Digital pressure management solutions
Content

1. About GiO Solutions
2. What is Gio
3. Clinical Applications
4. Product Range
5. Features
6. Specifications
7. Accessories
8. Order Information
9. FAQ
10. Contact
Pressure monitoring is an integral part in managing ventilated and intubated patients in critical care. Current methods of pressure monitoring often use analog pressure manometers and gauges. However, analog pressure gauges sometimes vary in reading and accuracy and this can lead to inaccurate readings and further complications.

GiO solutions tries to improve pressure monitoring practices with the help of the GiO digital pressure gauge. This advanced digital pressure gauge gives medical personnel the flexibility, accuracy and convenience they need during medical procedures and is a more reliable alternative to analog instruments.
What is GiO?

GiO is part of a new generation of digital pressure gauge for pressure monitoring in laboratory, R&D departments, hospitals, clinics and care centers. The GiO Digital Pressure Gauge displays pressure measurement digitally in cmH₂O, kPA and mBar in real time. It displays and captures real time pressure measurement at a high degree of accuracy with the Peak & Hold function.
What is P&H?

The GiO Digital Pressure Gauge is designed to detect and display pressure readings to a high degree of accuracy. This means that it is very sensitive to changes in pressure and is quick to respond to the changes that might occur during pressure monitoring practices. The P&H stands for “Peak” & “Hold”; GiO’s unique design is able to capture, hold and display peak pressure readings up to an accuracy of + or – 2.5% F.S (Full Scale).
Clinical Applications

The GIO digital pressure gauge can be used in a variety of medical procedures that help monitor patient condition and ensure their safety. Some of the applications of the GIO digital pressure gauge are:

1. Manual Hyperinflation
2. Cuff Management Practices
3. Neonatal Care
4. Respiratory Muscle Strength Assessment
Gauge in Market

- Mechanical Type
  - Bulky
  - Big dimension
  - Not easy carry
  - Limited accessories

- Digital Type
  - Large
  - Components insufficient
  - Pressure unit change?
  - Memory function?
Manual Resuscitation

Manual Resuscitation is a critical medical procedure used in Intensive Care Units (ICU) that involves inflating the lungs using oxygen and manual compressions to an inspiratory pressure of 20 to 40 cm H₂O.

- During manual resuscitation, there is a risk of shortage or excess in pressure being delivered to the lungs. This excessive or lack of bagging of the patient can lead to:
  - Changes in airway pressures and tidal volumes
  - Complications such as Pulmonary Odoema, Tachycardia and Lung Trauma.

By using the GIO digital pressure gauge with manual resuscitators, medical personnel are able to
1. Safely monitor pressure readings during resuscitation procedures
2. Maintain patient airway pressure greater than 20cm H20 in order to optimize alveolar ventilation.
Cuff Management Practices

Cuff management practices involve managing endo-tracheal (ET) tubes for intubated and tracheostomized patients.

An inflatable cuff is used to create a tight seal for pulmonary ventilation during mechanical ventilation and this is done to prevent damage to the tracheal mucosa. The pressure that builds between the trachea wall and cuff (Intra-cuff pressure) is important to keep the patient safe and GiO helps to monitor patient Intra-cuff pressure accurately.

1. The GiO digital pressure gauge helps maintain and monitor Intra-cuff pressure between 15-30 cm H₂O.
2. The GiO digital pressure gauge allows monitoring of Intra-cuff pressure easily without the need to remove any tubes.
3. The GiO Eco Cuff syringe can inflate/deflate the cuff whilst measuring real-time pressure with its 3-way stop clock.
Neonatal Care

• Pressure monitoring plays an integral role in all aspects of Neonatal care and the GiO pressure gauge can be used to help ensure the safety of fragile neonates.

• Critically ill neonates often need mechanical ventilation or continuous positive airway pressure (CPAP) support as they are too weak and unable to breathe for themselves. During these invasive or non-invasive respiratory support procedures, it is important to monitor pressure readings due to the fragile nature of neonatal lungs and their lower optimum pressure.

• The GiO digital pressure gauge is able to capture low pressure readings of 0-30 cm H₂O and provide clear quantitative visual information that takes into account the patient’s complete respiratory status.
Respiratory Muscle Strength Assessment

- The Gio Digital pressure gauge can be used to assess Respiratory Muscle Strength of patients by determining the Maximal Inspiratory (MIP) and Expiratory Pressure (MEP).

**MEP**
- The Gio Digital pressure gauge can measure MEP through the use of a hydrophobic filter attached to the GiO digital pressure gauge. Understanding MEP is important as it can help evaluate voluntary breathing capability, determine ventilatory capacity and can also indicate possible development of respiratory symptoms.

**MIP**
- MIP can be measured by Sniff Nasal Inspiratory Pressure (SNIP), a non-invasive method to assess respiratory muscle strength. It is an easier method to record MIP especially in patients with neuromuscular diseases. Patients simply draw in their maximal ‘sniff’ through the nasal airways and the GiO digital pressure gauge can provide an accurate MIP reading.
GiO Product Range

GiO 1  GiO 2  GiO 3

GiO 4  GiO 5  GiO 6
Operation

1. **On**—lightly press
2. **Change Units**—After turning on, press again to switch between displayed pressure units
3. **Off**—Hold for seconds

- **Peak & Hold**
  - Press once
- **Cancel Peak & Hold**
  - Press again
- **P & H value to 0**
  - Press when there is P&H has a value
- **Black Light**
  - Hold for 3 seconds
Operation

