



## Digital Meter Relay PSM-215A

- Small case in DIN size [48mm (W) x 24mm (H) x 88mm (D)]
- Front panel operating digital scaling
- Hi-Lo comparison output (relay photo coupler)
- RoHS compliant

### Specification

#### Input Specification

##### DC Voltage Measurement

Range	Measurement Range	Display	Input Impedance	Max. Allowable Input
11	±99.99mV	Offset ±9999	100MΩ or more	±50V
12	±999.9mV		100MΩ or more	±50V
13	±9.999V	Full scale ±9999	Approximately 1MΩ	±50V
1V	1 to 5V		Approximately 1MΩ	±50V

Accuracy = ±(0.03% of rdg + 2 digits) (at 23°C ± 5°C)

##### DC Current Measurement

Range	Measurement Range	Display	Input Impedance	Max. Allowable Input
2A	4 to 20mA	Offset ±9999 Full scale ±9999	Approximately 50Ω	±50mA

Accuracy = ± (0.1% of rdg + 2 digits) (at 23°C ± 5°C)

※ For each range, the accuracy is applied at (FSC-OFS)/(FIN-OIN) ≤ 1.

#### Comparison Part Specification

Control Method	Microcomputer calculation method
Setting Range	—9999 to 9999
Comparison Operation	Depends on sampling speed
Setting Condition	For higher and lower limits judgment (HI-GO-LO), higher limit judgment value > lower limit judgment value
	For higher and higher limits judgment (HH-HI-GO), higher higher limit judgment value > higher limit judgment value
	For lower and lower limits judgments (GO-LO-LL), lower judgment value > lower lower judgment value
Hysteresis	1 to 999 digits can be set for each comparison judgment value

#### Comparison Condition

##### Higher and Lower Limits Judgment (HI-GO-LO)

Comparison Condition	Judgment Monitor		Comparison Output		
	AL1	AL2	OUT1	OUT2	OUT3
Measurement value > higher limit judgment value	OFF	ON	OFF	OFF	ON
Lower limit judgment value ≤ measurement value ≤ higher limit judgment value	OFF	OFF	OFF	ON	OFF
Lower limit judgment value > measurement value	ON	OFF	ON	OFF	OFF

##### Higher Higher Judgment (HH-HI-GO)

Comparison Condition	Judgment Monitor		Comparison Output		
	AL1	AL2	OUT1	OUT2	OUT3
Measurement value > higher higher limit judgment value	ON	ON	OFF	ON	ON
Measurement value > higher limit judgment value	ON	OFF	OFF	ON	OFF
Higher limit judgment value ≥ measurement value	OFF	OFF	ON	OFF	OFF

##### Lower Lower Judgment (GO-LO-LL)

Comparison Condition	Judgment Monitor		Comparison Output		
	AL1	AL2	OUT1	OUT2	OUT3
Measurement value ≥ lower limit judgment value	OFF	OFF	OFF	OFF	ON
Lower limit judgment value > measurement value	OFF	ON	OFF	ON	OFF
Lower lower limit judgment value > measurement value	ON	ON	ON	ON	OFF

#### Relay Contact Output (parallel use with photo coupler output is not available)

Output Rating	DC 24V 1A (resistance load)
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#### Photo Coupler Output (parallel use with relay contact output is not available)

Output Rating	DC 30V 50mA
Output Saturation Voltage	1.2V or less (at 50mA)

#### General Specification

Measurement Function	One of DC voltage or DC current (single range)
Input Circuit	Single ended
Operating Method	Delta sigma conversion method
Sampling Speed	Max. 25 times/second
Display	Red 7 segments LED display (height of character 8mm)
Polarity Display	"—" is displayed when the calculation result is negative
Over Range Warning	oL or -oL is displayed for input signal of display range or more
Max. Display	±9999 (full 4 digits)
Decimal Point	Can be set at arbitrary position by front face sheet switch
Zero Display	Leading zero suppress
Backup	Setting data is stored in EEPROM (number of writings is 100,000 times)
Operating Temperature & Humidity	0 to 50°C / 35 to 85% RH (no dew condensation)
Storage Temperature & Humidity	—20 to 70°C / 60% RH or less (no dew condensation)
Power Supply Voltage	DC 24V ±20%
Power Consumption	Approximately 4W
External Dimensions	48mm (W) x 24mm (H) x 87.8mm (D) * Screw terminal included
Weight	Approximately 100g
Withstanding Voltage	Between power supply terminal and input terminal, between each output terminal DC 500V, one minute
	Between input terminal and each output terminal DC 500V, one minute
	Between case and power supply terminal, input terminal, between each output terminal AC 1500V, one minute
Insulation Resistance	Between terminals above DC 500V 100MΩ or more
Accessory	Instruction manual, attachment band, unit sticker

#### External Control Part

Digital Zero	Digital zero is turned ON by short-circuiting DZ terminal and COM terminal or same electric potential
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#### External Power Supply Part

