ENERY STORAGE SYSTEMS

SPECIALIZED CONTROL SOLUTIONS

Drive Precise and Dependable Insulation Measurement in Critical Energy Storage Systems

Standex DETECT Electronics

ENERY STORAGE SYSTEMS

HIGH-ISOLATION SWITCHING FOR BESS MONITORING

WHY REED RELAYS FIT INSULATION MEASUREMENT

Standex reed relays are used in monitoring, measurement, and selected control circuits around the main power path, not as the primary battery disconnect. Their main role is switching high-voltage measurement paths while contributing very little leakage to the insulation resistance being measured.

While various components can be used for insulation-resistance measurement, reed relays are exceptionally well-suited for this critical task. Their inherent design and properties offer several key advantages.

Key Advantages of Reed Relays

- **High Dielectric Strength:** Standex HV relay platforms provide kV-level open-contact withstand, selected according to the actual circuit voltage and insulation requirement.
- **Excellent Isolation:** KT relays provide 7 kVDC coil-to-contact isolation for strong protection between control and power circuits.
- **Low Leakage Current:** High insulation resistance limits leakage through the open switching path and reduces its influence on the resistance measurement.
- **Compact, Rugged Design:** Over-molded design in through-hole or surface-mount options enables high-density PCB placement while protecting against vibration, dust, and moisture.

Recommended Relays

Standex reed relays switch high-voltage measurement paths used for insulation monitoring; KT/KTP are the primary platforms, while the other products support diagnostic and auxiliary switching functions.

SERIES	KT	KTP	SHV	SIM	DIM
Switching voltage max. (VDC)	1,500	2,500	1,500	500	500
Breakdown voltage min. (VDC)	4,500	6,000	5,000	2,000 (Option for 3,000)	
Coil-to-contact isolation (VDC)	7,000	7,000	5,000	2,000	2,000
Insulation resistance min. (Ω)	10^{13}	10^{13}	10^{12}	10^{12}	10^{12}
Switching current max. (A)	1.0	1.5	1.5	0.5	0.5
Carry current max. (A)	2.5	3.0	2.5	1.5	1.5
Mounting	THT/SMD	THT/SMD	THT	THT	THT
Remark	AEC-Q200 UL	AEC-Q200 planned UL	Internal magnetic shield	-	-

Product selection depends on the actual switched voltage, dielectric requirement, and load.

KT

KTP

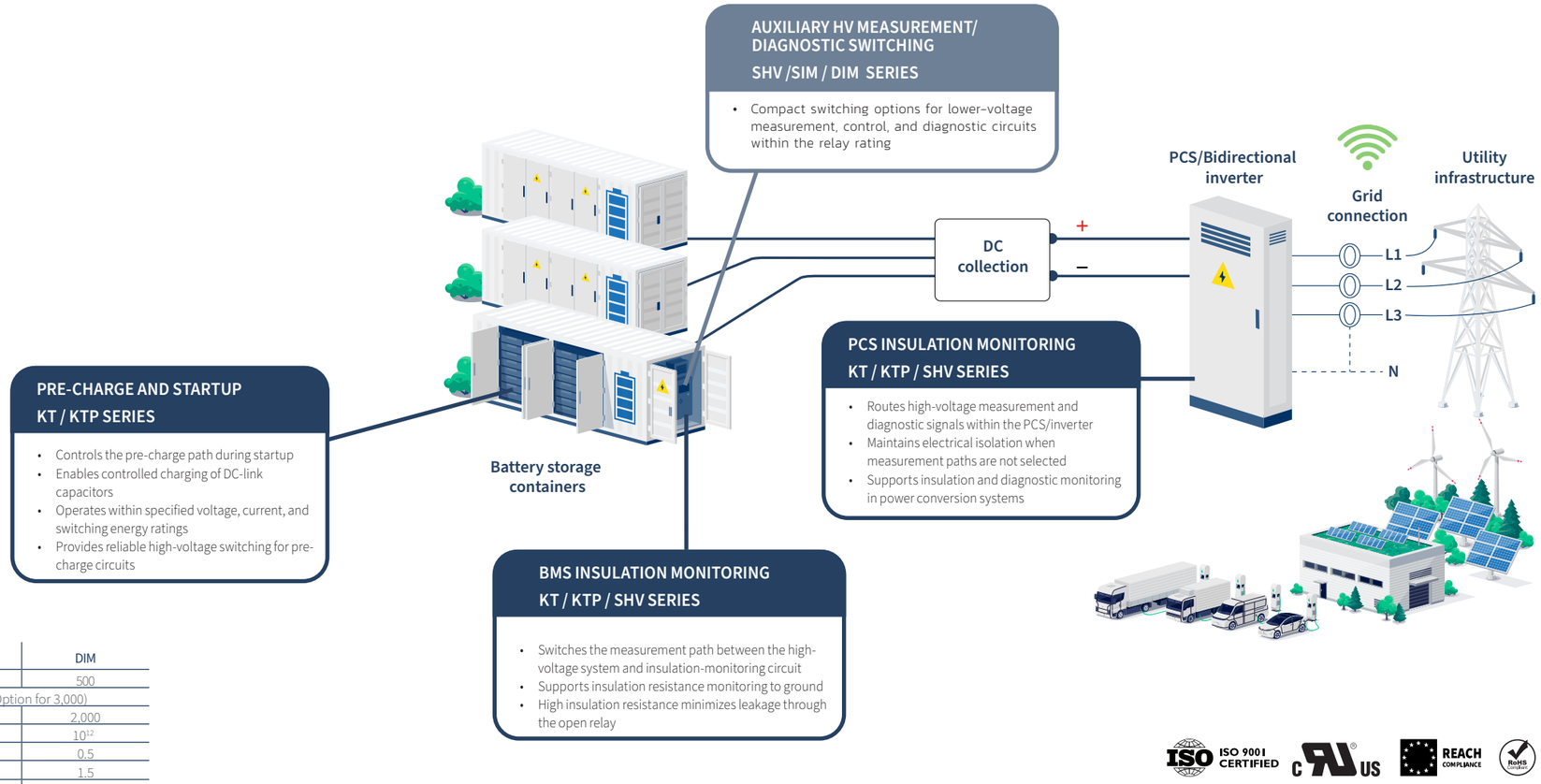
SHV

SIM

DIM

COMMERCIAL & INDUSTRIAL/UTILITY-SCALE BESS

BATTERY CONTAINERS → DC BUS / DC COLLECTION → PCS / BIDIRECTIONAL INVERTER → GRID OR FACILITY LOAD



ISO 9001 CERTIFIED · cULus · REACH COMPLIANCE · RoHS

BMS/Insulation Monitoring
- Insulation Resistance Measurement
- HV Measurement Switching

Diagnostic Measurement
- Insulation Verification
- High-Voltage Diagnostics

Auxiliary Measurement
- Voltage Measurement
- Diagnostic Routing

Controlled Startup
- Pre-Charge Circuit
- Inrush Limiting

High-Voltage Monitoring
- Fault Measurement Paths
- Isolation Monitoring

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