GRACE SENSE™

COMPARISON GUIDE

THERMOGRAPHY VS HSM 600 VS HSM FIBER SOLUTION

Category	Open-Door Thermography	HSM 600 (Thermistor-Based CTM)	HSM Fiber Solution (Phosphor Thermometry Fiber-Optic HSM)
Voltage Rating	Any, but requires open-door energized work	Up to 600VAC	Any voltage; non-conductive fiber probes can be safely applied to any electrical system
Incident Energy Exposure	High (open-door energized work)	None (closed-door monitoring)	None (closed-door monitoring)
Inspection Frequency	Intermittent snapshots	Continuous 24/7	Continuous 24/7
Access to Hidden Points	No	Yes (thermistors mount directly at potential failure points)	Yes (fiber probes mount directly to bus or bolted connections)
Data Logging	Manual	Automatic logging; SCM-NM supports real-time data streaming and/or direct data download	Automatic logging; HSM supports real-time data streaming and/or direct data download
Communication / Integration	None unless manually entered	Modbus TCP/IP, EtherNet/IP™, PLC/SCADA tags, Rockwell AOP	Modbus RTU, Modbus TCP/IP, EtherNet/IP™
Alarming	None (visual inspection only)	Smart alarming, latching alarms, dew point alarming, ΔT alarming to ambient and phases-to-phase alarming	Relay alarming; a Normally Open (N.O.) output contact for thresholds exceeded
Sensors	IR camera (line-of-sight only)	Thermistor-based sensors rated to 600VAC	Phosphor thermometry sensing via polymer optical fiber probes with ring-style lug secure attachment
Ambient Compensation	Manual interpretation	External ambient input or in-compartment reference for ΔT calculations	Ambient probe options are available for internal or external ambient reference
Phase Differential Monitoring	Not available	Yes (built-in)	May be manually calculated
Scalability	Limited by manpower	1 Network Module + 12 Remote Modules = 78 points	9-point or 18-point module available
Installation	Requires energized work	Compact modules; DIN or surface mount; thermistors affix to bus or cables	Module mounts within LV compartment, fiber probes securely piggy-back onto existing bolted connections and re-torqued into place for permanent mounting
Calibration	Camera calibration required	No calibration necessary	No calibration necessary

(continued on back)

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Use Cases	Periodic inspections	LV switchgear, MCCs, drives, PDUs, RPPs, transformers	LV/MV switchgear, MCCs, bus ducts, generators, UPS, high-current junctions
Strengths	Quick snapshot; useful for broad surveys	Standards-aligned ΔT monitoring, dew point, scalable architecture, smart alarms	High-accuracy direct connection monitoring, non-conductive, long-term monitoring, medium-voltage tested to 150kV BIL (38kVac equipment)
Limitations	Blind spots, requires open doors while equipment is energized, high PPE, no trending	Only 13 SCM modules allowed in a single network (78 point limit)	Fiber probes available in 10m or 15m lengths only