

The Probe

KK&S INSTRUMENTS - January / March 2012 Issue



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Magnetoscop 1.069 – Magnetic Permeability

Examples of permeability measurement applications:

- Measurement of material permeabilities in the range $\mu = 1,00001$ bis 2,000
- Detection of ferromagnetic inclusions in materials
- Proof of material changes (i.e. highly stressed parts of gas turbines)
- Detection of material defects induced by stress
- Sorting on the basis of material permeability
- Measurement of permeability variations in a material
- Quality control of stainless steel
- Non-destructive testing of materials and work-pieces
- Investigation of magnetically anisotropic materials

INSTITUT DR. FOERSTER —
has compiled standard functional sets containing all required components for the most frequent applications.

These are as follows:

Magnetic field measurement #1802429

Standard functional set for measurement of static and slow, dynamic magnetic field strengths and field gradients between 1 nanoTesla and 100 microTesla. The field and gradient probe used for this consists of a pair of probes incorporated in separate plastic bodies. A retaining fixture for the pair of probes permits them to be arranged parallel (absolute field strength measurement) or anti-parallel (gradient measurement).

Permeability measurement #1803492

Standard functional set for measurement of material permeabilities in the range $\mu = 1.00001$ to 2.000. The permeability probe used for measurement and the calibration standard $\mu = 1.2$ make it possible to calibrate the instrument so that the results then measured can be traced back and referred to national standards.

Permeability measurement #1801341

Standard functional set for measurement of material permeabilities in the range $\mu = 1.00001$ to 2.000 with ten times greater sensitivity than the standard (x1) probe. The high sensitivity (x10) probe is designed for fixed installation and requires a constant position in the earth's field.

Permeability comparison on the basis of $\mu=1,45$ Reference standard #1801880

Standard functional set for checking the variation of a material on the basis of the variation of material permeability with the aid of the comparison method. A permeability probe and a reference standard are used. However, the related test procedure must also have been established on the basis of the 1.45 (#1551272) reference standard in order to use this functional set. The method ensures that the results are comparable with the limit values specified in the test procedure. The results cannot be traced back or referred to national standards.



- Measurement of magnetic field strengths in the range 0,1nT to max 1 mT
- Extremely high sensitivity of 0.1 nT
- Measurement of material permeabilities in the range $\mu = \mu = 1.00001$ to 2.000
- Permeability measurements with results that can be traced to national standards
- Comparison method for checking the permeability of a work piece in order to indicate material changes for customer specific procedures only
- Scale unit selection of the measured values as Tesla, kA/m, A/m, Oersted, Gauß



For further Magnetoscop features or a price, reply to this email or contact

us on 02 88503755 or www.kks.com.au

Special - Ultrasonic Thickness Gauges

10% OFF! Echometer's



The new generation of the **ECHOMETER** series can now measure **wall thickness and sound velocities** in one instrument and therefore offers many advantages for the operator. This innovative dual-use Echometer has been re-designed by Karl Deutsch the well-known supplier of testing instruments and testing systems in Germany.

The new **ECHOMETER 1075** built in. Special attention has light-weight and compact instrument is ensured by a rubber integrated leg for self support. Low current consumption flexible tool for every-day use is now a simple



has state-of-the-art manufacturing technology and modern design been paid to the outstanding features and ease of operation for this instrument (115 g) (12 x 6,5 x 2,5 cm). Additional protection for in-ber holster which also prevents slippage during handling and offers port. A clear-text menu is shown on the large illuminated graphics sumption for a long battery lifetime makes the **ECHOMETER 1075** a use. The choice of application, thickness gauging or velocity measurement.

The **ECHOMETER 1075** measuring range depends on the ultrasonic probe fitted but can be between 0.7 to 400 mm for wall thickness. For the measurement of sound velocity, all materials between 100 to 20 000 m/s can be tested. To avoid errors when entering a known wall thickness for the sound velocity measurement, an interface is provided to attach the electronic Vernier Calliper (optional). The mechanically measured wall thickness is then transferred in an automated, fast and error-free manner.



The **ECHOMETER 1076 'Data'** will transfer the measured values via PC-interface into the optional "EchoStat". PC programme for further processing.



