



FLOW COMPUTER

Gas service
MODEL : EL4121

GENERAL SPECIFICATION

GS.No.GEJ322E-8

■ GENERAL

Using the most advanced electronic technologies, this digital instrument has been developed specifically to meet the most demanding gas flow measurement applications where accuracy is the prime requirement.

In response to the gas flowrate, temperature, and pressure information arriving from the sensing terminal, such as a flowmeter, it calculates gas flow, reduced to the equivalent volume flow under standard conditions, and totalizes the flow.

In addition to meter error curve correction capabilities, a correction factor "X" as a quadratic function of temperature and pressure is introduced, giving you increased freedom to optimize compensated calculation.

An analog output and instant flowrate (corrected for meter error and temperature) output are additional provisions. With a model dedicated only to flow and pressure inputs, the instrument can also carry out calculations as a pressure compensator with temperature value fixed.

■ FEATURE

1. Changing the meter factor, ranges of temperature pressure, or other parameters, of the companion flowmeter is simple by keystrokes on the front-panel keypad, or by inserting an IC card into the slot.
2. Built around a microprocessor, the instrument carries out calculations entirely in digital signal processing circuits to achieve a high degree of accuracy and reliability.
3. Variables, such as temperature and pressure, can be reviewed on command with the front panel keypad, whether or not calculation is in progress.
4. A nonvolatile memory (2PROM) retains all parameters and variables. Variables are resettable following a power cycle or reset if so configured.



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■ GENERAL SPECIFICATIONS (EL4121)

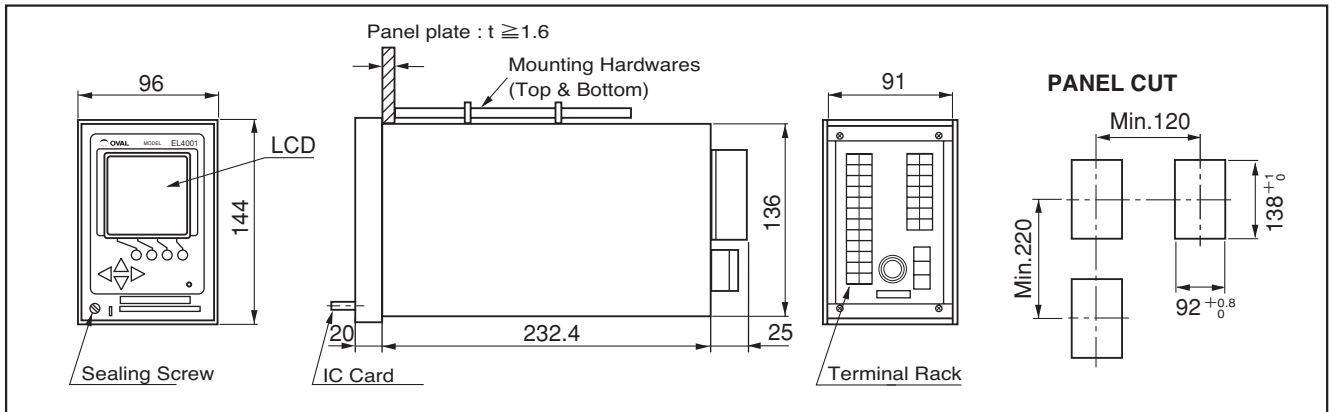
Item			Description				
Input signal	Flowrate input		Type of Signal	Pulse Generator	Power Supply		Response pulse
			2-wire, 12VDC 3-wire contact-closure pulse	——	13.5VDC	Current Capacity: 40mA */Short Protection Circuit Provided	50Hz
			2-wire, 12VDC 3-wire voltage pulse	——			2kHz
			24VDC, 2-wire current pulse (4/20mADC)	PA15, 25	24.0VDC		
			2-wire, 12VDC 3-wire open collector pulse	——	13.5VDC		
	32VDC, 3-wire open collector pulse	PA11	32.0VDC				
	Temp. Input	Thermal resistance bulb	Pt 100 at 0℃, 3wires system, Rated Current: 2mA				
		Analog	4 to 20mADC or 1 to 5VDC				
	Pressure input	4 to 20mADC or 1 to 5VDC					
Output signal	Pulse output	Totalized flow before correction	Open MOS-FET, Capacity : 230VAC/340VDC 0.2A Pulse width : 1ms/50ms				
		Totalized flow after correction					
		Synchronous output to flowmeter input	Open collector pulse Capacity : 30VAC, 20mA				
	Alarm output		Open MOS-FET Capacity : 230VAC/340VDC 0.2A				
	Analog output	Instant flowrate after correction	4 to 20mADC (max.Load : 500Ω) or 1 to 5VDC (Output Impedance : 250Ω) Conversion accuracy : ±0.1% of F.S.				
Display mode			ST Displayer (128 x 128dot) w/Back Light (※1) (※2) Items:Data, Unit, Error message are displayed at a time				
Display items	Totalized flow before correction		Same as Output Pulse Unit (m³ etc.)		Display capacity : 8 digits		
	Totalized flow after correction		Same as Output Pulse Unit (m³ (normal) etc.)				
	Instant flowrate before correction		m³/h etc.				
	Instant flowrate after correction		m³/h (normal) etc.				
	Temperature		2 digits under a decimal point (when ℃ is selected.)				
	Pressure		4 digits under a decimal point (when MPa is selected.)				
	Correction factor		4 digits under a decimal point				
	Meter error correction factor		5 digits under a decimal point				
	3α correction factor		4 digits under a decimal point				
	Temp. / Press. correction factor		4 digits under a decimal point				
	Quadratic corr. fctr.		4 digits under a decimal point				
Annunciation of abnormality		No. of Errors + Error Messages					
Computing range	Temperature		Pt100Ω at 0℃	Range : -50 to +350℃	Normal span : 70℃		
			4 to 20mADC or 1 to 5VDC		Normal span : 200℃		
	Pressure		0 to 3 MPa Normal span : 1/2Pmax. to Pmax. 1/5Pmax. to Pmax. (※3)				
Computing accuracy	Totalized flow after correction		1/2Pmax. to Pmax.	±0.2% of R.D.			
			1/5Pmax. to Pmax.	±0.5% of R.D.			
	Temperature		Pt100Ω at 0℃	±0.3% of SPAN			
			4 to 20mADC or 1 to 5VDC	±0.1% of SPAN			
	Pressure		±0.1%				
Battery for clock IC			Lithium Battery, Life:Approx. 10 years				
Communication (when com. interface is provided.)			Interface: RS485 Multipoint (Up to 16 units can be connected.) Dedicated protocol Baud rate: 4800 bps standard 9600 bps max.				
Transmission cable			Use 3-conductor shielded cable to the resistance thermometer bulb. Loop resist. 5Ω max. Example: 300 meters max. with 3-conductor 1.25mm² cable; 500 meters with 2.0mm² cable				
Power supply			85 to 264VAC, 50/60Hz, or 20 to 30VDC				
Power consumption			20W Max.				
Ambient temperature			-10 to +50℃				
Installation			Panel mount type				
Finish			Munsell; NI.5				
Weight			Approx. 2.5kg				

