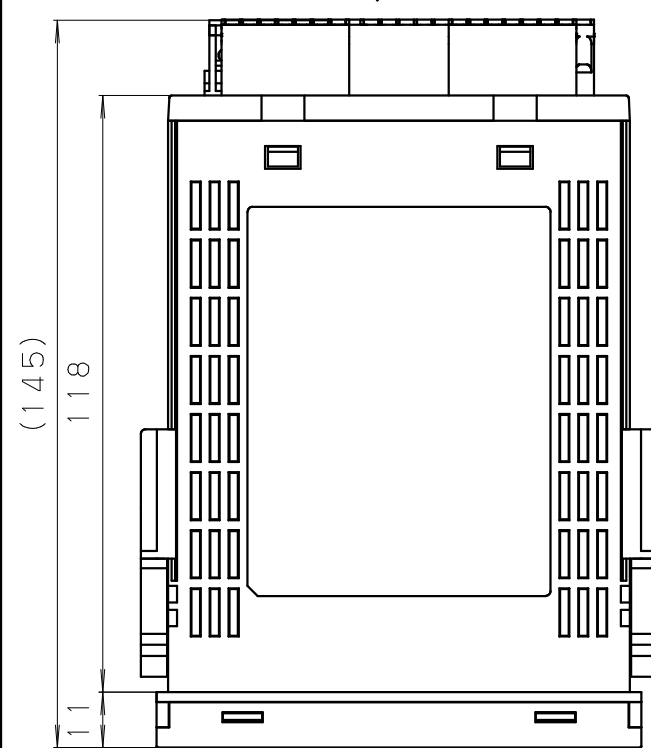
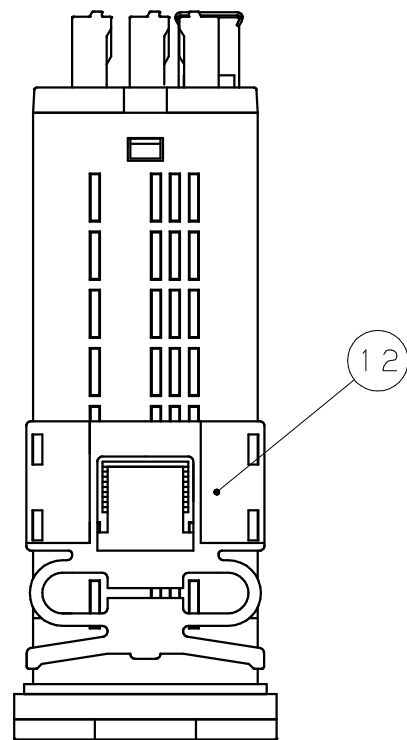


External dimensions (1:1.5)
Upper surface



Side

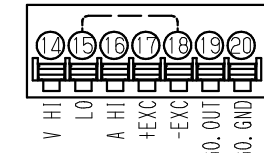


Connecting Terminals (Free)

Input/GO Output

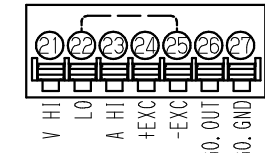
*Screwless connector

Ach. Process input
*15, 18: connected internally



Suitable wire: AWG24 to 16

Bch. Process input
*22, 25: connected internally

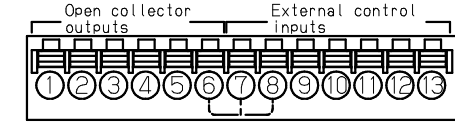


Suitable wire: AWG24 to 16

Comparative Output/External Control Input

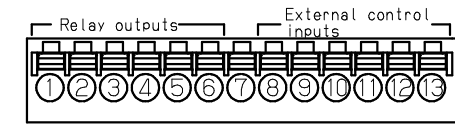
[Open-collector output products] *Screwless connector

