



FCX - A SERIES DIFFERENTIAL PRESSURE TRANSMITTER

DATA SHEET

FHC, FKC...2

The FCX -A differential pressure transmitter accurately measures differential pressure, liquid level or gauge pressure and transmits a proportional 4 to 20mA signal. The transmitter utilizes a unique micromachined capacitive silicon sensor with state-of-the-art microprocessor technology to provide exceptional performance and functionality.



FEATURES

1. High accuracy

0.07% accuracy for all calibrated spans is a standard feature for all DP models covering 0.1kPa {1m bar} draft range to 3000kPa {30 bar} high differential. 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, static pressure, and overpressure substantially reduces total measurement error in actual field applications.

3. Smart / Traditional convertible

Fuji micro-electronics manufacturing technology offers free selection of Smart / Traditional transmitters.

A small plug-in communication module upgrades your model FHC to smart type model FKC, which has full remote communication capabilities. A Hand Held Communicator (HHC), model FXW can remotely display or reconfigure all transmitter parameters at any point on the loop without affecting the transmitter signal.

4. Fuji/HART® bilingual communication module

The communication module is "bilingual" to speak both Fuji proprietary protocol and HART®. Any HART® compatible devices can communicate with FCX-A/C series transmitters.

5. Application flexibility

Example options that render the FCX-A suitable for almost any process applications includes.

- Analog indicator at either the electronics side or terminal side
- Full range of hazardous area approvals
- Built-in RFI filter and lightning arrestor
- 4 1/2 digits LCD meter
- Stainless steel electronics housing
- Wide selection of materials

SPECIFICATIONS

Functional specifications

Type :

Model FHC : 4 to 20mA, Traditional type

Model FKC : 4 to 20mA with digital signal

Service :

Liquid, gas or vapour

Static pressure, span, and range limit:

Type	Static pressure [MPa] {bar}	Span limit [kPa] {m bar}			Range limit [kPa] {m bar}
		Min.		Max.	
		FHC	FKC	FHC/FKC	
F□C□11	-0.1 to + 3.2 { -1 to + 32 }	0.1 { 1 }	0.1 { 1 }	1 { 10 }	+/- 1 { +/- 10 }
F□C□22	-0.1 to + 10 { -1 to + 100 }	0.6 { 6 }	0.1 { 1 }	6 { 60 }	+/- 6 { +/- 60 }
F□C□23	-0.1 to + 10 { -1 to + 100 }	3.2 { 32 }	0.32 { 3.2 }	32 { 320 }	+/- 32 { +/- 320 }
F□C□25	-0.1 to + 10 { -1 to + 100 }	13 { 130 }	1.3 { 13 }	130 { 1300 }	+/- 130 { +/- 1300 }
F□C□26	-0.1 to + 10 { -1 to + 100 }	50 { 500 }	5 { 50 }	500 { 5000 }	+/- 500 { +/- 5000 }
F□C□33	-0.1 to + 16 { -1 to + 160 }	3.2 { 32 }	0.32 { 3.2 }	32 { 320 }	+/- 32 { +/- 320 }
F□C□35	-0.1 to + 16 { -1 to + 160 }	13 { 130 }	1.3 { 13 }	130 { 1300 }	+/- 130 { +/- 1300 }
F□C□36	-0.1 to + 16 { -1 to + 160 }	50 { 500 }	5 { 50 }	500 { 5000 }	+/- 500 { +/- 5000 }
F□C□38	-0.1 to + 16 { -1 to + 160 }	300 { 3000 }	30 { 300 }	3000 { 30000 }	+/- 3000 { +/- 30000 }
F□C□43	-0.1 to + 42 { -1 to + 420 }	3.2 { 32 }	0.32 { 3.2 }	32 { 320 }	+/- 32 { +/- 320 }
F□C□45	-0.1 to + 42 { -1 to + 420 }	13 { 130 }	1.3 { 13 }	130 { 1300 }	+/- 130 { +/- 1300 }
F□C□46	-0.1 to + 42 { -1 to + 420 }	50 { 500 }	5 { 50 }	500 { 5000 }	+/- 500 { +/- 5000 }
F□C□48	-0.1 to + 42 { -1 to + 420 }	300 { 3000 }	30 { 300 }	3000 { 30000 }	+/- 3000 { +/- 30000 }

Remark :

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

- Lower limit of static pressure (vacuum limit) :

Silicone fill sensor : See Fig. 1

F□C□38 and F□C□48 : -0.5kgf/cm²

Fluorinated fill sensor :

66kPa abs (500mmHg abs) at temperature below 80°C

- The maximum span of each sensor can be converted to different units using below factors.

