



Dear customers,

16 October 2023

## **ULVAC Components News** **Price Revision and Sales Termination**

Please be informed that we will revise the price and then stop the sales of the following products significant cost increase of the meter relay that is a main component of GP-1GRY and difficulty continue to manufacture it because of the meter market shrinkage. Thank you for your and cooperation.

- Details -

[Object products]

Pirani vacuum gauge GP-1GRY A type

Meter for pirani vacuum gauge GP-1GRY A meter, C meter

[Price revision date]

From the purchase on 01 December 2023

[Sales end date]

31 March 2024 (the schedule may be changed depending on the stock status)

[Service period]

Maintenance parts including meter only is available for 7 years after sales end of the vacuum gauge main unit (the schedule may be changed depending on the stock status).

[Recommended models for replacement]

SW100 + ISG1

GP-1000G

[Attached file]

<PN-VG03-005-00E> Revised price list

<TN-VG03-008-00E> Replace of GP-1GRY(A) with SW100+ISG1

<TN-VG03-009-00E> Replace of GP-1GRY(A) with GP-1000G

Sincerely

Toshio Tanabe  
Senior Manager  
Sales Dept.  
Components Division

End of Document

# Replacement of GP-1GRY(A) with SW100 + ISG1

Components Business HQ  
ULVAC, Inc.

One of the recommended models to be replaced GP-1GRY(A) with is **SW100-A (sensor unit) + ISG1 (display) + AC adapter.**

By the replacement,

- Measurement performance will be improved.
- Display ISG1 is compact as SW100 is a transducer type (controller and sensor head are combined to one).
- Useful functions of SW100 are available with USB connection with PC/smartphone.

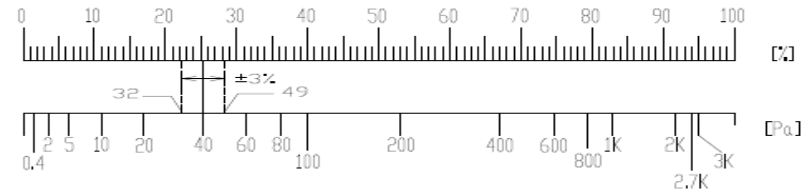
- By the replacement, measurement performance will be greatly improved.

GP-1GRY(A) Pa spec



Error range by pressure values: Within  $\pm 3\%$  of 100% full scale as converted to the liner scale

e.g.) At 40Pa, 32 to 49Pa (-20 to +23%)



Measurement range	0.4Pa	2Pa	20Pa	200Pa	2000Pa	2700Pa
Accuracy		+150% -100%	+30% -30%	+15% -15%	+45% -18%	

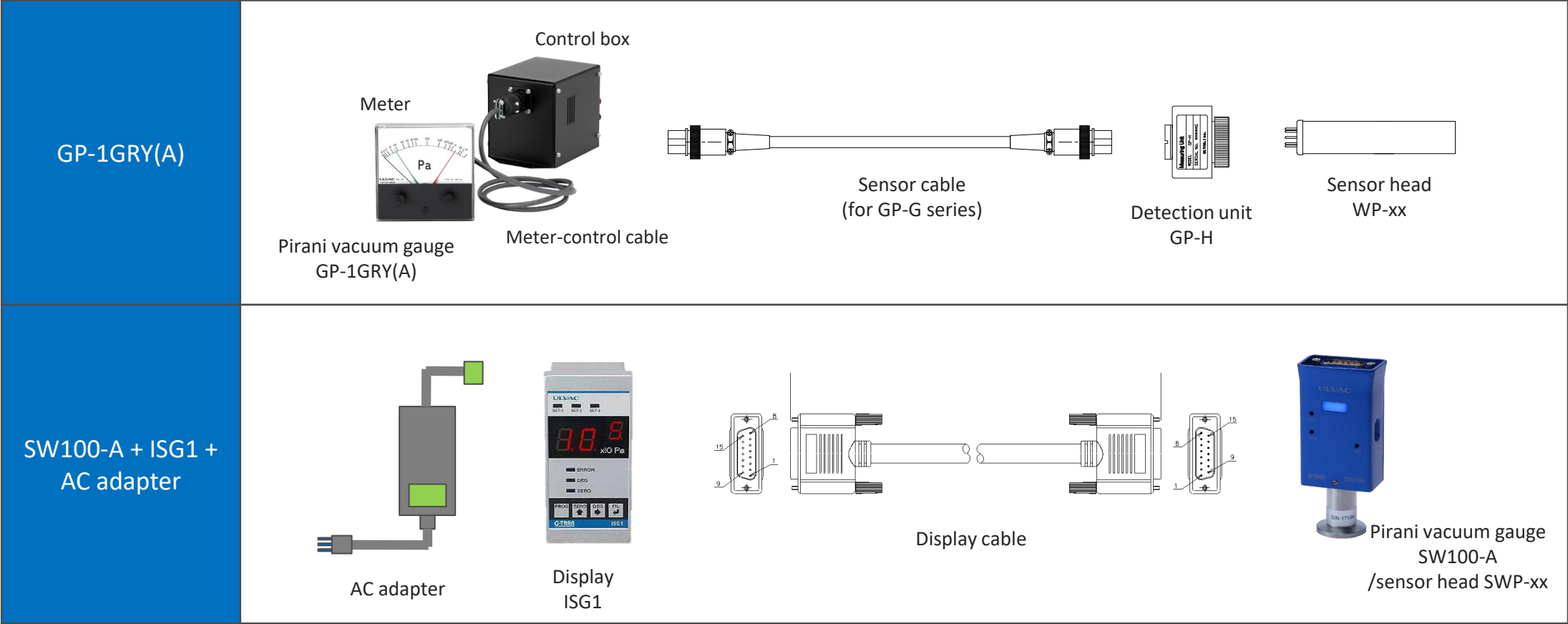
SW100 + ISG1



Measurement range	0.05Pa	0.1Pa				10000Pa	100000Pa
Accuracy	$\pm 20\%$		$\pm 10\%$				$\pm 20\%$

- Wider measurement range
- Higher accuracy
- Shock-resistant sensor head

- Unit configuration of GP-1GRY(A) is different from that of SW100-A + ISG1. Please note that there is no compatibility between the two.



