Barometric Pressure Transmitter

BPD
BPA

Jan.09

BPA

BPD c/w static port

Technical Data

Analogue output

BPD	0-1Vdc standard 0-5Vdc, 4-20mA on request
BPA	0-20mA, 4-20mA, 0-1Vdc and 0-5Vdc configurable by means of jumper 0-10Vdc on request

Resolution an.o/p Infinite, Display= 1mBar

Temperature drift

BPD;BPA	<1%F.S., zero, <1%F.S., span from -20C to +60C
BPD xxH	0,8mBar from -40C to +60C

Stabilization time

BPD	1 sec at 99% of measurement
BPA	5 min at 24Vdc supply at 99% of measurement
BPA	5 sec at 99% of measurement

Contact 3A/220Vac resistive load for BPA

Set point configurable 800-1100mBar for BPA

Power supply

BPD	8-35Vdc
BPDxxH	12-35Vdc
BPA	24Vac+/-10% (230Vac on request)

Supply current

BPD	<4mA
BPDxxH	25mA
BPA	1VA

Media compatibility air and dry gases

Over pressure 2 bar

Features

- **Measuring range 800-1100mBar (600-1100mBar)**
- **Accuracy**

BPD	**+/-0,4mBar@20C**
BPAxxH	**+/-0,8mBar@20C**
BPA Display	**+/-1,0mBar@20C**

- **Long-term stability 0,25% F.S. over 6 months at 20C**
- **Response time < 200msec to reach full accuracy after a pressure step**
- **Operating temperature**

BPD	**-30/+60C**
BPDxxH	**-40/+60C**
BPD	**-20/+60C**

- **Protection Class IP67**
- **Static Port to avoid wrong values in the field**
- **Heated sensor of BPDxxH**

General Description

BPA and BPD are analogue electronic barometers.

The piezoresistive sensor gives extremley accurate and stable measurement of atmospheric pressureand assures excellent repeatability, low hysteres and very good temperature stability.

The ouput signal of the sensor is conditioned to provide voltage or a current output linearly proportional to the barometric pressure.

The transmitters are ready to us as they have been factory calibrated.

An offset adjustment potentiometer is available for station elevation.

Ordering Codes

BPD 01	Barometric Pressure **0-1Vdc** 8-35Vdc
BPD 05	Barometric Pressure **0-5Vdc** 8-35Vdc
BPD 420	Barometric Pressure **4-20mA** 8-35Vdc
BPD 01H	Barometric Pressure **0-1Vdc** 12-35Vdc Heat
BPD 05H	Barometric Pressure **0-5Vdc** 12-35Vdc Heat
BPA 42024	Barometric Pressure **4-20mA** 24Vac
BPA 420/230	Barometric Pressure **4-20mA** 230Vac
BPA 010/24	Barometric Pressure **0-10Vdc** 24Vac
BPA 010/230	Barometric Pressure **0-10Vdc** 230Vac
SPB	Static Port for Barometric Measurement
SBT	Support Brackert for SPB

Barometric Pressure Transmitter

BPD
BPA

Jan.09

Applications

High performance solutions for:

- **environmental pressure monitoring**
- **agriculture**

- **hydrology**
- **data buoys**

- **laser interferometers**
- **meteorological**

- **waether and environmental datalogging**
- **barometric pressure compensation for internal combustion engine performance**

- **cleanroom barometric pressure compensation**
- **automative eission test**

Housing and Installation

In all models the sensor and the electronics are housed in a sturdy MACROLON box (degree of protection IP67).

When the lid is opened, holes allow fixing the base of the transmitter to a panel or surfae.

The precision of measurement does not depend on the position of the transmitter.

However, it is advisble to fit the transmitter in such a way that the sensor is facing downwards so as minimize the accumulation of dust or dirt on the filter.

If the tansmitter is installed in an outdoor location, it is recommended to use a pressure port which minimize the errors caused by the wind flow.

Connection Digram and Operation

Make the power connection for the BPA

Make the connection for the relay output, the relay contact is free.

Select the analogue output 0-20mA, 4-20mA, 0-1Vdc or 0-5Vdc by means of the jumper.

Power the instrument, press the PUSH button and turn the SET trimmer to set the desired threshold value between 800 and 1100mBar, the set value is shown on the LCD display

Using the trimmer, set the desired HYS (=hysteresis) value between 5 and 50mBar.

