



KF SERIES PRESSURE INDICATING CONTROLLER MODEL: KFP

General

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 pressures, temperatures, flows and liquid levels.

Model KFP Pressure indicating Controllers indicate and control a process variable by converting its pressure change into mechanical displacement of a bellows or a spiral pressure receiving element.

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 hard 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 modification and expansion flexibility.
- ◆ Interchangeable parts are used to the maximum practicable extent, thereby reducing the number of parts to be kept in stock.
- ◆ A balancing weight and a pulsation damping spiral (optional) are employed, thereby making the instruments highly resistant against mechanical vibration and process

Standard Specifications

Item		Specifications	
Detector section	Measuring range	SUS316 spiral: 0~3, 0~4, 0~5, 0~6, 0~10, 0~15, 0~20, 0~25, 0~35, 0~50, 0~70, 0~100, 0~150, 0~250, 0~350 (kgf/cm ² gauge pressure) Phosphor bronze billows: 0.2~1.0 (kgf/cm ² pneumatic pressure signal)	
	Allowable over range Without recalibration	Span of 70kgf/cm ² or less: Maximum pressure plus 50% of span Span of 100kgf/cm ² or more: Maximum pressure plus 20% of span	
	Process connection	PT1/4 internal thread	
Function	Accuracy	±1% FS (±1.5% FS for range of 0-150kgf/cm ² or more)	
	Repeatability	Within 0.3% FS (within 0.45% FS for range of 0-150kgf/cm ² or more)	
	Dead band	Within 0.2% FS (within 0.3% FS for range of 0-150kgf/cm ² or more)	
Indication	Angle	44 degrees	
	Scale length	150mm	
	Pointer	Process variable: Red, Set point value: Green	
	Output indicator	Scale range: 0-2kgf/cm ² , Indicator accuracy: ±3%FS	
Setpoint Section	Local setting	Internal or external setting by setting knob.	
	Remote setting	Pneumatic pressure setting of 0.2-1.0 kgf/cm ²	
	Setting range	0-100% 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)	0.05~30 min.	
	Derivative (D)	0.05~30 min.	
	Differential gap	1%~100% FS, adjustable	
	Batch setting pressure	0.6~1.1kgf/cm ² , adjustable	
	External reset pressure	0.2~1.0kgf/cm ²	
	Manual reset	0~100%FS, adjustable (by pneumatic pressure setting.)	
General Specifications	Output	0.2~1.0kgf/cm ² , 0 or 1.4kgf/cm ² (on-off, differential gap)	
	Minimum load	I.D. 4mm×3mm+20cm ³	
	Supply air pressure	1.4±0.14kgf/cm ²	
	Air consumption (50% output balanced)	Indicating transmitter: 4N ℓ /min	Only indicating: 0
		Indicating controller: 4N ℓ /min	Manual control: 3N ℓ /min.
	Saturated are supply capacity	Indicating controlling transmitter: 8N ℓ /min.	
		Pneumatic transmission: 40N ℓ /min.	Manual pneumatic pressure: 3N ℓ /min.
	Air connection	PT1/4 or 1/4NPT internal thread	
	Ambient temperature	-30~+80℃	
	Relative humidity	10%~90%RH	
	Case, Door	Enclosure: Rain-tight and dust, meets JIS F8001 Class 3 splash-proof, NEMA 3, IEC IP54 Vibration resistant.....Lloyd regulation or equivalent Materials: Case.....Aluminum die-cast Door.....Polyester with fiberglass Door-glass.....Reinforced glass (3mm thick) Case finish: Acryl baking finish (for corrosion-resistant and silver finish, refer to the optional specification.) Color of finish: Dark beige (MUNSELL 10YR4.7/ 0.5)	
	Mounting	Panel, wall or 2-inch pipe mounting (mounting bolt, nut material: SUS304)	
Net weight	Approx. 5.8Kg (local mode PI controller using 0-3 kgf/cm ² element without option.)		