1MPa=10³KPa=10bar=10.19716kgf/cm²=145.0377psi

1kpa=10mbar=101.9716mmH O=4.01463inH O

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CODE SYMBOLS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Description
							2								Type
F	H	C													Traditional, 4-20 mAdc
F	K	C													Smart, 4-20 mAdc + Fuji/Hart® digital signal
															Connections
															Process connections
															Oval flange screw
															Electrical connection
S															Rc 1/4
T															7/16-20 UNF
V															G 1/2
W															1/2-14 NPT
X															Pg 13,5
															M 20 x 1,5
															Pg 13,5
															Range & wetted parts material
															Static pressure limits
															Spans (*2)
															Process - cover LP & HP - side
															Measuring diaphragm
															Wetted cell body
	1	1	V												-1 to 32 bar
	1	1	H												10/100 mm WC
	2	2	V												316 SS
	2	2	H												316 SS
	3	3	V												316 SS
	3	3	H												316 SS
	3	3	M												316 SS
	3	3	C												316 SS
	3	3	T												316 SS
	3	5	V												316 SS
	3	5	H												316 SS
	3	5	M												316 SS
	3	5	C												316 SS
	3	5	T												316 SS
	3	6	V												316 SS
	3	6	H												316 SS
	3	6	M												316 SS
	3	6	T												316 SS
	3	8	V												316 SS
	4	3	V												316 SS
	4	3	H												316 SS
	4	3	M												316 SS
	4	3	C												316 SS
	4	5	V												316 SS
	4	5	H												316 SS
	4	5	M												316 SS
	4	5	C												316 SS
	4	6	V												316 SS
	4	6	H												316 SS
	4	6	M												316 SS
	4	8	V												316 SS
(*5)	2	3	B												316 SS
(*5)	2	3	L												316 SS
(*5)	2	3	U												316 SS
(*5)	2	5	B												316 SS
(*5)	2	5	L												316 SS
(*5)	2	5	U												316 SS
(*5)	2	6	B												316 SS
(*5)	2	6	L												316 SS
(*5)	2	6	U												316 SS
(*6)	8	1	H												316 SS
(*6)	8	2	H												316 SS
(*6)	8	3	H												316 SS
(*6)	8	3	M												316 SS
(*6)	8	3	T												316 SS
(*6)	8	5	H												316 SS
(*6)	8	5	M												316 SS
(*6)	8	5	T												316 SS
(*6)	8	6	H												316 SS
(*6)	8	6	M												316 SS
(*6)	8	6	T												316 SS
(*6)	9	1	H												316 SS
(*6)	9	2	H												316 SS
(*6)	9	3	H												316 SS
(*6)	9	3	M												316 SS
(*6)	9	3	T												316 SS
(*6)	9	5	H												316 SS
(*6)	9	5	M												316 SS
(*6)	9	5	T												316 SS
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(*6)	9	6	M												316 SS
(*6)	9	6	T												316 SS

