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RoHS Compliant

Mass Flow Controller
FC-PAR780/781CHT
Product Specifications

Approved	Checked	Draw
Sasaki	Ogata	Hirota

1. Specifications

ITEM		Specification	NOTE
1	Model	FC-PAR780/781CHT	Single Gas spec.
2	Controllable Fluid	Gas	
3	Full Scale Range	【FC-PAR780CHT】 10SCCM ~ 5SLM 【FC-PAR781CHT】 5SLM~20SLM	N ₂ equivalent
4	Valve Type	Normally-Closed (N/C)	
5	External Seals	316L Stainless Steel	
6	Response Time	Within 2sec	5% ≤ Set Point (From 0%set) N ₂ , 172kPaD (SEMI E17-91)
7	Accuracy	±1%F.S.	On Calibration Gas Calibration Temp. ±2°C Zero < ±0.1%F.S. F.S.=Full Scale
8	Linearity	±0.5%F.S.	
9	Repeatability	±0.2%F.S.	
10	Leak Integrity	1x10 ⁻¹¹ Pa·m ³ /sec(He) Max.	
11	Control Range	2 ~ 100%F.S.	
12	Operating Pressure Range	49 ~ 275kPaD	Flow rate = N ₂ equivalent flow
13	Max. Operating Pressure	490kPaG	
14	Proof pressure	1MPaG	
15	Ambient Temp. Range	Base Unit	50 ~ 80°C
		PCB Unit	15 ~ 50°C
16	Input Signal	Digital Control	0 ~ 100% (Digital command)
		Analog Control	0 ~ 5VDC
			Input Impedance : >1MΩ
17	Output Signal	Digital Control	0 ~ 100% (Digital output)
		Analog Control	0 ~ 5VDC
			<ul style="list-style-type: none"> •Load impedance : >2kΩ •Analog output can read out at any time
18	Materials Gas Wetted	316L S.S., 316 S.S., PTFE, Magnetic S.S.	S.S. = Stainless Steel
19	Fitting	1/4"VCR [®] Equivalent	
20	Surface Finish	TC Treatment (Fitting & Base) Machined Finish(Others)	TC Treatment Ra=0.2 μm Machined Finish Ra=0.8 μm

21	Digital Communications		(1) Interface EIA Standard RS-485 Modular Jack 6 poll (2) Wiring 2wire half-duplex, multi-drop (3) Synchronous fashion Asynchronous Start bit : 1 Data bit : 8 Stop bit : 1 Parity : None X Control : None (4) Baud rate 9600, 38400 bps (5) Max. connecting : 127 units	Default : 9600bps Variable by utility software
22	Automatic Zero Function		Adjustable range $\pm 10\%$ F.S.	
23	Ramping		1 ~ 999sec	
24	Alarm		Flow alarm Valve voltage alarm External input	Blinking Red LED
25	Flow Totalization		Ability to totalize flow (370days Max.)	During MFC is powered on. Sampling period : 1sec
26	Zero Recording Function		Data capacity : 1250 (Recordable Data) MFC Output Cumulative Zero change Total powered-on time	Need utility software Record data every executing Auto-Zero
27	Input Power		+15VDC $\pm 2\%$ 100mA -15VDC $\pm 2\%$ 200mA	Rush current 140mA (+15VDC), 240mA(-15VDC)
28	Power Consumption		4.5W	
29	Mounting Position		Any position	
30	Weight	Base Unit	1.1kg	
		PCB Unit	0.2kg	

2. Analog Interface

[D-sub 9pin Male connector]

Type: DELC-J9PAF-20L6FE (with ferrite core) Japan Aviation Electronics Industry, Ltd.

Jackscrew: #4-40UNC

Connector PINOUT

PIN No.	ITEM
1	VALVE OPEN/CLOSE (*1)
2	OUTPUT 0~5VDC
3	+15VDC
4	POWER COMMON
5	-15VDC
6	CONTROL 0~5VDC
7	SIGNAL COMMON
8	SIGNAL COMMON
9	VALVE TEST PT. (0 - 4VDC)

※1. Valve **Open** : Connect VALVE OPEN/CLOSE (14pin) and **COMMON(4,7,8 pin) or +15V(3 pin)**

Valve **Close**: Connect VALVE OPEN/CLOSE (14pin) and **-15V (5 pin)**

Note

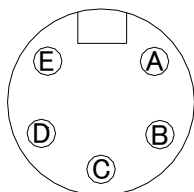
All COMMON pins in the MFC shall be connected to the COMMON line in the power supply.

[Base Unit – PCB Unit connecting interface]

The Cable between Base unit and PCB unit will be attached.

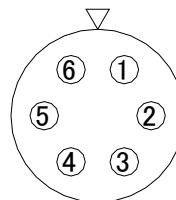
Cable length is 3m.

