

# Sitron's V- Tork Vibrating Tuning Fork for Level Detection

## Models:

- VTK-DC
- VTK-R
- MVTK-DC
- MVTK-AC

## Introduction

The V-Tork is a point level switch that is designed to detect low or high level of liquids (such as water and oil), thick and turbulent fluids, as well as corrosive mediums and pastes (depending on viscosity). Due to its simple and rugged controlled system, the V-Tork is virtually unaffected by any chemical or physical properties of the mediums and can be installed at any angle of the pipe or tank. It is ideal for multiple-purpose processing where the probes must be compatible with a variety of process materials and process conditions. The V-Tork does not require recalibration between batches and can also be cleaned in place.


The V-Tork can operate in temperatures up to 176°F (80°C) and has a maximum working pressure of 725 PSI (50Bar).

All models are made with 316 S.S. and are available with PTFE coatings or in hygienic versions for sanitary applications. Standard probes are available with 3/4" up to 1" BSP or NPT process connection and insertion length  $L = 3 \frac{1}{8}"$  ( $L = 80\text{mm}$ ).

## Technology

Sitron's V-Tork is based on the vibrating tuning fork principle, using piezo-electric crystals. The switch vibrates at a resonant frequency. When the tuning fork is submerged in the product, the frequency will change. This change is detected by the integrated oscillator and converted into a switching output. (The integrated electronics evaluates the level signals, according to the oscillation of the sensor's crystal, and then provides an accurate output signal).

## Features

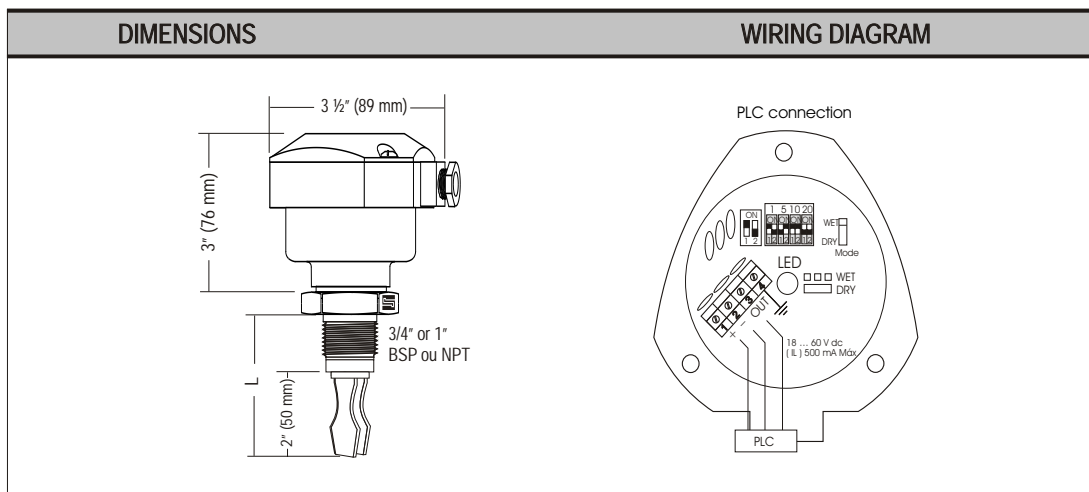
- Unaffected by product variations in density, conductivity, or dielectric constant.
- Unaffected by foam, tank agitation or vibration.
- Various length options to best suit your application.
- Made with 316 S.S. and can be PTFE coated when necessary.
- Relay and Transistor outputs available.
- Various process connections: Thread, Tri-Clamp, Hygienic Fittings, Flanges, etc.
- Polished Forks - RA tested when necessary
-  approved



### VTK-DC Power Supply: 20-60VDC (3 wire) Output: PNP Transistor

The VTK-DC is a compact point level switch designed to detect the level of several types of liquids and some fine solids. It is the ideal solution for applications that are connected directly to a PLC. A visual indication is given by a central LED that shows the working status of the unit.

The VTK-DC is made with 316 S.S. with a glass filled nylon enclosure, it is available in a great variety of process connections, such as threaded, sanitary or flange and can be PTFE coated when necessary for aggressive mediums.

