

SATRON VT_e pressure transmitter belongs to the series V-transmitters which will have both analog and smart properties. SATRON VT_e is used for 0-4 kPa ...0-100 MPa ranges. The transmitter communicates in a 2-wire system. In pressure measuring applications SATRON VT_e-transmitters are used for measuring the pressure of clean gases, steam, sedimenting, crystallizing and sticking liquids. The transmitter's sensor is piezoresistive. The rangeability is 100:1 for types VT_e6 - VT_e8. 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 made by using HART®275/375 communicator.

Damping

Time constant is continuously adjustable 0,01 to 60 s.

Response time

max. 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 mm³/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: 10-35 VDC.

Humidity limits

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

PERFORMANCE SPECIFICATIONS

Tested in accordance with IEC770:
Reference conditions, specified span, no range elevation, horizontal mounting;
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:

$$\pm [0.025 + 0.010 \times \left(\frac{\text{max. span}}{\text{calibrated span}} \right)] \% \text{ of calibrated span}$$

(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 shift, types VT_e5 - VT_e8:
±0.15 % of max. span

Zero and span shift, type VT_e4:
±0,25 % of max. span

Mounting position effect (VT_e4 ... VTA_e7)

Zero error < 0.15 kPa, which can be calibrated out.

VT_e8: mounting position has no effect

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)

Model VT_e8:

- Module A Conformity Assessment

All other models:

- 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, Titanium (VT_e8).

Other materials:

AISI316, AISI303

Housing with PLUG connector, housing type codes H and P

Housing: AISI303/316, Seals: Viton® and NBR

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

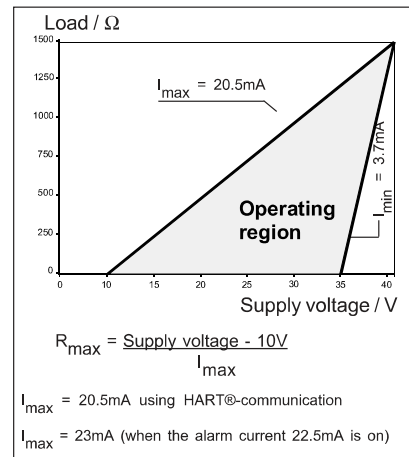
PLUG connector: PA6-GF30 jacket, Silicone rubber seal, AISI316 retaining screw.

Housing with junction box/terminal strip, housing type code M

Housing: AISI303/316, Seals: Nitrile and Viton®; Nameplates: Polyester

Filling fluid: Silicone oil or inert oil (VT_e4 ... VTA_e7)

Enclosure class IP66



Pressure limits

Maximum process pressure, MPa

Transmitter type	Max. overload. pressure, MPa	Pressure class
VT _e 4	0.3	PN40
VT _e 5	1.5	PN40
VT _e 6	7.5	PN100
VTA _e 7	40.0	PN250
VT _e 8	100.0	PN1000

Minimum process pressure

(VT_e8: no min. pressure limitations)

T _{proc.} °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