

Measuring Head MH-90

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Destination:

Measuring Head **MH-90** is used for Non-destructive Inspection (**MRT- Magnetic Rope Testing**) of Wire Ropes and is part of the **LRM[®]XXI** Diagnostic System. The measuring head is dedicated to generating magnetic flux inside the tested object and converting of magnetic flux leakage (MFL) over the defect or the change in magnetic flux density inside the tested object (LMA) to analog signals.

Measuring Range:

- Standard solution: nominal diameters from **40mm** up to **72mm**.
- Dedicated solution: the measuring range of the MH-90 model can be shifted about **+/-10%** at the customer's request.

NOTE:

Dedicated MH solution is required for MRT inspection of locked coil wire rope construction or umbilical armour.

Operation with LRM-XXI diagnostic system:

- Guiding system: slides (preferred for strands wire ropes) or wheels. One adjustable set of guiding system for the entire measuring range.
- Recorder types: compatible with **LRM[®]XXI** or **LRM[®]XXI-B**.
- Encoder types: compatible with detachable encoders solutions types **LRM[®]RI-1** or **LRM[®]RI-2** (ability to operate in time mode, without encoder).
- Connection cables: All types of **LRM[®]CA** connection cables with lengths from 0.5m to 60m.

Operating temperature range:

- From **-25°C** up to **55°C**.

Built-In Sensors:

- **LF (Local Fault)** based on **MFL** Method (**M**agnetic **F**lux **L**eakage):
 - Magnetic flux to analog signal converter based on copper coils.
 - Dedicated to detecting short/long wire discontinuities, corrosion pitting, strands loosening, fatigue changes in wire material.
 - Dedicated **LF** Sensor Inserts (**LF-I**) - 2 types sets.
 - Speed compensation of LF signals is implemented - Amplitude of LF sensor indication is not dependent on inspection speed in range from 0,05m/s up to 10m/s.
 - Accuracy of LF indications according to EN12927:2019 and ASTM E1571-11 standards.
- **LMA (Loose of Metallic Area)**:
 - Magnetic flux to analog signal converter based on hall effect elements.
 - Dedicated to detecting changes in metallic cross-sections area caused by mechanical abrasion or corrosion. It also detects shape deformation and fatigue-related material changes, wire breaks with longer distance between broken ends.
 - Accuracy of LF indications according to ASTM E1571-11 standard.
 - The amplitude of the LMA indication is independent of the inspection speed.

NOTE:

The application of LF and LMA sensors allows to meet the discard criteria according to ISO 4309:2017 (Annex C) as well as EN 12927:2019 where the LMA sensor is not required.

Construction:

- IP Ratings for all components is minimum IP67 (The MH underwater operational solution available upon request).
- Strong magnetic field due to NdFeB permanent magnets.
- Durable against mechanical damage, external and chemical factors due to composite housing construction of stainless steel and nylon.
- Simple design, no protruding parts, very easy to clean from grease with available chemicals.
- Dedicated attachment points for rigging.
- Transported in heavy-duty, waterproof plastic cases with wheels.

Dimensions & Weights:

- Dimensions (with guiding system):
 - Length: 477mm.
 - Height: 265mm.
 - Width: 191mm.
- Weight:
 - Net weight: 32kg.
 - Gross weight: 34kg (with Guiding System).

NOTE:

At the customer's request, the dimensions of the MH can be customized to meet the requirements of conducting MRT inspections in areas with limited space or access.