VIBRATING WIRE LOAD CELL & MONITORS

MVWLC series

Introduction:

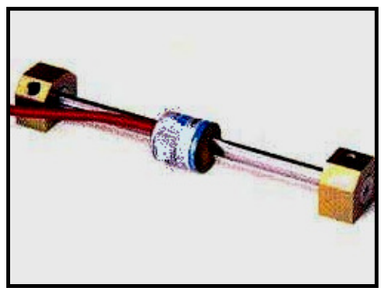
MVWLC series of precision vibrating wire load cells are available in (0.1 to 1000 kg), more than 20 different models virtually offering solution to force/torque measurement related to industry, civil structure, like dam, high rise building, rock-movement foundation heavy electrical/mechanical industries, machine tools, non-conventional energy, solids state physics application and many uncountable defense/nuclear applications. These load cell consist of held in tension between two end flanges. When this tensioned wire, electromagnetically plucked, vibrates at a frequency that is proportional to the strain in the wire. i.e tension is inferred from vibrating wire frequency. Careful selection design topology ensures better controllability and reliability with additional integrated power/voltage and control/protection. Company offers tailor made solution to custom requirement.

Operatinbg Principle: The strain gauge operates on the principle that a tensioned wire, when plucked, vibrates at a frequency that is proportional to the strain in the wire. The gauge is constructed so that a wire is held in tension between two end flanges. Loading of the concrete structure changes the distance between the two flanges and results in a change in the tension of the wire. An electromagnet is used to pluck the wire and measure the frequency of vibration. Strain is then calculated by applying calibration factors to the frequency measurement.

$f = 1/2pie.(T/M)^{1/2}$ .....f=frequency, pie: 3.14, T: tension in wire, M: density

Benefits:

- Simple installation and operational compatibility.
- Consistent performance over large temperature range (300°C)
- Scaled directly in N.m. with repeatable accuracy.
- Auto zero offset without drift with ultra high input impedance...
- Facility of programming profile of display in six steps/ RS-232 interface.



MVWLC- 00020

MVWLC- 00500

Electrical/Mechanical specifications of Vibrating wire load cell

Model	Range Newton	Pulse/D.C./Pulse Frequency Range	Burdon	Accuracy Restricted to Resolution level	Resolution Quantified/ optional	Voltage/current source Volt/current/optional As demanded	INTERFACE
MVWLC-9999990101	10.0/5.0 -9.99999N 1.0 mV-10.0N	0-50K.Hz	< 100 micro-N	99.99999%	1/2/5	015 V/001.0 A	RS-232USB
MVWLC-9999990401	10.0/5.0 -99.9999N 1.0 mV-20.0N	0-50 k.Hz	< 100 micro N	99.99999%	1/2/5	040 V/001.0 A	RS-232/USB
MVWLC-9999990102	05.0/1.0 -999.999N 1.0 mV-10.0N	0-50K.Hz	< 100 micro N	99.99999%	1/2/5	015 V/001.0 A	RS-232/USB
MVWLC-9999990402	05.0/1.0 -9999.99N 1.0 mV-20.0N	0-50 k.Hz	< 100 micro N	99.99999%	1/2/5	040 V/001.0 A	RS-232/USB
MVWLC-9999991002	05.0/1.0 -99999.9N 1.0 mV-99.9N	0-50k..Hz	< 100 micro N	99.99999%	1/2/5	100 V/001.0 A	RS-232/USB
MVWLC-9999992002	05.0/1.0 -999999N 1.0 mV-199N	0-50 k.Hz	< 100 micro N	99.99999%	1/2/5	200 V/001.0 A	RS-232/USB

General specification of Vibrating Wire Load cell signal conditioner:

Operating voltage: 220 volt A.C. (50-20,000 Hz)/ 12 V D.C.
Measurement range (full scale): as above in different model.
Force signal: $10^{-3}/10^{-1}/10^{+5}/10^{+9}$ Newton(optional)
Input capacitance: 10 nF
Response time: 1000 sample/sec
Burden: less than 100 micro newton/full scales current or better
Accuracy: 0.5/1.0/2.0 % reading
Repeatability: 100 of reading
Resolution: 1/5 micro.Newtonor optional and may be altered based on time behaviour of signal
Range (Newton): 10^{-06}-10^{-01} /10^{-1}-10^{+5} /10^{+5}-10^{+8} Newton /least count- micro.newton
Linearity adjustment: upto 100 micro.newton
Input imedence: ultra low(<1000 nano volt burdon),
Filtering: low pass(adjustable)
Offset: variable upto 10,000 nano N (manual/auto)
CMMR: >80 db at 50-60 Hz
Isolation: > 100 giga ohm
Connector: BNC-9 pinx2 and BNC-25 pinx2
Size: 5X8X8 inches/rack mounted or portable
Interface: RS-232
Option : ADDITIONAL SOFTWARE to plot V/I OR ANY DESIRED INFERENTIAL PARAMETER.
THESE SPECIFICATIONS OR PART THERE OF MAY BE MODIFIED TO MEET ANY TAILOR MADE SOLUTIONS.
NOTES: The numeral after product code indicates the (ampere meter) range and last digit corresponds to size (5x5x8, 8x8x12)

MVWLC-9999990402

Three numerals x 10 after MVWLC indicate power of load ell and last two x 100 indicate rpm.Load cell with tailor specs are also available. Company offer tailor made software solution.

MOTORON SEMICONDUCTORS CORPORATION

11, Shri nagar colony, Shakti nagar extension, DELHI-110052. Tel: 011-8800292956/23655454

motoron@hotmail.com