

1.2.7. LOW FREQUENCY EDDY CURRENT ARRAYS WITH VIDEO CLOCK

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At the Otto-von-Guericke-University Magdeburg eddy current arrays have been developed able to work even at low frequencies for deep penetration. The downscaled electronics is completely integrated into the sensor housing. The arrays provide up to 25 images per second and are directly connected via USB to a notebook.

The paper presents two types of arrays. Together with the BASF company a circular array for inspection of heat exchanger tubing has been set up. This array visualizes defected areas in two dimensions and enables analysis of the defect extension. The digital signals from the probe may be sent via 30 m probe cable. First results of non-ferromagnetic tubes are presented.

The second array is a flat array for inspection of smooth surfaces for surface and subsurface defects. The array provides images with video clock and has an integrated position tracking system. This way the handling is easy and the image quality can be increased by microscanning principles.