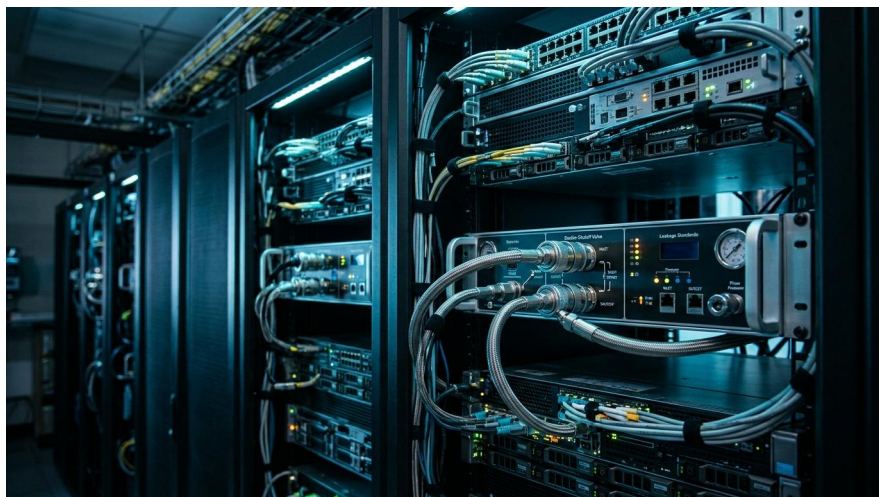


Rack Quick Disconnect Module Double-Shutoff Valve Leakage Standards - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The Rack Quick Disconnect Module Double-Shutoff Valve Leakage Standards (RQDM-DSV) establishes a new benchmark for fluid containment integrity in carrier-grade telecom rack environments. Engineered for mission-critical liquid-cooled and dielectric-fluid systems, this module integrates dual redundant shutoff valves with precision leakage control, ensuring zero-downtime operation and environmental compliance. This datasheet outlines the hardware architecture, performance specifications, and compliance framework for OEM integration.



ARCHITECTURE & CHASSIS DESIGN

The RQDM-DSV is housed in a compact 1RU chassis constructed from marine-grade aluminum with corrosion-resistant coating. The double-shutoff valve assembly features two independent, spring-loaded poppet valves arranged in series, providing fail-safe isolation upon disconnection. The module includes integrated leak sensors, pressure transducers, and a local status LED array. Quick-disconnect couplings are rated for 10,000 mating cycles and are compatible with standard 3/8-inch and 1/2-inch fluid lines.

HARDWARE FEATURES

- Dual redundant shutoff valves with automatic closure on disconnection
- Leakage rate: <0.1 mL per disconnect cycle (per ISO 16016)
- Integrated pressure relief and thermal shutoff protection
- Operating pressure range: 0.5 to 10 bar
- Fluid compatibility: water, glycol mixtures, dielectric fluids
- Real-time leak detection with alarm relay output
- Hot-swappable module design with blind-mate connectors
- RoHS and REACH compliant materials

COMPLIANCE & STANDARDS

The RQDM-DSV meets or exceeds the following standards: IEC 60529 (IP54),

ISO 16016 (leakage classification), UL 94 V-0 (flammability), and Telcordia GR-63-CORE (environmental durability). It is designed for NEBS Level 3 compliance and carries CE and FCC certifications.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	1RU Chassis (19-inch rack mount)
Valve Configuration	Double-shutoff, series redundant
Leakage Rate	<0.1 mL per disconnect cycle
Operating Pressure	0.5 to 10 bar
Fluid Compatibility	Water, glycol, dielectric fluids
Coupling Type	Quick-disconnect, 3/8 or 1/2 inch
Mating Cycles	10,000 minimum
Power Supply	1+1 Redundant AC/DC
Operating Temperature	-20°C to +60°C (standard); -40°C to +70°C (extended)
Ingress Protection	IP54
Compliance	IEC 60529, ISO 16016, UL 94 V-0, Telcordia GR-63-CORE, NEBS Level 3

ORDERING OPTIONS

- RQDM-DSV-01: Standard 1RU module, 3/8-inch couplings, AC power
- RQDM-DSV-02: 1RU module with 1/2-inch couplings, DC power
- RQDM-DSV-03: Redundant power input version
- RQDM-DSV-04: Extended temperature range (-40°C to +70°C)