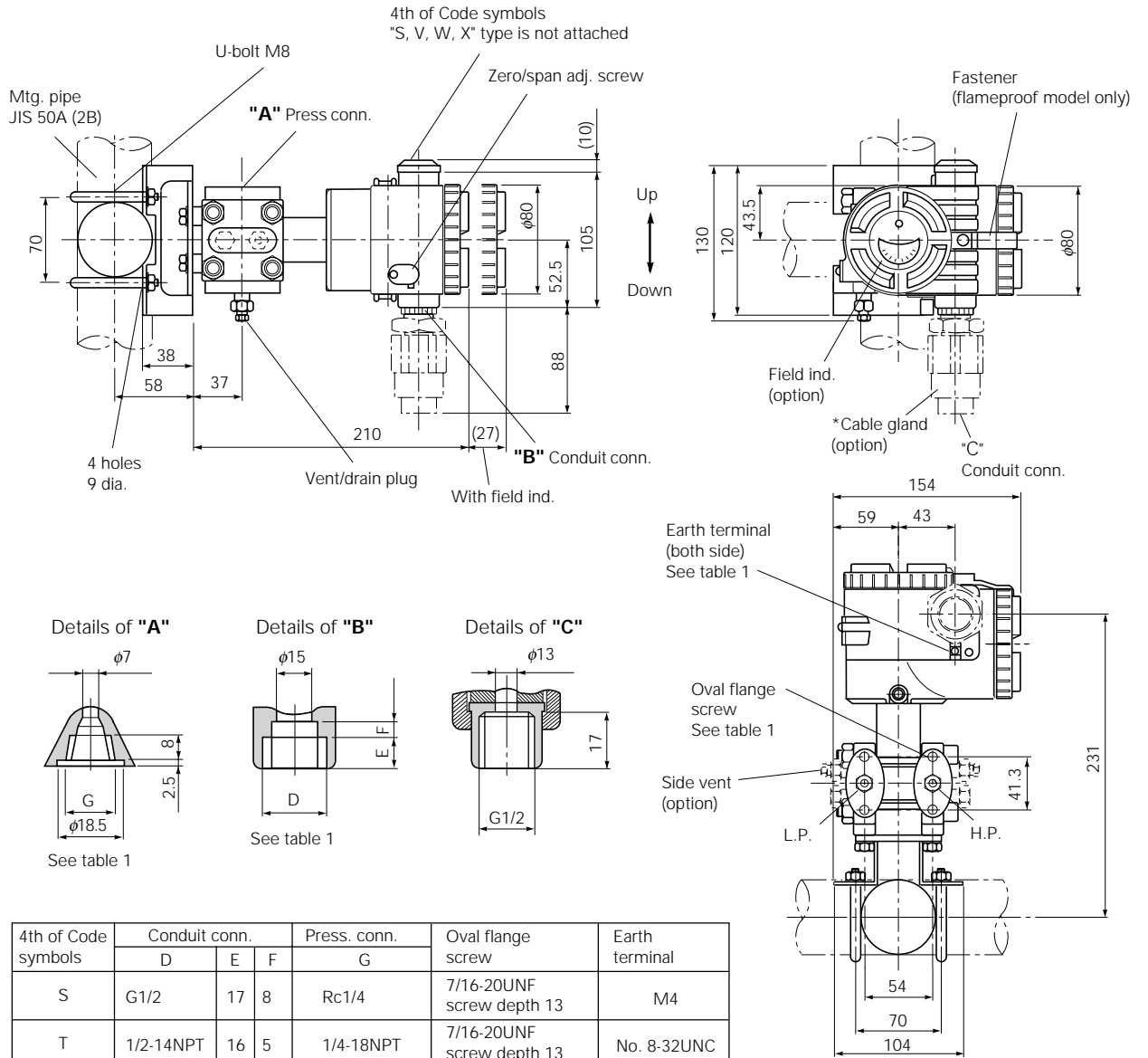
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
F	H	C					2	-						
F	K	C					2	-						

