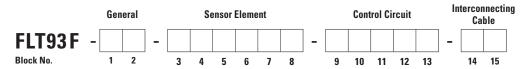


FLT93F

1755 La Costa Meadows Drive | San Marcos, California 92078 USA 760-744-6950 Toll Free (US): 800-854-1993 Fax: 760-736-6250 www.fluidcomponents.com

## FlexSwitch™ Insertion for Flow, Level & Temperature



INSTRUCTIONS: To order an FLT93F, please fill in each numbered box above with the appropriate code from the categories below. Once you have determined all the specifications, contact an FCI representative or FCI directly for price information or additional options not shown. Consult FCI on the cost of special data and documentation. Final acceptance of the part number is subject to FCI's approval.

[Block 1] Agency Approval	Code
Not required	0
Factory Mutual (FM)	1
Factory Mutual (FM) (T4 rated) <sup>1</sup>	2
ATEX, CE Marking	3
FMc	4
FMc (T4 rated) <sup>1</sup>	5
IEC 16	6
Inmetro	7
Other	*
[Block 2] Identification Tag <sup>2</sup>	Code
Mylar	Α
316L stainless steel	В
Agency approved, customer specified	W
Other	*
[Block 3] Process Temperature	Code
-40°F to 350°F [-40°C to 177°C]	1
-100 °F to 500 °F <sup>4, 29</sup> [-73 °C to 260 °C]	2
[Block 4] All Welded Material of Construction	Code
316L stainless steel	Α
316L stainless steel electropolish	В
erectrohousu	C
Hastelloy C	
•	D
Hastelloy C	D W
Hastelloy C Monel 400 Agency approved,	
Hastelloy C Monel 400 Agency approved, customer specified	w
Hastelloy C Monel 400  Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT	*
Hastelloy C Monel 400 Agency approved, customer specified Other [Block 5] Process Connection	W  * Code 1 2
Hastelloy C Monel 400 Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT 1 " Male NPT	* Code 1 2 3
Hastelloy C Monel 400 Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT5 1" Male NPT 1 " Male BSPT6	* Code 1 2 3 4
Hastelloy C Monel 400  Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT 1" Male NPT 1" Male BSPT <sup>6</sup> Flanged	* Code 1 2 3
Hastelloy C Monel 400 Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT5 1" Male NPT 1 " Male BSPT6	* Code 1 2 3 4
Hastelloy C Monel 400 Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT 1" Male NPT 1" Male BSPT <sup>6</sup> Flanged Retractable Packing Gland	* Code 1 2 3 4
Hastelloy C Monel 400  Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT 1" Male NPT 1" Male BSPT <sup>6</sup> Flanged Retractable Packing Gland with Graphite Packing Material <sup>24</sup> Low pressure	* Code 1 2 3 4
Hastelloy C Monel 400  Agency approved, customer specified Other  [Block 5] Process Connection 1/4" Male NPT 3/4" Male NPT 1" Male NPT 1" Male BSPT <sup>6</sup> Flanged Retractable Packing Gland with Graphite Packing Material <sup>24</sup> Low pressure to 50 psig [3,5 bar(g)]	* Code 1 2 3 4 5

on	al options not shown. Consult	FCI on th	ie
1	[Block 5] Process Connection	Code	
1	(continued from previous column)  Medium pressure to 500 psig [35 bar(g)]		
	1 1/4" Male NPT	8	
1	Flanged	9	
	Agency approved, customer specified	W	
1	Other	*	
	[Block 6] Flange Size <sup>8, 9</sup>	Code	
	Not required	0	4
	1 1/2" Flange		
1	150 lb carbon steel <sup>10</sup>	Α	4
1	150 lb per Block 4	В	4
	300 lb carbon steel 10	C D	1
	300 lb per Block 4	ט	1
	<b>2" Flange</b> 150 lb carbon steel <sup>10</sup>	E	
	150 lb per Block 4	F	
1	300 lb carbon steel <sup>10</sup>	G	4
•	300 lb per Block 4	Н	4
	DIN DN40 Form C Flange		
	#PN40, 316L stainless steel	4	
	DIN DN50 Form C Flange		
	#PN16, 316L stainless steel	5	
1	#PN40, 316L stainless steel	6	
	Flat duct stainless steel flange with 3/4" FNPT	J	
	Agency approved, customer specified <sup>11</sup>	W	
	Other	*	
	[Block 7] Insertion Length	Code	
	1.2" [30 mm] <sup>12</sup>	1	4
	2" [51 mm]	2	4
	4" [102 mm]	3	4
1	6" [152 mm]	4	1
1	9" [229 mm]	5	1
	12" [305 mm] 18" [457 mm]	6 7	
1	18" [457 mm] Agency approved,	w	
	customer specified 13		
	[Block 8] Local Enclosure <sup>14</sup>	Code	
	Sensor element only	Α	
	with 6" [152 mm], Kapton wire pigtails,	^	
	no enclosure	В	
	Sensor element only with cable pigtail, no enclosure <sup>15</sup>	נו	
	Note maximum cable temp: PVC: 190°F [90°C] Teflon: 300°F [150°C]		
	(continued next column)		