The instrument will now indicate the barometric pressure; HI led, LO led or ALARM led and ALARM relay will perform as shown in table 1

NOTE:

The ALARM led on indicates that the relay is energized and the contact is closed

Once the installation is complete, make sure that the cover is perfectly closed; the same applies to the grommet

Table 1	HI	LO	ALARM LED
Measure>SET,Measure<SET+HYS	ON	OFF	OFF
Measure>SET,Measure>SET+HYS	ON	OFF	ON
Measure<SET,Measure>SET-HYS	OFF	ON	OFF
Measure<SET,Measure<SET-HYS	OFF	ON	ON

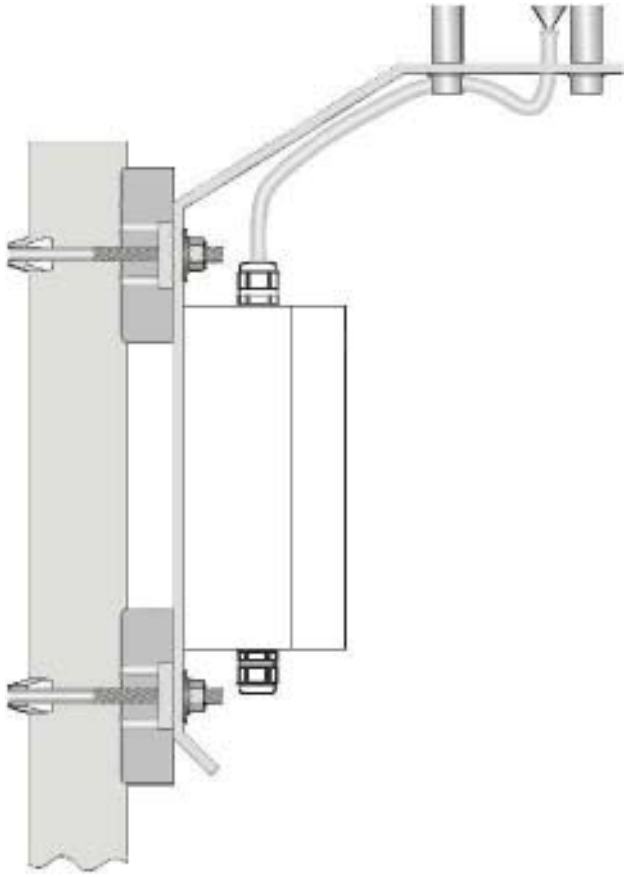
Static Port for Barometric Measurements

General Description

The measurement of barometric pressure in free field can give wrong values, of houdreds of pascal, because of wind fluctuation and diretion.

The SPB static port for barometric measurement minimizes such errors, because, besides working as a filter (brake) against the wind dynamic pressures, it llows the barometer to work properly, even in the presence of snow or ice, as well as to conform to the WMO recommendations (World Meteorology Organization).

The materials in are UV-resistant and can operate in the temperature range between - 40C and +80C



Installation and Connection

The instrument is easy to install and it has to be placed far from buildings, trees or other source that might disturb the flow of the wind.

The SBT mounting bracket and three m5x16 Stainless Steel screws are available to fix the port properly.

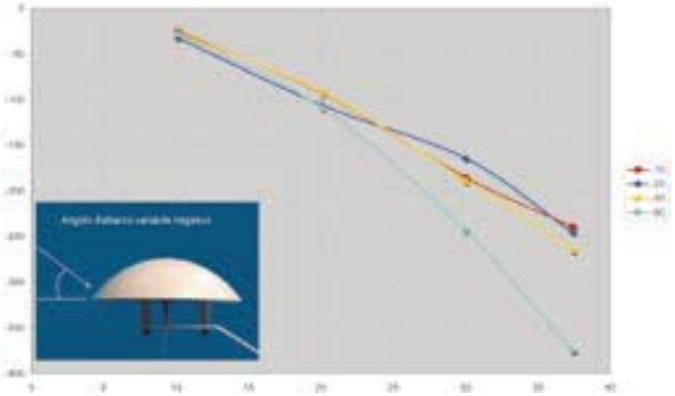
The connection of the static port to the barometer, i.e. either to a BPD or to a BDPxxH, is carried out through th special tube (inside 3mmdia, outside 6mm dia.), which is resistant to climate changes and UV.