# Specifications

	GP-1GRY(A)	SW100 + ISG1	Note
Measurement range	0.4 to 2700Pa	$5 \times 10^{-2}$ to $1 \times 10^{+5}$ Pa	<a href="#">Refer to P3</a>
Accuracy	Within $\pm 3\%$ of 100% full scale as converted to the liner scale	$5 \times 10^{-2}$ to $1 \times 10^{-1}$ Pa: $\pm 20\%$ $1 \times 10^{-1}$ to $1 \times 10^{+4}$ Pa: $\pm 10\%$ $1 \times 10^{+4}$ to $1 \times 10^{+5}$ Pa: $\pm 20\%$	<a href="#">Refer to P3</a>
Recorder output (pressure output) signal	DC0 to 10mV non-liner output	DC0 to 10V log output $P=10^{(V-3)}$	<a href="#">Refer to P7</a>
Set-point	2 contact output MAX. AC125V/1A, AC250V/0.5A, DC30V/2A MIN. DC10mV/10 $\mu$ A	3 photocoupler output 30V <sub>MAX</sub> , 50mA <sub>MAX</sub> , 70mW	<a href="#">Refer to P6</a>
Applicable sensor head (fitting)	WP-01( $\Phi$ 18), WP-02( $\Phi$ 15), WP-03(R3/8), WP-16(NW16)	SWP-16(NW16), SWP-25(NW25), SWP-R1/8(R1/8), SWP-P18( $\Phi$ 18), SWP-P15( $\Phi$ 15), SWP-CF16(ICF034), SWP-1S(ASME BPE sanitary 1")	<a href="#">Refer to P9</a>
Filament	Platinum (Pt)	Platinum (Pt)	
Operating temperature range	10 to 40 °C	10 to 40 °C	
Power supply voltage	AC100 to 240V	DC24V *With AC adapter, AC100 to 240V	
I/O connector	None *Independent set-point output terminal, recorder output terminal	D-sub15pin	<a href="#">Refer to P6, 7</a>
Meter/display dimensions	W100 x D111 x H100	ISG1 : W48 x D96 x H70	<a href="#">Refer to P8</a>
Sensor head (sensor unit) dimensions, weight	e.g.) WP-16: $\Phi$ 30 x 102.4mm, 77g	e.g.) SW100-A + SWP-16: 150g 48 x 34 x 104mm	<a href="#">Refer to P9</a>

For details, see the instruction manuals of each model.

### GP-1GRY(A)

Meter front panel

Meter rear panel

• Meter relay action (contact output MAX. AC125V/1A, AC250V/0.5A, DC30V/2A MIN. DC10mV/10μA)

電源	メータリレー		COM-NC	COM-NO
OFF		Lo	ON	OFF
		Hi	ON	OFF
ON		Lo	OFF	ON
		Hi	OFF	ON
ON		Lo	ON	OFF
		Hi	OFF	ON
ON		Lo	ON	OFF
		Hi	ON	OFF

### SW100+ISG1

ISG1 front panel

ISG1 rear panel

• Set-point output action

When the pressure has lowered to below a certain set-point level, photocoupler will be actuated and the signal will turn to Lo. Set-point lamp on.

"I/O"	Description	Remarks
2	Filament error signal output	Lo when error, 30VDC <sub>MAX.</sub> 50mA <sub>MAX.</sub> 70mW
3	Setpoint 1 actuating signal	Lo when actuated, 30VDC <sub>MAX.</sub> 50mA <sub>MAX.</sub> 70mW
5	ADJ adjustment	Actuated when shorted to GND
7	Setpoint 3 actuating signal	Lo when actuated, 30VDC <sub>MAX.</sub> 50mA <sub>MAX.</sub> 70mW
8	Pressure signal output +	DC0 to 10V
9	Signal GND	GND of pressure signal, burnout signal, setpoint, etc.
10	RS485 -	Serial communication RS485 - output
11	Setpoint 3 actuating signal	Lo when actuated, 30VDC <sub>MAX.</sub> 50mA <sub>MAX.</sub> 70mW
12	RS485 +	Serial communication RS485 + output
15	Signal GND	GND of pressure signal, burnout signal, setpoint, etc.
Case	FG	Frame ground

Note) Output form is different (GP-1GRY: contact output, SW100+ISG1: Photocoupler output). The host system needs modification.

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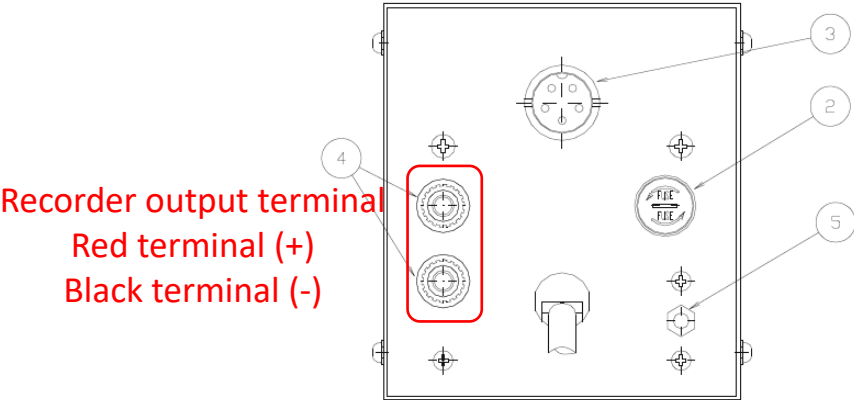
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TN-VG03-008-00E

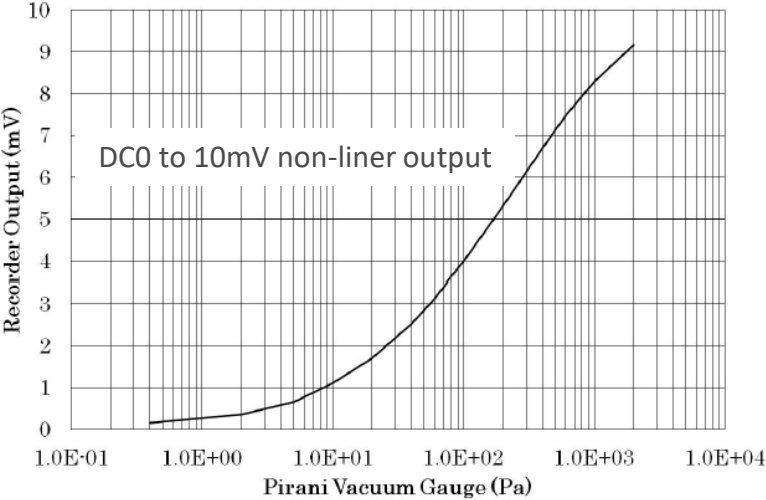
6

# Recorder output (pressure output) signal

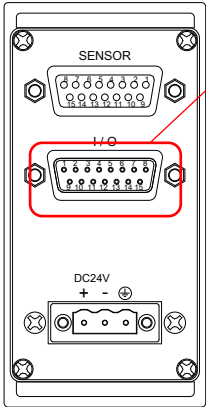
GP-1GRY(A)



