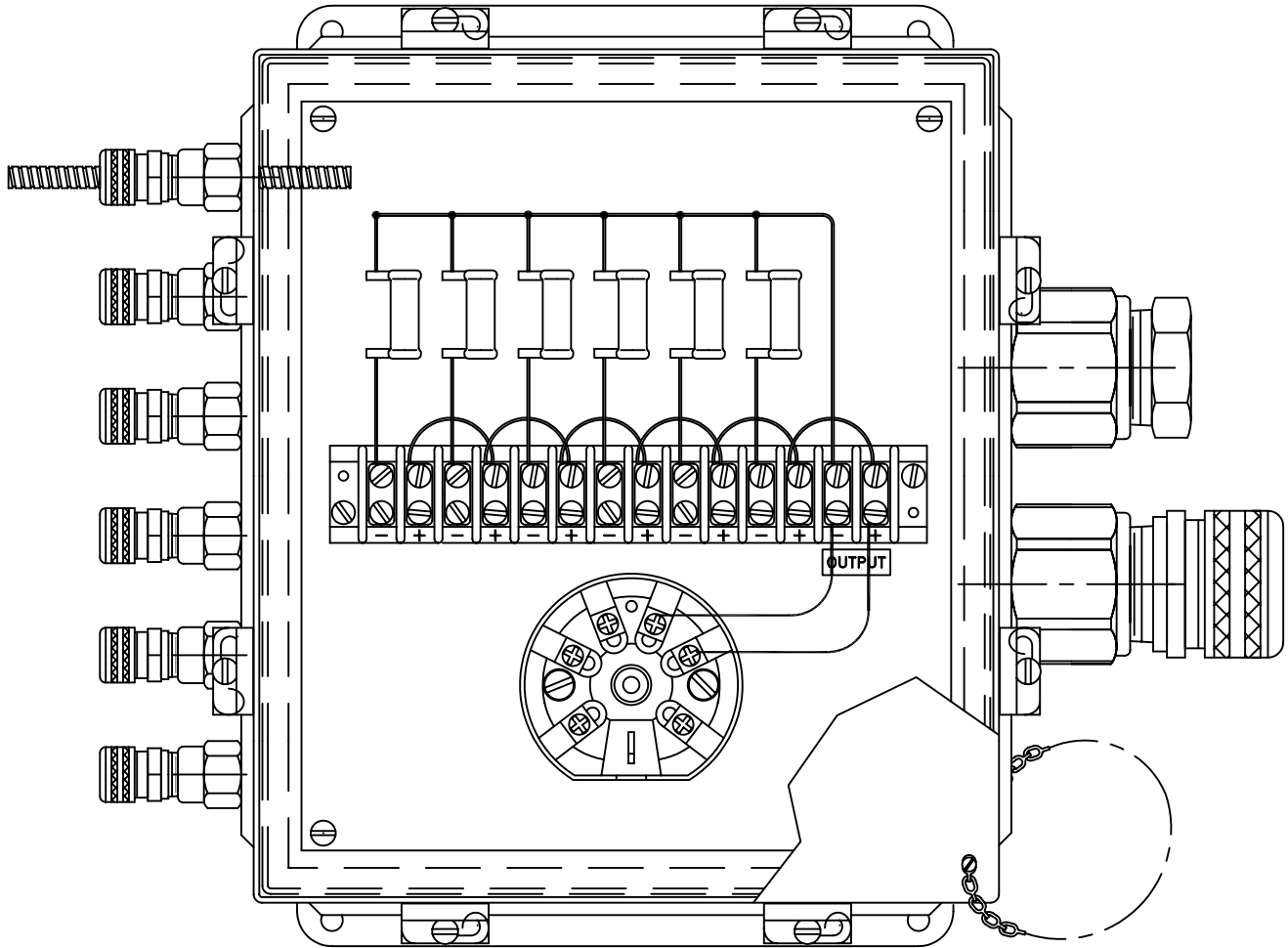


## MULTICOUPLES



### THERMOCOUPLE AVERAGING SWAMPING BOXES

In many applications the average temperature of a process is measured rather than a number of individual points measurements. For example, a harness assembly consisting of a group of thermocouples placed in a ring around the exhaust outlet and connected to a single indicator. Another example is high temperature alarm indication on a storage tank or process vat, or air ducts. To average thermocouples, three conditions are required. Thermocouples must be connected in parallel to produce an EMF signal of a singular thermocouple. Measuring junctions must be ungrounded or isolated from each other to prevent an EMF signal from becoming additive. All thermocouples must have the same nominal resistance. Since the length and individual construction of each thermocouple may differ, obtaining all couples of the same resistance is impossible. To solve this, a swamping (or averaging) box with a 500 ohm resistor attached in series to the negative leg will reduce the differences to insignificant fraction of the total resistance. All swamping boxes are supplied completely wired using actual thermocouple wires and terminal blocks.



TEMPERATURE MEASUREMENT DESIGNER'S GUIDE  
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## SECTION MULT THERMOCOUPLE AVERAGING SWAMPING BOXES

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