## Level Measurement Point level measurement - Vibrating switches

### SITRANS LVS100

#### Overview



SITRANS LVS100 is a vibrating point level switch for bulk solids.

#### Benefits

- · High resistance to mechanical forces
- · Strong resistance to external vibrations
- · Rotatable enclosure for ease of installation and wiring
- Suitable for point level detection of materials starting at a bulk density of 60 g/l (3.8 lb/ft<sup>3</sup>)
- Customer desired extensions up to 2000 mm (78.74")

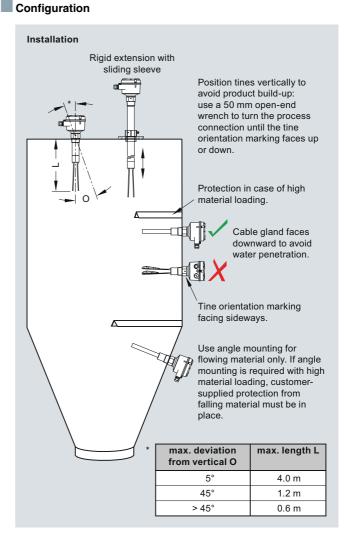
#### Application

SITRANS LVS100 detects high, low or demand levels of dry bulk solids in bins, silos or hoppers.

SITRANS LVS100 has a compact design and can be top, side, or angle mounted. The vibrating fork design ensures the tines are kept clean. The unique design of the fork and crystal assembly eliminates false high level readings even if tines become damaged.

A signal from the electronic circuit excites a crystal in the probe causing the fork to vibrate. If the fork is covered by material, the change in vibration is detected by the electronic circuitry which causes the relay to change state after a one second delay. When the fork is free from material pressure, full vibration resumes and the relay reverts to its normal condition.