Rear panel of controller



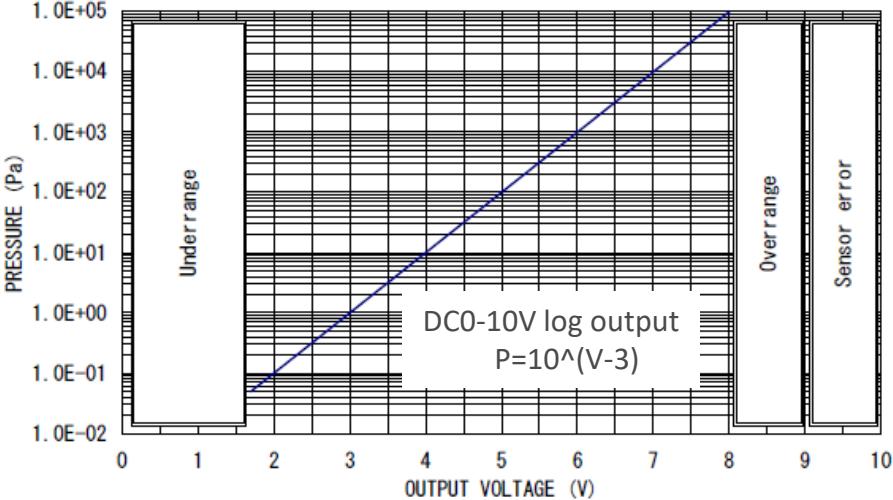
SW100+ISG1



ISG1 I/O connector (D-sub15pin)

"I/O"	Description	Remarks
2	Filament error signal output	Lo when error, 30VDC <sub>MAX</sub> , 50mA <sub>MAX</sub> , 70mW
3	Setpoint 1 actuating signal	Lo when actuated, 30VDC <sub>MAX</sub> , 50mA <sub>MAX</sub> , 70mW
5	ADJ adjustment	Actuated when shorted to GND
7	Setpoint 3 actuating signal	Lo when actuated, 30VDC <sub>MAX</sub> , 50mA <sub>MAX</sub> , 70mW
8	Pressure signal output +	DC0 to 10V
9	Signal GND	GND of pressure signal, burnout signal, setpoint, etc.
10	RS485 -	Serial communication RS485 - output
11	Setpoint 3 actuating signal	Lo when actuated, 30VDC <sub>MAX</sub> , 50mA <sub>MAX</sub> , 70mW
12	RS485 +	Serial communication RS485 + output
15	Signal GND	GND of pressure signal, burnout signal, setpoint, etc.
Case	FG	Frame ground

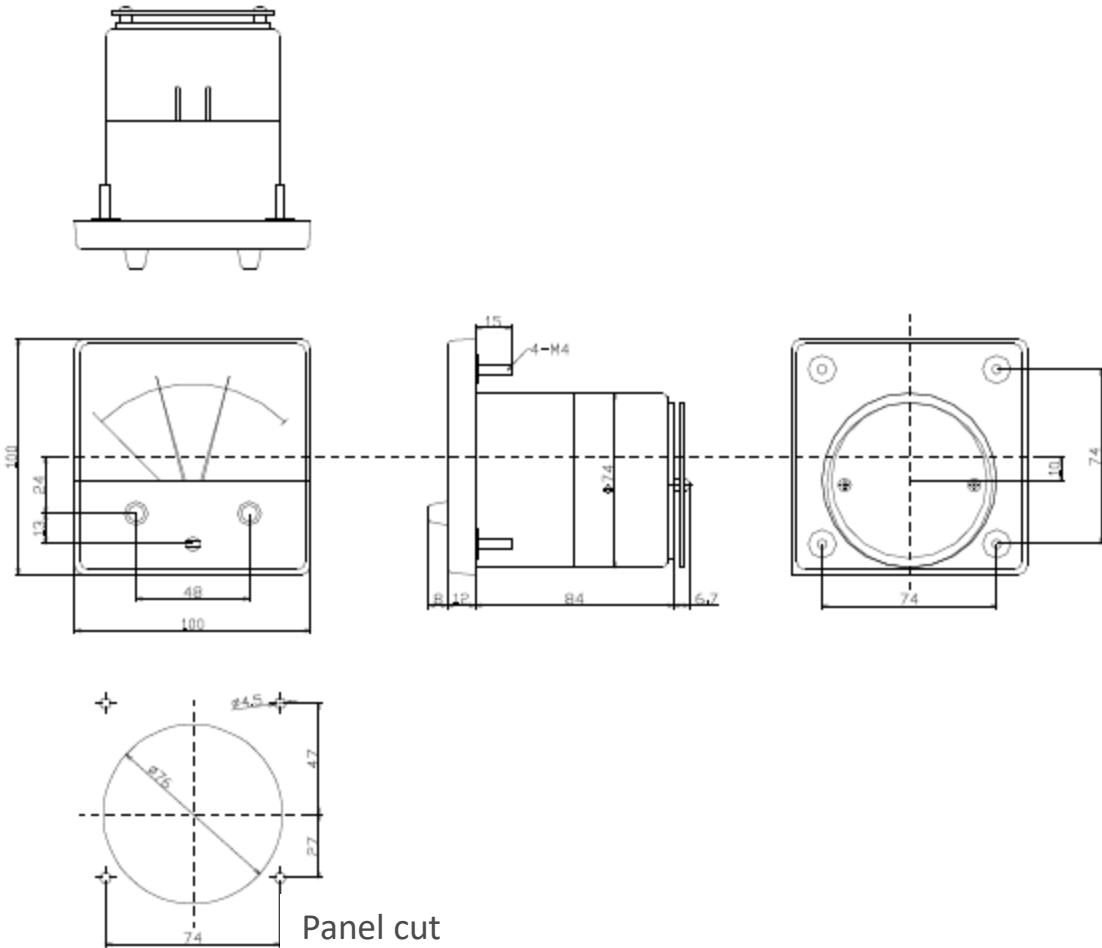
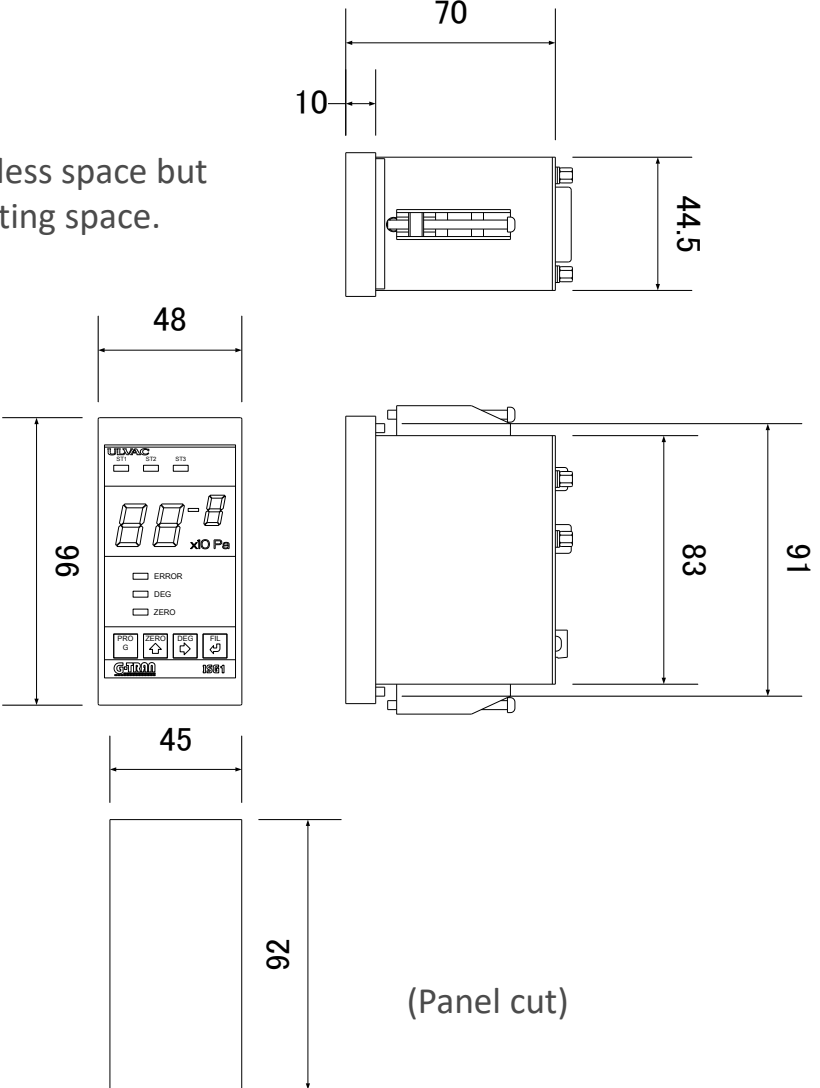
ISG1 rear panel



