

Title (en)

REMOTE MEASUREMENT OF INTERNAL TEMPERATURES THROUGH MATERIALS PENETRABLE BY MICROWAVE RADIATION

Title (de)

FERNMESSUNG VON INNEREN TEMPERATUREN DURCH VON MIKROWELLENSTRAHLUNG DURCHDRINBARE MATERIALEN HINDURCH

Title (fr)

MESURE A DISTANCE DE TEMPERATURES INTERNES A TRAVERS UN MATERIAU PERMEABLE A UN RAYONNEMENT A HYPERFREQUENCE

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Application

EP 96933287 A 19961011

Priority

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- US 54267795 A 19951013

Abstract (en)

[origin: WO9714941A1] A method and an apparatus remotely measures internal temperatures through materials penetrable by microwave radiation. Higher temperature areas for example in high voltage equipment may be detected through porcelain clad insulators whereas most detector systems only measure the outside surface. The method comprises selecting a frequency range where the microwave radiation at least partially penetrates the materials, detecting self emitted thermal radiation through the materials for the microwave frequency range in a target beam of a passive receiver, producing signals proportional to the thermal radiation detected in the target beam, remotely scanning the target beam of the passive receiver through a target pattern, comparing the signals for different locations in the target pattern to identify locations emitting higher thermal radiation, and processing the signals to provide an indication of internal temperature for the locations emitting higher thermal radiations.

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