Indicator & Arrester																
Indicator																
Arrester																
2	-	A													None	none
2	-	B													Analog, 0-100% linear scale	none
2	-	C													Analog, 0-100% √ scale	none
2	-	D													Analog, Custom scale	none
2	-	J													Analog, double scale	none
2	-	E													none	yes
2	-	F													Analog, 0-100% linear scale	yes
2	-	G													Analog, 0-100% √ scale	yes
2	-	H													Analog, Custom scale	yes
2	-	K													Analog, double scale	yes
2	-	L													Digital, 0-100%	none
2	-	P													Digital, Custom scale (FKC only)	none
2	-	M													Digital, 0-100% √ scale	none
2	-	Q													Digital, 0-100%	yes
2	-	S													Digital, Custom scale (FKC only)	yes
2	-	N													Digital, 0-100% √ scale	yes
Approvals for hazardous locations (consult FUJI for availability)																
A															None (standard)	
X															Flameproof housing <<d>> II C T5/T6 (LCIE)	
K															Intrinsic safety CENELEC EEx ia IIC T4/T5	
F															Flameproof housing <<d>> II C T5/T6 (ISseP)	
D															FM - Flameproof housing	
E															CSA - Flameproof housing	
M															BASEEFA - Flameproof housing (Conduit seal)	
N															BASEEFA - Flameproof housing (Cable gland seal) - (Conduit connection G 1/2)	
R															SAA - Flameproof housing (Conduit seal)	
S															SAA - Flameproof housing (Cable gland seal) - (Conduit connection G 1/2)	
H															FM - Intrinsic safety & Nonincendive	
J															CSA - Intrinsic safety & Nonincendive	
P															BASEEFA - Type N	
T															SAA - Intrinsic safety	
Q															SAA -Type N	
Side vent/drain & mounting bracket																
															Side vent/drain	mounting bracket
A															none	none
B															none	yes, CS
C															none	yes, SS
D															yes	none
E															yes	yes, CS
F															yes	yes, SS
SS parts																
															SS tag plate	SS housing
Y															none	none
B															yes	none
C															none	yes
E															yes	yes
Special applications & fill fluid																
															Treatment	Fill fluid
Y															none (std)	silicone oil
W															none (std)	fluorinated oil
G															degreasing	silicone oil
A															oxygen serv.	fluorinated oil (only w/digit7=V)
D															chlorine serv.	fluorinated oil (only w/digit 7=H,T,B,U)
N															NACE	silicone oil
R															vacuum serv.	silicone oil
Process cover gasket																
															- A	Viton
															- C	PTFE square section gasket in SS flange (FEF design)
(*6)															- D	PTFE square section gasket in PVDF insert
Bolts/screws material																
															A	Cr-Mo (standard)
															C	Recommandation NACE (ASTM A193 B7M bolts & A 194 2HM nuts)
															D	Recommandation NACE (ASTM A320 L7M bolts & A 194 2HM nuts, for Canada)
(*3)															E	SS 316/316 ((bolt/nuts)
															F	SS 630/304 (bolt/nuts)

- * Notes:
- 1-The thread is M12, if static pressure 420 bar
 - 2- Minimum spans are for model FHC - 100:1 turn down is possible with model FK C, but it should be used at a span greater than 1/40 of the maximum span for better performance.
 - 3- Max. static pressure 100 bar for SS 316 bolts/nuts; for static pressure > 100 bar, please specify: SS 630 bolts
 - 4- Gold/ceramics coating for Hydrogen service (Hydroseal)
 - 5-Process cover with lining has only side vent-drain facility
 - 6-Process cover with PVDF insert with 1/2-18 NPT side process connection/no vent drain, other upon request
- Square section PTFE gasket

Test certificate based on 5 measuring points up and down (option)

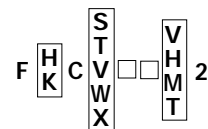
OUTLINE DIAGRAM (Unit:mm)



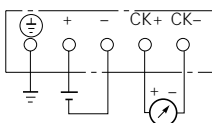
4th of Code symbols	Conduit conn.			Press. conn.	Oval flange screw	Earth terminal
	D	E	F	G		
S	G1/2	17	8	Rc1/4	7/16-20UNF screw depth 13	M4
T	1/2-14NPT	16	5	1/4-18NPT	7/16-20UNF screw depth 13	No. 8-32UNC
V	Pg13.5	8	4.5	1/4-18NPT	M10 or M12 screw depth 13	M4
W	M20x1.5	16	5	1/4-18NPT	M10 or M12 screw depth 13	M4
X	Pg13.5	8	4.5	1/4-18NPT	7/16-20UNF screw depth 13	M4