*6, 7, 8: connected internally



Suitable wire: AWG24 to 16

[Relay output products] *Screwless connector

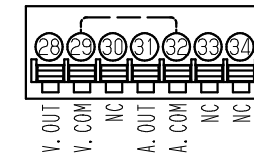


Suitable wire: AWG24 to 16

Output terminal

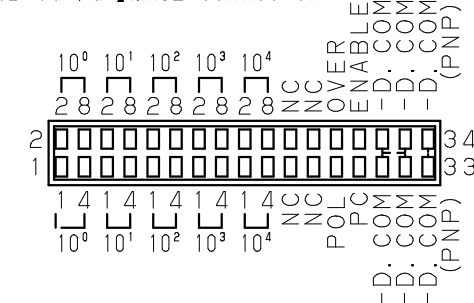
[Analog Output] *Screwless connector

*29, 32 connected internally

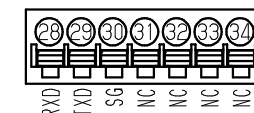


Suitable wire: AWG24 to 16

[BCD Output] *MIL connector



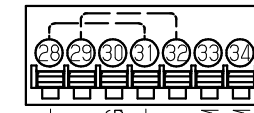
[RS-232C] *Screwless connector



Suitable wire: AWG24 to 16

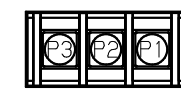
[RS-485] *Screwless connector

*28, 31&29, 32 connected internally

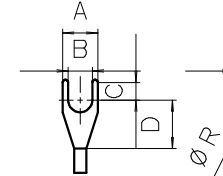


Suitable wire: AWG24 to 16

Supply Power



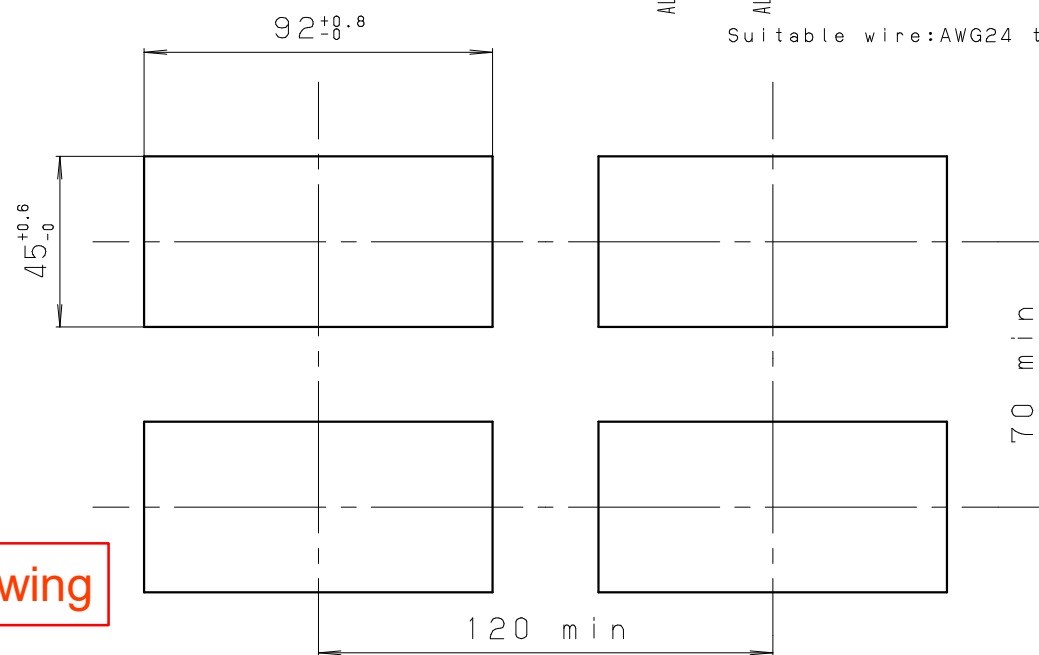
[Suitable crimping terminal]



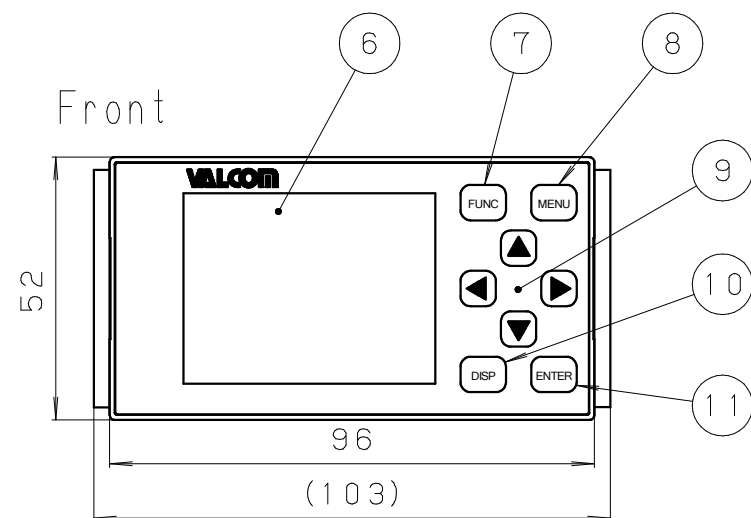
No.	Name	Description
P1	POWER (+)	Power source terminal (In case of DC power, +V)
P2	POWER (-)	Power source terminal (In case of DC Power, 0V)
P3	FG (NC)	FG terminal (DC Power option: no connection) (Non-usable for a relay terminal)