Note) Both output voltage and output curve are different. In case of using this signal, the host system needs modification.



# Meter/display and panel cut dimensions

GP-1GRY(A)	SW100
 <p>Panel cut</p>	<p>Note) Need a less space but check the existing space.</p>  <p>(Panel cut)</p>

# Sensor head (sensor unit) fitting/dimension

GP-1GRY(A)

WP-01 WP-02 WP-03 WP-16 WPB-10-034

Sensor head model	Mounting port size (dia.)	Case material
WP-01	Φ18	BS(Ni plating)
WP-02	Φ15(18)	BS(Ni plating)
WP-03	Φ3/8	BS(Ni plating)
WP-16	NW16(Φ30)	BS(Ni plating)

SW100

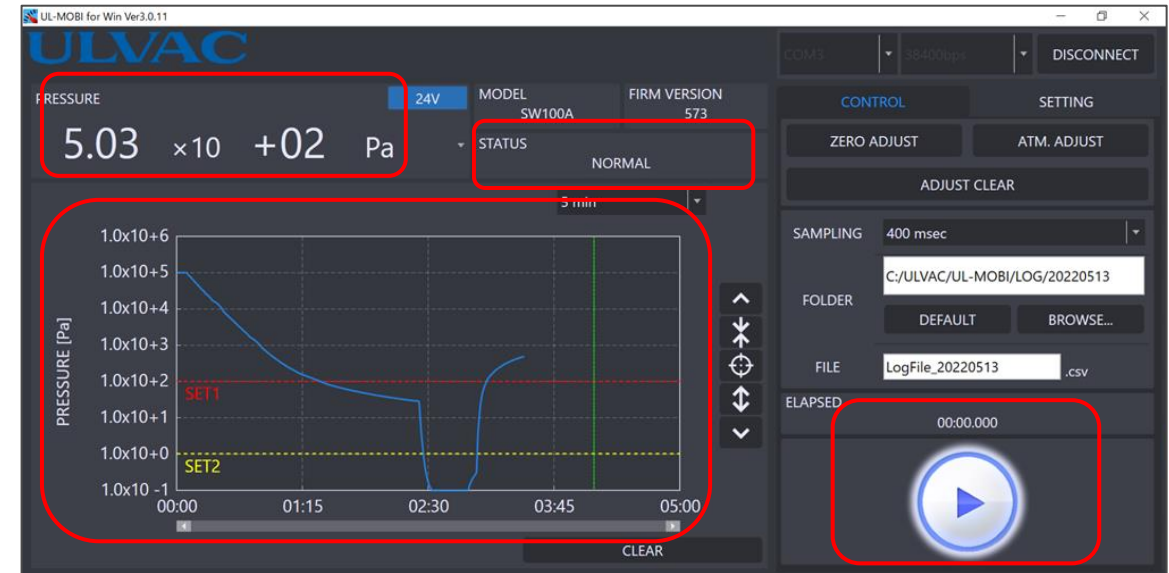
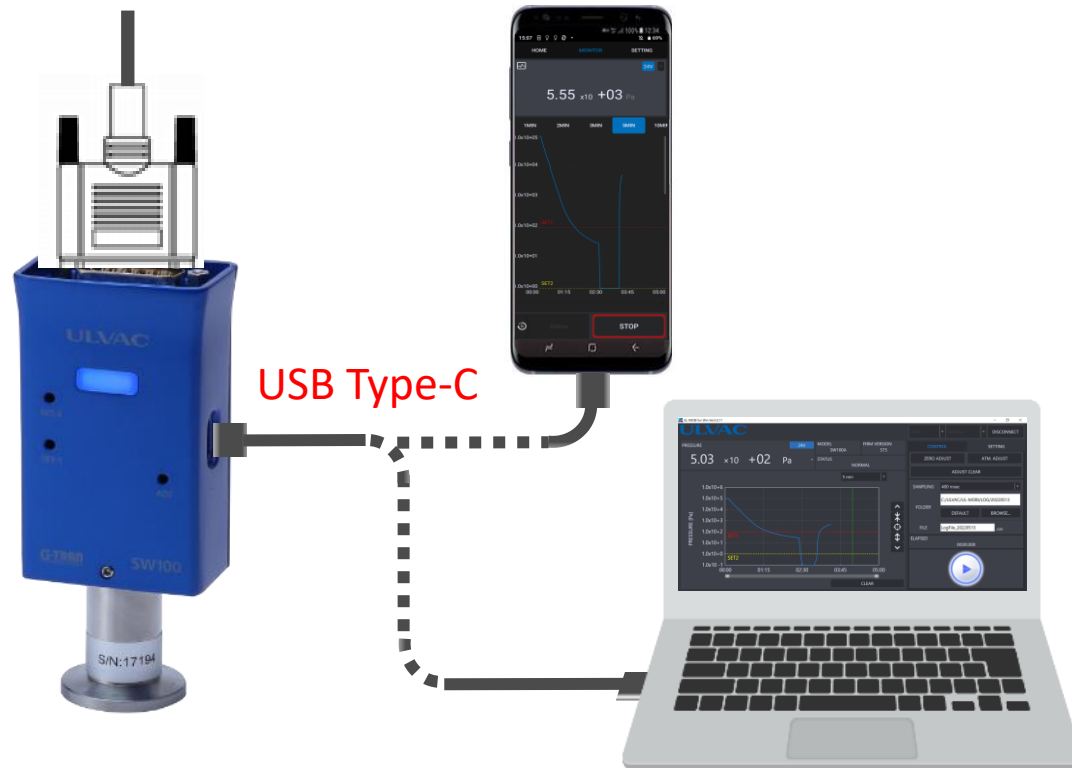
SWP-16 SWP-25 SWP-R1/8 SWP-P18 SWP-P15 SWP-CP16 SWP-1S