Table 1

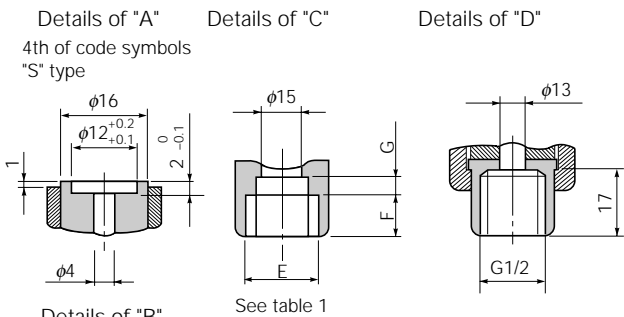
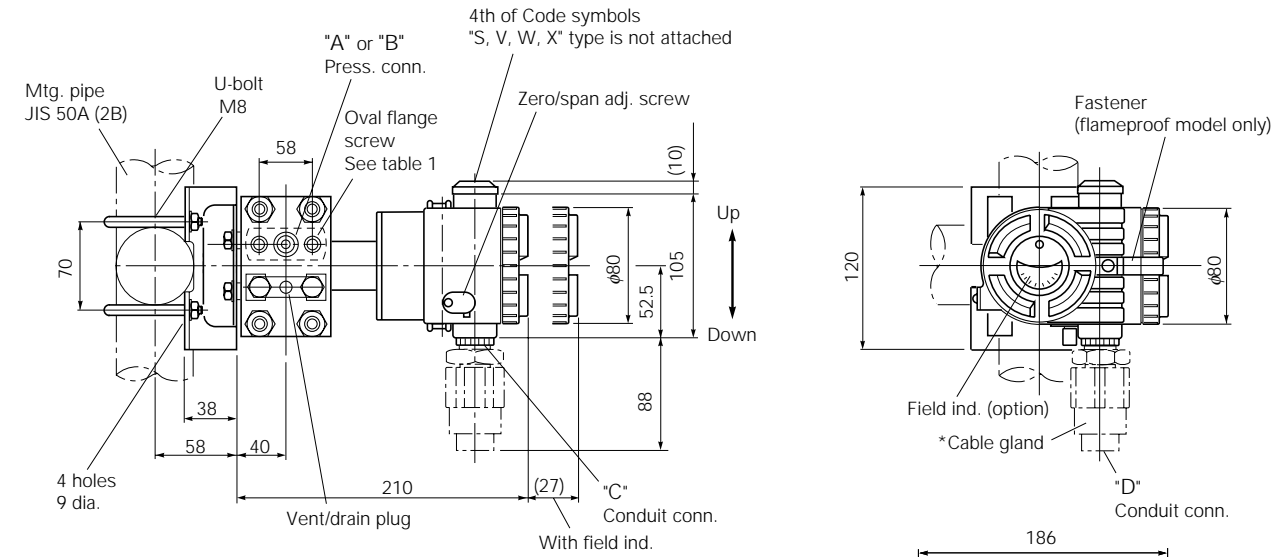
Note *: Cable gland is supplied in case of flameproof packing type. ø11 cable is suitable.



CONNECTION DIAGRAM

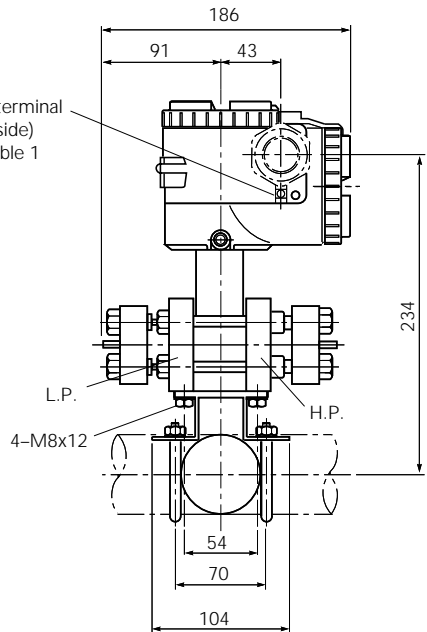


FHC, FKC...2

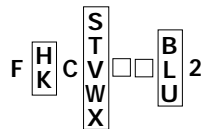
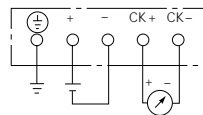


4th of Code symbols	Conduit conn.			Oval flange screw	Earth terminal
	E	F	G		
S	G1/2	17	8	7/16-20UNF screw depth 13	M4
T	1/2-14NPT	16	5	7/16-20UNF screw depth 13	No. 8-32UNC
V	Pg13.5	8	4.5	M10 screw depth 13	M4
W	M20x1.5	16	5	M10 screw depth 13	M4
X	Pg13.5	8	4.5	7/16-20UNF screw depth 13	M4

Table 1



CONNECTION DIAGRAM



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