Strain Monitor Type KL66-S

Strain Monitor KL66-S is used as a force and deformation monitoring element for all types of structures

General

As in all DIGI SENS transducers, an oscillating-wire sensor is used to convert the force/load into an electrical signal. This patented element is able to deliver a signal that can be directly processed by a computer.

Application

Surveying the stress of any kind of structure like bridges, cranes, machines or tanks. Overload protection for elevators, platform, robots, vehicles, etc.

Description

The Strain Monitor KL66-S is threaded on the structure to be surveyed and allows a precise and reproducible measurement of its stress changes. Using DIGI SENS vibrating wire technology instead of a strain gauge, means having a simple mechanical mounting combined with a very accurate measurement.
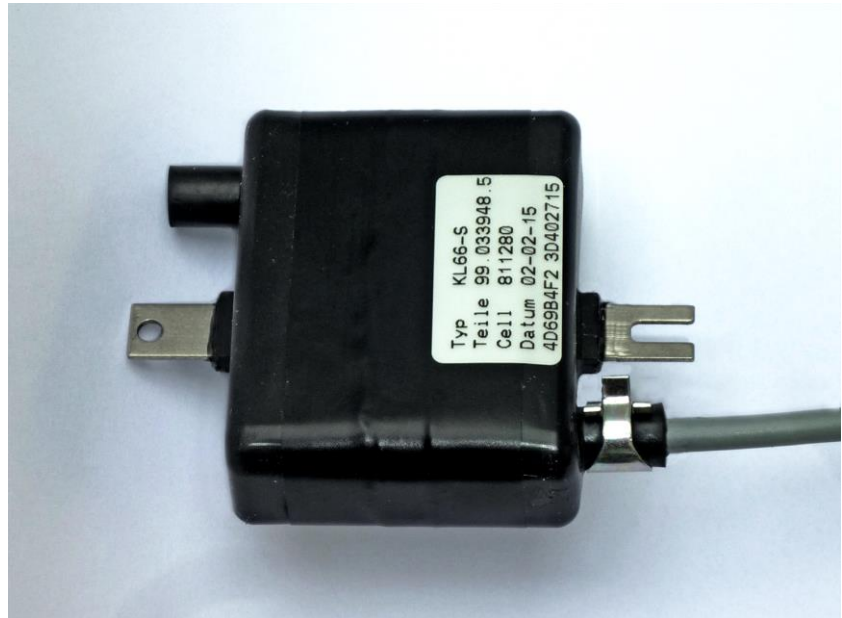
This technology also offers an extremely high resolution.
Deformations of fractions of a με can be measured.
Since the KL66-S is adapted to the material of the structure to be surveyed, differential thermal expansion has no negative influence on the precision.

The DIGI SENS technology is also standing for a very good long-term stability. Since no organic material is involved in the measurement chain, creeping or other influences are reduced to the minimum.

The KL66-S delivers a 5V-TTL frequency signal, proportional to the displacement measured. The frequency is a square root function of the displacement. In most applications it can be considered linear.
This frequency signal is easy to transmit, immune to perturbations and can be treated directly by any processor.

Fit and function

No special tooling is needed. No surface conditioning, no glues drying in clean room condition. No maintenance is needed.

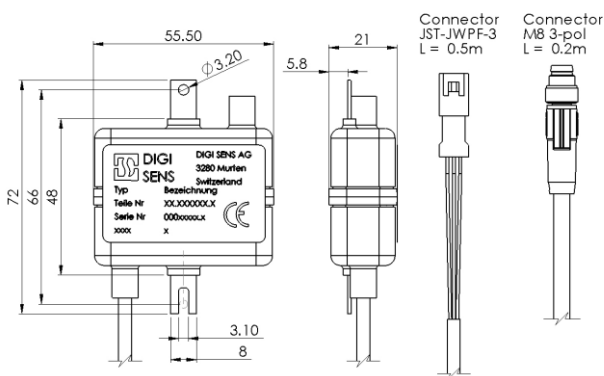Just tighten the screw and you are ready to measure.
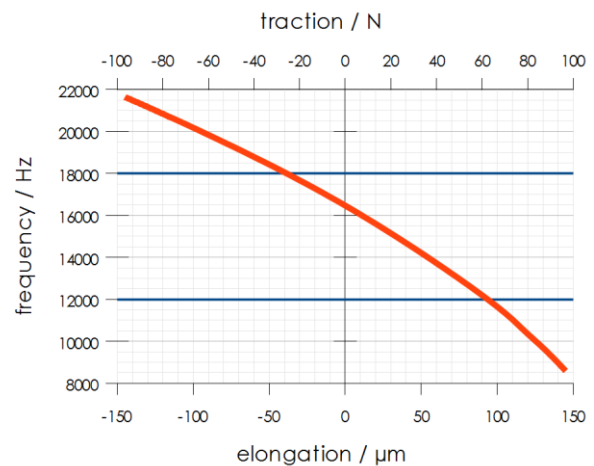
Strain Monitor Type KL66-S
Technical Data

1. Technical specification

Length	72 mm
Width	55.5 mm
Height	21 mm
Weight (without cable)	60 g
Housing	IP64 (with cover IP66)
Power supply	3 – 5 V DC
Nominal	5 mA(max.10 mA)
Elongation nominal	+90 / -45 µm
Elongation overload	+135 / -120 µm
Traction nominal	+60 / -30 N
Traction overload	+90 / -80 N
Signal	12000-18000 Hz (5 V TTL)
Overload range	9000-21000 Hz (5 V TTL)
Base frequency	16500 Hz ±500 Hz
Sensitivity	~4 Hz / µε @ 12 kHz
	~2 Hz / µε @ 18 kHz

Functional temperature range	-10 to + 70°C
Temperature drift of zero	typical 0.5 Hz/°K
Temperature influence on span	typical 0.1%/10°K
Vibration sensitivity	According to IEC 68-2-34
Shock resistance	According to IEC 68-2-34
Hysteresis (for ideal structure)	=2 f.s.d. Hz
Reproducibility (for ideal structure)	=2 f.s.d. Hz
Relative Air Humidity	≤98% not condensing
Pollution degree	2
MTBF	13Mio h

2. Cable

Type	AWM 2464
Length	0.5 m with JST
	0.2 m with M8
Conductors	3

Cable Connection: (TTL-compatible)
JST:
(1) white, ground
(2) brow, power supply
(3) green, string frequency
M8:
(3) ground
(1) power supply
(4) string frequency

Bending radius	15x diameter of cable

3. Standards
residential: EN 61000-6-1 and -3
industrial: EN 61000-6-2 and -4

4. Delivery Condition:
- Fitting Instruction
- Fitting Accessories

Dimensional drawing

Characteristic (typical)

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