



Grown...to meet challenges

30+ years in Process Control Instrumentation

Vital - Compact Vibrating Fork Level Switch

Version 2.1

Vital is a compact level limit switch suitable for all kinds of free flowing solids and grains for overspilling and dry run detection. Vital is unaffected by spurious vibrations and is independent of the application material's electrical properties. Vital can be made with a minimum of 1 1/4" mounting and 100 mm tines.

Principle

A tuning fork made of stainless steel is kept vibrating at its resonant frequency by piezo ceramic elements. When the service material covers the tines of the fork, vibrations are damped. This damping is sensed electronically and the processed signal is used to energize a relay whose contacts in turn are used for annunciation and / or control.

Approvals IP-68, CMRI, CCOE, EIL, IS-13947



Features

- Compact instrument, minimum tine length of 100 mm
- No moving parts, no wear and tear, maintenance-free
- Comes with a fork erosion alarm
- IP-68 Protection, as per IS-13947
- Fast switching time < 0.85 seconds (available on request)
- Polished tines ideal for hygienic applications

Applications

- PET / PVC chips with under water detection
- Rice, wheat, other food grains, flour
- Iron ore, sinters & pulverised coal
- Dry sand & fly-ash
- Packaging machines
- Milk Powder

Why Sapcon

- Sapcon ~ Synonymous with Level Measurement.
- Pioneers in this field with over 32 years of expertise.
- Understanding your problems, always ready with solutions.
- Masters in customization.
- Offering accelerated delivery, saving your inventory costs.

Parts

The parts of Vital are explained in Figure 1. All dimensions are in millimeters. Figure 2 shows the mounting arrangement for Vital.

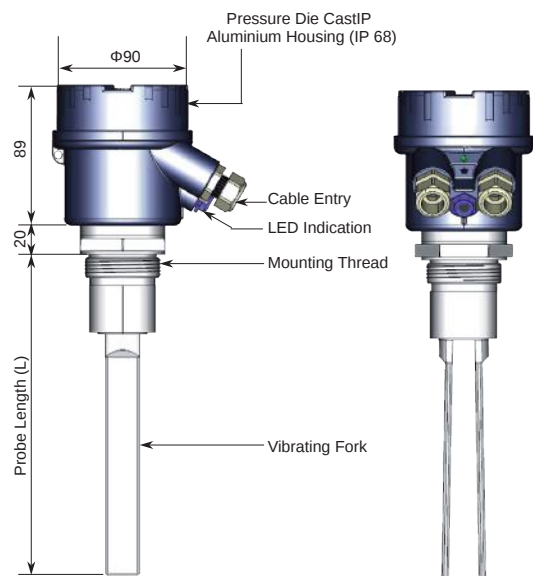


Figure 1: Parts of Vital

Manufacturing Level Instruments & Speed Monitoring Systems

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Technical Specifications

Mechanical

Housing:	Pressure die-cast aluminium (IP-68) / FLP / Stainless Steel
Type:	Electronics top mounted with fork
Pressure:	Absolute, max 15 bar on request
Mounting Arrangement:	Threaded: 1 1/2" BSP / NPT Flanged: As per requirement Other: As per requirement
Mounting Material:	MS / SS 304 / SS 316
Probe Length:	Standard: 200 mm Customized: 100 mm - 3 meters
Extension:	Pipe GI / Stainless Steel
Fork Material:	SS 316, SS 316 L
Cable Entry:	2 nos of 1/2" BGP/NPT, PG 13.5
Temperature in vessel:	-20°C to 80°C / 120°C / 150°C / 200°C

Electrical

Indication:	Bi-color LED (Normal: Green, Alarm: Red)
Mains:	90-265 V AC & 18-55 V DC
Power Consumption:	400 mW max.
Output:	Open collector PNP, NPN
Relay Rating:	Contact 6A, 230 VAC for non-inductive loads
Fork Frequency:	150-350 Hz (depends on tine length)
Delay Setting:	1-25 seconds (Covered and Uncovered)
Fail-safe Settings:	Field Selectable
Minimum:	Fail-safe Low
Maximum:	Fail-safe High
Sensitivity Settings:	Field selectable
Low:	Strong vibrations
High:	Weak vibrations
Response Time:	Standard: 1 second Customized: 0.8 seconds

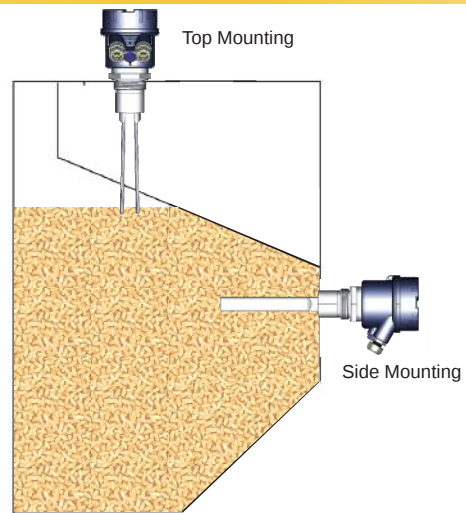


Figure 2: Mounting Arrangement for Vital

Model Selection

VITAL	
ENCLOSURE	
W8- WEATHERPROOF IP-68	
FC- FLAMEPROOF (GAS GROUPS IIA, IIB & IIC)	
TEMPERATURE	
S- STANDARD TEMPERATURE UPTO 80°C	
H1- HIGH TEMPERATURE MAX 150°C	
H2- HIGH TEMPERATURE 200°C	
PROBE LENGTH	
PL- STANDARD PROBE LENGTH 200 mm	
PX- EXTENDED PROBE LENGTH (UPTO 3000 mm)	
PROBE MOUNTING ARRANGEMENT*	
T- THREADED BSP / NPT	
F- FLANGED ASA / ANSI / JIS / DIN; O- OTHER	
WETTED PARTS	
S6- SS 316	
SL- SS 316L	
HC- HASTLE ALLOY C	
P- PTFE LINED	
PA- PFA LINED	
XX- HALAR LINED	
OUTPUT	
11- SPDT RELAY OUTPUT	
12- DPDT RELAY OUTPUT	
13- OPEN COLLECTOR PNP/NPN	
D- 8/16 mA CURRENT (ONLY DC VERSION)	
VITAL	FC
S	PL
T	SL
D	

Connect to us

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