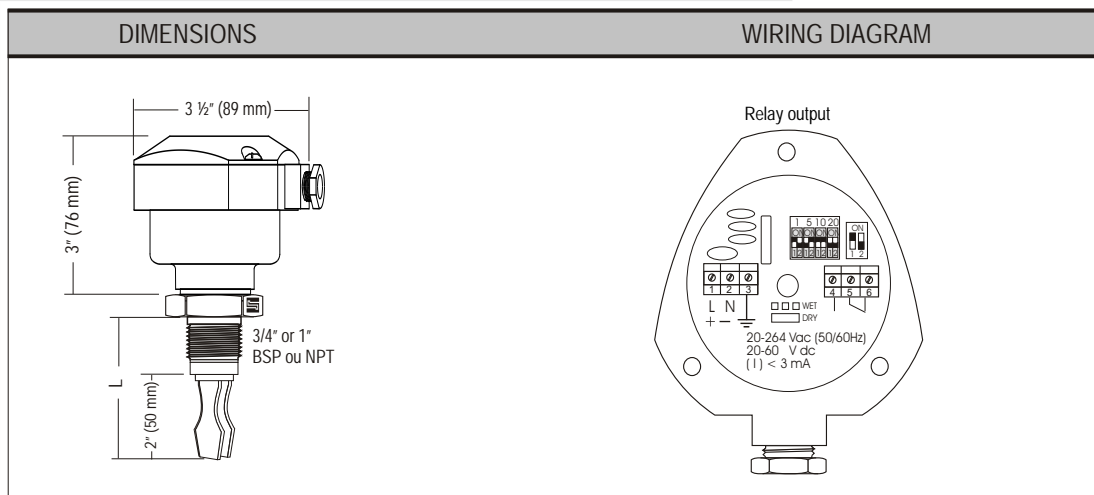




## VTK-R Power Supply: 20-60VDC/20-264VAC Output: Relay (SPDT)

The VTK-R is a compact point level switch designed to detect the level of several types of liquids and some fine solids. It provides AC and DC voltage supply to best suit any application. A visual indication is given by a central LED that shows the working status of the unit.

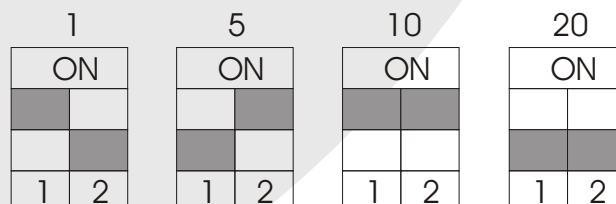
The VTK-R is made with 316 S.S. with a glass filled nylon enclosure, it is available in a great variety of process connections, such as threaded, sanitary or flange and can be PTFE coated when necessary for aggressive mediums.



## Time delay adjustment for VTK-DC & VTK-R models

The VTK-DC and VTK-R models also provide a time delay adjustment that enables the user to adjust 1, 5, 10 or 20 seconds as indicated by the drawing below.

( 1 ; 5 ; 10 ; 20 seconds )



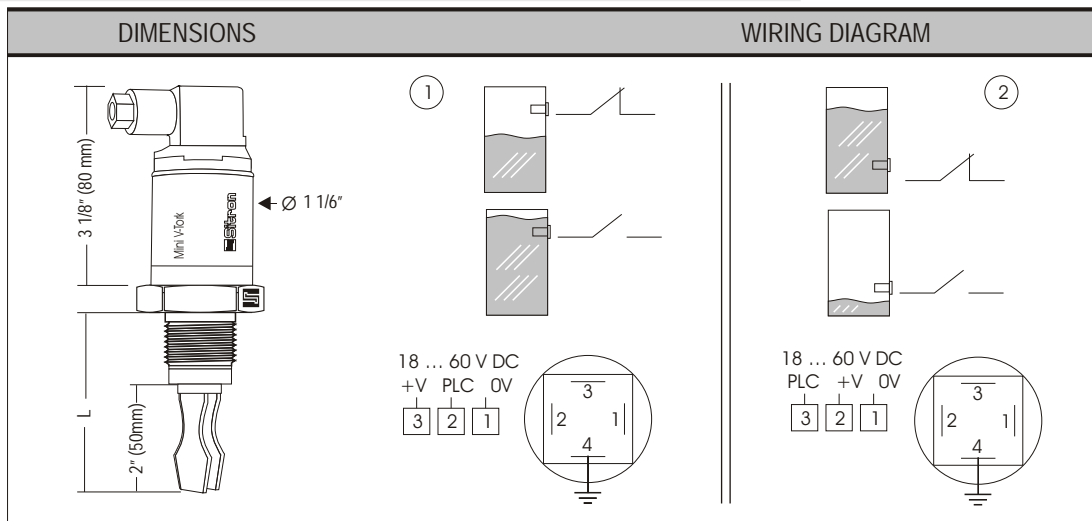
Different positions for keys # 1 & # 2 delineate time delay adjustment.



## MVTK-DC Power Supply: 20-60VDC Output: PNP Transistor

The MVTK-DC (Mini V-Tork) is the most compact version of the vibrating point level switches that is also designed to detect the level of several types of liquids and some fine solids. The Mini V-Tork DC is available with a DC voltage supply and a transistor output. The electronics are integrated within the 316 S.S. body to best suit any space constraint issues relating to the application. A visual indication is given that shows the working status of the unit. The MVTK-DC can be made with a great variety of process connections, such as threaded, sanitary or flange and can be PTFE coated when necessary for aggressive mediums.