• Key Applications: dry bulk solids in bins, silos, hoppers



SITRANS LVS100 installation

# Level Measurement Point level measurement - Vibrating switches

## SITRANS LVS100

Mode of Operation         Vibrating point level switch           Input         High, low and demand           Measuring frequency         200 Hz           Output         DPDT relay           Relays         DPDT relay           Relay delay         From loss of vibration: approximately 1 second           From resumption of vibration: approximately 1 second         From resumption of vibration: approximately 1 second           Signal delay         Probe covered to covered: approximately 1 second           Probe uncovered to uncovered: approximately 1 second         Probe covered to uncovered: approximately 1 second           Alarm output         Relay 5 A at 30 V DC, non-inductive         Relay 5 A at 30 V DC, non-inductive           Sensitivity         High or low, switch selectable         Rated operating conditions           Installation conditions         Indoor/outdoor         Ambient conditions           - Location         Indoor/outdoor         Ambient conditions           - Process temperature         -40 +150 °C (-40 +130 °F)         Hax. threaded bushing temperature           + Process temperature         -40 +150 °C (-40 +302 °F)         Hax. threaded bushing temperature           + Process temperature         +40 °C (+176 °F)         Hax. threaded bushing temperature         +90 °C (+130 °F)           • Max. threaded bushing temperature	Technical specifications	
Input       High, low and demand         Measuring frequency       200 Hz         Output       Poly         Relays       DPDT relay         Relay delay       From loss of vibration: approximately 1 second         Signal delay       Probe covered to covered: approximately 1 2 seconds         Signal delay       Probe covered to uncovered: approximately 1 2 seconds         Relay fail-safe       High or low, switch selectable         Alarm output       Relay 5 A at 30 V DC, non-inductive         Sensitivity       High or low, switch selectable         Rated operating conditions       Indoor/outdoor         Ambient conditions       Indoor/outdoor         Ambient conditions       -40 +60 °C (-40 +140 °F)         Installation conditions       -40 +150 °C (-40 +302 °F)         Max. threaded bushing temperature       +80 °C (+176 °F)         Max. enclosure surface temperature       +150 °C (+302 °F)         Max. threaded bushing temperature       +150 °C (+302 °F)         Max. threaded bushing temperature       +150 °C (+302 °F)         Max. to bar g (145 psi g)       European Pressure Directive         97/23/EC: Category 1       Max. 10 bar g (145 psi g)         European Pressure Directive       97/23/EC: Category 1         Minimum material den	Mode of Operation	
Measured variable     High, low and demand 200 Hz       Output     200 Hz       Relays     DPDT relay       Relays     From loss of vibration: approxi- mately 1 second       Signal delay     From resumption of vibration: approximately 1 2 seconds       Signal delay     Probe uncovered to covered: approximately 1 second       Relay fail-safe     High or low, switch selectable       Alarm output     Relay 8 A at 250 V AC, non-induc- tive       Sensitivity     High or low, switch selectable       Nambient conditions     Indoor/outdoor       • Location     Indoor/outdoor       Ambient conditions     -       • Location     Indoor/outdoor       Ambient conditions     -       • Process temperature     -40 +60 °C (-40 +140 °F)       • Installation catagory     III       • Pollution degree     2       • Max. threaded bushing temperature     +80 °C (+176 °F)       • Max. threaded bushing temperature     +150 °C (-40 +302 °F)       • Max. extension surface temperature     +150 °C (+30 2°F)       • Max. enclosure surface temperature     +150 °C (+30 2°F)       • Max. threaded bushing temperature     +150 °C (+30 2°F)       • Max. enclosure surface temperature     +150 °C (+30 2°F)       • Max. enclosure surface temperature     +150 °C (+30 2°F)       • Material	Measuring principle	Vibrating point level switch
Measuring frequency     20 Hz       Output     Polays       Relays     DPDT relay       Relay delay     From loss of vibration: approximately 1 second       From resumption of vibration: approximately 1 second     Probe uncovered to covered: approximately 1 second       Signal delay     Probe covered to uncovered: approximately 1 second       Probe covered to uncovered: approximately 1 second     Probe covered to uncovered: approximately 1 second       Relay fail-safe     High or low, switch selectable       Alarm output     Relay 8 A at 250 V AC, non-inductive       Relay 5 A at 30 V DC, non-inductive     Relay 5 A at 30 V DC, non-inductive       Installation conditions     Indoor/outdoor       Ambient conditions     Indoor/outdoor       Ambient temperature     -40 +60 °C (-40 +140 °F)       Installation catagory     III       Pollution degree     2       Medium conditions     -       • Process temperature     -40 +150 °C (-40 +302 °F)       • Max. threaded bushing temperature     +80 °C (+176 °F)       • Max. enclosure surface temperature     +90 °C (+130 °F)       • Max. enclosure surface temperature     +150 °C (-40 +302 °F)       • Max. enclosure surface temperature     +150 °C (-40 +302 °F)       • Max. enclosure surface temperature     +90 °C (+14 °F)       • Max. enclosure surface temperature </td <td>Input</td> <td></td>	Input	
