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X1, X3, Q1, Q3 LINE CONTROLLERS

Calibration

The instrument calibration is based on a series of steps. Each step performs the calibration of a particular input or output. It must be done when only strictly necessary and using reference instruments with an high accuracy. Then the instrument must remain switched on at the environmental conditions for a certain time (min. 1 hour).

Calibration by keyboard

Starting from the “rel.” parameter (see page 47-X1/Q1, 49-X3/Q3 in the instruction handbook), press both the “√” and “^” keys for a couple of sec. Then appears “PASS” (password). If the set number is equal to the parameter Code one, the calibration procedure is available.

The parameters from “CAL.1” to “CAL.4” corresponds to the input signals as listed in the below table. During these steps, the instrument is ready to receive the calibration signal for the corresponding input. To apply the correct calibration value mentioned in the below table on the input terminals. Wait until the displayed value remains stable (Note: the display shows the difference between the present measure and the calibration value) and then enter the new value by the “√” or “^” keys. Wait some second to verify the calibration error (correct if the display shows ± 1 digit). Otherwise please repeat the calibration procedure pressing once again the “√” or “^” keys. When the calibration is correct press the “↵” key to go to the next step. It is possible do not modify the displayed values avoiding the “√” or “^” keys pressure. The following steps “CAL.5” and “CAL.6”, are always present even if valid and significant when the relative retransmission option is fitted. “CAL.5” corresponds to the current output low range and “CAL.5” corresponds to the current output high range. These values must be measured with a proper device with an suitable accuracy. For “CAL.5”, measure the mA value and enter this value in the controller. For “CAL.6”, measure the mA value and enter this value in the controller. The “CAL.6” value must be entered do not considering the tens number (e.g. measured value 18.124 mA, enter the value 8.124).

After “CAL.6”, press the ↵ key to come back to the Normal Operation.

Step	Function	Action
CAL.1	MV and TC calibration	Apply 50.000mV to the input – set with √ or ^ keys
CAL.2	RTD calibration	Apply 313.594 Ω to the input – set with √ or ^ keys
CAL.3	Remote Setpoint Volts calibration	Apply 10 V to the input – set with √ or ^ keys
CAL.4	Remote Setpoint mA calibration	Apply 20mA to the input – set with √ or ^ keys
CAL.5	Analog output low range calibration	Measure OP4 mA output, enter the corresp. value
CAL.6	Analog output high range calibration	Measure OP4 mA output, enter the corresp. value