- The shock-resistant structure of the sensor head SWP series makes its filament hard to break.

Note 1) Need a little more space, so check the existing space.  
Note 2) Please prepare an adapter flange in case that the above fittings cannot be installed direct.

# [Reference] SW100 useful functions with USB

- In SW100, useful functions are available with USB connection with PC/smartphone.



Application software: UL-MOBI for Windows/Android

- Error status check
  - Measurement status check
  - Data logging
- \*Need power supply for measurement.

# Replacement of GP-1GRY(A) with GP-1000G

Components Business HQ  
ULVAC, Inc.

One of the recommended models to be replaced GP-1GRY(A) with is **GP-1000G**.

By the replacement,

- Measurement value can be read clearly owing to the digital type display.
- The set-point output can be used in the almost same way as the output form is the same contact output.
- In case of using the recorder output signal, the host system needs modification because its output voltage and curve are different.

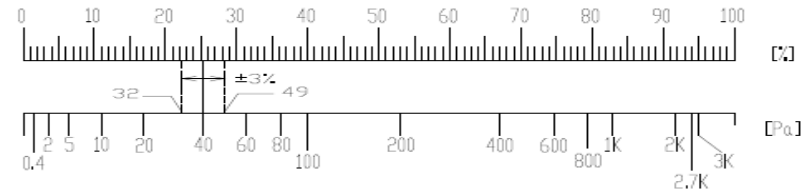
- By the replacement, the reading accuracy will be improved.

GP-1GRY(A) Pa spec



Error range by pressure values: Within  $\pm 3\%$  of 100% full scale as converted to the liner scale

e.g.) At 40Pa, 32 to 49Pa (-20 to +23%)



Measurement range	0.4Pa	2Pa	20Pa	200Pa	2000Pa	2700Pa
Accuracy		+150% -100%	+30% -30%	+15% -15%	+45% -18%	

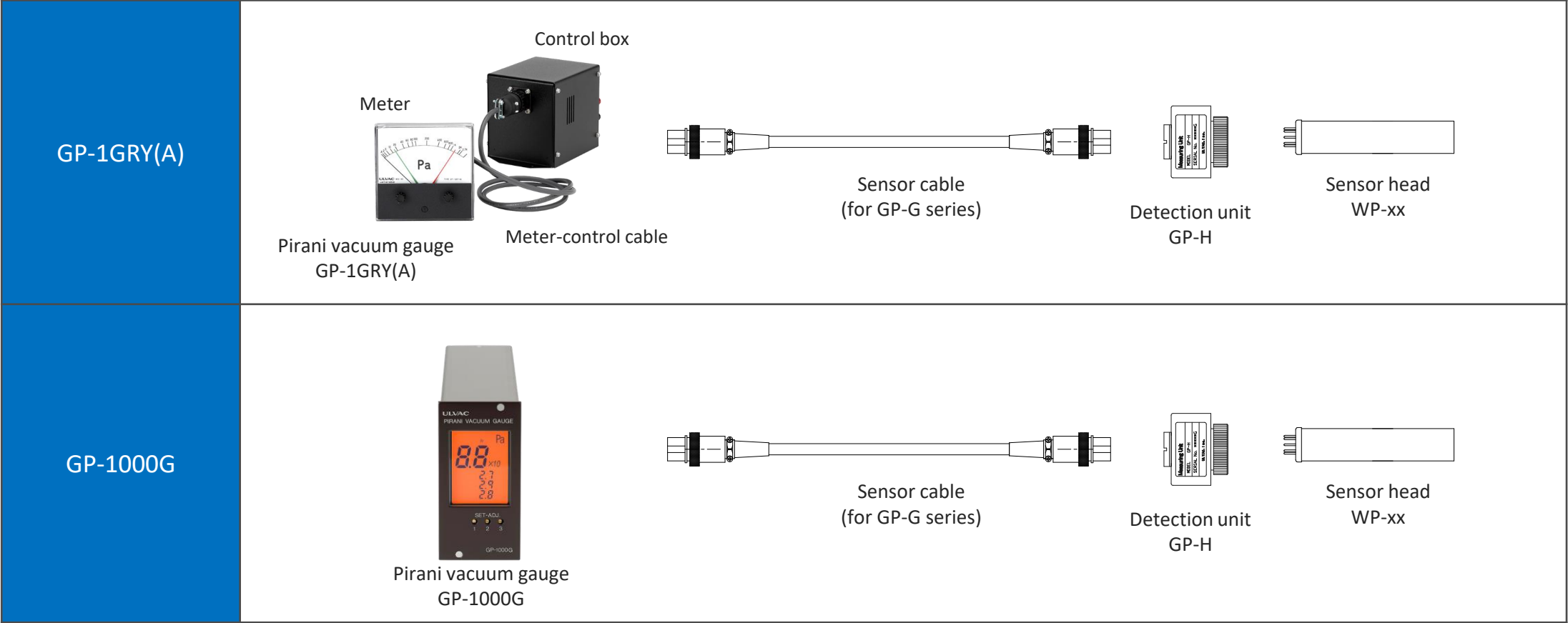
GP-1000G



Measurement range	0.4Pa	10Pa	51Pa	760Pa	1000Pa	2700Pa
Accuracy	$\pm 50\%$	$\pm 30\%$	$\pm 15\%$	$\pm 30\%$	$\pm 50\%$	

- Same measurement range
- Higher accuracy (especially lower pressure range)

- Unit configuration of GP-1000G is the same as that of GP-1GRY(A) except main unit. Units other than main unit can be reused.