Output         DPDT relay           Relays         DPDT relay           Relay delay         From loss of vibration: approximately 1 second           Signal delay         Probe uncovered to covered: approximately 1 second           Signal delay         Probe uncovered to covered: approximately 1 second           Relay fail-safe         High or low, switch selectable           Alarm output         Relay 5 A at 30 V DC, non-inductive           Relay 5 A at 30 V DC, non-inductive         Relay 5 A at 30 V DC, non-inductive           Sensitivity         High or low, switch selectable           Rated operating conditions         Indoor/outdoor           Location         Indoor/outdoor           Ambient conditions         -40 +60 °C (-40 +140 °F)           Installation catagory         III           Probest themperature         -40 +60 °C (-40 +302 °F)           Max. threaded bushing temperature         +80 °C (+176 °F)           Max. enclosure surface temperature         +90 °C (+130 °F)           Proseure (vessel)         Max. 10 bar g (145 psi g)           Warriel (Category 1D)         Pressure (vessel)           Material         Epoxy coated aluminum           Process connection         -Thread 1¼* NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve           R 1½* [(BSPT), En 10226]	Measured variable	High, low and demand
RelayDPDT relayRelay delayFrom loss of vibration: approximately 1 secondFrom resumption of vibration: approximately 1 2 secondsSignal delayProbe uncovered to covered: approximately 1 2 secondsRelay fail-safeHigh or low, switch selectableAlarm outputRelay 6 A at 250 V AC, non-inductiveRelay fail-safeHigh or low, switch selectableAlarm outputRelay 5 A at 30 V DC, non-inductiveSensitivityHigh or low, switch selectableRated operating conditionsIndoor/outdoorInstallation conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient conditions2Installation catagoryIIIPollution degree2Max. threaded bushing temperature+40 + 150 °C (-40 + 302 °F)Max. threaded bushing temperature+30 °C (+176 °F)Max. extension surface temperature+90 °C (+194 °F)(Category 2D)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft <sup>3</sup> )Design Material• Thread T1½" (PTPT), ANSI/ASME B1.20.1], R 1½" (IBSPT), EN 10226], ½"NPT [(Taper), ANSI/ASME B1.20.1], R 112" (IBSPT), EN 10226], ½"NPT [(Taper), 	Measuring frequency	200 Hz
Relay delayFrom loss of vibration: approximately 1 secondSignal delayFrom resumption of vibration: approximately 1 2 secondsSignal delayProbe uncovered to covered: approximately 1 2 secondsRelay fail-safeHigh or low, switch selectableAlarm outputRelay 8 A at 250 V AC, non-inductiveRelay 5 A at 30 V DC, non-inductiveRelay 5 A at 30 V DC, non-inductiveSensitivityHigh or low, switch selectableRated operating conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient temperature-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions+90 °C (+176 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. extension surface temperature+90 °C (+194 °F)• Category 2D)Max. 10 bar g (145 psi g)European Pressure Directive 97/23/EC: Category 1• Process connection• Thread 11/4" NPT [(Taper), ANSI/ASME B1.20.1], R 11/2" (IGSPT), EN 10226]• Thread R 11/4" NPT [(Taper), ANSI/ASME B1.20.1], B 11/22(B), 15/1NPT [(Taper), ANSI/ASME B1.20.1], Stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configuration• Tine materialStainless steel 304 (1.4301) or 316T1 (1.4571) depending on configuration• Thread R 11/4" (1.4571) depending on configuration (1.	Output	
mately 1 secondSignal delayFrom resumption of vibration: approximately 1 2 secondsSignal delayProbe uncovered to covered: approximately 1 secondRelay fail-safeHigh or low, switch selectableAlarm outputRelay 8 A at 250 V AC, non-inductiveSensitivityHigh or low, switch selectableRated operating conditionsRelay 5 A at 30 V DC, non-inductiveInstallation conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient conditions-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions-40 +150 °C (-40 +302 °F)Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+194 °F)• Clategory 1D)• Pressure (vessel)Max 10 bar g (145 psi g) European Pressure Directive• Process connection-Thread T1½" (RSPT), EN 10226]• Thread T1½" (RSPT), EN 10226]• Thread T1½" (RSPT), EN 10226]• Thread T1½" (GSPT), EN 10226]• Thread T1½" (GSPT), EN 10226]• Thread T1½" (GSPT), EN 10226]• Thread T1½" (Category 1)• Thread T1½" Stahless steel 316T1 (1.4571)0 configuration• Degree of protectionP66/Type 4/NEMA 4• Conduit entry2 x M201.5 or 2 x½" NPTWeightStandard version, no extensions:	Relays	DPDT relay
Signal delayapproximately 1 2 seconds approximately 1 second approximately 1 second Probe covered to uncovered: approximately 1 2 secondsRelay fail-safeHigh or low, switch selectable Relay 8 A at 250 V AC, non-induc- tiveAlarm outputRelay 5 A at 30 V DC, non-induc- tiveSensitivityHigh or low, switch selectableRated operating conditions Installation conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient conditions- +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions- 40 +150 °C (-40 +302 °F)Max. threaded bushing temperature (Category 2D)+80 °C (+176 °F)Max. enclosure surface temperature (Category 1D)+90 °C (+194 °F)• Pressure (vessel)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1MaterialEpoxy coated aluminum• EnclosureProcess connection• Thread TH* NPT [(Taper), ANSI/ASME B1.20.1], B 11/2* [(BSPT), EN 10226] * PT (Taper), ANSI/ASME B1.20.1], Sliding sleeve (min. length 500 mm (19.69')]• Thread raterial stanless steel 304 (1.4301) or 316T1 (1.4571) depending on configuration• Conduit entry2 x M201.5 or 2 x ½* NPTWeightStandard version, no extensions:	Relay delay	