[Block 8] Local Enclosure <sup>14</sup>	Code
(continued from previous column)  Aluminum;	С
NEMA Type 4X (IP66) and hazardous locations Groups B, C, D, E, F, G and EEx d IIC; 1 x 1" NPT entry	Ů
Aluminum; NEMA Type 4X (IP66) and hazardous locations Groups B, C, D, E, F, G and EEx d IIC; 2 x 3/4" NPT entries	D
316 stainless steel; NEMA Type 4X (IP66) and hazardous locations Groups B, C, D, E, F, G and EEx d IIC; 1 x 1 " NPT entry	E
Agency approved, customer specified	w
Other	*
[Block 9] Configuration <sup>23</sup>	Code
Single channel dual alarms with standard epoxy sealed, gold plated contacts 6 amp at 115 Vac relays	4
Single channel dual alarms with hermetically-sealed, 0.5 amp at 115 Vac relays	5
Agency approved, customer specified	W
Other	*
[Block 10] Alarm No. 1: Application <sup>18</sup>	Code
<b>For Flow Service</b> Gas	A
For Flow Service	A C
For Flow Service Gas For Level, Interface Service	
For Flow Service Gas For Level, Interface Service Wet/Dry	С
For Flow Service Gas For Level, Interface Service Wet/Dry Interface (wet/wet) For Temperature Service Temperature	C D
For Flow Service Gas For Level, Interface Service Wet/Dry Interface (wet/wet) For Temperature Service Temperature	C D
For Flow Service Gas  For Level, Interface Service Wet/Dry Interface (wet/wet)  For Temperature Service Temperature [Block 11] Alarm No. 2: Application 9	C D E
For Flow Service Gas  For Level, Interface Service Wet/Dry Interface (wet/wet)  For Temperature Service Temperature [Block 11] Alarm No. 2: Application 9 Not required For Flow Service	C D E Code
For Flow Service Gas  For Level, Interface Service Wet/Dry Interface (wet/wet) For Temperature Service Temperature [Block 11] Alarm No. 2: Application 9 Not required For Flow Service Gas For Level, Interface Service	C D E Code O A

[Block 12] Application-Specific Setup & Calibration <sup>19</sup>	Code	
Not required	0	•
Jumper selection only	1	•
Jumper selection and adjustment of 1 alarm setpoint in Air or Water	3	
Jumper selection and adjustment of 2 alarm setpoint in Air or Water	4	
Jumper selection, Air flow curve from 0 SFPS to 120 SFPS [36,6 NMPS] and adjustment of 2 alarm setpoints	8	
Agency approved, customer specified <sup>18, 20</sup>	W	
[Block 13] Remote Enclosure	Code	
Not required	0	•
Aluminum; NEMA Type 4 (IP66) and hazardous locations Groups C, D, E, F, G with opposing 2 x 1" NPT entries	A	▼
Aluminum; NEMA Type 4X (IP66) and hazardous locations Groups B, C, D, E, F, G and EEx d IIC; 2 x 1 " NPT entries (not recommended for cable gland installation)	В	◀
Aluminum; NEMA Type 4X (IP66) and hazardous locations Groups B, C, D, E, F, G and EEx d IIC; 2 x 3/4" + 11" entries	G	▼
316 stainless steel; NEMA Type 4X (IP66) and hazardous locations Groups B, C, D, E, F, G and EEx d IIC; 2 x 1" NPT entries <sup>28</sup> (not recommended for cable gland installation)	C	
No enclosure; panel mounted control circuit <sup>21</sup>	F	
Agency approved, customer specified	W	
Other	*	
[Block 14] Cable Jacket	Code	
Not required	0	•
PVC; 190°F [90°C] maximum temperature	1	•
Teflon; 300°F [150°C] maximum temperature	2	
Agency approved, customer specified	W	

