VIBRATING WIRE WEIR MONITOR

GEOKON®

MODEL 4675LV

The Model 4675LV with cutaway revealing its internal components: a cylindrical weight suspended from the vibrating wire force transducer.

APPLICATIONS

The Model 4675LV is used for the precision water level measurement and monitoring of:

- Weirs
- Tanks
- Stream levels
- Reservoir levels

OPERATING PRINCIPLE

The Model 4675LV is a precision water level monitoring system that uses a vibrating wire force transducer to provide a highly stable and sensitive means of monitoring water levels.

The main component is a cylindrical weight suspended from the vibrating wire force transducer. The cylinder hangs partially in the water whose level is to be monitored. As the water level changes, the changing buoyancy force on the cylinder acts directly on the vibrating wire transducer altering its tension and hence its resonant frequency.

In operation the vessel containing the Weir Monitor is connected hydraulically to the water whose level is to be measured. The vessel is positioned so that the bottom of the hanging cylinder is slightly below the bottom of the V-notch or flume.

ADVANTAGES AND LIMITATIONS

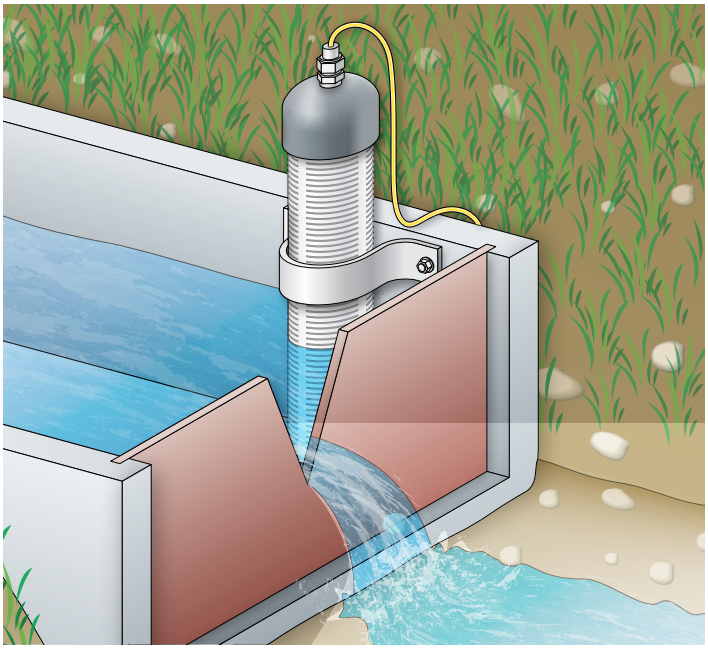
The main advantage of the 4675LV system lies in it's high sensitivity and stability, which allows water level changes of as little as 0.1 mm to be measured accurately.

The force transducer is immune to zero drift and has a very low response to temperature changes.

As with all vibrating wire sensors, because the output is a frequency, it is not affected by changes of cable resistance and hence long signal cables are not a problem.

The frequency is measured by either a portable readout or datalogger.

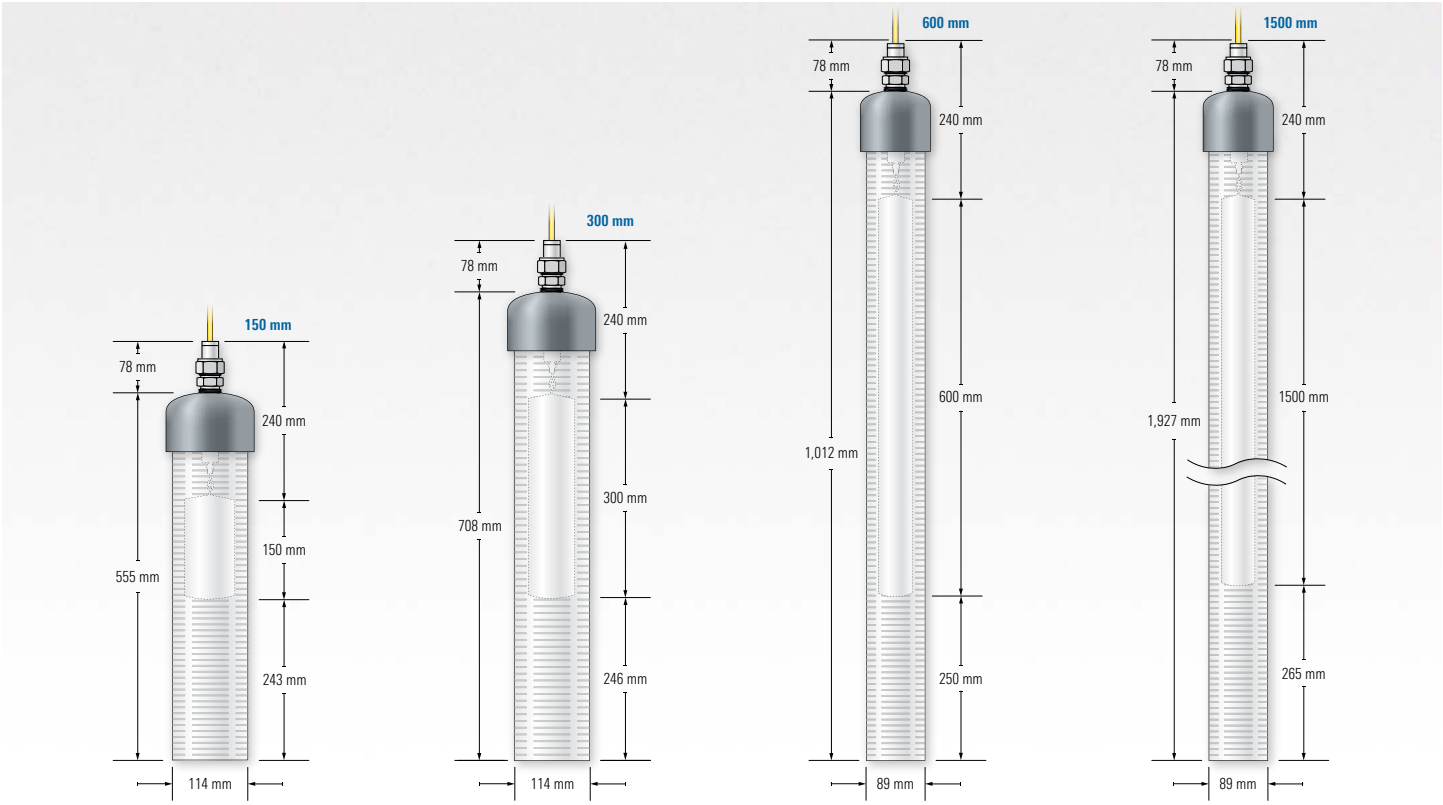
4 to 20 mA or 0 to 5 V outputs can be obtained using the Model 8020-59 VW Frequency to Analog Converter.