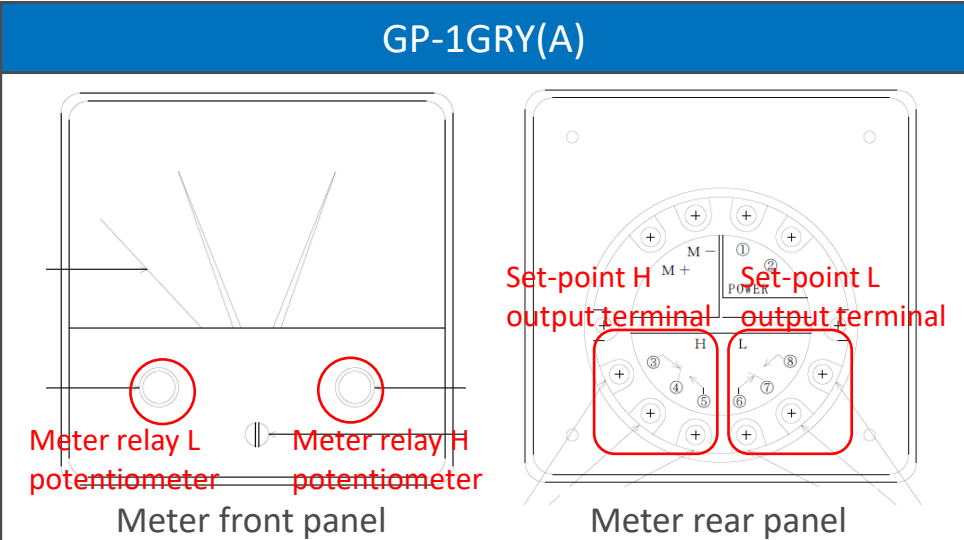


# Specifications

	GP-1GRY(A)	GP-1000G	Note
Measurement range	0.4 to 2700Pa	0.4 to 2700Pa	<a href="#">Refer to P3</a>
Accuracy	Within $\pm 3\%$ of 100% full scale as converted to the liner scale	$4.0 \times 10^{-1}$ to $1.0 \times 10^{+1}$ Pa : $\pm 50\%$ $1.0 \times 10^{+1}$ to $5.1 \times 10^{+1}$ Pa : $\pm 30\%$ $5.1 \times 10^{+1}$ to $7.6 \times 10^{+2}$ Pa : $\pm 15\%$ $7.6 \times 10^{+2}$ to $1.0 \times 10^{+3}$ Pa : $\pm 30\%$ $1.0 \times 10^{+3}$ to $2.7 \times 10^{+3}$ Pa : $\pm 50\%$	<a href="#">Refer to P3</a>
Recorder output (pressure output) signal	DC0 to 10mV non-liner output	① Liner output $1.0 \times 10^{+3}$ Pa F.S. 0 to 10V ② Liner output $1.0 \times 10^{+2}$ Pa F.S. 0 to 10V ③ Dummy log output Each range 1V ④ Non-liner output 0 to 10V	<a href="#">Refer to P7</a>
Set-point	2 contact output MAX. AC125V/1A, AC250V/0.5A, DC30V/2A MIN. DC10mV/10 $\mu$ A	3 relay contact output Relay load: AC100V/0.5A, DC24V/1A (resistance load) Mechanical service life: 5 million times operations Electrical service life: 100,000 times operations	<a href="#">Refer to P6</a>
Applicable sensor head (fitting)	WP-01( $\Phi$ 18), WP-02( $\Phi$ 15), WP-03(R3/8), WP-16(NW16)	WP-01( $\Phi$ 18), WP-02( $\Phi$ 15), WP-03(R3/8), WP-16(NW16)	<a href="#">Refer to P9</a>
Filament	Platinum (Pt)	Platinum (Pt)	
Operating temperature range	10 to 40 °C	10 to 40 °C	
Power supply voltage	AC100 to 240V	AC100 to 240V	
I/O connector	None *Independent set-point output terminal, recorder output terminal	D-sub37pin	<a href="#">Refer to P6, 7</a>
Meter/main unit dimensions	W100 x D111 x H100	W50 x D238 x H99	<a href="#">Refer to P8</a>
Sensor head (sensor unit) dimensions, weight	e.g.) WP-16: $\Phi$ 30 x 102.4mm, 77g	e.g.) WP-16: $\Phi$ 30 x 102.4mm, 77g	<a href="#">Refer to P9</a>

For details, see the instruction manuals of each model.





- Meter relay action (contact output MAX. AC125V/1A, AC250V/0.5A, DC30V/2A MIN. DC10mV/10μA)

電源	メータリレー	COM-NC		COM-NO
OFF		Lo	ON	OFF
		Hi	ON	OFF
ON		Lo	OFF	ON
		Hi	OFF	ON
ON		Lo	ON	OFF
		Hi	OFF	ON
ON		Lo	ON	OFF
		Hi	ON	OFF

GP-1000G

Each set-point set value / relay status

I/O connector (D-sub37pin)

Pin No.	Signal	PinNo.	Signal
1	REC OUT (+)	20	REC OUT (-)
2 <sup>*1</sup>	Ar/N <sub>2</sub> (INPUT)	21	Mantissa part A 1 (OUTPUT)
	• N <sub>2</sub> Lo/SHORT	22	Mantissa part A 2 (OUTPUT)
	• N <sub>2</sub> Hi/OPEN	23	Mantissa part A 4 (OUTPUT)
3		24	Mantissa part A 8 (OUTPUT)
4	GND	25	Mantissa part B 1 (OUTPUT)
5	Symbol +/- (OUTPUT)	26	Mantissa part B 2 (OUTPUT)
	• + Lo	27	Mantissa part B 4 (OUTPUT)
	• - Hi	28	Mantissa part B 8 (OUTPUT)
6	Strobe	29	RS-232C SD
7	Exponent part C 1 (OUTPUT)	30	RS-232C RD
8	Exponent part C 2 (OUTPUT)	31	
9	Exponent part C 4 (OUTPUT)	32	SETPOINT-1 NO
10	Exponent part C 8 (OUTPUT)	33	SETPOINT-1 COM
11		34	SETPOINT-1 NC
12		35	ERROR NO
13 <sup>*2</sup>	Pa/Torr	36	ERROR COM
	• Torr Lo/SHORT		
	• Pa Hi/OPEN		
14	SETPOINT-2 NO	37	ERROR NC
15	SETPOINT-2 COM		
16	SETPOINT-2 NC		
17	SETPOINT-3 NO		
18	SETPOINT-3 COM		
19	SETPOINT-3 NC		

- Set-point relay output action \*Relay load: AC100V/0.5A, DC24V/1A (resistance load)  
When the measured pressure value is lowered than the set-point value, the set-point relay is actuated (reversed). At the same time, a frame is displayed around “SET\*” on the LCD display panel.

