SOLITEL®

Vibrating rod level switches for solids

DESCRIPTION

SOLITEL®, vibrating rod level switches are integral units, providing a low cost and reliable level detection of bulk solids in tanks or silos. The SOLITEL® is ideally suited for level control on powders, granulars or lump materials up to a minimum density of 0,05 kg/dm³.

FEATURES

- 2 position density adjustment (media with SG < 0,1 and > 0,1)
- SG as low as 0,05 kg/dm³ – granular size 10 mm (0.39")
- Status LED – built into cover
- Electro polished 316 TI (1.4571) vibrating rod
- Self-cleaning sensor
- Output: 8A SPDT relay (1A @ 24 V DC)
- Process Temperature: -40 °C to 160 °C (-40 °F to 320 °F)
- Max Pressure: 25 bar abs. (360 psia)

APPLICATIONS

- Pulverised coal
- Cement
- Lime
- Cereals
- Synthetic granulates
- Perlite

PRINCIPLE OF OPERATION

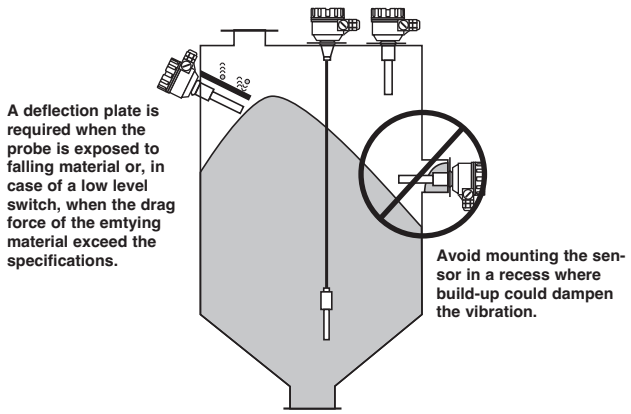
An invasive rod vibrates at 350 Hz frequency.
When in contact with the medium, the vibration will be dampened.
The attenuation of the vibration will be detected by the integral mount electronics, thus changing the status of the output.

AGENCY APPROVAL

Agency	*Approval*
DMT	ATEX II 1/2 D IP 65 (Dust Ex)
Other approvals are available, consult factory for more details	

From 235 mm up to 20 m insertion length (9.25" up to 65.62')

MOUNTING



A deflection plate is required when the probe is exposed to falling material or, in case of a low level switch, when the drag force of the emtying material exceed the specifications.

Avoid mounting the sensor in a recess where build-up could dampen the vibration.

SELECTION DATA

A complete sensor consists of one order code:

1. One order code for electronics and sensor
2. Optional: threaded mounting flanges – consult factory

1. One order code for electronics and sensor

BASIC MODEL NUMBER

Standard electronics - max process temperature 110 °C (230 °F) - 95 °C (200 °F) for flexible version

V S H	Solitel with STANDARD sensor	- 235 mm (9.2") insertion length
V S R	Solitel with EXTENDED RIGID sensor	- selectable insertion length / 10 cm (3.9") increments
V S K	Solitel with FLEXIBLE sensor	- selectable insertion length / 1 m (3.3') increments

High temperature electronics - max process temperature 160 °C (320 °F)

V H H	Solitel with STANDARD sensor	- 235 mm (9.2") insertion length
V H R	Solitel with EXTENDED RIGID sensor	- selectable insertion length / 10 cm (3.9") increments

HOUSING MATERIAL / CABLE ENTRY / APPROVAL – IP 67

S	Aluminium, 4 entries (2x M20 x 1,5 and 2 x ½" NPT - all plugged)	Weatherproof
A	Aluminium, 4 entries (2x M20 x 1,5 and 2 x ½" NPT - all plugged)	ATEX II 1/2 D IP 65 (Dust Ex)

OUTPUT

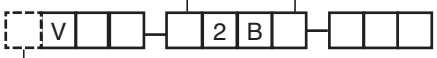
2 B	SPDT relay 8 A @ 250 V AC / 1 A @ 24 V DC

POWER SUPPLY

A	85 .. 265 V AC / 120 ..375 V DC
D	19 .. 55 V DC / 16 .. 40 V AC

INSERTION LENGTH

0 0 0	VSH/VHH:	235 mm (9.2")
0 5 0 3 0 0	VSR/VHR:	min 50 cm (19.7") max 300 cm (9.8'), Specify length in 10 cm (3.9") increments
0 0 1 0 2 0	VSK:	min 1 m (3.3') max 20 m (65.60'), Specify length in 1 m (3,3') increments



complete order code for SOLITEL electronics and sensor

X = product with a specific customer requirement

PERFORMANCE

Description	Specification
Response time	< 1,8 s (when covered) – 2 s (when free) or with time delay: 5 s + 1,5 s (field selectable)
Electromagnetic compatibility	Meets CE requirements (EN 61000-6-4, EN 61000-6-2)