Rating	DC24V±5%
Maximum Load	25mA

#### Optional Specification

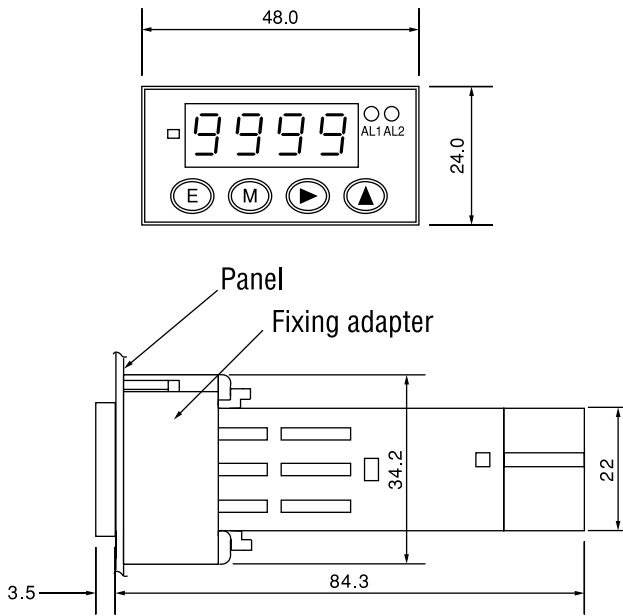
##### RS-485 Part (mounting with analog output at once is not available)

Simultaneous Method	Asynchronous method
Communication Method	2-wire type semi double (poling selecting method)
Transmission Speed	38,400bps/19,200bps/9,600bps/4,800bps/2,400bps
Start Bit	1 bit
Data Length	7 bits / 8 bits
Parity Bit	Even parity / odd parity / no parity
Error Detection	BCC (Block Check Character) check sum
Stop Bit	1 bit / 2 bits
Character Code	ASCII code
Delimiter	CR/CR + LF
Transmission Control Procedure	No procedure
Name of Used Signal	Noninversion (+), inversion (—)
Number of Connected Meters	Max. 31 meters
Length of Line	Max. 500m (total)

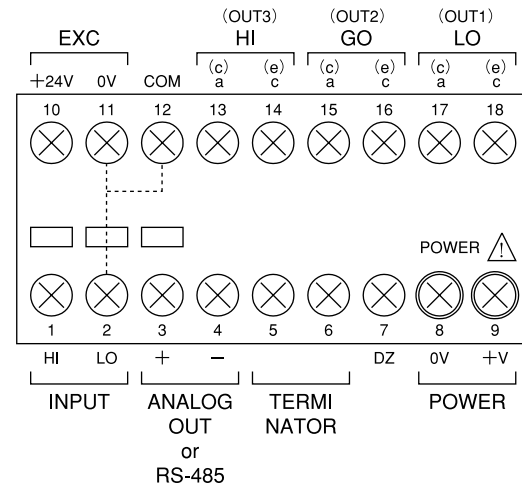
##### Analog Output Part (mounting with RS-485 at once is not available)

Output Specification	Select one of DC4 to 20mA or 0 to 10V			
	Type	Load Resistance	Accuracy	Ripple
Output Specification	4 to 20mA	0 to 250Ω	± (0.5% of FS)	25mVp-p or less
	0 to 10V	10kΩ or more	± (0.5% of FS)	50mVp-p or less

## Dimensional Outline Drawings

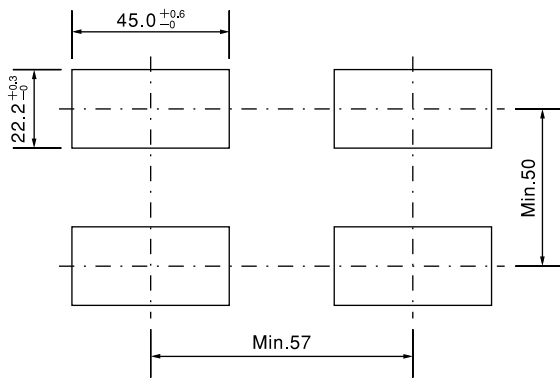


## Terminal Connection Method



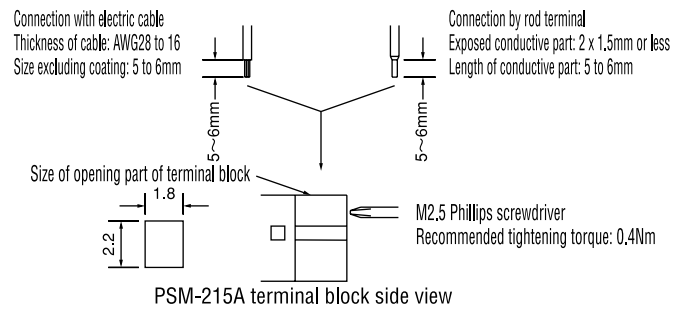
※ Within ( ) in comparison output is the wiring at photo coupler output

## Panel Cut Dimensions



※ Recommended thickness of panel: 1 to 8mm

## Wiring Diagram



Indicator

## How to Order

**PSM - 215A -** 11 - 1 - 1 - 1

Input Range	Option Output	Comparison Output	Display Unit
11 : ±99.99mV 12 : ±999.9mV 13 : ±9.999V 1V : 1 to 5V 2A : 4 to 20mA	1 : None 4 : RS-485 Interface 6 : Analogue Output (4 to 20mA) 7 : Analogue Output (0 to 10V)	1 : Relay Contact Output 2 : Photo Coupler Output	1 : psi 2 : kgf/cm <sup>2</sup> 3 : bar 4 : torr 5 : atm 6 : KPa 7 : MPa

※ Specification is subject to change without notice.