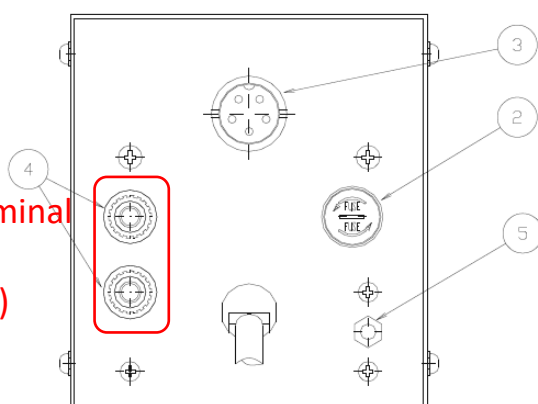
Power	Measured pressure(Pa)	Set pressure(Pa)	Relay setpoint output	
			COM-NC	COM-NO
OFF			CLOSE	OPEN
ON	2.0×10 <sup>+1</sup>	5.0×10 <sup>+1</sup>	OPEN	CLOSE
ON	8.0×10 <sup>+1</sup>	5.0×10 <sup>+1</sup>	CLOSE	OPEN

Note) The set-point output can be used in the almost same way as the output form is the same contact output though there is difference of terminal/connector. Please pay attention not to exceed the rated load.

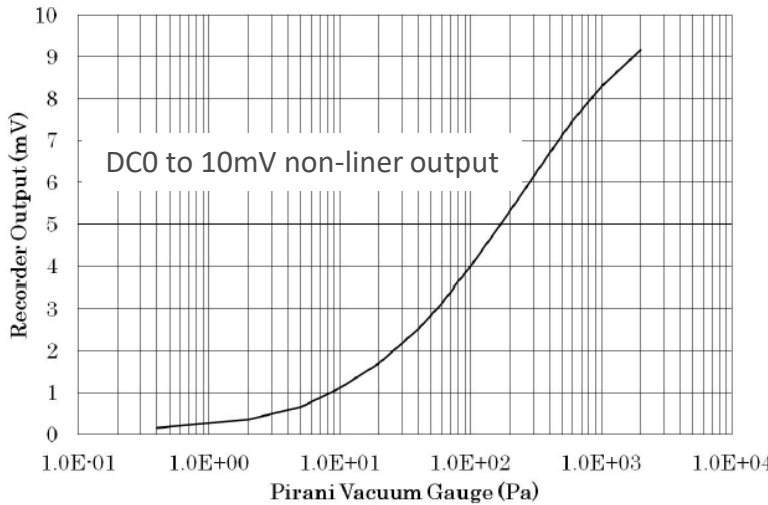
# Recorder output (pressure output) signal

GP-1GRY(A)

Recorder output terminal  
Red terminal (+)  
Black terminal (-)



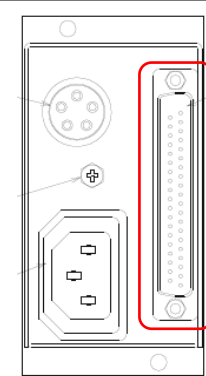
Rear panel of controller



DC0 to 10mV non-liner output

GP-1000G

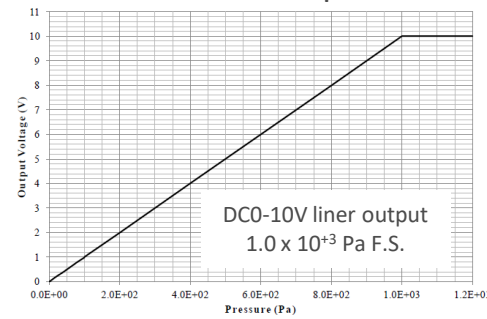
I/O connector (D-sub37pin)



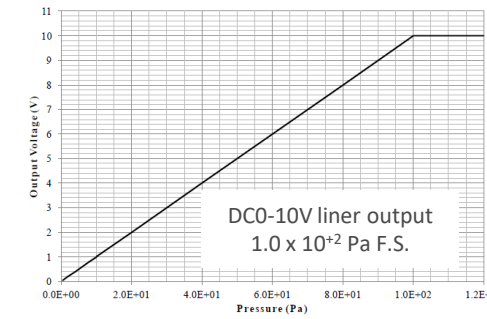
Rear panel

Pin No.	Signal	PinNo.	Signal
1	REC OUT (+)	20	REC OUT (-)
2	Ar/N <sub>2</sub> (INPUT)	21	Mantissa part A 1 (OUTPUT)
	• N <sub>2</sub> Lo/SHORT	22	Mantissa part A 2 (OUTPUT)
	• N <sub>2</sub> Hi/OPEN	23	Mantissa part A 4 (OUTPUT)
3		24	Mantissa part A 8 (OUTPUT)
4	GND	25	Mantissa part B 1 (OUTPUT)
5	Symbol +/- (OUTPUT)	26	Mantissa part B 2 (OUTPUT)
	• + Lo	27	Mantissa part B 4 (OUTPUT)
	• - Hi	28	Mantissa part B 8 (OUTPUT)
6	Strobe	29	RS-232C SD
7	Exponent part C 1 (OUTPUT)	30	RS-232C RD
		31	

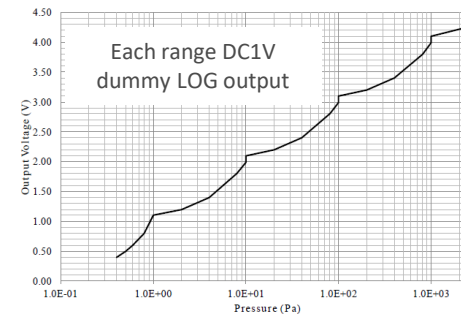
Pin no. of recorder output



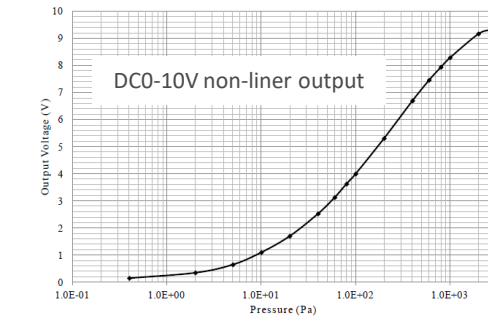
DC0-10V liner output  
1.0 x 10<sup>+3</sup> Pa F.S.



DC0-10V liner output  
1.0 x 10<sup>+2</sup> Pa F.S.



Each range DC1V  
dummy LOG output



DC0-10V non-liner output

Note) Each output voltage and output curve are different. In case of using this signal, the host system needs modification.