approximately 1 secondProbe covered to uncovered: approximately 1 2 secondsRelay fail-safeHigh or low, switch selectableAlarm outputRelay 8 A at 250 V AC, non-induc- tiveRelay 5 A at 30 V DC, non-induc- tiveRelay 5 A at 30 V DC, non-induc- tiveSensitivityHigh or low, switch selectableRated operating conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient temperature-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions-40 +150 °C (-40 +302 °F)Max. threaded bushing temperature+80 °C (+176 °F)Max. threaded bushing temperature+90 °C (+194 °F)(Category 2D)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Process connection-Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69')]Process connection-Thread R 1½" (IBSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69')]Tine material stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine material tatiness steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine material veightStainless teel 316T1 (1.4571)WeightStandard version, no extensions:		
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Alarm outputRelay 8 A at 250 V AC, non-inductiveRelay 5 A at 30 V DC, non-inductiveSensitivityHigh or low, switch selectableRated operating conditionsInstallation conditions- LocationIndoor/outdoorAmbient conditions-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. threaded bushing temperature+90 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft³)Design MaterialEpoxy coated aluminum• Process connection• Thread 1½* NPT [(Taper), ANSI/ASME B1.20.1], R 1½* [(BSPT), EN 10226] • Thread R 1½* [(BSPT), EN 10226]• Thread 1½* NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [mini. length 500 mm (19.69*)]• Thread at 1½* [(BSPT), EN 10226]• Thread at 1½* [(BSPT), EN 10226]• Thread at 1½* [(BSPT), EN 10226]• Thread at 1½* (Taper), ANSI/ASME B1.20.1], sliding sleeve [mini. length 500 mm (19.69*)]• Thread at 1½* [CBSPT, EN 10226] <td></td> <td></td>		
tivetiveRelay 5 A at 30 V DC, non-inductiveSensitivityHigh or low, switch selectableRated operating conditionsInstallation conditions- LocationIndoor/outdoorAmbient conditions- Ambient temperature-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. axtension surface temperature+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g)• European Pressure Directive97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft <sup>3</sup> )Design• Thread 1¼* NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread naterial: stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationPrice of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½* NPTWeightStandard version, no extensions:	Relay fail-safe	High or low, switch selectable
tiveSensitivityHigh or low, switch selectableRated operating conditionsInstallation conditionsInstallation conditionsIndoor/outdoorAmbient conditionsIndoor/outdoorAmbient temperature-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature+90 °C (+194 °F)(Category 2D)+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g)European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft³)Design MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection-Thread T1½" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]• Thread R 1½" (ISPT), EN 10226]• Thread R 1½" (ISPT), PST 10226], * NPT ((Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread ratirial: stainless steel 304 (1.4301) or 316T1 (1.4571)104(1.4301) or 316T1 (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Alarm output	
Rated operating conditionsInstallation conditionsLocationAmbient conditions• Ambient temperature-40 +60 °C (-40 +140 °F)• Installation catagoryIII• Pollution degree2Medium conditions• Process temperature-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature(Category 2D)• Pressure (vessel)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft <sup>3</sup> )Design Material• EnclosureProcess connectionProcess connection• Thread 11/2" [(BSPT), EN 10226] EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69')]• Thread raterial: stainless steel 316TI (1.4571)Degree of protectionTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeight		
Installation conditionsIndoor/outdoorAmbient conditions-40 +60 °C (-40 +140 °F)• Ambient temperature-40 +60 °C (-40 +140 °F)• Installation catagoryIII• Pollution degree2Medium conditions-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature+90 °C (+194 °F)• Max. enclosure surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature(Category 1D)• Pressure (vessel)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/I (3.8 lb/ft <sup>3</sup> ) <b>Design</b> MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection• Thread 11/4" NPT [(Taper), ANSI/ASME B1.20.1], R 11/2" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve (min. length 500 mm (19.69')]• Thread raterial: stainless steel 306 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Sensitivity	High or low, switch selectable