Optional Specifications

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)	Consists of a manual control regulator, two position transfer switch and balance check button.
(3) Air set (not applicable to panel mounting type)	Pressure regulator with filter plus $\phi 40$ mm pressure gauge. (supply pressure: 2-9.9 kgf/cm ² , output: 1.4 kgf/cm ² , pressure gauge: 0-2 kgf/cm ²)

Optional Semi to standard and Special Specification

Item	Specifications
(1) Corrosion to resistant and silver finish (Y138)	Corrosion to resistant finish with backed acryl (Y138A) : Resistant against corrosive gases. Corrosion to proof finish with backed epoxy resin (Y138B) : Resistant against corrosive liquids. Regular silver finish with backed acryl (Y138C) : To suppress temperature rise caused by direct sunlight or other cause. Corrosion to resistant silver finish with backed acryl (Y 138D) : To suppress temperature rise cause as above to be resistance against corrosion gases. (Note: Silver finish is not resistant against alkaline gases.)
(2) Oil to free (Y 158)	Oil to free treatment. (excluding 20 to 100 Kpa {0.2-1.0kgf/cm ² }, pneumatic signal receiving type).
(3) Special order items: (The items metioned in the right are available as special order items.)	<ol style="list-style-type: none"> 1) Elevation (a) For messuring ranges less than 9.81MPa {100kgf/cm²} : Up to 20% of maximum value of span. (b) For messuring ranges 10 Mpa {10kgf/cm²} or over: Up to 10% of maximum value of span. 2) Process pipe connections: Rc1/2, 1/2NPT, Rc1/4, 1/4NPT internal thread. 3) Sprial element with pulsation damper. 4) Indication only. 5) Door lock key. 6) Compound meter Bellows type: to 101 to 19.6 Kpa { to 760 to 0.2 mmHg} to 101 to 98.1 Kpa { to 760 to 1 mmHg} to 98.0 to 49.0 Kpa { to 1 to 0.5 kgf/cm²} to 98.0 to 98.0 Kpa { to 1 to 0.5 kgf/cm²} to 24.5 to 24.5 Kpa { to 0.5 to 0.5 kgf/cm²} Sprial type: Standard ranges with 0 to 3.43 Mpa {0 to 35 kgf/cm²} Indicating accuracy: +1.5FS 7) Stainless steel tag plate 8) AUTO/MAN switch viewing window 9) Pressure gauge (40 mm) for transmitting signal.