A	5~5.8mm	E	5~5.8mm
B	3~5mm	F	2~5mm
C	2~5mm	G	4.5~6mm
D	4.5~6mm	ØR	3~4.5mm

Panel cut dimensions (1:2)



Front

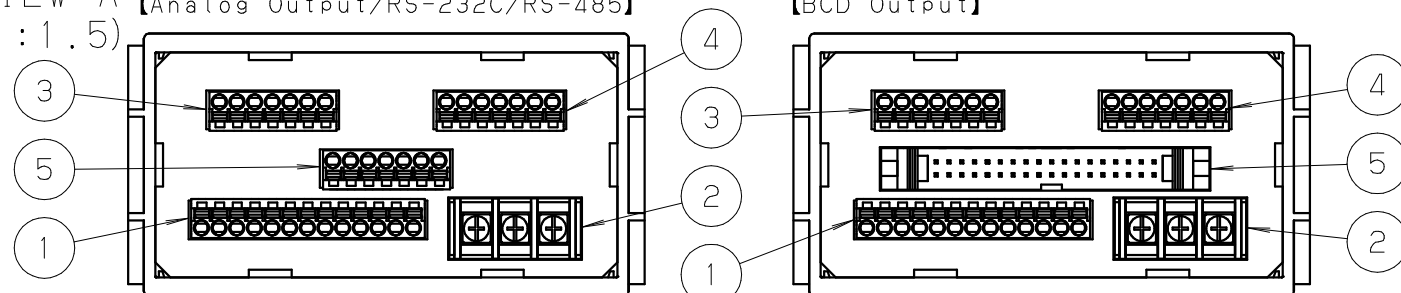


Reference drawing

VIEW A (1:1.5)

[Analog Output/RS-232C/RS-485]

[BCD Output]

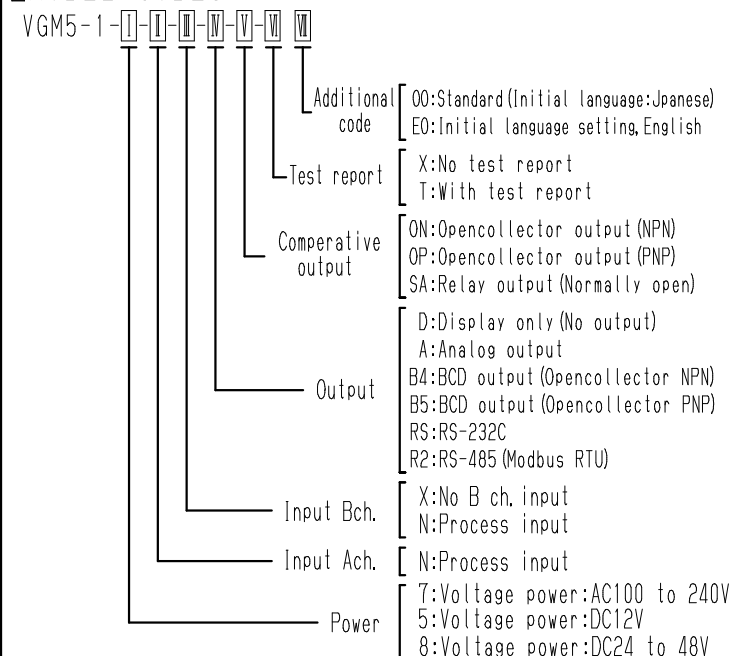


*Depending on the models, there are some unused terminal boards.

