



TFS410 DIGITAL FLOW SENSOR

Model		TFS410-10-01-27	TFS410-50-02-27	TFS410-11-03-27	TFS410-21-03-27	TFS410-51-04-27
Port size Rc(PT)		1/8	1/4	3/8	3/8	1/2
Measured fluid		Air, Nitrogen				
Flow rate measurement range		1 10 L/min	5 50 L/min	10 100 L/min	20-200 L/min	50 500 L/min
Minimum set unit		0.1 L/min	0.5 L/min	1 L/min	2 L/min	5 L/min
Accumulated pulse flow rate Exchange value(Pulse width:50ms)		0.1 L/pulse	0.5 L/pulse	1 L/pulse	2 L/pulse	5 L/pulse
Display units	Instantaneous flow rate	L/min, CFMx10 ⁻²		L/min, CFMx10		
	Accumulated flow	L, ft ³ x 10 ⁴				
Operating pressure range		-50 KPa 0.5 KPa		-50 KPa 0.75 KPa		
Operating fluid temperature		0 50 °C				
Power supply voltage		DC 12 24 V ± 10 %				
Current consumption		150 mA or less		160 mA or less		170 mA or less
Accumulated flow range		0 999999L				
Detection type		Heater type				
Accuracy		± 5 % F.S				
Repeatability		± 1% F.S		± 2 % F.S		
Temperature characteristics		± 3 % F.S (15 to 35 °C, 25 °C reference) ± 5% F.S (0 to 50°C, 25 °C reference)				
Output Note1) specifications	Switch output	NPN open collector Maximum load current 80 mA; Internal voltage drop: 1 V or less. Maximum applied voltage: 30 V; 2 outputs				
	Accumulated pulse output	NPN open collector (same as switch output)				
Hysteresis		Hyteresis mode: Variable (can be set from 0), Window comparator mode:3-digit fixed				
Response time		Ligts up when output is turned ON OUT1: Green; OUT2: Red				
Status LED's		1 sec. Or less				
Environment	Enclosure	Ip65				
	Operating temperature range	Operating: 0 to 50 °C, Stored: -25 to 85 ° C (with no freezing and condensation)				
	Withstand voltage	100 VAC for 1 minute between terminals and housing				
	Insulation resistance	50Ω or more (500 VDC maasured via megohmmeter) between 1000V P-P Pulse widthμ s, duration 1 ns				
		M12 connector (3m)				

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Flow rate range

Symbol	Content
10	1 10 L/min
50	5 50 L/min
11	10 100 L/min
21	20 200 L/min
51	50 500 L/min

Thread type

Symbol	Content
Nil	Rc
N	NPT

Port size

Symbol	Port size	Rated flow range				
		10	50	11	21	51
01	1/8	●	●	—	—	—
02	1/4	●	●	—	—	—
03	3/8	—	—	●	●	—
04	1/2	—	—	—	—	●

Unit specifications

Symbol	N
Nil	With switching function
M	Fixed SI unit

Lead wire

Nil	N
Lead wire with M12 connector (3m)	Without lead wire

Output specifications

Symbol	Content
27	NPN ope collector 2 ouputs
67	PNP open collector 2 outputs



TFS410 DIGITAL FLOW SENSOR

Model	TFS410-03H	TFS410-06H	TFS410-12H
Fluid	Dry, air, N ₂		
Detection type	Heater type		
Rated flow range ^{Note1}	150 3000 L/min	300 6000 L/min	600 12000 L/min
Minimum Setting Unit	5 L/min	10 L/min	
Display units	Instantaneous flow	L/min, CFM	
	Cumulative flow	L, m ³ , m ³ x 10 ³ , ft ³ , ft ³ x 10 ³ , ft ³ x 10	
Rated pressure range	0.1 1.5 MPa		
Proof pressure	2.25 MPa		
Pressure loss	20 kPa(maximum flow)		
Accumulated flow	0 9,999,999,999L		
Accuracy	± 1.5 %F.S (0.7MPa ... 20 °C)		
Repeatability	± 1.0 %F.S (0.7MPa ... 20 °C) Analog output ±3.0%F.S		
Pressure characteristics	± 1.0 %F.S (0.1 – 1.5MPa, But based on 0.7 MPa)		
Temperature characteristics	± 2.0%F.S.(0-50 °C , Based on 25°C)		
Output	Seitch Output	Maximum load current of NPN open collector: 80mA, maximum applied voltage: 30V internal voltage drop: below 1V (Load current: 80	
		Maximum load current of PNP open collector: 80Ma, internal voltage array: below 1.5V (when negative current is 80 Ma)	
	Cumulative pulse output	NPN or PNP open collector flow rate per pulse: 100 L/pulse, 10. Of ³ /pulse On time of each pulse: 50msec/pulse	
	Analog Output	Voltage output voltage 1 – 5 V, minimum load impedance: 100k (outpuy load group impedance 1K)	
Response time	1 sec. Or less		
Hysteresis	Hysteresis mode variable (can be set from) upper and lower limit comparison mode: fixed (-3 %F.S can be set)		
Power supply	DC24V ±10%		
Consumption current	450mA or less		
Protection	Workina temn	0-50 °C(no freezing and condensation)	
		Ac1000V 1 minute between external terminal and housing	
	Insulation impedance	50 MΩ(DC500v megohmmeter)external terminals and the shell	
		μ	