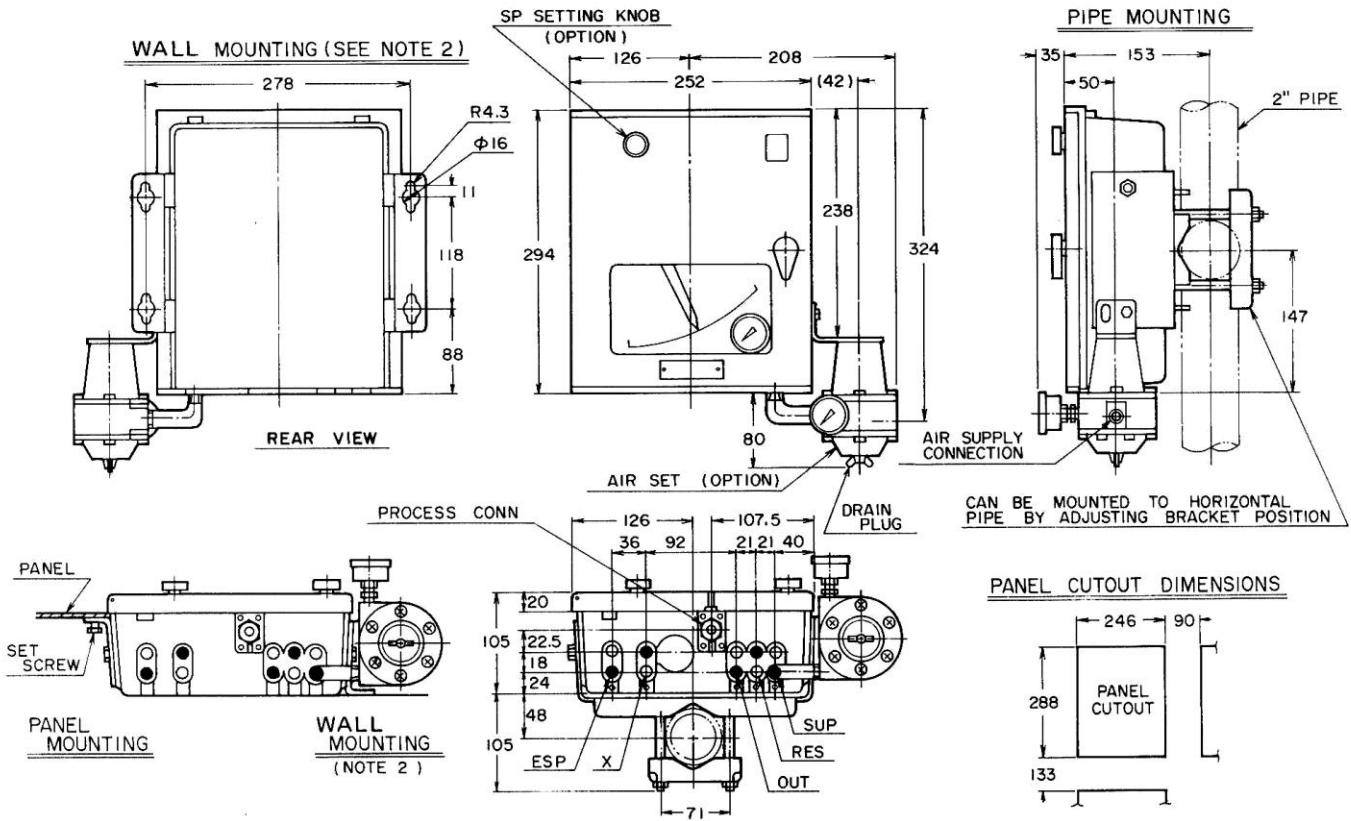
Model Number Table

KFPA12-01025B4S-K.M.7

Basic model no.			Selections					Options	Description	
Type	Function	Control action	Type of detector	Measuring range	Air connection	Signal pressure	Mounting method			
KFP									Pressure indicating controller	
	A0								Indicating transmitter	
	A1								Indicating controller (local type)	
	A2								Indicating transmitting controller (local type)	
	A3								Indicating controller (cascade type)	
	A4								Indicating transmitting controller (cascade type)	
		0								No selection
		1								P + Manual reset
		2								PI
		3								PID
		4								PD + Manual reset
		5								PI + Batch
		6								On-Off
		7								Differential gap
		8								P + External reset
		9								PD + External reset
			-01							Spiral type
			-02							Bellows type
			-03							Pneumatic signal receiving type
				003						Spiral type 0- 3 kgf/cm ²
				004						Spiral type 0- 4 kgf/cm ²
				005						Spiral type 0- 5 kgf/cm ²
				006						Spiral type 0- 6 kgf/cm ²
				010						Spiral type 0- 10 kgf/cm ²
				015						Spiral type 0- 15 kgf/cm ²
				020						Spiral type 0- 20 kgf/cm ²
				025						Spiral type 0- 25 kgf/cm ²
				035						Spiral type 0- 35 kgf/cm ²
				050						Spiral type 0- 50 kgf/cm ²
				070						Spiral type 0- 70 kgf/cm ²
				100						Spiral type 0- 100 kgf/cm ²
				150						Spiral type 0- 150 kgf/cm ²
				250						Spiral type 0- 250 kgf/cm ²
				350						Spiral type 0- 350 kgf/cm ²
				760						Bellows type -760~0mmHg (Negative pressure)
			805						Bellows type 0- 0.5 kgf/cm ²	
			810						Bellows type 0- 1 kgf/cm ²	
			815						Bellows type 0- 1.5 kgf/cm ²	
			820						Bellows type 0- 2 kgf/cm ²	
			821						Pneumatic signal (0.2~1.0 kgf/cm ²) receiving type	
				A					PT 1/4 internal thread (instruction plate: Japanese)	
				B					1/4 NPT internal thread (instruction plate: English)	
					1				0.2~1.0kgf/cm ²	
					2				3-15 PSI	
					3				0.2~1.0bar	
					4				20-100kpa	
						P			Panel mounting (air-set cannot be installed)	
						S			Wall mounting	
						T			2-inch pipe mounting	
							-X		No option	
							-K		With external SP setting knob (applicable to type A1 or A2 controller.)	
							-M		Built-in manual controller (with auto/manual switch) (applicable to type A1, A2, A3 or A4 controller.)	
							-7		With air-set	

Overall Dimensions

(Unit: mm)



AIR CONNECTIONS (REFER TO NOTE 1,3)

- : PT 1/4 FEMALE
- : 1/4 NPT FEMALE

REGEND

- ESP : EXTERNAL SP SIGNAL
(FOR CASCADE TYPE ONLY)
- X : PNEUMATIC PRESS. RECEIVING OR TRANSMITTING SIGNAL
- OUT: CONTROLLED SIGNAL
- RES: EXTERNAL RESET SIGNAL
(FOR EXTERNAL RESET TYPE ONLY)
- SUP : SUPPLY AIR PRESSURE

- Note:**
- 1) The holes not to be used for connection are plugged.
 - 2) If two or more instruments are to be mounted on wall, keep them apart at least 80mm (163mm for instruments with air set) horizontally and at least 126mm vertically.
 - 3) For manual reset provision, "SUP" and "RES" have been preconnected.