- Echometer - Simple & Accurate
- Echometer - Large numerical display
- Echometer - 3 sensitivity levels
- Echometer - 3 display modes
- Echometer - Selectable mm or inch
- Echometer - 3 Models available
- Echometer - 4 Probes available
- Echometer - Calliper available
- Echometer - Limits acoustical & optical
- Echometer - Silicone Armour & Stand
- Echometer - Velocity & Thickness gauges
- Echometer - optional data Software
- Echometer - Australian calibration
- Echometer - Australian Spares
- Echometer - Splash Resistant to IP 54
- Echometer - German Quality

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News - New Product

The **Foerster Group** with their bases in Germany and the US welcome the new addition to their range of portable Eddy Current instruments the **DEFECTOSCOP MC 2.834** – with its user friendly operation and unique ability to connect Eddy Current Arrays with up to 32 sensors to each of its 3 input modules.

DEFECTOSCOP MC 2.834



General Description

The **DEFECTOSCOP** Eddy Current test unit is known for its user friendly operation and its unique ability to connect Eddy Current Arrays (ECA) with up to 32 sensors to each of its 3 input modules. This permits up to a total of 96 sensors. Each module can operate up to 4 separate frequencies, either simultaneously or sequentially, driven by two independent channels.

Technical Specifications

Test frequency: 10 Hz to 10 MHz

Modular options: 3 modules with 2 independent channels including multiplexing (up to 96 sensors)

Clearance compensation: possible for each individual sensor (up to 48 sensors)

Simultaneous operation: 3 modules with 4 independent frequencies each

Sensors: Single sensor/Arrays with up to 32 sensors in multiplexing mode and all coil configurations

Position encoder: one or two axis synchronization

Preamplifier: -24 to +36 dB in 0.5 dB steps adjustable for each module, input range ± 15 V to ± 15 mV

Driver output: ± 16 V; 10 mA to 1 A with adjustable current

Sensitivity (digital scaling): ± 90 dB independently adjustable per sensor in 0.5 dB steps

Display: TFT Touch Display with LED Backlight, 600 x 800 pixel, 26.4 cm (10.4") diagonal

Screen views: x/y, x/t, y/t, C-Scan (with unlimited user defined views)

Outputs: 3x USB 2.0, 1x RS232, 1x Ethernet 100 MBit/s, VGA, Audio In/Out, GPIO, 2x Analog

Power supply: up to 2 lithium ion rechargeable batteries (typ. operating time: 6-14h), mains (115/230V)

Weight: 4.3 kg (with 1 module and 1 battery)

For further Defectoscop information please reply to this email or contact us on

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Application - Calibration Standards



‘Why do I need my calibration standards Certified Annually?’

Applications vary, standards should not!

Many factors can cause changes in calibration standards;

Moisture
Oxidation
Magnetism
Temperature
Contamination
Natural ageing
Physical Damage
Normal Wear & Tear

Operating any instrument naturally requires the operator to be completely familiar with the instrument. This level of proficiency is gained from any one of various sources. For simple instruments the operator's manual is often sufficient. For more complex instruments the operator usually seeks the help of others more familiar with the device in question.

It is fair to say that in the modern world of manufacturing a great deal of emphasis has been placed on making instruments more “user Friendly” this is obviously a good thing, but it can sometimes serve to obscure the complex nature of what the instrument it actually doing to give the observed result. Time pressures make us all want to achieve a result quickly in order that we may move on to the next task and it is this desire for speed of process that makes us overlook the basics, sometimes to our peril.

With the majority of instruments the most basic component is the calibration standard, possibly a lump of metal, a piece of plastic or some other expensive and innocuous piece of kit, however it is worthwhile remembering that this seemingly insignificant object is nearly always written into ISO for a company's operating procedure. The need to be able to back up any testing is critical.

There are many types of standard, those manufactured to specification agreed upon by Academia and the applicable industry, sometimes by the manufacturer of the instrument and others by the user themselves. In all cases they are designed to monitor the accuracy of the test instrument for which they were produced.

Next time you use an instrument take a look at your standard, are they still within the certification period? do they look to be in good condition? have they been stored properly? do they show signs of wear from repeated use? are you able to tell their condition?

Your calibration standard is the only thing between pass and fail, look after it and it will look after you.

Get your standards certified annually and you will be the better for it!

Have any questions or like re-certification, contact us now !

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