- Bar segment
- Color Code
- Power
- Unit

- Battery: CR 2032 lithium
- 10 times / day, 240 days

GiO 2
www.GiO-Solutions.com
s/n 2011010067
Made in Taiwan

7.6F
s/n: Year/Month + Serial #
# Features & Benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real-Time Display</td>
<td>Provides quick and accurate pressure readings</td>
</tr>
<tr>
<td>Three pressure units (kPa, cmH₂O, mBar)</td>
<td>Available in different readings for better data</td>
</tr>
<tr>
<td>Peak &amp; Hold Function</td>
<td>Captures and holds peak pressure</td>
</tr>
<tr>
<td>Built-in Backlight</td>
<td>Clear display under any conditions</td>
</tr>
<tr>
<td>Color-coded Analogue Bars</td>
<td>Clear identification of Pressure range</td>
</tr>
</tbody>
</table>
Specifications

Digital Pressure Gauge

- GiO 1
  - Pressure Line 50cm with Luer Connector (Male, Male) 7.6 M
  - Pressure Line 50cm with Luer Connector (Male, Female) 7.6 M
  - Silicone tube 50cm with Luer Connector (Male) 7.6 M

- GiO 2
  - Pressure Line 50cm with Luer Connector (Male, Male) 7.6 M
  - Pressure Line 50cm with Luer Connector (Male, Female) 7.6 M
  - Silicone tube 50cm with Luer Connector (Male) 7.6 M

- GiO 3
  - Pressure Line 50cm with Luer Connector (Male, Male) 7.6 M
  - Pressure Line 50cm with Luer Connector (Male, Female) 7.6 M
  - Silicone tube 50cm with Luer Connector (Male) 7.6 M

- GiO 4
  - Elbow Connector 7.6 M
  - Straight Connector 7.6 M
  - Hydrophobic filter 7.6 M

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Accessories

**SNIP Kit**

<table>
<thead>
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<th>REF</th>
<th>Product</th>
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<tbody>
<tr>
<td>GS10</td>
<td>SNIP Kit</td>
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**ECO Cuff**

<table>
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<tr>
<th>REF</th>
<th>Product</th>
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<tbody>
<tr>
<td>GC22</td>
<td>Eco Cuff Pressure Inflator</td>
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<tr>
<td>GC22 - 01</td>
<td>Eco Cuff Syringe Kit</td>
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# Accessories

## NIF Kit

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<tr>
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<tr>
<td>GN10</td>
<td>NIF Filtration Valve</td>
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## MEP & MIP Measurement

<table>
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<th>Product</th>
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<tbody>
<tr>
<td>3004</td>
<td>Mouth Piece 22F</td>
</tr>
<tr>
<td>74056</td>
<td>Straight Connector 22M</td>
</tr>
<tr>
<td>76204</td>
<td>Straight Connector, 22F</td>
</tr>
<tr>
<td>71091</td>
<td>One-Way Valve 22F, 22M</td>
</tr>
<tr>
<td>71092</td>
<td>One-Way Valve 22M, 22F</td>
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# Order Information

<table>
<thead>
<tr>
<th>Model</th>
<th>GiO1</th>
<th>GiO2</th>
<th>GiO3</th>
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<tbody>
<tr>
<td>REF</td>
<td>GB 10</td>
<td>GB 20</td>
<td>GB 30</td>
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<tr>
<td>Pressure Range</td>
<td>0 to 30 cmH$_2$O</td>
<td>0 to 80 cmH$_2$O</td>
<td>-30 to 100 cmH$_2$O</td>
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<tr>
<td>Color</td>
<td>Baby Pink</td>
<td>Sky Blue</td>
<td>Misty Purple</td>
</tr>
<tr>
<td>Unit</td>
<td>kPa, cmH$_2$O, mBar</td>
<td>kPa, cmH$_2$O, mBar</td>
<td>kPa, cmH$_2$O, mBar</td>
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<tr>
<td>Model</td>
<td>GiO4</td>
<td>GiO5</td>
<td>GiO6</td>
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<tr>
<td>REF</td>
<td>GB 40</td>
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<tr>
<td>Pressure Range</td>
<td>-60 to 0 cmH$_2$O</td>
<td>-100 to 0 mmHg</td>
<td>-250 to 250 cmH$_2$O</td>
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<tr>
<td>Color</td>
<td>Turquoise</td>
<td>Khaki</td>
<td>Jade Green</td>
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<tr>
<td>Unit</td>
<td>kPa, cmH$_2$O, mBar</td>
<td>mmHg</td>
<td>kPa, cmH$_2$O, mBar</td>
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Frequently Asked Questions

Q: How many GiO Digital Pressure gauges come in a box?
- Only 1 of your chosen GiO Digital Pressure gauge comes in each box. It also includes 2 elbow connectors, a pressure line and 2 hydrophobic filters.

Q: Why don’t I just buy GiO 6 to suit all my pressure monitoring needs, instead of buying a GiO with smaller pressure ranges?
- This is due to the accuracy of GiO. Users who need to accurately measure between a specific pressure range should buy a corresponding GiO because of a 2.5% Full scale accuracy. The range of GiO 6 between -250 to +250 would yield a Full scale of 500 cmH20, the accuracy of pressure readings would then be 500*2.5% = 12.5 cmH20. If a value is for example 20, the real value would then be between 8 – 32. Gio 6 is predominantly used for machine calibration, capable of high pressure readings and thus, it is suitable. However, a GiO 1 with 0 to 30 cm H20 will not be able to correctly measure precise pressure readings for machine calibration.
References


Contact Us

If you would like to make an enquiry or if you have any questions on any of our products, please feel free to contact us.

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