# Brief Operating Instructions
Vacuum Switch VS-V-D-PNP

## 1 Display
- **“Mode” key**
  - Used to select the various setting procedures
- **Function keys “Up”/“Down”**
  - Used to change the settings
- **LED Output 1**
  - Indicate the switching states: Output 1 = red,
- **LED Output 2**
  - Output 2 = green

## 2 Setting the Zero Point
The zero point is set with the air and pressure hoses disconnected by pressing and holding the "Mode" key for at least 3 seconds.

## 3 Setting the Switching Point and Hysteresis

### 3.1 Output 1
- **To set the switching point of Output 1**, press the "Mode" key once.
- **After two seconds**, the display starts to alternate between "H-1" and the current setting.
- **To change the setting**, press the function key "Up" or "Down" until the desired value is displayed.
- **Store the new setting by pressing the "Mode" key**
- **The display now changes to the hysteresis value**, alternating between "h-1" and the current setting.
- **To change the setting**, press the function key "Up" or "Down" until the desired value is displayed.
- **Store the new setting by pressing the "Mode" key**

### 3.2 Output 2
- **To set the switching point of Output 2**, press the "Mode" key three times.
- **After two seconds**, the display starts to alternate between "H-2" and the current setting.
- **To change the setting**, press the function key "Up" or "Down" until the desired value is displayed.
- **Store the new setting by pressing the "Mode" key**
- **The display now changes to the hysteresis value**, alternating between "h-2" and the current setting.
- **To change the setting**, press the function key "Up" or "Down" until the desired value is displayed.
- **Store the new setting by pressing the "Mode" key**

### LED Output 1
- **Display of measured p<sub>amb</sub>**
- **Hold for at least 3 seconds**
- **Zero point is set**
4 Operating Mode "Hysteresis"
For each output, there is a switching point $H$ and a Hysteresis $h$.
Example: $H_1 = -0.46$ bar, $h = 0.07$ bar, NO (Normally Open)
At 0 bar, the digital output is off.
When the vacuum reaches the switching point $H$, the digital output switches to on and remains on as long as the vacuum is greater than -$0.39$ bar ($= 0.46$ bar - $0.07$ bar). If the vacuum drops below -$0.39$ bar, the digital output switches to off.
If the setting NC (Normally Closed) is selected, the signals at the digital output are inverted (off at vacuum > $H$, on at vacuum < $H-h$).

5 Locking the Settings
The locking function prevents inadvertent changing of the selected settings.
To lock the settings, press and hold the "Mode" key and press the "Down" key. The display then shows $\text{Lock}$ to indicated that the settings are locked.
To deactivate the lock, press and hold the "Mode" key and press the "Down" key. The display then shows "UnC" to indicate that the settings are unlocked.

Notes
This document is an abbreviated summary of the standard documentation. Please consult the standard documentation if you need to change any settings not described here.

Default settings

<table>
<thead>
<tr>
<th>Switching point 1</th>
<th>Hysteresis</th>
<th>Switching point 2</th>
<th>Hysteresis</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H - 1$</td>
<td>$h - 1$</td>
<td>$H - 2$</td>
<td>$h - 2$</td>
</tr>
<tr>
<td>0.46 bar</td>
<td>0.07 bar</td>
<td>0.79 bar</td>
<td>0.07 bar</td>
</tr>
</tbody>
</table>