

A photograph of an aerial ropeway system. In the foreground, a large red and yellow pulley system is visible, with a thick black cable running through it. The cable extends upwards and across the frame, supported by several thinner cables. In the background, a small yellow and black cabin is suspended from the main cable, moving up a steep, light-colored rocky mountain face. The sky is blue with some light clouds.

Magnetic Rope Testing for Aerial Ropeways

- MRT instruments & services
- Suitable for different applications
- Robust equipment & smart software
- Compliant with EN 12927-8, ASTM E1571
- Warranty, customer training & consulting

Ropes installed in aerial ropeways should be inspected according to the appropriate standards. Unlike visual inspection, which is tiresome and subjective, magnetic rope testing (MRT) detects outer and inner defects in the rope. MRT is capable of inspecting the whole length of rope at high speed, and data from the test is stored for the entire service life of the rope. The wire rope tester INTROS[®] covers a wide range of rope diameters, and can be used on all types of aerial ropeways and zip lines. It meets the requirements of EN 12927-8 and ASTM E1571.

INTROS[®] is a dual function instrument, i.e. it simultaneously measures loss of metallic area (LMA), caused by corrosion, abrasion or wear and reveals local flaws (LF), e.g. broken wires, pitting corrosion, cross-nicking, welding spots, etc. It is suitable to inspect stranded, spiral, half-locked, full-locked, plastic coated or plastic filled valley ropes made from bright and galvanized wire, with fiber or steel core. The instrument operates using the magnetic flux leakage method, incorporating powerful magnets to saturate the rope for proper performance.

INTROS[®] consists of a basic unit (BU) and magnetic head (MH) connected with a detachable data transfer cable up to 20 m in length. The Monoblock MB8-24 does not have a separate BU and accommodates the magnetic head and boards in the same body, therefore needs no connecting cable. Each magnetic head is equipped with sensors and sleeves to align the rope and protect sensors. During inspection, the rope moves through the magnetic head or the magnetic head moves along the rope, whilst the basic unit collects inspection data. Data can be downloaded from the BU to a computer in the form of signal-distance diagrams, called traces, e.g. LMA, LF, inspection speed traces, etc. Magnetic heads MH6-26, MH22-45, and MH24-64M5 cover ropes for all types of ropeways. Monoblock MB8-24 is suitable also for inspection of zip lines.

The basic unit BU-M is compatible with all magnetic heads and has a large illuminated graphic display, capable of indicating inspection data and battery level. Increased memory capacity allows the storage of bulk data.



Dimensions	235x125x37 mm
Weight	1 kg
Power supply	Li-ion batteries
Continuous work	5 hours
Length of cable	Up to 20 m
Storage capacity	8 Gb
Ingress protection	IP66
Ambient temperature	-25°...+55°C



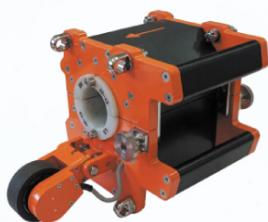
Monoblock MB8-24 has magnetic head and basic unit accommodated in the same body with a front panel display and membrane keypad. It is equipped with non-detachable sensors and set of sleeves.

Diameter of ropes	from 8 to 24 mm
Dimensions	280x125x82 mm
Weight	3.5 kg
Inspection speed	from 0 to 1 m/s
Ingress protection	IP54
Ambient temperature	-10°...+50°C



Magnetic head MH6-26 is equipped with non-detachable sensors and set of sleeves.

Diameter of ropes	from 6 to 26 mm
Dimensions	250x185x105 mm
Weight	4 kg
Inspection speed	from 0 to 4 m/s
Ingress protection	IP66
Ambient temperature	-25°...+55°C



Magnetic head MH22-45 is equipped with non-detachable sensors and set of sleeves.

Diameter of ropes	from 22 to 45 mm
Dimensions	295x185x195 mm
Weight	11.1 kg
Inspection speed	from 0 to 4 m/s
Ingress protection	IP66
Ambient temperature	-25°...+55°C



Magnetic head MH24-64M5 is equipped with detachable sensors and set of sleeves.

Diameter of ropes	from 24 to 64 mm
Dimensions	330x235x195 mm
Weight	15 kg
Inspection speed	from 0 to 4 m/s
Ingress protection	IP54
Ambient temperature	-25°...+55°C

Downloading and further analysis of traces are provided with the in-house developed software Wintros®. Functions of Wintros® include settings and calibration of the instrument, chart zooming and filtering, automatic marking of defects, comparison of charts in the same window, cut-off options, etc. It can automatically generate the rope inspection report. Rope Strength® software allows assessment of rope residual strength.

INTRON PLUS provide training of customers at its rope laboratory, or at the customer's site.



Rope inspection for the Sugarloaf cableway in Rio de Janeiro



MH6-26 inspects the rope of a chair lift



MB 8-24 inspecting a zip line rope



Inspection at Roosevelt Island Tramway, NYC

