Digital Panel Meter VALCOR series

F3 series

Indicates the change in condition with change of color. LCD adopted.

F3 type has up to four setting outputs per input channel.
Highly versatile panel meter suitable to various occasions.

- Current operation state (normal/abnormal) can be found easily by the color of the value (on main display).
- Measured values can be displayed in 3 colors: red, orange and green, as desired, in areas partitioned by set values.
- High speed sampling as fast as 2000 samples per second.
- Fast output enables use for high-speed and safe control purposes.
- Analog output ranges of 4 to 20 mA, 1 to 5 V and 0 to 5 V included as standard.
- Output scaling function included, which allows the measurement range to be set variable as desired.

Specifications

Input signal	Process input: 4–20mA/0–5V/1–5V/0–10V Selectable Power supply for sensor: DC12V 80mA max.
Input impedance	4–20mA: 68Ω 0–5V/1–5V/0–10V: 68kΩ
Display	−9999–9999 (User selectable decimal places) 7 segment 4-digit LCD with 3 changeable colors (red, orange and green)
Sampling cycle	2000 times/sec Max.
Indication Conversion Rate	1–10 times/sec Selectable
Accuracy	Display: ± 0.05%F.S.±1digit (25°C±3°C) Analog output: ±0.5%F.S. (25°C±3°C)
Analog output	4–20mA/0–5V/1–5V Range to be switched, Option 0–10V (*1)

Setting output (Select by model)	4-setting Relay output, AC125V, 0.3A (per 1 setting)/ DC24V, 1A (per 1 setting) Response time 3msec. or less(*1) 4-setting Photomos Relay output, AC / DC250V, 0.1A (per 1 setting) Response time of compaarison output 2msec. or less (*1)
Operating temperature range	0–55°C (No freezing)
Operating humidity range	35–85%RH (No condensation)
Power supply (Select by model)	AC90–240V 50/60Hz Current consumpiton 15VA or less
	DC24V ±10% Current consumpiton 300mA or less
Dimensions	97(W)×48.8(H)×132.5(D) *Option terminals are not described in the following figure
Weight	Approx. 300g (Varies with specification)
Accessories	Operation manual (1 copy), Unit labels, List of initial settings, Panel mounting bracket, Amphenol connector (5730240) (BCD output function only)
Other Functions	Display scaling, Analog output scaling, Display hold (upper peak/bottom peak/transition peak/peak-to-peak/sample hold), Auto-zero, Max./min. value indication, Pattern selection, Simulation, Input value shift, sub-display ON/OFF, Key protection, Main display color change, Display update rate setting, Power-saving mode ON/OFF, Sampling rate setting, Dumping time constant, Zero suppress ON/OFF, Fix-zero, Tracking zero

- (*1)0–90% of response time. Sampling cycle, damping time constant at high-speed setting

Setting output

F3	4-setting output to ch.1

Option output

A5 Analog output (0–10V)	0–10V Safe load resistance 10kΩ or more Response time 2.5msec.or less(*) Analog output accuracy ±0.5%F.S.(25°C±3°C) Temperature characteristics ±0.35%F.S./10°C
BO BCD open collector output	NPN open collector DC50V 100mA or less Response time 1.5msec. or less (*)
RS RS-232C	RS-232C-compliant 2-wire half-duplex Asynchronous Communication rate (300/600 1200/2400/4800/9600/19200/38400 bps) Stop bit (1, 2bit) Parity (NON/ODD/EVEN) Data length (7, 8bit) unit No. (0–99)

R1 RS-485	RS-485-compliant 2-wire half-duplex Asynchronous Communication rate (300/600 1200/2400/4800/9600/19200/38400 bps) Stop bit (1, 2bit) Parity (NON/ODD/EVEN) Data length (7, 8bit) unit No. (0–99)	

- (*)0–90% of response time. Sampling cycle, damping time constant at high-speed setting

Model Selection

|	①Model	②Power	③Input Signal	④Setting Outputs	⑤Output Signal
Example	F3	②	③ —	④	⑤

