

A

absolute pressure is the pressure including the atmosphere pressure.(sealed at zero pressure-vacuum).

acceleration The rate of change of velocity per unit of time.

accuracy In exact conformity with a standard.

Active Load The company for strain gauge transducers.

active arms The number of active (effective) arms in the whetstone bridge circuit.

active range The capacity over which the transducer is specified to operate.

arms *see active arms*

B

Beam The physical form which can be of various cross sections that are generally long and slender in the horizontal position. Can be simply supported or fixed.

Bending Force out of straightness, usually of a beam.

best straight line The output of a strain gauge transducer is directly proportional to the force applied with minimal errors. The output is represented by the BSL with stated errors.

bolt-on is a transducer that is bolted to a member and shares the force to be measured.

bonding Strain gauges are bonded with adhesive to a sub-straight material. The process is termed as bonding.

bridge Strain gauge transducers are connected as a electrical whetstone bridge.

bridge completion is when a quarter or half bridge active gauges need to be made into a full bridge with either dummy gauges or fixed resistors.

BSL *see best straight line*

C

calibration The force test carried out to a transducer to determine the sensitivity and accuracy of the transducer.

capacity The maximum force that the transducer is stated to work satisfactorily within its performance specification.

cell Generally associated with load as another name for transducer.

centigrade The general unit of temperature measured in degrees.

centre cell This is the description of a load cell that is designed to be not effected to off centre loading with minimal effect.

charpy is a impact strength format for testing material (similar to izod).

clamp-on is a transducer that is clamped to a member and shares the force to be measured.

coating Strain gauges are protected by various materials, some of which are applied in a liquid form that hardens.

column The physical form which can be of various cross sections that are generally short in a vertical position.

compensation temp. range The temperature range over which the transducer has been compensated.

Comp The name of the Active load compressive load cell range

compression Force applied as a pressure in which the material is put into compression.

creep The change of the output with a constant force over a period of time.

D

deflection The distance that an item will move from its original position.

deviation The difference between the output signal and the BSL at a specific reading.

diaphragm The physical form that is generally thin and circular fixed on its outer circumference.

dynamic Force in actual operation; energizing or motive force.

E

elasticity Spontaneously resuming its normal shape after contraction, dilatation, or distortion.

element The item of a transducer that experiences the mechanical force, and that the strain gauges are bonded.

environment Refers to the degree of protection given to the transducer. Identifies whether the transducer is sealed, and how rugged.

error Amount of deviation from the correct or accurate result.

excitation voltage Voltage used as the input to the transducer. Applied across the apex of the whetstone bridge.

extensometer measures the length extension of material, nominally when the material is being tested for tensile strength.

F

fahrenheit A unit of temperature measured in degrees.

fatigue strength The effect in the strength of material after repeated stress.

foil strain gauge is a strain gauge that is manufactured from a metal foil that has been bonded to an insulated backing material. The gauge pattern is then etched in the foil.

fso *see full scale output.*

full scale output The output from a transducer at full rated capacity.

G

gauge An item that can be used to check or measure another item.

gauge pressure is pressure that neglects the effect of atmospheric pressure. (the back end of the sensor is open to atmosphere).

Graduate The name of an Active Load load beam range.

gram A unit of mass in metric system. X 1000 = a kilogram.

H

Hangman The name of an Active Load tensile load link, using double shear element.

Hopper The name of an Active Load compressive load cell used to weigh hoppers/silos. Using the principle of single shear.

hysteresis The deviation of the output signal between an increasing force to that of a decreasing force when applied to a transducer.

I

impact strength The effect in the strength of a material when hit with a dynamic force. Test to verify the effect is known as Izod or Charpy.

impedance Total effective resistance of an electrical circuit.

Infant The name of an Active Load centre cell.

infinite resolution is the resolution nominally from an analogue sensor where there are no steps as the output increases.

inertia Property of matter by which it continues in its existing state or rest or uniform motion in a straight line, unless that state is changed by an external force.

input impedance The total input resistance of a transducer

insulation The resistance of electrical circuit to earth.

Izod an impact strength format for testing material (similar to Charpy).

J

joules A unit of work energy, work done by force of one newton when its point of application moves one metre in the direction of action of the force, work done of heat generated by a current of one ampere flowing for one second against a resistance of one ohm.

Junior The name of an Active Load universal load cell.

K

kilogram A unit of mass in the metric system, 1000 gram. *see gram.*

kilonewton A unit of force, 1000 newton. *see newton*

L

linearity The straightness of an output, the deviation from the best straight line determines the linearity of the transducer.

live weight The active weight that may be applied to a load cell or platform. *opps. tare*

load Force or mass.

load cell Transducer to measure force or mass (weight).

Lowland The name of an Active Load low profile centre cell.

M

Master The name of an Active Load tensile load link using double shear. It is frequently used with telemetry.

maximum excitation voltage The maximum recommended voltage that should be applied to the input of a transducer under continuous use.

metre The principle metric measurement of length

micro-strain Is deflection of material per unit length of material. (1,000,000 micro-strain = 1 strain).

Millimetre Is a principle metric measurement of length (1000 millimetres= 1 metre).

Modulus Is the rigidity measurement of a material. It is used to convert a stress to a strain.

Multi The name of an Active Load range of diaphragm type load cells.

N

newton

nominal

non-linearity

O

Ohm The units that resistance is measured.

ounce An imperial unit of weight. X16 = a pound.

output at rated load Is the output from a transducer at the full range of the transducer.

output impedance

overload

P

Pancake The name of an Active load low profile load cell using shear webs.

pascal

passive

Pin The name of the Active load range of load pins

platform

pound An imperial unit of weight.

pressure

pressure transducer

principle stress

Q

quality

R

range

rated load

rating

recommended excitation voltage

repeatability

resolution

resistance

RTL

running line tensiometer

S

safe temp. range

safety factor

safe overload

'S' cell

sealed

semi-conductor

Senior

Shackle

shear

Standard

strain

strain gauge

stress

Student

T

tare Is the unused weight, dead weight before the live weight is applied.

telemetry A wireless form of transmitting a signal or message via radio.

temp. effect span The effect to the slope of an output due to temperature change.

temp. effect zero The effect to the zero output due to temperature change.

Tensile

tensile

tensiometer

tension

terminal point

torque

traceable

transducer

tri-axle

U

underhook

ultimate overload The load at which the component finally brakes.

Ultimate tensile strength The force under which the material finally brakes, normally stated as a stress.

universal A format that will operate in more than one direction. A load cell that is used in both tension and compression

Utility

U.T.S. see *Ultimate tensile strength*

X axis

x-y axis

Y

y axis

yield strength

yield stress

Y.S.

V

velocity

von mises

Z

z-axis

zero balance

zero point

zero return

W

Wedge

weight

whetstone

X