LocationIndoor/outdoorAmbient conditions-40 +60 °C (-40 +140 °F)Installation catagoryIIIPollution degree2Medium conditions-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. exclosure surface temperature+90 °C (+194 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (-40 +302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (-40 +302 °F)• Max. extension surface temperature+150 °C (-40 +302 °F)• Max. extension surface temperature+100 °C (+194 °F)• Category 1D)• Pressure (vessel)• Pressure (vessel)Max. 10 bar g (145 psi g)• European Pressure Directive97/23/EC: Category 1Minimum material densityapprox. 60 g/I (3.8 lb/ft <sup>3</sup> ) <b>Design</b> • Thread 11/4" NPT [(Taper), ANSI/ASME B1.20.1], R 11/2" [(BSPT), EN 10226]• Thread R 11/2" [(BSPT), EN 10226]• Thread R 11/2" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread materialStainless steel 304 (1.4301) or 316TI (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions: <td>Rated operating conditions</td> <td></td>	Rated operating conditions	
Ambient conditions-40 +60 °C (-40 +140 °F)• Ambient temperature-40 +60 °C (-40 +140 °F)• Installation catagoryIII• Pollution degree2Medium conditions-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature+90 °C (+194 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g)• Process connectionEpoxy coated aluminumProcess connection• Thread 1¼* NPT [(Taper), ANSI/ASME B1.20.1], R 1½* [(BSPT), EN 10226]• Thread R 1½* [(BSPT), EN 10226], ½* NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69°)]• Thread materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½* NPTWeightStandard version, no extensions:	Installation conditions	
<ul> <li>Ambient temperature</li> <li>-40 +60 °C (-40 +140 °F)</li> <li>Installation catagory</li> <li>Ill</li> <li>Pollution degree</li> <li>2</li> <li>Medium conditions</li> <li>Process temperature</li> <li>-40 +150 °C (-40 +302 °F)</li> <li>Max. threaded bushing temperature</li> <li>+80 °C (+176 °F)</li> <li>Max. extension surface temperature</li> <li>+90 °C (+194 °F)</li> <li>(Category 2D)</li> <li>Max. axtension surface temperature</li> <li>+150 °C (+302 °F)</li> <li>Max. 10 bar g (145 psi g)</li> <li>European Pressure Directive 97/23/EC: Category 1</li> <li>Minimum material density</li> <li>approx. 60 g/l (3.8 lb/ft<sup>3</sup>)</li> </ul> Design Material <ul> <li>Enclosure</li> <li>Process connection</li> <li>Thread 1¼* NPT [(Taper), ANSI/ASME B1.20.1], R 1½* [(BSPT), EN 10226]</li> <li>Thread material: stainless steel 304 (1.4301) or 316TI (1.4571)</li> <li>Degree of protection</li> <li>IP66/Type 4/NEMA 4</li> <li>Conduit entry</li> <li>2 x M20x1.5 or 2 x ½* NPT</li> <li>Weight</li> </ul>	Location	Indoor/outdoor
Installation catagoryIIIPollution degree2Medium conditions-40 + 150 °C (-40 + 302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. threaded bushing temperature+90 °C (+194 °F)• Max. extension surface temperature (Category 2D)+150 °C (+302 °F)• Max. extension surface temperature (Category 1D)+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/tf³)Design MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226]• Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configurationPine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Ambient conditions	
<ul> <li>Pollution degree</li> <li>Pollution degree</li> <li>Medium conditions</li> <li>Process temperature</li> <li>-40 + 150 °C (-40 + 302 °F)</li> <li>Max. threaded bushing temperature</li> <li>+80 °C (+176 °F)</li> <li>Max. enclosure surface temperature</li> <li>+90 °C (+194 °F)</li> <li>(Category 2D)</li> <li>Max. extension surface temperature</li> <li>+150 °C (+302 °F)</li> <li>Max. 10 bar g (145 psi g)</li> <li>European Pressure Directive</li> <li>97/23/EC: Category 1</li> <li>Minimum material density</li> <li>approx. 60 g/l (3.8 lb/ft<sup>3</sup>)</li> </ul> <b>Design</b> Material <ul> <li>Enclosure</li> <li>Process connection</li> <li>Thread 1¼" NPT [(Taper), ANSI/ASME B 1.20.1], R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B 1.20.1], sliding sleeve</li> <li>Imin. length 500 mm (19.69")]</li> <li>Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configuration</li> <li>Tine material</li> <li>Stainless steel 316TI (1.4571)</li> <li>Degree of protection</li> <li>IP66/Type 4/NEMA 4</li> <li>Conduit entry</li> <li>2 × M20x1.5 or 2 x ½" NPT</li> <li>Weight</li> </ul>	<ul> <li>Ambient temperature</li> </ul>	-40 +60 °C (-40 +140 °F)
Medium conditions• Process temperature-40 +150 °C (-40 +302 °F)• Max. threaded bushing temperature+80 °C (+176 °F)• Max. enclosure surface temperature+90 °C (+194 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Max. extension surface temperature+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g)• Pressure (vessel)Max. 10 bar g (145 psi g)• Enclosuregprox. 60 g/l (3.8 lb/ft <sup>3</sup> ) <b>Design</b> • Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	<ul> <li>Installation catagory</li> </ul>	III
