6□ detector.)	
	5	Rigid PVC (applicable type 11, 22, 33 or 6□ detector.)	
7	SUS304 (applicable to type 7□ detector.)		

VI	2	SUS316 (diaphragm; SUS316L, SUS316 in case of type 44)	
	3	Monel (excluding type 44 and extended diaphragm of 6□ or 7□ detector.)	
	4	Tantalum (excluding type 44 and extended diaphragm of 6□ or 7□ detector.)	
	8	SUS316L (excluding type 44 detector.)	

VII	2	SUS316 (diaphragm; SUS316L, SUS316 in case of type 44)	
	3	Monel (excluding type 44 and extended diaphragm of 7□ detector.)	
	4	Tantalum (excluding type 44 and extended diaphragm of 7□ detector.)	
	8	SUS316L (excluding type 44 detector.)	

VIII	SUS316 (diaphragm; SUS316L, SUS316 in case of type 44)		
	1	80 mm-JIS 10K (RF) equiv. flange	Flush diaphragm type
	2	80 mm-JIS 30K (RF) equiv. flange	
	3	3 in. -ANSI 150 (RF)equiv. flange	
	4	3 in. -ANSI 300 (RF) equiv. flange	
	5	100 mm-JIS 10K (RF) equiv. flange	Extended diaphragm type
	6	100 mm-JIS 30K (RF) equiv. flange	
	7	4 in. -ANSI 150 (RF)equiv. flange	
8	4 in.-ANSI 300 (RF) equiv. flange		

IX	Blank (applicable to type 11, 22, 33, 44, 6□ or 8 □ detector)	
	02	2 m (applicable to type 7□ detector.)
	03	3 m (applicable to type 7□ detector.)
	05	5 m (applicable to type 7□ detector.)

X	Blank (applicable to type 11, 22, 33, 44, 6□ or 8 □ detector.)	
	00	Applicable to flush diaphragm, wafer and button diaphragm type.)
	10	100 mm (applicable to extended diaphragm of type 6□ or 7□ detector.)
15	150 mm (applicable to extended diaphragm of type 6□ or 7□ detector.)	

XI	A	Rc ¼ internal thread (When this option chosen, instruction plate becomes Japanese version.)
	B	¼ NPT internal thread (When this option chosen, instruction plate becomes Japanese version.)

XII	1	0.2 to 1.0 kgf/ cm ²
	2	3 to 15 PSI
	3	0.2 to 1.0 bar
	4	20 to 100 kPa
	8	19.6 to 98.1 kPa (equality to 0.2 to 1.0 kgf/cm ²)

XIII	P	Panel mounting (not applicable to with air-set.)
	T	2 in. pipe mounting
	F	Flange mounting (applicable to type 61 or 62 detector.)

XIV	-X	No selection
	-M	Built in manual controller (with auto/manual transfer switch) (applicable to type B ₁ , B ₂ , B ₃ or B ₄ controller.)
	-K	With external SP setting knob (applicable to type B ₁ or B ₂ controller.)
	-5	Elevation
	-6	Suppression
	-7	Pressure regulator with filter

[Notes]

- 1) For material of cover and flange.
- *1. Cover material denote for detector type 11/22/33/44/61 LP³/62LP³/81 or 82. Flange materials denote for detector type 61HP²/62HP²/71 or 72.
- *2. For detector type 61 or 62; Flange material
- *3. For detector type 61 or 62; Chamber cover material

- 2) When specifying semi- standard option (Y□) not listed in model no. table, please write as; KFD11Y-112222A1T-M,K,6,7 (Y66,Y138). Please consult with factory in case of a multiple of "Y" spec. are required.)