Selection	Cheak	Model	Specifications
1.Model	○	F3	1ch. Input
2.Power supply [Current consumpiton]		4	DC 24V ±10% Current consumpiton 300mA or less
		7	AC 90–240V Current consumpiton 50/60Hz 15VA or less
3.Input signal		N	Multiple-input Process input 4–20mA/0–5V/1–5V Power supply for sensor DC12V 80mA max.
		A5	0–10V/4–20mA (Note)
4.Setting output		S	4-setting Relay output AC125V 0.3A/DC24V 1A (per 1 setting)
		O	4-setting Photomos Relay output AC/DC250V 0.1A (per 1 setting)
5.Output signal (Option)		Blank	4–20mA Safe load resistance: 250Ω or less 0–5V/1–5V Safe load resistance: 10kΩ or more Analog output accuracy ±0.5%F.S. (25°C±3°C) Temperature characteristics ±0.35%F.S./10°C
		A5	Analog output 0–10V Safe load resistance: 10kΩ or more
		BO	BCD open collector output NPN type
		RS	RS-232C
		R1	RS-485

- (Note) Do not use sensor power supply of this unit when connecting pressure transducer (VALCOM product),
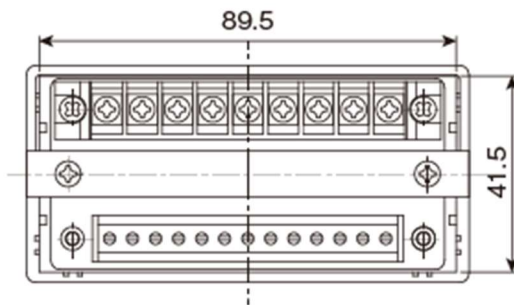sensor 0–10V output type (Model code:A5). Please prepare sensor power supply separately.

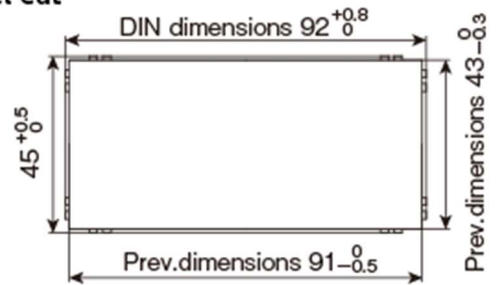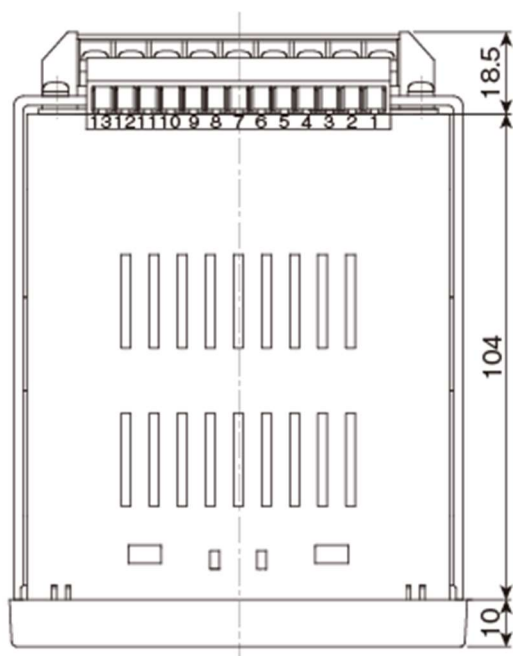## Dimensions (Unit: mm)
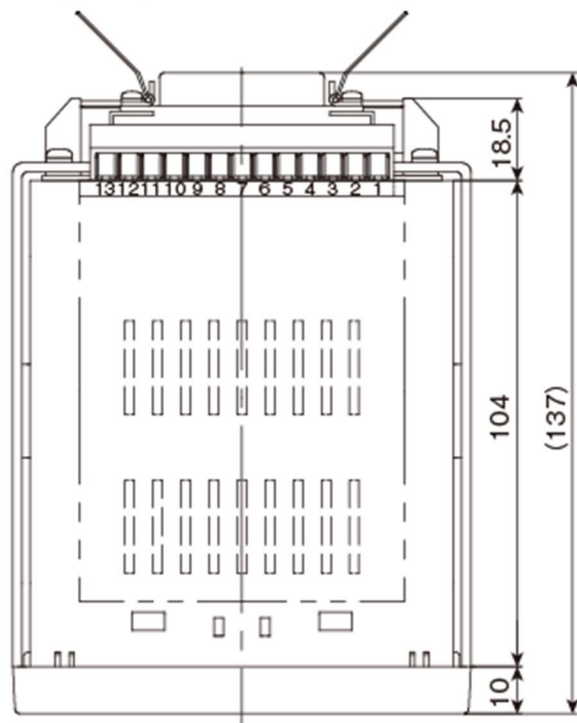
F3 Process input type

