

TC706

Thermal imaging for gas detection



SF₆ leaks located at a distance, with the switchgear in service

TC706

SF₆ leak detection thermal imager

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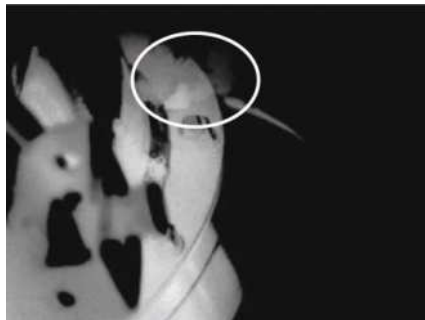
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SF₆ escapes shown as a live plume on screen, without de-energising the installation.

Product overview



Substation survey with the installation in service



Leak plume as seen by the cooled detector

Passive imaging tuned to SF₆

The TC706 uses passive thermal imaging in the 9.8-11.2 μm band, where SF₆ absorbs strongly, so a leak appears on screen as a live plume and its exact point of origin can be located at a distance, with no power outage.

The cooled QWIP detector of 320 × 256 delivers high image quality and accurate temperature measurement (−40 °C to +500 °C), so the same instrument also covers routine thermographic inspections.

Features and advantages

- Long-distance location of leaks on energised equipment.
- Cooled detector with thermal sensitivity (NETD) ≤ 0.025 °C.
- No specific background or auxiliary light needed for on-site checks.
- Handle and viewfinder rotate together for easy observation at any angle.
- Compact and light (3 kg): single-person field use.
- Voice and video recording for complete survey reports.



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Applications and detectable gases



Rotating handle and viewfinder for awkward inspection angles

Applications

- SF₆ leak surveys in gas-insulated substations and circuit breakers.
- Preventive inspection of energised switchgear.
- Environmental protection: tracing emissions of greenhouse gases.

Detectable gases

Besides SF₆, the camera visualises acetic acid, ammonia, FREON-12, cyanoacrylate, ethylene, chlorine dioxide and MEK, among other gases absorbing in its spectral band.

Field documentation

Findings are stored as radiometric images and video with voice annotation; the built-in visible camera and HDMI output complete the reporting workflow.



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TC706 – TECHNICAL SPECIFICATIONS

Detector	Cooled QWIP, 320 × 256
Spectral range	9.8-11.2 μm (peak 10.55 μm), tuned to SF ₆ absorption
Thermal sensitivity (NETD)	≤ 0.025 °C at 30 °C
Field of view / min. focus	14.5° × 10.8° / 0.5 m, or 24° × 18° / 0.3 m
Spatial resolution (IFOV)	0.79 or 1.13 mrad
Frame rate, focus and zoom	60 Hz; automatic, motorised or manual focus; 1-4× electronic zoom
Built-in visible camera	1.3 MP CMOS
Displays	0.6-inch HD colour OLED viewfinder with zoom; 5-inch HD colour touchscreen, 800 × 600
Temperature range	-40 °C to +500 °C
Accuracy	±2 °C or ±2 % of reading, whichever is greater
Analysis functions	Up to 10 spots, 5 areas (max/min/average), 2 lines; profile, isotherm, difference, alarms (voice, colour)
Image control	11 palettes; automatic/manual contrast and brightness
Corrections	Emissivity 0.01-1.0; background temperature; atmospheric transmittance
Storage	8 GB SD card, over 6000 images; manual/automatic capture; continuous infrared and visible video
File formats	Infrared JPEG (14-bit with measurement data) and MPEG-4; visible JPEG / MPEG-4; 40 s voice notes
Image improvement	Averaging (S2, S4, S8, S16) and spatial filter
Laser pointer	1 mW / 635 nm (red)
Power supply	Rechargeable Li-Ion battery, 3 h continuous; smart charger or on-line adaptor; external 10-15 V DC
Environment	-15 °C to +50 °C; ≤ 90 % RH (non-condensing); IP54
Weight and dimensions	3 kg; 335 × 160 × 172 mm
Interfaces	HDMI video output, USB 2.0, audio output



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