

# **COPAL ELECTRONICS**

HANDY MANOMETER

# PG-100



(Compliance with EMC Standards)

INSTRUCTION MANUAL Ver.2.1

Thank you very much for your purchase of our products.  
This instruction manual is prepared for your proper use of  
the product, which conforms to the EC Directive according  
to the EMC Directive 89/336/EEC.

For more detailed information please ask for the  
nearest distributor or the following sales center.

## **COPAL ELECTRONICS**

Nishi-Shinjuku Kimuraya Bidg., 7-5-25  
Nishi-Shinjuku Shinjuku-ku Tokyo 160-0023, Japan Phone.:(03) 3364-7055

## § 1. HANDLING NOTES

### WARNING

 **CAUTION** This caution mark describes when there is a possibility that user may suffer from damage or physical damage may occur if the product is used improperly.

#### CAUTION

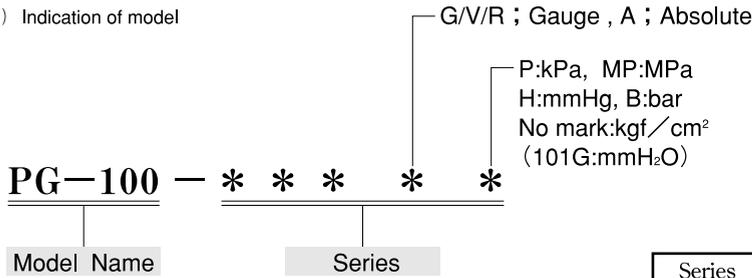
- (1)The each attachment fitting torque to the pressure port should be less than 1 N · m.
- (2)Available media to be measured is air or non corrosive gas only.  
The another media ,i.e. water or corrosive gas/liquid may damage the internal structure and cause malfunction.
- (3)Applied pressure must be less than the specified maximum pressure.
- (4)Internal battery
  - ① Replace battery with Toshiba Battery Co.,Ltd. /ERVM3.6V/ lithium battery only. Use of another battery may present a risk of fire or explosion. If you need replace battery, please place an order with us.
  - ② When “LOBAT” sign is displayed, the battery should be replaced.
  - ③ The battery used in this device may present risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 100°C (212°F), or incinerate.
  - ④ Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.
- (5)The only pH neutral detergents should be used to clean the body.  
The solvents such as thinners, benzene, etc. must be not used.

## § 2. TRANSPORTATION & STORAGE

- (1)The product,which is a precision instrument, must be taken special care not to be damaged by impact nor by being dropped when it is transported and in storage.
- (2)The product must be avoided in storage where is dusty, dripping and vibrated.

### §3. SPECIFICATION

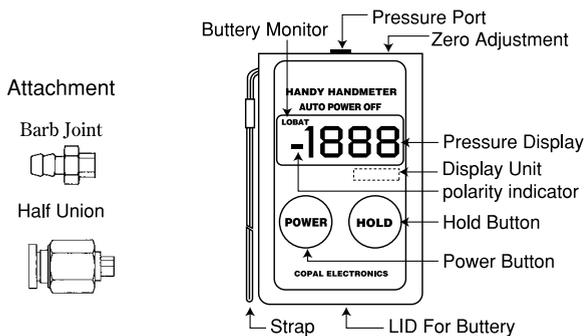
(1) Indication of model



- (2) Type            G/V/R—Gauge pressure, A—Absolute pressure
- (3) Display        3 1/2 Digits —1999 ~1999 max., LCD Digital
- (4) frequency    Approximately 3 Times/sec.
- (5) Function      Auto Power Off(3min.)  
Reading Hold  
Low Battery Sign
- (6) Accuracy     ± 0.5%F.S. ± 2digit (at 25 °C)  
± 1%F.S. ± 2digit (101RP,only)
- (7) Temperature Characteristics (DRIFT)  
Zero ; ±0.05% F.S./°C ± 2 digit  
(101G/101GP/101RP/102AP/102AH...±0.1% F.S./°C ± 2 digit)  
Span; ±0.05%Reading/°C ±2 digit
- (8) Battery        Built in Lithium Battery.Life : min.3,000 hours
- (9) Operating Temperature & Operating Humidity  
0~50°C ,35~85%RH(No condensation)
- (10) Storage Temperature  
-20~70°C ,(Less than 65%RH)
- (11) Weight        Approximately 100 g
- (12) Pressure Port M5 Female thread, 0.8 mm pitch
- (13) Attachment for intake pressure  
Half union (for 6mm O.D.tube),1 piece  
Barb joint (for 6mm O.D.4mm I.D.tube),1 piece
- (14) Outline