Front
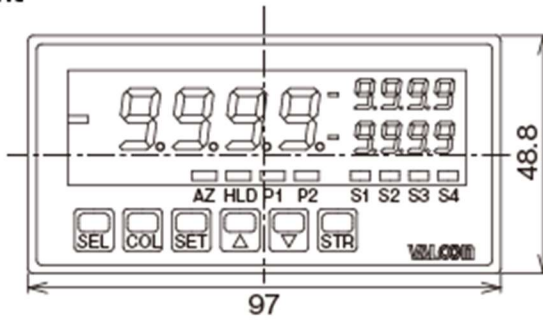
Rear

Panel cut

Recommended thickness for panel board:1 to 2.5 mm Tightening toeque:0.6 N·m or less ※Fix this product to panel firmly, tighten with appropriate torque
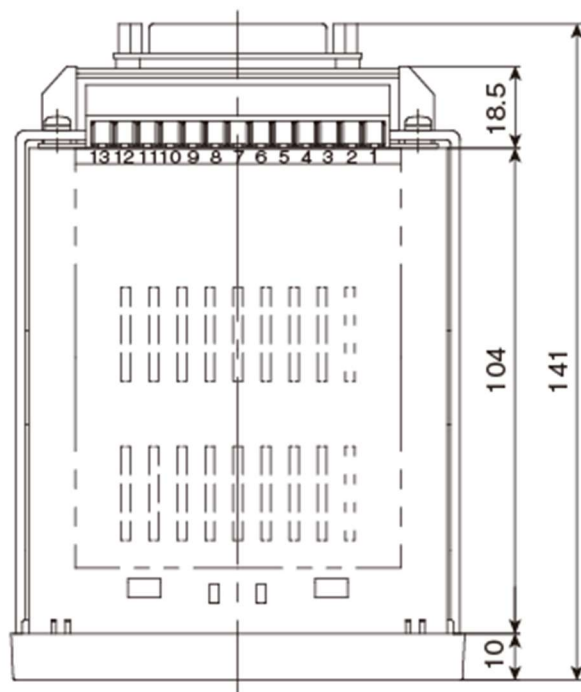
Base・A5 type

13 12 11 10 9 8 7 6 5 4 3 2 1
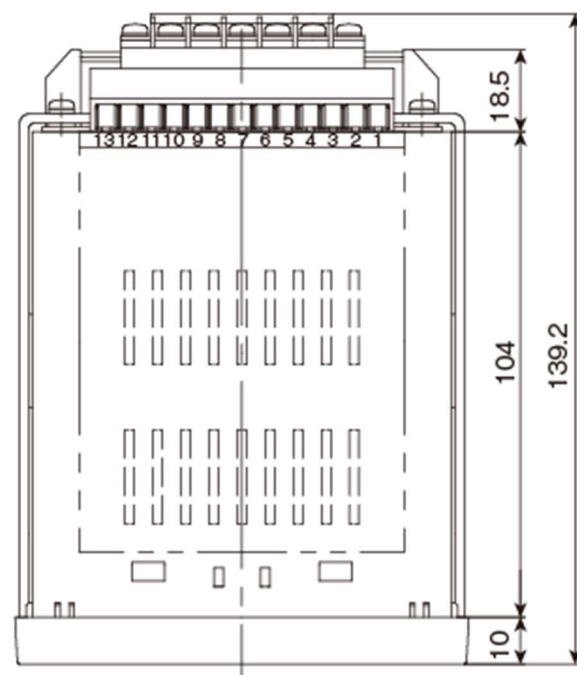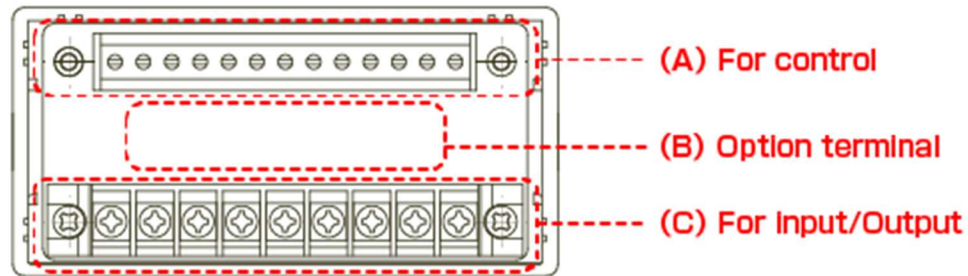
18.5

104

10

BCD output type

13 12 11 10 9 8 7 6 5 4 3 2 1

18.5

104

(137)