All MVTK-DC are NEMA 6 (IP 67) protection class, enabling the switch to be applied in damp, wet or submerged applications.

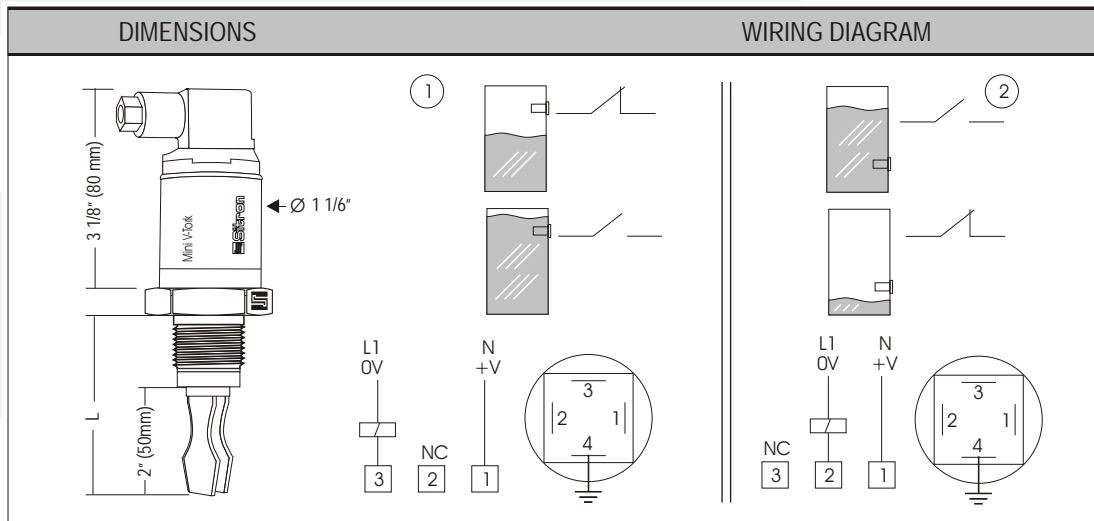




## MVTK-AC Power Supply: 85-264 VAC Output: Direct Load Switching (2 wire)

The MVTK-AC is the AC version of the Mini V-Tork, available with an AC voltage supply direct load switching output (2wire). It is also designed to detect the level of several types of liquids and some fine solids. The electronics are integrated within the 316 S.S. body to best suit any space constraint issues relating to the applications. A visual indication is given that shows the working status of the unit. The MVTK-AC can be made with a great variety of process connections, such as threaded, sanitary or flange and can be PTFE coated when necessary for aggressive mediums.

The MVTK-AC is a 2 wire switch. It is necessary to use an external relay (contactor) in series with the power supply.



MODEL	
VTK-DC	Enclosure - 20...60Vdc Power Supply - Output PNP (3 Wire)
VTK-R	Enclosure - Universal Power Supply - Output Relay (1SPDT)
MVTK-DC	No enclosure - 20...60Vdc Power Supply - Output PNP (3 Wire)
MVTK-AC	No enclosure - 85...264Vac Power Supply - Output 2 Wire

SIZE	
4	3/4"
5	1"
6	1 1/2"
7	2"
9	3"
Q	4"
X	OTHER

PROCESS CONNECTION TYPE	
B	BSP
N	NPT
D	FLANGE ANSI 150# - Carbon Steel Painted
E	FLANGE ANSI 150# - 316 SS
G	FLANGE ANSI 300# - Carbon Steel Painted
H	FLANGE ANSI 300# - 316 SS
K	FLANGE ANSI 150# - 304 SS
L	FLANGE ANSI 300# - 304 SS
T	TRI-CLAMP
X	OTHER - SPECIFY

COATING	
S	NONE
H	HALAR <sup>®</sup> Coated
E	EPOXY Coated
P	Polished
X	OTHER - SPECIFY

INSERTION LENGTH	
L80	L=3 1/8" (80mm) - Standard
L64	L=64mm - Standard (Sanitary connection)
L	SPECIFY

HOUSING	
SC	No enclosure
N1	Small Nylon
NE	N1 Encapsulated
G1	Small Aluminum
G2	Large Aluminum
GX	Aluminum (EX d)

ELECTRICAL CONNECTION	
1	1/2" BSP
2	PC 1/2" BSP
6	1/2" NPT
7	PC 1/2" NPT
D	DIN Connector 18 (43650)
M	M12 Connector
X	OTHER - SPECIFY

ACCESSORIES	
A	Clamp
B	Sanitary Nipple - 1"BSP
F	O'ring seal for clamp
S	Sanitary Nipple - TC Connections
MT	Medium Temp - 50mm 316SS Neck (up to 100C)
HT	High Temp - 100mm 316SS Neck (up to 120C)
0	NONE