<ul> <li>Process temperature</li> <li>-40 +150 °C (-40 +302 °F)</li> <li>Max. threaded bushing temperature</li> <li>+80 °C (+176 °F)</li> <li>+90 °C (+194 °F)</li> <li>Max. extension surface temperature</li> <li>(Category 2D)</li> <li>Max. extension surface temperature</li> <li>(Category 1D)</li> <li>Pressure (vessel)</li> <li>Max. 10 bar g (145 psi g)</li> <li>European Pressure Directive</li> <li>97/23/EC: Category 1</li> <li>Minimum material density</li> <li>approx. 60 g/l (3.8 lb/ft<sup>3</sup>)</li> <li>Design</li> <li>Material</li> <li>Enclosure</li> <li>Process connection</li> <li>Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], B 1½" [(BSPT), EN 10226]</li> <li>Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve</li> <li>[min. length 500 mm (19.69")]</li> <li>Thread material:</li> <li>stainless steel 304 (1.4301) or 316TI (1.4571) depending on configuration</li> <li>Tine material</li> <li>Stainless steel 316TI (1.4571)</li> <li>Degree of protection</li> <li>IP66/Type 4/NEMA 4</li> <li>Conduit entry</li> <li>2 x M20x1.5 or 2 x ½" NPT</li> <li>Weight</li> <li>Standard version, no extensions:</li> </ul>	Pollution degree	2
<ul> <li>Max. threaded bushing temperature</li> <li>Max. enclosure surface temperature (Category 2D)</li> <li>Max. extension surface temperature (Category 1D)</li> <li>Pressure (vessel)</li> <li>Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1</li> <li>Minimum material density</li> <li>approx. 60 g/l (3.8 lb/ft<sup>3</sup>)</li> <li>Design</li> <li>Material</li> <li>Enclosure</li> <li>Epoxy coated aluminum</li> <li>Process connection</li> <li>Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]</li> <li>Thread R 1½" [(BSPT), EN 10226]</li> <li>Thread R 1½" [(BSPT), EN 10226]</li> <li>Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configuration</li> <li>Tine material</li> <li>Stainless steel 316TI (1.4571)</li> <li>Degree of protection</li> <li>IP66/Type 4/NEMA 4</li> <li>Conduit entry</li> <li>2 x M20x1.5 or 2 x ½" NPT</li> </ul>	Medium conditions	
<ul> <li>Max. enclosure surface temperature (Category 2D)</li> <li>Max. extension surface temperature (Category 1D)</li> <li>Pressure (vessel)</li> <li>Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1</li> <li>Minimum material density</li> <li>approx. 60 g/l (3.8 lb/ft<sup>3</sup>)</li> <li>Design</li> <li>Material</li> <li>Enclosure</li> <li>Process connection</li> <li>Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]</li> <li>Thread material: stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configuration</li> <li>Tine material</li> <li>Stainless steel 316TI (1.4571)</li> <li>Degree of protection</li> <li>IP66/Type 4/NEMA 4</li> <li>Conduit entry</li> <li>2 x M20x1.5 or 2 x ½" NPT</li> <li>Weight</li> <li>Staindard version, no extensions:</li> </ul>	<ul> <li>Process temperature</li> </ul>	-40 +150 °C (-40 +302 °F)
(Category 2D)+150 °C (+302 °F)• Max. extension surface temperature (Category 1D)+150 °C (+302 °F)• Pressure (vessel)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft³) <b>Design</b> MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226] V= NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Tine materialStainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Max. threaded bushing temperature	+80 °C (+176 °F)
(Category 1D)Max. 10 bar g (145 psi g) European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft³)Design MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226] ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Tine materialStainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4 2 x M20x1.5 or 2 x ½" NPT Weight		+90 °C (+194 °F)
European Pressure Directive 97/23/EC: Category 1Minimum material densityapprox. 60 g/l (3.8 lb/ft³)Design MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226] V" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:		+150 °C (+302 °F)
DesignMaterial• EnclosureProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Pressure (vessel)	European Pressure Directive
MaterialEpoxy coated aluminum• EnclosureEpoxy coated aluminumProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226] • Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Minimum material density	approx. 60 g/l (3.8 lb/ft <sup>3</sup> )
• EnclosureEpoxy coated aluminumProcess connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226] • Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316T1 (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Design	
Process connection• Thread 1¼" NPT [(Taper), ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Material	
ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]• Thread R 1½" [(BSPT), EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316Tl (1.4571) depending on configurationTine materialStainless steel 316Tl (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Enclosure	Epoxy coated aluminum
EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]• Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configurationTine materialStainless steel 316TI (1.4571)Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Process connection	ANSI/ASME B1.20.1], R 1½" [(BSPT), EN 10226]
<ul> <li>Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on configuration</li> <li>Tine material</li> <li>Stainless steel 316TI (1.4571)</li> <li>Degree of protection</li> <li>IP66/Type 4/NEMA 4</li> <li>Conduit entry</li> <li>2 x M20x1.5 or 2 x ½" NPT</li> <li>Weight</li> <li>Standard version, no extensions:</li> </ul>		EN 10226], ½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve
Degree of protectionIP66/Type 4/NEMA 4Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:		• Thread material: stainless steel 304 (1.4301) or 316TI (1.4571) depending on
Conduit entry2 x M20x1.5 or 2 x ½" NPTWeightStandard version, no extensions:	Tine material	Stainless steel 316TI (1.4571)
Weight Standard version, no extensions:	Degree of protection	IP66/Type 4/NEMA 4
	Conduit entry	2 x M20x1.5 or 2 x 1/2" NPT
	Weight	