※1 : ST display stands for Super Twisted Nematic display.

※2 : Backlight life (luminance declined to one half its original luminance): 2500h approx.

※3 : Pmax. to be a value corresponding to 20mA (or 5V) in pressure input.

■ DIMENSION (Unit in mm)



■ MODEL CODE NUMBER

Item	Code No.						Supplementary Code						Description		
	①	②	③	④	⑤	⑥	—	⑦	⑧	⑨	⑩	⑪		⑫	
Model	E	L	4	1	2	1								Flow computer for Gas	
Power Supply							6							20 to 30 VDC	Power Consumption : 20VA
							7								
Temperature Input							0							None (Only pressure input)	
							1								Pt 100Ω at 0°C
							2								4 to 20mADC/1 to 5VDC
							9								Special
Pressure Input							0							Non (Only temperature input)	
							1								4 to 20mADC/1 to 5VDC
							9								Special
Output							1							Pulse of before/after correction + Analog output after correction + Alarm Output	
							2								Pulse of before/after correction + Analog output before correction + Alarm Output
							9								Special
Communication							0							No	
							1								Yes
Finish											1			Muncell N1.5	

■ TERMINAL CONNECTIONS

TB1				
1	SUP.	FLOW IN	12	
2	SIG.		13	
3	0V		14	
4	OUT1/1		15	
5	b	TEMP IN	16	
6	B		17	
7	A		18	+
8	+		19	—
9	—	PULSE OUT3	20	+
10	+		21	—
11	—			

※1 : Provided with communication interface

TB2				
1	SUP.	PRESS IN	8	+
2	+		9	—
3	—		10	
4	+	ANALOG OUT	11	
5	—		12	
6	+	PULSE OUT1	13	
7	—			

TB3		
	H (+)	POWER
	N (—)	
	GND	

■ TERMINAL IDENTIFICATION

TB1			
No	Display		Description
1	Flowrate Input	SUP.	3 wires Generator
2		SIG.	2 wires Generator
3		0V	Synchronous Output to Flowrate Input (O.C)
4		OUT1/1	
5	Temp. input	b	3 wires Pt100Ω
6		B	
7		A	
8		+	4 to 20mADC/1 to 5VDC
9		—	
10	Pulse Output 3	Non Polarity	Alarm Output Open MOS-FET
11			

TB2			
No	Display		Description
1	Pressure Input	SUP.	+24VDC
2		+	4 to 20mADC/1 to 5VDC
3		—	
4	Analog Output	+	Instant flowrate after correction
5		—	4 to 20mADC/1 to 5VDC
6	Pulse Output 1	Non Polarity	Totalized flow before correction
7			Open MOS-FET
8	Pulse Output 2	Non Polarity	Totalized flow after correction
9			Open MOS-FET
10			
11			
12			
13			

TB3		
No	Display	Description
1	Power Supply	H (+)
2		N (—)
3	Earth	85 to 264VAC or 20 to 30VDC

Terminal connection screws : M3.5

■ When you make inquiries please state the following:
(fill in blanks or check ☐ with ☒ mark)

1. PRODUCT MOD	EL4121_____ No. of units_____
2. Spec. of Flowrate Inp	Model of Flowmeter to be connected
	Model of a Pulse Generator to be connected
	Meter Factor:_____ I/P (at 20°C)
3. Spec. of Temperature Inp	Model of a Thermal resistance Bulb:_____
	Temperature Input: ☐ 4 to 20mADC
	☐ 1 to 5VDC
	☐ Pt 100Ω
	☐ JPt 100Ω (The former JIS)
	※Temperature Range:_____ to _____ °C
4. Spec. of Pressure Inp	Pressure Input: ☐ 4 to 20mADC
	☐ 1 to 5VDC
	※Pressure Range:_____ to _____ MPa
5. Value of Fall ba	Temperature:_____ °C
	Pressure:_____ MPa
6. Spec. of Flowrate Outp	Unit of Output Pulse: Total flow before correction _____ m³/P
	Total flow after correction _____ m³/P
7. Spec. of Analog Outp	Full Scale of Instant Mass Flowrate_____ to _____ m³/h
8. Finish Color (Fram	☐ Standard ☐ Specified
9. Tag No., et	

※ : Input range shall be accorded with computing range.

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