

**SATRON VG pressure transmitter** belongs to the series V transmitters which will have both analog and smart properties. SATRON VG is used for 0-1.4 kPa...0-25 MPa ranges. The transmitter communicates in a 2-wire system.

In pressure measuring applications SATRON VG transmitters are used for measuring the pressure of clean, sedimenting, crystallizing and sticking materials. The transmitter's sensor is piezoresistive. The rangeability is 100:1 for types VG6 - VG7. 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 external control shafts, keyboard (display option) or HART®275/375 communicator.

### Damping

- Time constant is continuously adjustable 0.01 to 60 s.

### Temperature limits

Ambient: -30 to +80 °C  
Process: -30 to +125/+200 °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 IEC60770: 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:

$\pm[0.025+0.01 \times (\frac{\text{max. span}}{\text{calibrated span}})]\%$  of calibrated span

(incl. nonlinearity, hysteresis and repeatability)

### Long-term stability

±0.1 % / max. span / 1 year

### Temperature effect

- on -20 to +80 °C range  
(process temperature code N)  
Zero and span error:  
±0.15 % of max. span.  
- on 0 to +200 °C range  
(process temperature code H)  
Zero and span error:  
±1 % of max. span, VG6 - VG8  
±2 % of max. span, VG4 - VG5

### Mounting position effect

Zero error < 0.32 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

### Insulation test voltage

500 V rms 50 Hz

### CONSTRUCTION AND CALIBRATION

#### Materials

Diaphragm<sup>1)</sup>: AISI316L, AISI317L, Duplex (EN 1.4462), Hast. C22/276, CoNi-alloy, Titanium Gr2 or Tantalum.  
Coupling<sup>1)</sup>: AISI316L, Duplex (EN 1.4462), Hast. C276 or Titanium Gr2.  
Other sensing element materials: AISI316, SIS2343.

**Filling fluid:** Silicone oil, food industry oil or inert oil

**Enclosure class** IP66

<sup>1)</sup> Parts in contact with process medium

### Housing with PLUG connector,

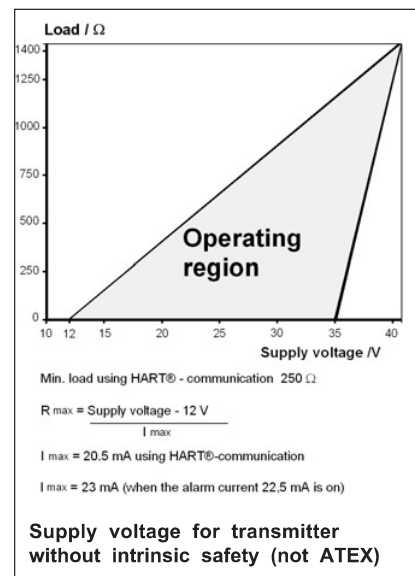
housing type codes H, P and T  
Housing: AISI303/316  
Seals: Viton® and NBR  
TEST jacks: MS358Sn/PVDF, protected with silicone rubber shield.  
PLUG connector: PA6-GF30 jacket, Silicone rubber seal, AISI316 retaining screw.

### Housing with junction box/terminal strip,

housing type codes M and N  
Housing: AISI303/316; Seals: Nitrile and Viton®; Nameplates: Polyester

### Connection hose between sensing element and housing

Codes L and K:  
PTFE hose with AISI316 braiding.



### Pressure limits

Maximum process pressure, MPa

Transmitter type	Max. overload pressure	Pressure class
VG3	0.2	PN40
VG4	0.3	PN40
VG5	1.5	PN40
VG6	7.5	PN100
VG7	40.0	PN250
VG8	100.0	PN250

Minimum process pressure

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