

**SATRON VB pressure transmitter** belongs to the series V transmitters.

SATRON VB is user-friendly, through the ball valve mounted transmitter which is used for 0-4 kPa ... 0-3 MPa ranges. The transmitter communicates in a 2-wire system. In pressure measuring applications SATRON VB transmitter is used for measuring the pressure of gases, steams and sedimenting, crystallizing and sticking liquids. The transmitter's sensor is piezoresistive. The rangeability of the model VB6 is 100:1. The transmitter communicates digitally using the HART® protocol.



## TECHNICAL SPECIFICATIONS

### Measuring range and span

See Selection Chart.

### Zero and Span adjustment

Zero elevation: Calibrated span is freely selectable on the specified range depending from the desired option. This can be made by using a HART®275/375 communicator.

### Damping

- Time constant is continuously adjustable from 0.01 to 60 s.

### Response time

Maximum 100 ms

### Temperature limits

Ambient: -30 to +80 °C  
Process: -30 to +125 °C  
Shipping and storage: -40 to +80 °C  
Operating temperature of display: 0 to +50°C (does not affect operation of the transmitter)

### Pressure limits

Min. and max. process pressure:  
See the appended tables.

### Volumetric displacement

< 0.5 mm<sup>3</sup>/max. span

### Output 2-wire (2W), 4-20 mA,

user selectable for linear, square root, inverted signal or the transfer function (16 points) specified by the user.

### Supply voltage and permissible load

See the load capacity diagram;  
4-20 mA output: 12 - 35 VDC.

### Humidity limits

0-100 % RH; freezing of condensed water is not allowed in reference pressure channels.

## PERFORMANCE SPECIFICATIONS

Tested in accordance with IEC 60770:  
Reference conditions, specified span, no range elevation, horizontal mounting; O-ring seals, AISI316L diaphragm, silicone oil fill.

### Accuracy

±0.1 % of calibrated span  
(span 1:1 - 7.5:1 / max.range).  
On the measuring ranges  
7.5:1 - 100:1:  
 $\pm[0.025+0.010 \times (\frac{\text{max. span}}{\text{calibrated span}})]\%$   
of calibrated span  
(incl. nonlinearity, hysteresis and repeatability)

### Long-term stability

±0.1 % / max. span / 12 months

### Temperature effect on compensated temperature ranges -20...+80 °C:

Zero and span error, types VB5 and VB6: ±0.15 % of max.span.

Zero and span error, type VB4:  
±0.25 % of max.span

### Mounting position effect (VB4 ... VB6)

Zero error < 0.15 kPa which can be calibrated out.

### Vibration effect (IEC 68-2-6: FC):

±0.1 % of measuring range/  
2g/10 to 2000 Hz  
4g/10 to 100 Hz

### Power supply effect

< ±0.01 % of calibrated span per volt

### European Directive Information

European Pressure Equipment Directive (PED) (97/23/EY)  
- Sound Engineering Practice  
Electro Magnetic Compatibility (EMC directive 2004/108/EC)  
-All pressure transmitters

### Insulation test voltage

500 V rms 50 Hz

## CONSTRUCTION

**Wetted materials:** AISI316L /317L

**Other materials:** AISI316L, AISI317L, AISI303

### Seals:

Housing : NBR  
Process connection : FPM (Viton®)

**TEST jacks:** MS358Sn/PVDF, protected with TPE rubber shield.

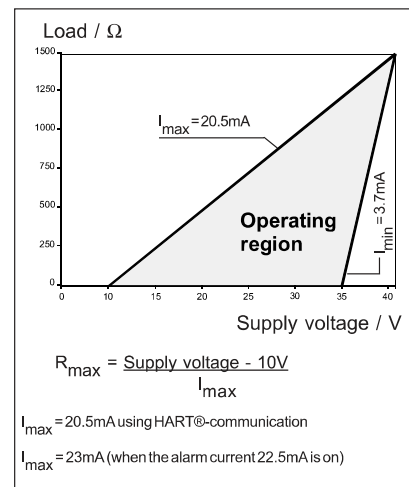
**PLUG connector:** PA6-GF30 jacket, Silicone rubber seal, AISI316 retaining screw.

**Filling fluid:** Silicone oil or inert oil

**Enclosure class** IP66

### Calibration

Transmitter is calibrated for maximum range with 1 sec. damping  
Calibration for customer-specified range and item positioning must be mentioned in the order.



## Pressure limits

Maximum process pressure, MPa

Transmitter type	Max. overload. pressure, MPa	Pressure class
VB4	0.3	PN40
VB5	1.5	PN40
VB6	7.5	PN100

Minimum process pressure

T <sub>proc.</sub> °C	Minimum pressure for different fill fluid (kPa, abs.)	
	DC200 100 cSt	Inert oil
20	5	8
40	8	10
80	16	28
120	21	53