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(57) Abstract :

The present invention relates to a portable device for on-site metallic weld defect detection, integrating an ultrasonic probe (1), eddy current sensor (2), signal processing unit (3), rechargeable power module (4), digital display (5), data storage and communication module (6), and ergonomic casing (7). The device enables detection of both surface and subsurface weld defects in real-time, with portability, wireless connectivity, and user-friendly operation. It ensures efficient, accurate, and cost-effective inspection, particularly suited for field conditions in industries requiring reliable weld quality assurance.

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