

RAT-Combo



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diagnostic device for leak detection and location in impulse pipe network.

Leak detection is done by resistance measurements and fault location by TDR technology.

General information:

Leak detection and location in impulse network

Application:

District heating and cooling

Technical specification:

Main functions:

Type of measurement

Insulation resistance
Loop resistance
Galvanic voltage
Continuous loop control

Control of connection to the pipe

Specification

0 - 200 MΩ

0 - 100 kΩ

0 - 2000 mV

Triggering of detector by breaking of loop

Resistance measurement between supply and return pipe

Insulation resistance measurement:

Test range
Test voltage
Test current
Accuracy up to 1 MΩ
Accuracy over 1 MΩ
Measurement in both polarities

0 - 200 MΩ

24 V

max. 100 mA

+/- (2% of m. + 8 digits)

+/- (5% of m. + 8 digits)

Loop resistance measurement:

Test range
Test voltage
Test current
Accuracy
Measurement in both polarities

0 - 100 kΩ

24 V

max. 100 mA

+/- (2% of m. + 8 digits)

Galvanic voltage:

Test range
Accuracy

0 - 2000 mV
+/- 5%

TDR (reflectometer) module:

Type of measurement

Specification

Test range

up to 10 km (by VOP 100%)

Pulse rate

1 - 70 ns

Gain adjustment

x 30

Velocity of propagation (VoP)

40 - 100%

Possibility to select any part of the chart

0 - 10 km

Accuracy

+/- 0,01% of range +/- 1 px

Noise filtration

50/60 Hz; 20 MHz, 100 MHz, 200 MHz,
350 MHz, 650 MHz, 750 MHz, 900 MHz

Selectable output impedance

42 Ω, 50 Ω, 75 Ω, 100 Ω

Communication:

GSM / LAN / RELAY

Number of channels:

Power supply:

12 V DC / 120 - 240 V AC

Housing:

IP65

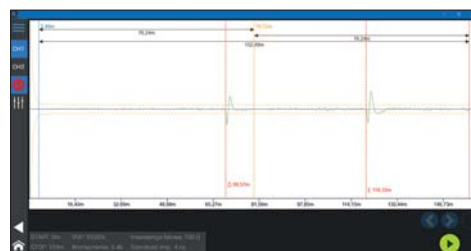
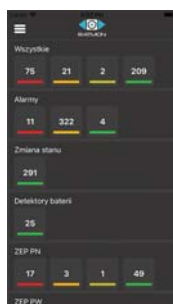
Dimensions:

200 x 150 x 75 mm

Weight:

0,64 kg

Software:



RATMON - web application for remote data acquisition and analysis of test results as well as configuration and operation of detectors.



RATMON MOBILE - Android and iOS application for reviewing of pipe loops state.



RATMANAGER - PC software for configuration and operation of detectors.

Scope of delivery:

- RAT-COMBO device with DIN mounting bracket, 2 BNC cable and boxes
- 12 V AC/DC power adapter
- GSM antenna (for devices with GSM module)

Optional accessories:

DESCRIPTION

Battery module

External GSM antenna

Constant impedance connection box, one loop

3-wire sensor cable connection box, 2 alarm loops

MSC-1 connection box, two loops

Grounding

External cabinet with NEMA certificate

INDEX

BAT-1

ANT-1

BOX-3

BOX-7

BOX-9

GND-1

SK-1