ControlAir Inc.

TRANSDUCER TERMINOLOGY DEFINITIONS

SUPPLY PRESSURE SENSITIVITY:

Change in output pressure caused by a change in the supply pressure. Usually an inverse effect as output will react opposite to change in input. Almost non-existent in precision type regulators.

LINEARITY (TERMINAL BASED):

The maximum deviation of the calibration curve (average of upscale and downscale readings) from a straight line coinciding with the calibration curve at upper and lower range values.

REPEATABILITY:

The closeness of agreement among a number of consecutive measurements of the output of the same value of the input under the same operating conditions approaching from the same direction, for a full range of traverses.

HYSTERESIS:

The consistent value of the output as based upon the direction from which the input value was derived.

EX: 12mA = 9.0 psi is ideal
approached from 4mA, then 12mA may equal 8.95 psi
If approached from 20mA, then 12mA may equal 9.05 psi

FLOW CAPACITY:

Usually refers to the maximum amount of flow at midrange pressure or at maximum pressure. Higher flow allows an I/P to be mounted further from the valve positioner and to still maintain the desired response time. Low flow causes problems when there is leakage in the instrument lines.

AIR CONSUMPTION:

The total amount of air (bleed and leakage) flowing through the nozzle of the regulator or I/P. Usually dependent upon supply pressure and output pressure conditions. Air costs money and is therefore a concern to any plant that has installed a new air system.

DEADBAND:

The range through which a signal input may be varied, upon reversal of the direction, without initiating an observable change in output signal.

EX: a change from 12.0mA to 12.1mA may not produce detectable change in output dependent upon the deadband.

EXHAUST CAPACITY:

Maximum flow from the load back through the transducer express in SCFM.

RESPONSE TIME:

An output expressed as a function of time, resulting from the application of a specified input under specified operating conditions.