Danfoss KP and RT Switches — Ranges, Reset Logic and Replacement Reading

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The compact KP family versus the industrial RT line: reading range and differential, auto versus manual reset (and why the law of the machine decides it), LP/HP duty splits, connection styles from flare to solder, and the accessories that keep decades-old switches in approved service.

Two families, one job, different build points

| KP (compact) | RT (industrial) |

Build | Compact bellows switch for refrigeration and light industry | Larger industrial housing, wider ranges, finer adjustability |

Stocked examples | KP1 LP 0.2–7.5 bar auto, KP1E solder/flare, KP5 HP 8–32 bar manual, KPR5 6–18 bar | RT 200, 0.2–6 bar; temperature versions like the RT124, 200–300 range in auto and manual reset |

Typical duty | LP cut-out, HP safety, fan cycling | Plant monitoring, marine and process panels, class-approved duties |

The four facts on every nameplate

Range — set-point span (the stocked rows put it in the name: 0.2–7.5, 8–32…). Pick a range where the set point sits mid-scale, not at the edge.

Differential — the gap between cut-out and cut-in: fixed on safety versions, adjustable on regulating duty. Too narrow short-cycles the machine; the switch-vs-transmitter guide covers when to leave switches entirely.

Reset — auto restarts the plant when pressure recovers; manual forces a human to visit the fault. HP safety cut-outs are manual-reset as a rule (often by the approval, not preference) — hence the KP5 manual and RT124 manual-reset rows existing beside their auto twins.

Connection — 1/4 3 flare dominates KP refrigeration duty, solder variants (KP1E) where flare joints are unwanted; RT process connections run larger.

Accessories keep the installed base alive: RT hand knobs, seal screws for tamper-evident settings, and brackets ship as line items. Around 160 KP and 180 RT rows are stocked under Danfoss — quote the type code and range off the old switch's plate and the current equivalent returns within 24 hours (type codes have survived decades, which is why RT switches from the 1980s still replace one-for-one).

Frequently asked questions
Should a high-pressure cut-out be auto or manual reset?Manual, almost always — an HP trip means something is wrong (condenser fan, airflow, overcharge), and auto-reset would cycle the compressor against the fault. Many approvals mandate manual reset on the safety HP switch outright.What does the differential on a pressure switch do?It is the distance between switching points: cut-out at the set point, cut-in differential-lower (or higher, by duty). Wide differential = fewer, longer cycles; too narrow and compressors short-cycle to death.Can an RT switch replace a KP in the same duty?Functionally where range, differential and approvals line up — the RT is the larger, finer-adjustment industrial build. Panel cut-outs, connection and bracket differ, so it is a planned substitution, not a drop-in.Why does my pressure switch chatter near the set point?Set point at the extreme end of the range, vibration at the bellows, or pulsation from the machine — a damping loop or a mid-range switch model fixes what contact cleaning cannot.Are these switches still acceptable where a transmitter is specified?Different instruments: a switch gives a hard contact at a point — ideal for safety chains; a transmitter gives the continuous signal control systems want. Modern panels commonly run both, and the dedicated guide maps the split.

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