DIN-Rail Terminal Blocks — Screw, Spring and Push-In Systems Compared and Sized

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Choosing between screw-clamp, tension-spring and push-in terminal blocks, how block sizing follows conductor cross-section, earth blocks and multi-level variants, the jumpering and marking accessories that complete a rail — across the stocked WAGO TOPJOB S and 285, Phoenix UT, Weidmüller W-series and Schneider NSYTRR ranges, plus where WAGO 221 lever connectors fit.

Three clamping technologies, one decision

Technology | How it holds | Strengths | Stocked example |

Screw clamp | Torqued pressure plate | Universal, inspectable, happy with fine-stranded wire + ferrule or without | Weidmüller WDU 2.5, Phoenix UT 6-PE |

Tension spring | Cage spring, constant force | Vibration-proof, no re-torquing rounds — the marine and rolling-stock default | Schneider NSYTRR 6 mm² spring block |

Push-in | Spring, wired straight in | Fastest termination: solid or ferruled conductors push in tool-free | WAGO TOPJOB S multi-level, 2.5 mm² |

Fine-stranded conductors get a crimped wire-end ferrule before entering spring or push-in clamps; solid wire never needs one. Screw systems in vibrating plant are the one place a maintenance schedule must include re-torquing — the spring families exist to delete that task.

Sizing and the special blocks

Size by the conductor, not the current alone: a block's nominal cross-section (2.5, 4, 6, 10, 16 mm²…) sets both its rated current and the largest conductor the clamp accepts; the connectable range runs below nominal, so one 4 mm² block often covers 0.5–4 mm² wiring.

Earth blocks in green/yellow clamp conductively onto the rail itself — no wired PE bar needed; the UT-PE pattern and WAGO's g/y versions (up to the 285-series at 95 mm²) bond the moment they snap on.

Multi-level blocks stack two or three circuits per rail slot — sensor wiring's best friend when the enclosure is full.

High-current feed-through: the WAGO 285 two-conductor block at 95 mm² carries supply-cable duty on the same rail system.

Accessories decide the system: comb jumpers, end plates, end stops, partition walls and marker tags are family-specific — around 3,400 terminal-block line items in stock include these, and mixing makers on one rail usually fails at the jumper, not the block.

And the lever connector everyone searches for

The WAGO 221 series is not a DIN-rail block — it is a lever-operated splicing connector for joining conductors in boxes and luminaires, re-openable by hand, with mounting carriers when a fixed position is wanted. On a rail, run proper terminal blocks; in a junction box or retrofit, the 221 is the right tool. Both live in the same catalogue — about 680 WAGO and 920 Weidmüller line items — and a wiring-list quotation (cross-sections, counts, jumpering) returns the complete rail bill of materials within 24 hours, control-side relays included via the relay and socket pairing chart.

Frequently asked questions
Are push-in terminal blocks reliable for stranded wire?Yes, with a crimped ferrule on the strand end — the ferrule turns the strand into the rigid pin the spring is designed to grip. Solid conductors push in bare.Can WAGO 221 connectors be used instead of terminal blocks?For in-box splicing and retrofit joints, yes — that is their job. For panel wiring on DIN rail, use rail-mounted blocks: they carry the jumpering, marking and earth-bonding system the 221 does not.How do I pick the terminal block size?From the largest conductor the point must accept: choose the nominal cross-section at or above it, then confirm the block's rated current covers the circuit. The connectable range reaches well below nominal, so fewer sizes cover a whole cabinet.Do green/yellow earth blocks need a wire to the PE bar?No — PE blocks bond to the DIN rail through their mounting foot, making the rail the protective conductor path; the rail itself must then be bonded to the enclosure's earth.Why won't jumpers from one maker fit another maker's blocks?Jumper pitch, slot geometry and insulation pockets are proprietary per family — combs are designed into the block, not standardised across brands. Keep one system per rail section.

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