

TECH NOTE

TN-114 – Proportionality

In reed switch level and flow sensing applications, the term "proportionality" refers to the relationship between magnet strength, float or piston mass, and the resulting switch sensitivity and repeatability.

ERECTA SWITCH products are designed so that the magnetic force acting on the reed switch contacts is proportional to the position of the magnet-bearing float or piston relative to the switch element. This proportional relationship produces a predictable, repeatable switch point that does not drift with temperature or with the number of operating cycles.

The key practical implication of proportionality is that the switch trip point is determined primarily by physical position (liquid level or flow rate) and is not significantly affected by the rate of change of that position. A float rising slowly and a float rising rapidly will trip the switch at the same level.

This property distinguishes ERECTA SWITCH reed-based products from some other switch technologies where trip point can vary with approach speed or direction (hysteresis). The differential between make and break points in ERECTA SWITCH products is a designed-in characteristic of the specific product, not an artifact of dynamic effects.

Design Benefit

Proportional response means switch point calibration established during initial installation remains valid throughout the product's service life. No field recalibration is required for normal service conditions.