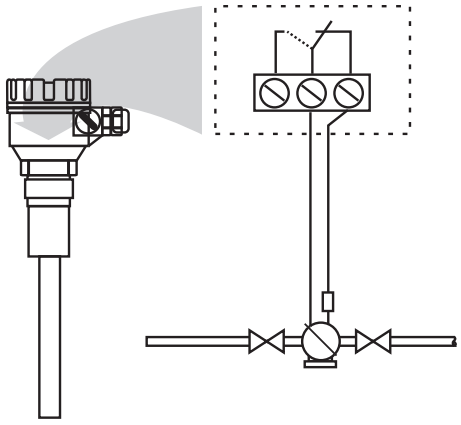
PHYSICAL/FUNCTIONAL SPECIFICATIONS

Description	Specification
Input voltage	85 ... 265 V AC / 120 ... 375 V DC or 19 ... 55 V DC / 16 ... 40 V AC
Power consumption	1.3 VA
Output	8 A SPDT relay @ 250 V AC (1A @ 24 V DC)
Indication	Output status LED (green/red) – visual indication on cover
Housing material	IP 67, Aluminium (2x M20 x 1,5 and 2 x 1/2" NPT - all plugged) 2 x M20 x 1,5 cable gland separately included
Approvals	ATEX II 1/2 D IP 65
Sensor material	All wetted parts of polished 316 Ti SST (1.4571) (except VSK) PE coated cable (VSK)
Mounting	Threaded: 1 1/2" BSP (G 1 1/2)
Actuation length	VSH/VHH: 235 mm (9.2") VSR/VHR: from 500 mm up to 3000 mm (19.7" up to 9.8') VSK: from 1 m up to 20 m (3.3' up to 65.6')
Max pressure	25 bar abs. (360 psia) Flexible version VSK: 6 bar abs. (87 psia)
Min density	0,05 kg/dm³ - max granular size: 10 mm (0,39")
Max mechanical load on sensor	VSH/VHH: 85 Nm
Weight of unit	2,5 kg (VSH/VHH) + 1,4 kg/m for VSR/VHR + 0,6 kg/m for VSK

Description		Process temp.	Ambient temp.	temp. at process conn.
Max temperature	VSH/VSR	-30 °C to +110 °C (-20 °F to +230 °F)	-30 °C to +50 °C (-20 °F to +120 °F)	max +90 °C (+195 °F)
	VHH/VHR	-30 °C to +160 °C (-20 °F to +320 °F)	-30 °C to +35 °C (-20 °F to +95 °F)	max +135 °C (+275 °F)
	VSK	-35 °C to +95 °C (-30 °F to +200 °F)	-30 °C to +60 °C (-20 °F to +140 °F)	max +85 °C (+185 °F)

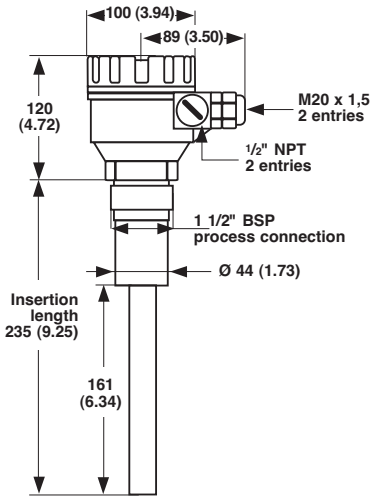
ELECTRICAL CONNECTION

SPDT Relay (8 A @ 250 V AC / 1 A @ 24 V DC)
85 ... 265 V AC / 120 ... 375 V DC or 19 ... 55 V DC / 16 ... 40 V AC

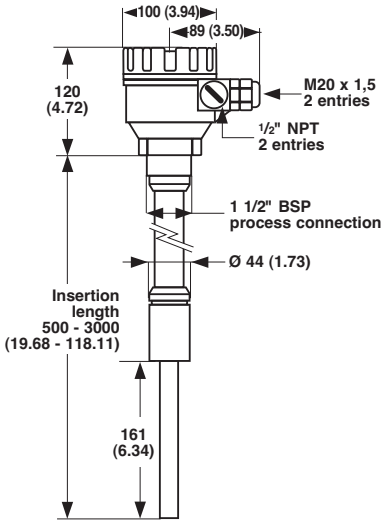


DIMENSIONS in mm (inches)

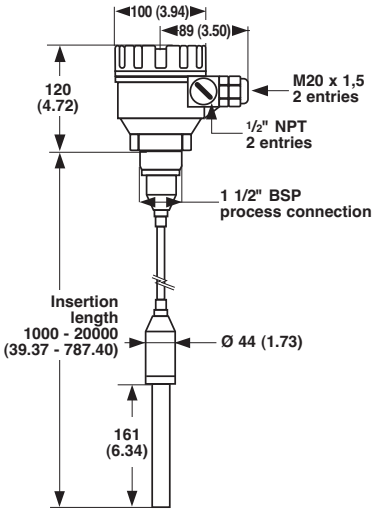
VSH/VHH



VSR/VHR



VSK



ISO-9001:2008 REGISTERED FIRM
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Accredited by the RvA

QUALITY ASSURANCE - ISO 9001:2008

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UNDER RESERVE OF MODIFICATIONS

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