to F	·Cl's a	ipproval.	
	[Blo	ock 15] Cable Length	Code
	Not	required	0
•		[3 m]	1
•	25′	[7,5 m]	2
	1	[15 m]	3
	<u> </u>		-
	cus	ency approved, tomer specified <sup>22</sup>	W
	_	· ·	
	Note	es	
	4	Shorter manufacturing lead tim available when this is selected option.	
	*	Voids Agency Approvals. Contact	
	1. 2.	Field selectable heater power di Customer specified tan data field	
		Customer specified tag data field maximum 3 lines by 20 character and must be supplied at time of All other require a "W" or "*" in	s/line order. Block 2.
	4.	Not available with cable pigtail.	
	5.	Only available in 316L stainless s insertion lengths of 2 inches or g	teel for reater.
•	6.	Available in 316L stainless steel	
•	8.	ANSI flanges are phonographic serrated, DIN are Form C per DII Form B1 per EN DIN1092-01.	N 2526/
	9.	Flanged material will be identica to that selected in Block 4, Code D, F and H.	I s B,
•	10.	Carbon steel flanges are availabl 316L stainless steel sensor const only.	e with ruction
	11.	Customer specified flange shall ANSI or DIN specifications and 1 1/2"[DN40] or larger.	be per must be
	12.	For use only in a 3/4" tee.	
	13. 14.	Maximum insertion length is 120 Local enclosure required for agen	
•		approval. Metal enclosure require	d for CE.
•	15.	Select cable jacket and length in 14 and 15.	Blocks
	16.	IEC approval: 350°F [177°C] max Block 3 must be Code 1. Local enclosure, Block 8 must be Code C, D or E. I enclosure, Block 13, must be Co B, G or C.	Remote
	17.	Without 19" rack or mating conn Also available in dual channel ve	
	18.	Refer to application matrix on Application Data Sheet for valid combinations.	alarm
	19.	For all codes except "0" a comp FLT application data sheet must accompany the order.	eted
	20.	Customer specified calibration s not exceed temperature and pre limitations of the FLT93F specific	ssure
	21.	Remote enclosure required for F CSA approval.	M and
	22.	Wire resistance must be less that ohms.	ın 7.0
•	23.	Factory default setting for input 115 Vac for FM units, and 230 Va other agency approvals in Block	c for all 1.
•	24.	Teflon packing material must be process media is Ozone, Chlorin Bromine.	e or
	28.	Requires selection of stainless s	teel tag.

(continued next column)

Requires selection of stainless steel tag, Code B in Block 2. Electronics' maximum temperature is 140 °F [60 °C]. If installation location will exceed this, insulation, extending the "U" length (Block 7) or remote enclosure (Block 13) is recommended.





1755 La Costa Meadows Drive | San Marcos, California 92078 USA 760-744-6950 Toll Free (US): 800-854-1993 Fax: 760-736-6250 www.fluidcomponents.com

## FLT93 F

## FlexSwitch™ Insertion for Flow, Level & Temperature

Customer Information				
Customer Name & Address:		P.O. No.: Customer Order:		
		Tag Number(s):		
Contact				
Contact:   Fax:				
Email: Tax				
Lindin				
Control Circuit Jumper Section (Required for Block 12, Codes 3 through W of OIS)				
Input Power: 115 Vac 230 Vac 24 Vdc 24 Vac				
Application Matrix (Circle one alarm combination and enter in Blocks 10 - 11 on Oi	S)	Alarm No. 1 Alarm Condition:		
			with low flow, low level (dry), or high temperature	
Alarm 1 Gas Liquid Level	Temper- Interface		with high flow, high level (wet), or low temperature	
Not required A 0 (Wet/Dr	y) ature D 0	Contact Configuration:	SPDT	
Gas Flow A A			DPDT (This selection disables Alarm No. 2)	
Liquid Flow		Alarm No. 2		
Level (Wet/Dry) A C C C	D C	Alarm Condition:	311 6 1 1 1/1 1 1/1 1	
Interface	D D		vith low flow, low level (dry), or high temperature vith high flow, high level (wet), or low temperature	
Temperature A E C E	E E D E	Contact Configuration:		
Instrume	nt Calibration (Requ		rough W of OIS)	
		ess Conditions		
Primary Flow Media:			3:	
Lower Level Media:				
Gas Liquid		Gas Liquid	1.00	
Temperature: ☐ °F ☐ °C  Minimum Nominal Maxim	num	Temperature:  oF  Minimum No	ominal Maximum	
Pressure: Psig Bar(g)		Pressure: Psig		
Minimum Nominal Maxim	num	Minimum No	ominal Maximum	
Part	2: Calibration Condition	ns - Flow Application	s Only	
IMPORT	ANT: FCI calibrates in two r	nedias; choose 🔲 Water	or 🗌 Air	
For Temperature Applications Only		lications Only	For Level/Interface Applications Only	
Temperature Range	Pipe or duct inside diameter	:   inches   mm	Sensing Element Mounting: Side	
As entered for the primary/lower media in the "Process Conditions" section above.	Pipe Orientation:	horizontal vertical		
As entered for the secondary/upper media in the	Sensing Element Mounting:		Level Rate-of-Change: inches/sec (at sensing element) mm/sec	
"Process Conditions" section above.  Other:	Flow Direction:  right to	_ ,	Interface Rate-of-Change: inches//hr	
Alarm Set Point: No. 1	top to bottom bottom to top		(at sensing element)   mm/hr	
No. 2	Flow Range: minimum maximum Nominal Flow Rate: Output Bar Graph: Required		Output Bar Graph: Required	
Analog Output Curve: Required  Not required	Flow Units:		☐ Not required	
Note: For vacuum and/or small volume (less than 10 in. <sup>3</sup>	Alarm Set Point: No. 1			
or 150 cm <sup>3</sup> ) process conditions, calibration of the temper- ature output is recommended if the temperature alarm is used in combination with a flow or level/interface alarm.	Analog Output Curve (per E Air (see Code 8) Not required	Block 11 on OIS):  Special (see Code W)		