Power supply	<ul> <li>19 230 V AC, +10 %, 50 60 Hz, 8 VA</li> <li>19 50 V DC, +10 %, 1.5 W</li> </ul>
Certificates and approvals	CSA/FM General Purpose     CE     CSA/FM Dust Ignition Proof     C-TICK     ATEX II 1/2 D

## Level Measurement Point level measurement - Vibrating switches

### SITRANS LVS100

Selection and Ordering data	Order No.	
SITRANS LVS100, standard	7 M L 5 7 3 5	-
Vibrating point level switch for high or low level detection of bulk solids Sensitivity > 60 g/l.	- 0	A 0
Input Voltage DPDT Relay - 19 230 V AC, 19 50 V DC	1	
Process temperature up to +150 °C (+302 °F)	A	
Process connection	-	
Threaded R 1½" [(BSPT), EN 10226] 1½" NPT [(Taper), ANSI/ASME B1.20.1] R 1½" [(BSPT), EN 10226] DIN 2999 thread, sliding	A B C	
sleeve - min. length 500 mm (19.69")		
1½" NPT [(Taper), ANSI/ASME B1.20.1], sliding sleeve [min. length 500 mm (19.69")]	D	
Extension length		
<u>Stainless steel 316Tl (1.4571)</u> Standard length, 170 mm (6.69")	11	
Add order code Y01 and plain text:		
"Insertion length mm" Stainless steel 304 (1.4301)		
• 300 500 mm (11.81 19.69")	1 2	
• 501 1000 mm (19.72 39.37")	13	
• 1001 1500 mm (39.41 59.06")	14	
• 1501 2000 mm (59.09 78.74")	15	
Approvals		
CSA/FM General Purpose, CE, C-TICK		A
CSA/FM Class II, Div. 1, Group E,F, G, Class III,		в
ATEX II 1/2 D, C-TICK		
		_
Selection and Ordering data	Order code	
Further Designs		
Please add " <b>-Z</b> " to Order No. and specify Order code(s).		
Total insertion length: Enter the total insertion length in plain text description, max. 2000 mm (78.74")	Y01	
Signal bulb inserted in M20 cable gland	A20	
Operating Instructions	Order No.	
Multi-language	7ML1998-5F	TE2
This device is shipped with the Siemens Milltronics		103
manual CD containing the complete ATEX Quick Start		
and Operating Instructions library.		
Spare Parts		
Replacement Electronics Module LVS100 DPDT	7ML1830-1N	IS
Relay (19 to 253 V AC, 19 to 55 V DC) R 1½ " [(BSPT), EN 10226] DIN 2999 thread, sliding sleeve	7ML1830-1N	іт
1½" NPT [(Taper), ANSI/ASME B1.20.1] ,	7ML1830-1N	JU
sliding sleeve [min. length 500 mm (19.69")]	7111210000 11	

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SITRANS LVS100 connections

19 to 50 V DC, +10%, 2 W

0

AC: Terminal 1: L Terminal 2: N

DC: Terminal 1: + Terminal 2: - 21

LED

19 to 230 V AC, +10%, 50 to 60 Hz, 8 VA