

General Specifications

Technical Information for Converter

1. GENERAL

• **RANGE**

The region of values between the lower and upper limits of the input or output variable.

• **SPAN**

The algebraic difference between the lower and upper values of a given range.

Example: range -15 to 100°C, Span 115°C

• **ZERO SUPPRESSION**

The amount X in a range for which the zero of the measured variable is below the actual lower measuring range value X .

Example: Measuring range 20 to 100kPa,
Zero suppression 20kPa

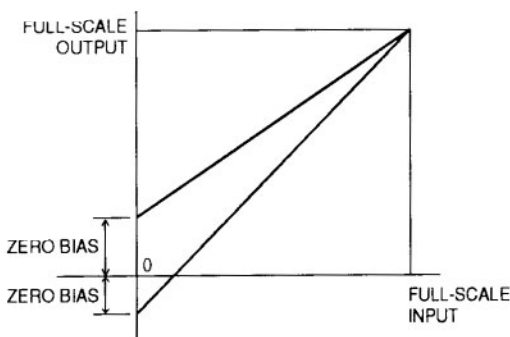
• **ZERO ELEVATION**

The amount X in a range for which the zero of the measured variable is above the actual lower measuring range value $-X$.

Example: Measuring range -25 to 100°C
Zero elevation 25°C

• **ZERO BIAS**

The amount of zero suppression or zero elevation.

• **ISOLATION**

To isolate (DC) electrically between the input and output signals of a device.

Example: The isolation is necessary for ensuring accurate measurement when measuring temperature in a electric furnace for which a thermocouple is the detector.

• **FLOATING INPUT**

The input circuit that is isolated from the frame, from supply source and from any of the output terminals.

• **DIFFERENCE INPUT**

The input circuit intended to measure the difference across two terminals regardless of two voltage signals applied between each terminal and a common input terminal.

• **SINGLE-ENDED INPUT**

The input circuit in which one input terminal is directly connected to measuring earth. In many cases, that is the common point terminal.

• **INSULATION RESISTANCE**

The resistance under specified conditions between two conductive bodies separated by insulation material. In electric measuring, that is considered between each input, output and power supply circuit.

• **DIELECTRIC STRENGTH/ WITH STAND VOLTAGE**

The voltage value to which the insulation of an electrical device is able to withstand.

• **INPUT IMPEDANCE**

The impedance looking into the device between its input terminals under operating conditions. In most cases, that is expressed as an equivalent resistance value connected in parallel with the capacity. For a device measuring the direct current, the input impedance is called also input resistance.

- **OUTPUT IMPEDANCE**

The impedance looking into the device between its output terminals under operating conditions. For a device measuring the direct current, the output impedance is called also output resistance.

- **ALLOWABLE LOAD RESISTANCE**

The total load resistance value which is able to be connected to a device without deteriorating its performance.

- **ERROR**

The algebraic difference between the measured value and the true value of the measured variable.

- **ACCURACY**

The difference between the true value of the measured variable and the measured value obtained under the (Standard operating Conditions utilizing) standard signal generator and the measuring instrument calibrated in becom.

- The standard operating conditions are as follows:

Room temperature: $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Supply voltage: rated voltage $\pm 2\%$

Frequency: $50/60\text{Hz} \pm 1\text{Hz}$

Zero and span adjustment: executed.

For thermocouple transmitters, the linearization accuracy and cold junction compensation error are separately expressed, and for RTD transmitters, the linearization accuracy is separated.

- **LINEARITY**

The closeness to which a input-output calibration curve approximates a specified straightline.

- **REPEATABILITY / REPRODUCIBILITY**

The algebraic difference between the values obtained by a number of consecutive measurements of the output for the same value of the input under the same operating conditions.

- **TEMPERATURE COEFFICIENT**

The characteristic change of a device for a specific ambient temperature change from the reference temperature within its operating temperature range.

- **RESPONSE TIME**

For a step response, the time interval between the step change of an input signal and the instant when the resulting variation of the output signal reaches a specified percentage*of its final steady-state value.

- **STEP RESPONSE**

The response for a instantaneous change from a steady-state value to another steady-state value.

- **FREQUENCY RESPONSE**

The change of logarithmic gain and phase angle as functions of the frequency, of a steady-state output corresponding sinusoidal input signal.

- **TIME CONSTANT**

In the linear first order lag system, for a step response, the time interval between the step change of an input signal and the instant when the resulting variation of the output signal reaches 63.2% of it full-scale change.