符号 REV.	改訂日 REV. DATE	改訂内容 REVISION	担当 ENG	検閲 CHK	承認 APP	材質 MATERIAL	顧客名 CUSTOMER
						表面処理 FINISH	
						第三角法 THIRD ANGLE PROJECTION	品名 TITLE Digital panel meter
						単位 UNIT mm	型式 MODEL VGM5-1-(I)-(II)-(III)-(IV)-(V)-(VI)-(VII)
						尺 度 1:1.5 シートサイズ SCALE (1:2,Free) SHEET SIZE A3	作成日 DATE 2021.1.7
						製図 設計 検閲 承認 DRAWN DESIGNER CHECKED APPROVED	図面番号 DWG NO. AK-17-5001-01-00
						H. K. T. T. Kokita	改訂符号 REV

VALCOM 株式会社パルコム
VALCOM CO., LTD

MODEL CODES



BASIC SPECIFICATIONS

Number of input channel : 1 or 2 (According to model codes)
 Display : 2.4 inch TFT liquid crystal display
 Used in 1ch input : A ch. measurement result
 Used in 2ch inputs : A ch. measurement result, B ch. measurement result, calculation result, A ch. and B ch. measurement results, A ch. or B ch. measurement result and calculation result
 Over warning : By exceeding the range of display, displays OVER or -OVER
 External controls : 5 functions of the followings can be assigned to control terminals (user-configurable).
 ①Comparative output reset function
 ②Hold reset function A/B/A&B
 ③Display value holding function A/B/A&B
 ④Maximum value holding function A/B/A&B
 ⑤Minimum value holding function A/B/A&B
 ⑥Amplitude value holding function A/B/A&B
 ⑦Deviation value holding function A/B/A&B
 ⑧Average value holding function A/B/A&B
 ⑨Digital zero function A/B/A&B
 ⑩Monitor change function
 ⑪Trend log function
 ⑫Pattern select function 1/2/3
 As follows, only short cut setting
 ⑬CompareList function
 Ambient temperature range : -5 to 50°C 35 to 85%RH (Non condensing)
 Storage temperature range : -10 to 70°C up to 60%RH
 Supply power : AC power [VGM5-1-7-(I)-(II)-(III)-(IV)-(V)-(VI)] AC100 to 240V±10% 50/60HZ
 DC power [VGM5-1-5-(I)-(II)-(III)-(IV)-(V)-(VI)] DC12V±10%
 DC power [VGM5-1-8-(I)-(II)-(III)-(IV)-(V)-(VI)] DC24 to 48V±10%
 Power consumption : AC power [VGM5-1-7-(I)-(II)-(III)-(IV)-(V)-(VI)] At AC100V:11VA max At AC240V:15VA max
 DC power [VGM5-1-5-(I)-(II)-(III)-(IV)-(V)-(VI)] At DC12V:6.5W max
 DC power [VGM5-1-8-(I)-(II)-(III)-(IV)-(V)-(VI)] At DC24V:6.5W max At DC48V:7W max

External dimension's : 96mm (W) x52mm (H) x145mm (D)
 Weight : Approx. 350g
 Withstand voltage : AC power [VGM5-1-7-(I)-(II)-(III)-(IV)-(V)-(VI)] Between Power terminals and inputs/external controls/comparative outputs/other outputs AC3000V for 1 minute
 DC power [VGM5-1-5or8-(I)-(II)-(III)-(IV)-(V)-(VI)] Between Power terminals and inputs/external controls/comparative outputs/other outputs AC1500V for 1 minute
 AC power and DC power Between input terminals and external controls/comparative outputs/other outputs AC1500V for 1 minute
 Between enclosures and each terminals AC3000V for 1 minute
 Insulation resistance : Between terminals mentioned above, at DC500V 100MΩ or higher
 Vibration : 10 to 55Hz half amplitude 0.15mm in X, Y, Z directions for 30 minutes
 Protective structure : IP66 (front)
 Installation environment : indoor use
 Rated altitude : up to 2000m
 Transient overvoltage : II
 Measurement category : II
 Pollution degree : 2
 Conformed EN standard : EN61326-1 (EMS: industrial electromagnetic environment/EMI: Class A) (Applicable to line length only under 30m)
 EN61010-1
 EN50581
 Material of enclosure : polycarbonate (PC) black UL94V-0

INPUT SPECIFICATIONS
 @ Process input (Common to A ch., B ch.)

Measurement range	Input resistance	Maximum allowable input	Accuracy (at 23±5°C 35~85%RH)
±5V	Approx. 1MΩ	±100V	±(0.05% of FS+1digit)
0~5V			
1~5V			
±10V	Approx. 10Ω	±50mA	
0~10V			
±20mA			
0~20mA			
4~20mA			

*It is possible to measure up to ± 10% FS range on each range. (Limited with ± 10% FS by internal processing.)
 In the bipolar input setting, the full scale is set to be ± separately, and for ± 10 V input, for example, limit processing is performed up to ± 11 V. (20 V is not treated as FS.) Also, in the accuracy of ± 10 V input, it is prescribed as one side FS handling and accuracy is calculated as 5 mV (0.05%) ± 1 digit.