Series	Pressure Range	Max. Pressure	Res.	Unit
101G	0~1000	2000	1	mmH <sub>2</sub> O
101GP	0.00~10.00	20	0.01	kPa
101RP	-10.00~10.00	20	0.01	kPa
102G	0~1.000	2	0.001	kgf/cm <sup>2</sup>
102GP	00.0~100.0	200	0.1	kPa
102RP	-100.0~100.0	200	0.1	kPa
102GH	0~735 ※	1471	1	mmHg
102VP	00.0~100.0	200	0.1	kPa
102VH	0~735 ※	1471	1	mmHg
102AP	00.0~100.0	200	0.1	kPa abs
102AH	0~735 ※	1471	1	mmHg abs
103G	0~10.00	15	0.01	kgf/cm <sup>2</sup>
103GP	000~1000	1500	1	kPa
103GMP	.000~1.000	1.5	0.001	MPa
103RP	-100~1000	1500	1	kPa
102VB	.000~-1.000	2	0.001	bar
102GB	.000~1.000	2	0.001	bar
103GB	0.00~10.00	15	0.01	bar

※Measurement can be made upto “-760mmHg” for 102VH and upto “760mmHg” for 102AH/GH (Accuracy not guaranteed beyond the rated pressure.).



### §4. PART NAMES AND FUNCTIONS

- (1) Pressure display Measured pressure value is displayed in LCD.
- (2) Polarity Sign Minus(—)  
Minus Sign is displayed when negative pressure is applied.  
Minus(—)
- (3) Pressure Port The pressure intake.
- (4) Power Button To turn on and off the power.If the button is pressed while the power is ON,the power turns OFF and vice versa.
- (5) Hold button Measured pressure value is kept while “Hold” button is pressed.
- (6) Zero Adjustment Trimmer  
For zero point adjustment
- (7) Battery Monitor  
LOBAT sign is displayed in LCD when a battery is running out.

## §5. HOW TO USE

- (1) Set the attachment (Half Union or Barb Joint) into the pressure port .
- (2) Turn on the power .The display must be less than  $\pm 5$  counts.  
(No pressure applied)  
Adjust the zero point by Zero Adjustment Trimmer with a minus driver to have "000" on the Pressure Display.  
⚠Do not adjust the zero point of 102AP/102AH because it is calibrated to a vacuum.
- (3) Set a tube into the attachment  
Available tube size and material are as follows ; For Half Union ;  $\phi$  6mm O.D.in Nylon or Urethane  
For Barb Joint ;  $\phi$  6mm O.D.,  $\phi$  4mm I.D.in Nylon
- (4) Apply the pressure to be measured.The value is displayed while the Hold Button is pressed ,the value is kept.
- (5) The power can be turned off by pressing the Power Button or by keeping the power ON over three minutes.The latter is an additional function "auto power off"

## §6. WARRANTY

Nidec Copal Electronics warrants the products for the period of one year after the date of the customer' s receipt. We will repair the troubled products caused by our improper designing and/or production control at our cost. Our warranty is limited to the products only, not on another damage that is caused by the product malfunction.

Please note that the repairing cost resulted from the following matters are out of our responsibility.

- (1)Trouble and damage caused by mishandling or careless usage against the handling manual.
- (2)Trouble and damage caused by improper remodeling, adjustment or repair.
- (3)Trouble and damage caused by natural disaster, fire or any other irresistible force.
- (4)Replacement of attachments.(Half Union and Barb Joint).