Typical Model 4675LV installation.

SYSTEM COMPONENTS

The cylinder and force transducer are contained within a housing made from slotted PVC pipe. This pipe can be positioned within the weir or tank or it can be installed in a Stilling Well connected hydraulically to the tank or weir. The vibrating wire transducer is vented to the atmosphere so that barometric fluctuations are compensated for automatically. The vent line terminates in a moisture trap which requires periodic maintenance to replace the desiccant. A length of GEOKON standard cable is spliced at onto the end of the readout cable to allow a standard connection to the chosen readout or datalogger.



Nominal lengths and diameters of the Model 4675LV standard ranges.

ORDERING INFORMATION

4675LV-1-150MM: Vibrating Wire Weir Monitoring System, 150 mm range, includes transducer, hanging weight, stilling well, desiccant chamber with capsules, and mounting hardware.

4675LV-1-300MM: Vibrating Wire Weir Monitoring System, 300 mm range, includes transducer, hanging weight, stilling well, desiccant chamber with capsules, and mounting hardware.

4675LV-1-600MM: Vibrating Wire Weir Monitoring System, 600 mm range, includes transducer, hanging weight, stilling well, desiccant chamber with capsules, and mounting hardware.

4675LV-1-1500MM: Vibrating Wire Weir Monitoring System, 1500 mm range, includes transducer, hanging weight, stilling well, desiccant chamber with capsules, and mounting hardware.

4675LV-2: Vibrating Wire Weir Monitoring System, transducer only, with desiccant chamber and capsules.

02-335VT8: Yellow Polyurethane Cable for the above, 8.50 mm (±0.38 mm) [0.335"] Ø, 2 twisted pairs, with integral 3.18 mm [0.125"] polyethylene vent tube.

TLS-208: Setting tool for 1/4" Rawl drop-in anchors. One required per installation.

4675LV-2-12: Stilling Well (Specify range).

4675LV-3-1: Stainless steel "V" notch weir plate, 22.5°, 30 cm, 14 L/sec.

4675LV-3-2: Stainless steel "V" notch weir plate, 45°, 30 cm, 28 L/sec.

4675LV-3-3: Stainless steel "V" notch weir plate, 60°, 30 cm, 39 L/sec.

4675LV-3-4: Stainless steel "V" notch weir plate, 90°, 30 cm, 68 L/sec.

COMPATIBLE READOUTS AND DATALOGGERS

GK-404: Handheld Readout

GK-406: Vibrating Wire Analyzer

8600 Series: Multi-Channel Dataloggers

8800 and 8900 Series: GeoNet Wireless Data Acquisition System

8920, 8930, and 8950 Series: GeoNet Cellular and Wi-Fi Network Loggers

8940 Series: GeoNet Dataloggers

TECHNICAL SPECIFICATIONS

Standard Ranges[1]	150, 300, 600, 1500 mm
Resolution	0.025% F.S. (minimum)
Accuracy[2]	±0.1% F.S.
Linearity	0.25% to 0.75%F.S.
Stability	±0.05% F.S. per year
Temperature Range[3]	–20 °C to +80 °C
Dimensions (L × Ø)	165 × 25 mm (transducer)

[1]Other ranges available on request.
[2]Accuracy established under laboratory conditions.
[3]Using anti-freeze solution can extend the range below 0 °C.

GEOKON | TRUSTED MEASUREMENTS

GEOKON
48 Spencer Street
Lebanon, NH 03766 • USA

www.geokon.com
e: info@geokon.com
p: +1 · 603 · 448 · 1562

GEOKON is an **ISO 9001:2015** registered company