Maintenance and cleaning are very simple.

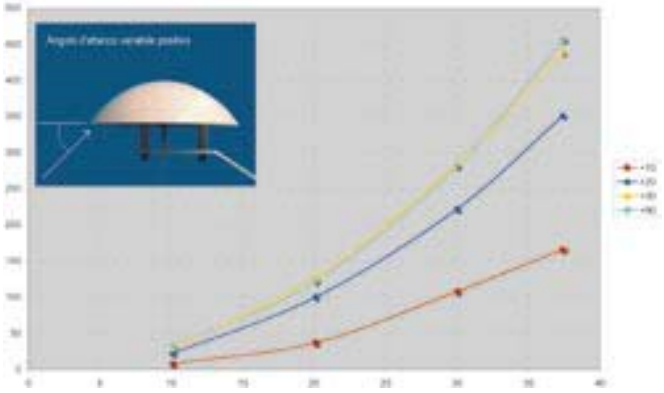
Plastic parts are in LURAN S777K.

It is strongly suggested to use non-aggressive cleaners, compatible with plastic material.

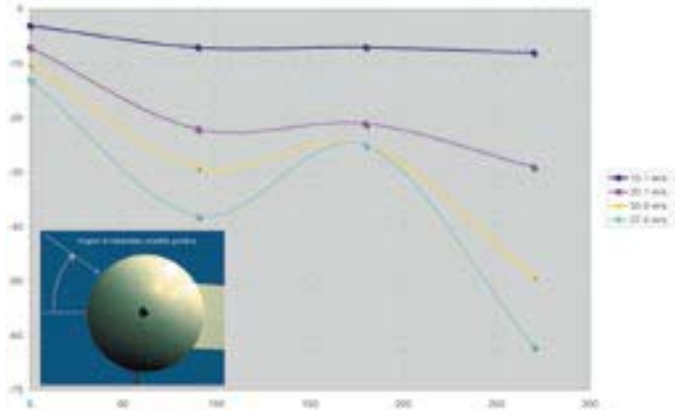
Tests made in the Wind Tunnel



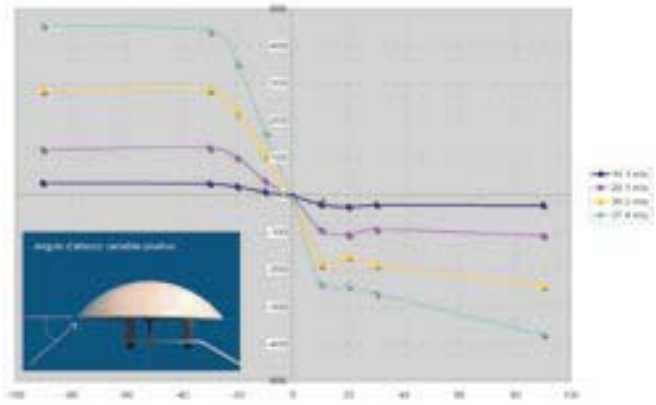
DeltaP according to the yaw jongle



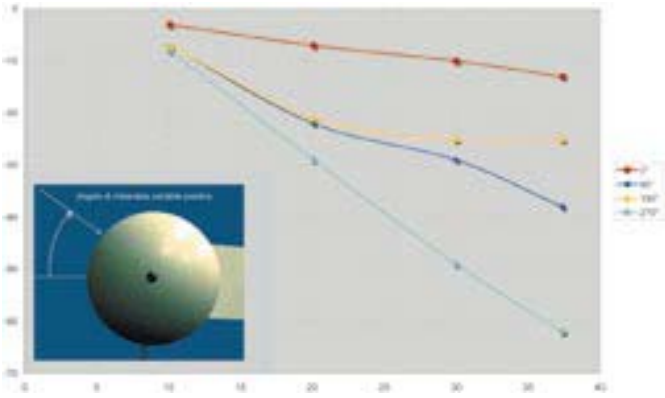
DeltaP according to the yaw jongle



DeltaP according to the join angle



DeltaP according to the x join angle



DeltaP according to the x jongle angle (yaw angle)