10

RS-232C output type

13 12 11 10 9 8 7 6 5 4 3 2 1

18.5

104

141

10

RS-485 output type
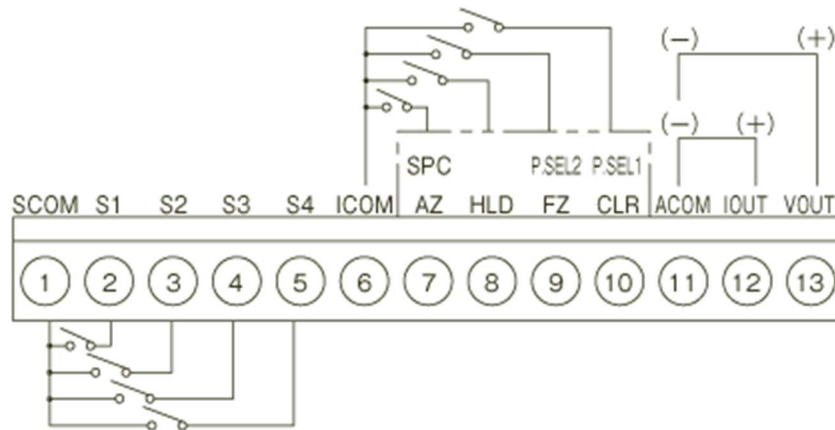
13 12 11 10 9 8 7 6 5 4 3 2 1

18.5

104

139.2

10

Terminal connection

(A)Terminals for control Output, terminals for control input (upper) connection

Terminal No.	Name	Functions	Terminal No.	Name	Functions
1	SCOM	COM terminal of comparison setting output	8	HLD	Hold
2	S1	Comparison setting output 1 terminal	9	P.SEL2	Pattern SEL 2
3	S2	Comparison setting output 2 terminal		FZ	Forced zero
4	S3	Comparison setting output 3 terminal	10	P.SEL1	Pattern SEL 1
5	S4	Comparison setting output 4 terminal		CLR	Clear
6	ICOM	COM terminal of control	11	ACOM	Analog output COM
7	SPC	Sample hold clear	12	IOUT	Analog (Current) Output+
	AZ	Auto-zero	13	VOUT	Analog (Voltage) Output+

(B)Option output connection
  ●**BCD signal output**

Amphenol: 5740240 Accessories: Amphenol: 5730240

Item		Pin No.			Item
EOC (Signal of over the conversion)		1	13		Digital GND.
$\times 10^0$ BCD OUT	1	2	14	1	$\times 10^2$ BCD OUT
	2	3	15	2	
	4	4	16	4	
	8	5	17	8	
$\times 10^1$ BCD OUT	1	6	18	1	$\times 10^3$ BCD OUT
	2	7	19	2	
	4	8	20	4	
	8	9	21	8	
-		10	22		-
OVER (Over)		11	23		POL. (Polarity)
-		12	24		-

●**RS-232C communication**
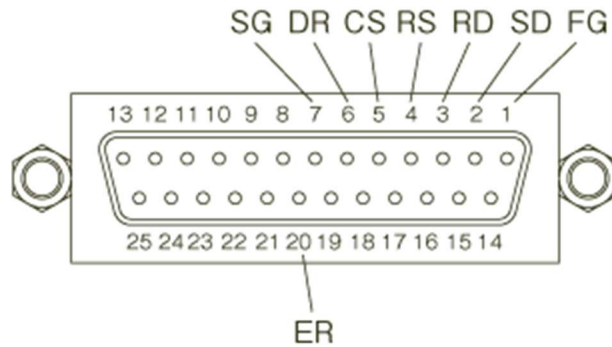
Name	Pin No.	Functions	Input output
SD	2	Transmit data	Output
RD	3	Received data	Input
FG	1	Frame ground, or cable shield	-
RS	4	Request to send	Output
CS	5	clear to send	Input
SG	7	Signal ground	-
DR	6	Data set ready	Input
ER	20	Data terminal ready	Output

●**RS-485 communication**

Terminal No. 23 24 25 26 27

Signal name A+ B- SG

Signal name	Terminal No.	Item	Input output
A+	23	Non inverting output	Input output
B-	24	Inverting output	Input output
SG	25	Signal ground	-
Terminator	26	Terminals are short-circuited	-
	27		

(C)Input/output terminals connection

● **F3 Power supply、Input terminals (Lower) connection**

Process input

14 15 16 17 18 19 20 21 22

Power supply for sensor DC12V 80mA max. Pressure transmitter (+) AGND.Pressure transmitter (−) F.G. AC90~240V or

ch.1

(−) (+)

ch.1

+ −
POWER DC24V