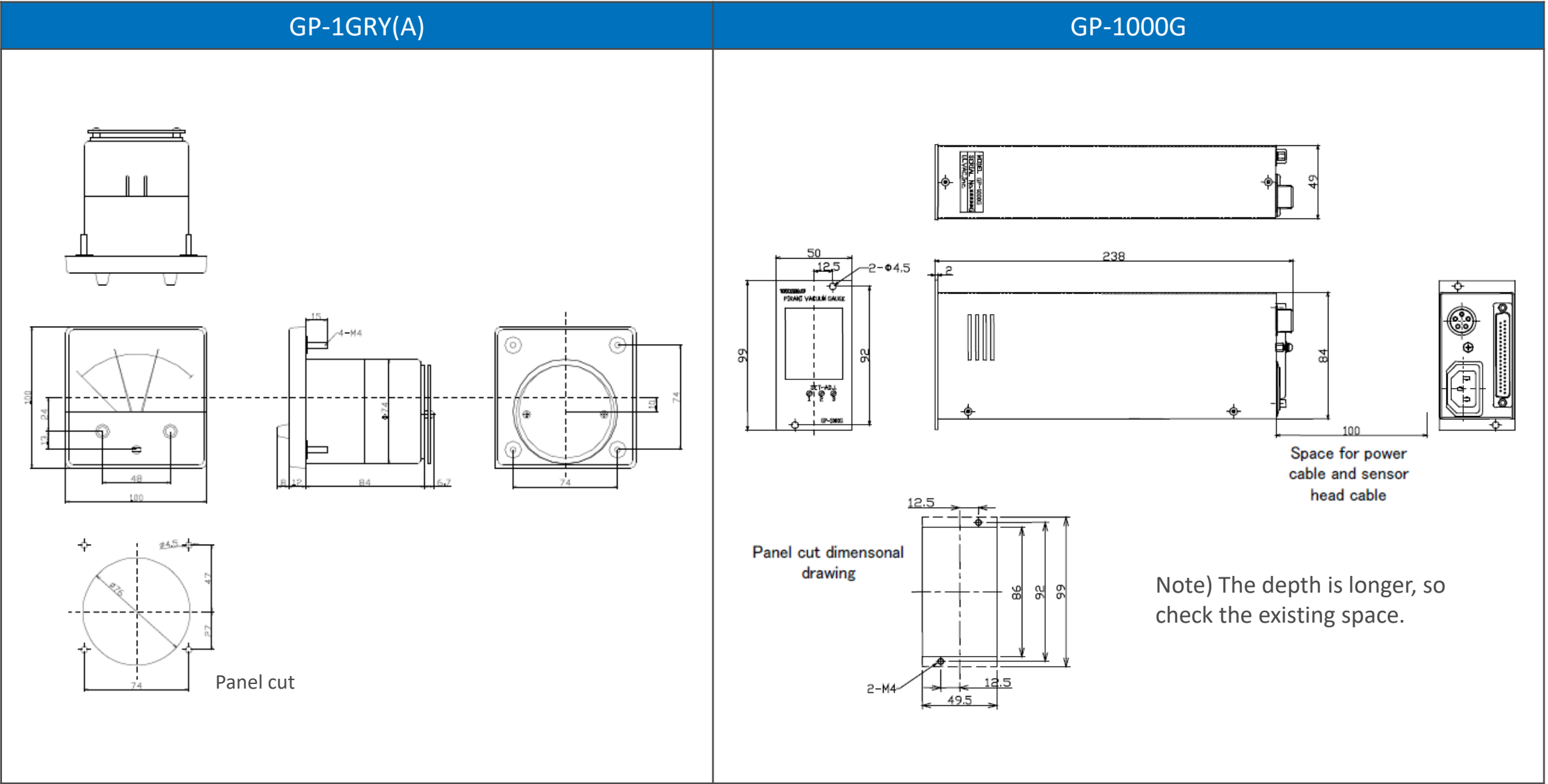
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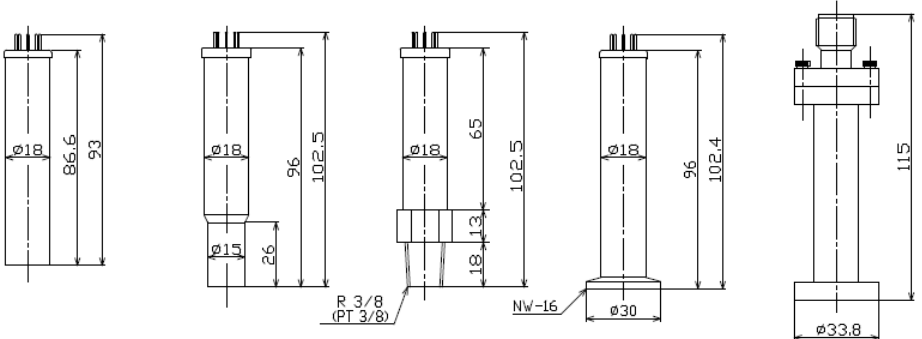
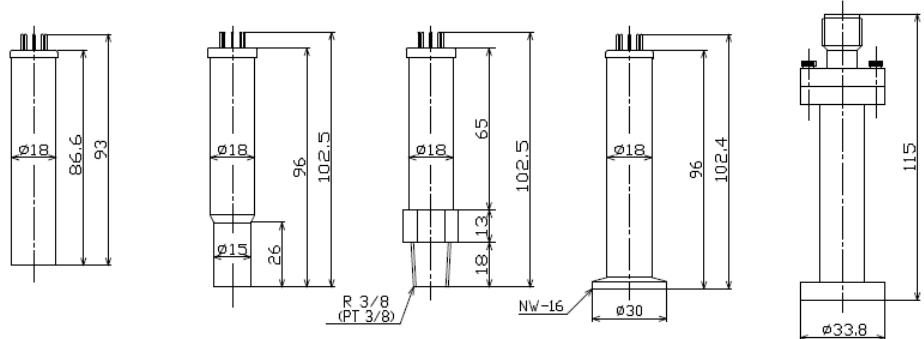
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7

# Meter/display and panel cut dimensions



# Sensor head fitting/dimension

GP-1GRY(A)			GP-1000G		
 <p>WP-01      WP-02      WP-03      WP-16      WPB-10-034</p>			 <p>WP-01      WP-02      WP-03      WP-16      WPB-10-034</p>		
Sensor head model	Mounting port size (dia.)	Case material	Sensor head model	Mounting port size (dia.)	Case material
WP-01	Φ18	BS(Ni plating)	WP-01	Φ18	BS(Ni plating)
WP-02	Φ15(18)	BS(Ni plating)	WP-02	Φ15(18)	BS(Ni plating)
WP-03	Φ3/8	BS(Ni plating)	WP-03	Φ3/8	BS(Ni plating)
WP-16	NW16(Φ30)	BS(Ni plating)	WP-16	NW16(Φ30)	BS(Ni plating)

Note ) There is no change in sensor heads (sensor cable and detection unit are also the same).