BASE UNIT SIDE



EGG.0B.305.CLL (LEMO)

PCB UNIT SIDE



LF07WBR-6S (HIROSE ELECTRIC)

A, 1...VS1

B, 2...SS2

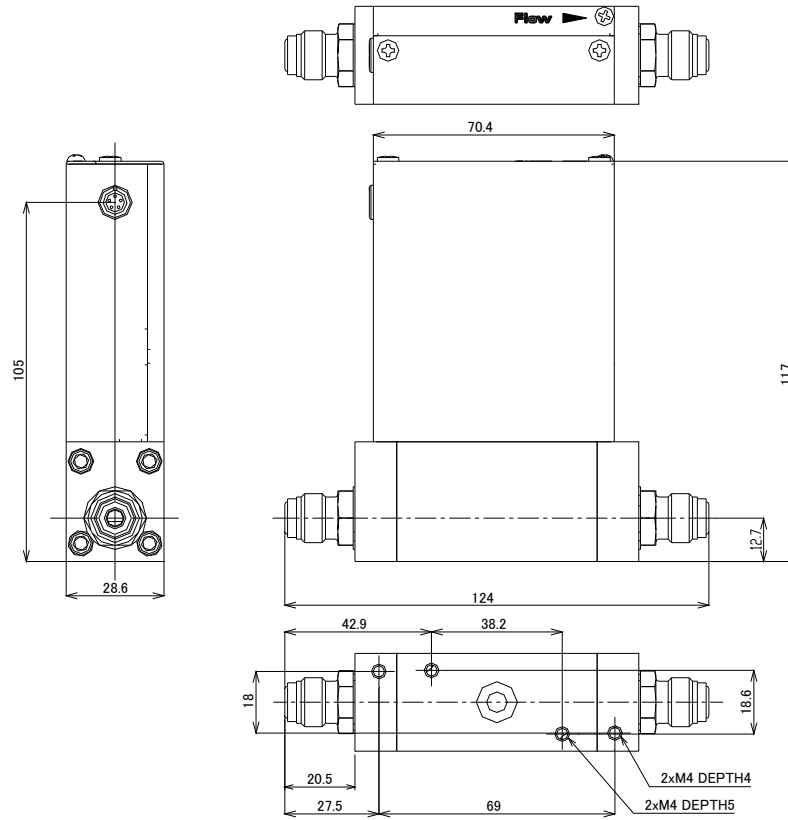
C, 3...SS1

D, 4...SS3

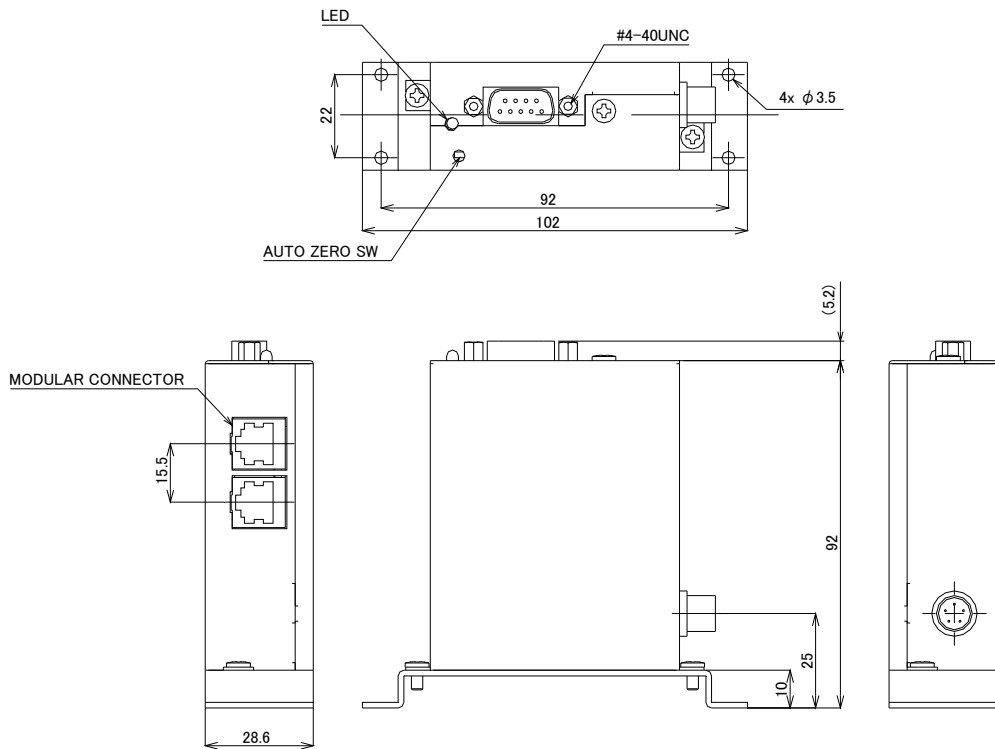
E, 5...VS2

3. External Dimensions

BASE UNIT



PCB UNIT



This product is compliant with RoHS. Each regulated chemicals in the product will be contained

less than the limit that are ruled by RoHS compliance bellow,

- 1) Pb \leq 1000ppm**
- 2) Hg \leq 1000ppm**
- 3) Cd \leq 100ppm**
- 4) Hexavalent chromium \leq 1000ppm**
- 5) PBB \leq 1000ppm**
- 6) PBDE \leq 1000ppm**