Conversion method : Δ conversion method
 Input signal : Single ended
 Sampling rate : Max. 4000 times/sec (1ch product)
 Max. 2000 times/sec (2ch product)
 Display updating period : 10 sps/1 sps
 Zero display : Reading zero suppress
 Decimal point : Settable freely
 Display resolution : 1/99999
 Display resolution : -99999~99999
 Sensor power supply : DC12V±10% 100mA max.
 DV24V±10% 50mA max.
 *Allowable current of 2 ch input is the above current together with A ch. and B ch.
 *When used with a combination of DC12V and DC24V, power consumption is 1.2W max.

OUTPUT SPECIFICATIONS

[Comparison output]
 Open collector output : Output rating
 NPN: Sink current 50mA MAX.
 PNP: Source current 50mA MAX.
 Applied voltage 30V MAX.
 Output saturation voltage ≤1.2V at 50mA
 Number of outputs 4 transistor outputs
 Relay output : Contact rating:AC250V 2A, DC30V 2A
 Mechanical life:20 million times
 Electrical life:100 thousand times or more
 4 A contacts, AL1 and AL2, AL3 and AL4 share common
 Control method : Microcomputer calculating method
 Judgement value : -99999~99999 settable range
 Hysteresis : Settable within the range of 0-99999 digits for each judgement value independently.
 Comparison action : According to sampling rate (circulate period).
 Comparison formula memory : 8 pattern memory
 [Analog output]
 Conversion method : D/A conversion method
 Resolution capability : Equivalent of 13bit
 Scaling : Digital scaling
 Output objective : An item can be selected from source displayable values
 Response speed : Up to 300 us (0~90% response)
 Specifications for each output : Refer to the following chart.

Output type	Load resistance	Accuracy	Ripple
0 to 10V	≥2kΩ	±(0.1% of FS)	±50mVp-p
±10V			
1 to 5V			
0 to 20mA	≤550Ω		±25mVp-p
4 to 20mA			

*Current output ripple is at load resistance 250Ω, 20mA output.

[BCD output]

Output type : Open collector output NPN/PNP type
 Measurement data : Negative logic transistor is ON at logical "1"
 Polarity signal: Negative logic transistor is ON at minus display
 Over signal : Negative logic transistor is ON at over display
 Synchronized signal (PC) : Transistor is ON for a fixed period every time data becomes valid.

Transistor output capability : Voltage 30V max. Current 10mA max. Output saturation voltage up to 1.2V at 10mA
 Enable : By shorting the enable terminal to -D. COM or bringing to same voltage level, the BCD output transistors become OFF.

[RS-232C]

Communication protocol : Modbus-RTU/OriginalCommand /OriginalOutput
 Synchronization method : Asynchronous
 Communication method : Full duplex
 Baud rate : 9600bps, 19200bps, 38400bps
 Data length : 7bit, 8bit
 Start bit : 1bit
 Parity bit : None, Odd, Even
 Stop bit : 1bit, 2bit
 Delimiter : CR+LF, CR
 Character code : ASCII
 Transmission control procedure : No control sequence
 Used signal names : TXD, RXD, SG
 Number of connectable units : 1
 Cable length : Max. 15m

[RS-485]

Communication protocol : Modbus-RTU
 Synchronization method : Asynchronous
 Communication method : 2-wire half-duplex
 Baud rate : 9600bps, 19200bps, 38400bps
 Data length : 8bit
 Start bit : 1bit
 Parity bit : None, Odd, Even
 Stop bit : 1bit
 Used signal names : Non-inverting (+), Inverting (-)
 Number of connectable units : 31
 Cable length : Max. 1.2km (total)
 *Conforming CE mark, less than 30m

Reference drawing

符号 REV.	改訂日 REV. DATE	改訂内容 REVISION	担当 ENG	検閲 CHK	承認 APP	材質 MATERIAL	顧客名 CUSTOMER
						表面処理 FINISH	
						第三角法 UNIT 単位 mm	品名 TITLE
						天度 SHEET SIZE A3	Digital panel meter (Specifications)
						作成日 DATE 2021.1.7	型式 MODEL
						製図 DRAWN	VGM5-1-(I)-(II)-(III)-(IV)-(V)-(VI)
						設計 DESIGNER	図面番号 DWG NO.
						検閲 CHECKED	改訂符号 REV
						承認 APPROVED	AK-00-5013-01-00
						H. K.	VALCOM 株式会社バルコム
						T. T. Kokita	VALCOM CO., LTD