Thank you for purchasing our LED digital pressure sensor. Please be sure to read this User’s Manual before using the sensor, so you can use it without any trouble. Please keep this manual handy with care so you can refer to it whenever necessary.

**Warning**
- Since the sensors are neither drip-proof nor dust-proof, do not use them in locations where they may be exposed to water or oil or dust.
- Since the sensors are not explosion-proof, do not use them in inflammable or explosive gas, fluid or atmosphere.
- Do not use the sensor in an atmosphere exceeding the range of application temperature or causing heat as sensor malfunction may result.
- Do not use it with an ambience or gas containing a corrosive substance.

**Caution**
- Make sure that any pressure higher than 0.2MPa is not normally applied at vacuum release.
- Keep the fluid used as clean as possible.
- For power source, use DC which is stable.
- Incorporate a surge absorber circuit in relays, solenoid valves, etc which are to be connected with output and source terminals. Avoid any use which involves over 80mA in current.
- Ground the FG terminal when using a unit power source such as switching current.
- Do not short-circuit output terminals (black with a gray lead wire) and other terminals.
- Do not use it with an amplitude or gas containing a corrosive substance.
- Malfunction may result if the wiring is designed or the sensor used in a way that subjects the unit to noise or other disturbance.

**1. Characteristics**
- To enhance visibility, an LED display is used for the vacuum switch.
- LED displays are used for set-up pressure and impression pressure.
- Two types of vacuum switch – two-point output and analog – are provided, the application determining which should be used.
- In wiring to a connector, a connector system has been chosen for ease of layout.
- Three pipe connection methods are offered – one-touch, M5 metric female screw, and direct connection. The application will determine which method is the most appropriate.
- Output detection accuracy is enhanced by the use of electronic switches.
- Differential response can be adjusted in the set value of about 0 ~ 15 %F.S. (Only available for the pressure sensor with analogue output VUS21 type only)

**3. Attaching the Main Body (Stand alone type)**
1. Install the sensor with attached screws (M2.5 × 6, 8, 10 mm) in the set value of about 0 ~ 15 %F.S. (Only available for the pressure sensor with analogue output VUS21 type only).
2. The pressure intake port of VUS21 is M5 type metric female thread. Please apply PISCO Tube Fittings whose tightening torque should be 1.0 ~ 1.5N·m. Use a spanner to the hexagonal part of fittings for tightening.

**5. Pressure setting**
1. Making contact (confirm wiring and apply a direct current)
2. Put indication change-over switch in pressure setting mode (ME face ø3.8 Depth 2.5)
3. Turn differential response setting trimmer (S1 or S2, SW) all the way to the right (counterclockwise) to put setting at a minimum value.
4. Care must be taken as output will be unstable by minimizing differential response when vacuum level is unstable.
5. Use a small screwdriver to adjust the pressure setting trimmer (S1 or S2, SW) to the desired value.
6. Set indication change-over switch at ME, apply pressure and confirm if HYS works.

**6. Differential response setting (Vacuum sensor with analogue output : VUS21 type only)**
1. Differential response (hysteresis) can be regulated using differential response trimmer (HYS).
2. Differential response is regulated in the range of between 0 and 15% of set value. Turn HYS counterclockwise to increase differential response.
3. Confirmation of differential response
   - Put indication change-over switch in pressure indication mode (ME), increase or decrease pressure in the neighborhood of set pressure to read activation indication lamp’s illumination on/off value. Differences in displayed values are taken as differential response.
4. Examples of differential response regulation
   - Increase differential response when pressure pulsates with output repeatedly showing small on/off movements.
   - When an allowable range is to be set for the lowering of pressure.