ROKADE™
ROKADE RoTek India Pvt. Ltd.

Artesis

AMT Pro

Rotating Equipment Tester without Sensors

A Paradigm Shift in Condition Monitoring
AMT Pro

The Artesis AMT Pro is a portable motor driven equipment test system which automatically generates a condition assessment report indicating existing electrical mechanical and operational faults, time to failure information, recommended corrective actions, and effects of faults on energy efficiency.

Powered by its patented machine learning algorithm and 10 million motor datasets, this unique instrument is capable of monitoring three phase AC motors and generators as well as driven equipment of all sizes and power levels to provide clear, unambiguous indications when the performance of a motor driven equipment begins to degrade.

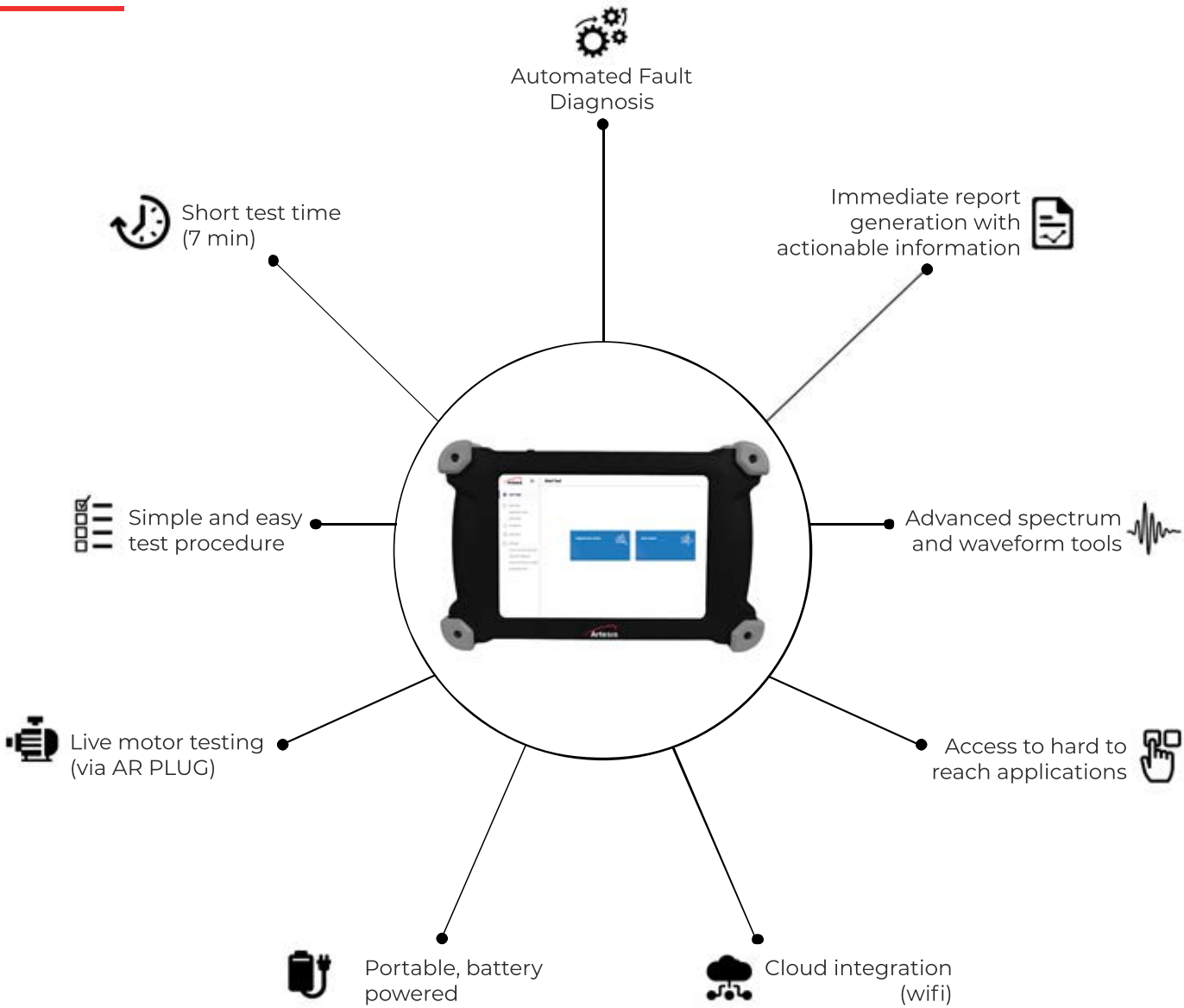
An Intelligent Way Of Maintenance

AMT Pro is designed for route-based condition monitoring of rotating equipment enabling early fault detection on the **motor, drive train and driven equipment without installing any sensors on the equipment.**

AMT Pro is connected to MCC Panel via three current transformers and three voltage probes, making the system straightforward to install, and use without in-depth training of personnel. The test duration is approximately 7-10 minutes allowing up to 40 tests to be performed in a day.

With AR Plug, connection to the MCC panel can be made much quicker without shutting down the motor.

Features
AMT Pro



Comprehensive Fault Coverage

AMT Pro is compatible with 3 phase AC motors of fixed and variable speed and generators. Utilizing Artesis' revolutionary Model Based Voltage and Current analysis, AMT Pro offers comprehensive fault detection capability covering electrical, mechanical and process related faults.

Fault Coverage

- Loose foundation/ components
- Unbalance/misalignment/coupling
- Transmission faults
- Driven equipment faults
- Bearing faults
- Rotor faults
- Stator/insulation faults

Electrical Parameter

- Vr, Vs and Vt
- Ir, Is and It
- Frequency
- Voltage Unbalance
- Current Unbalance
- Motor Load
- Power Factor
- Active Power
- Reactive Power
- Total and odd harmonics

Process Faults

- High energy consumption
- Low efficiency
- Cavitation in pumps
- Flow turbulence in fans, blowers
- Filter and heat exchanger fouling
- Lubrication
- Oversize/undersize motors

Watch AMT Pro Video

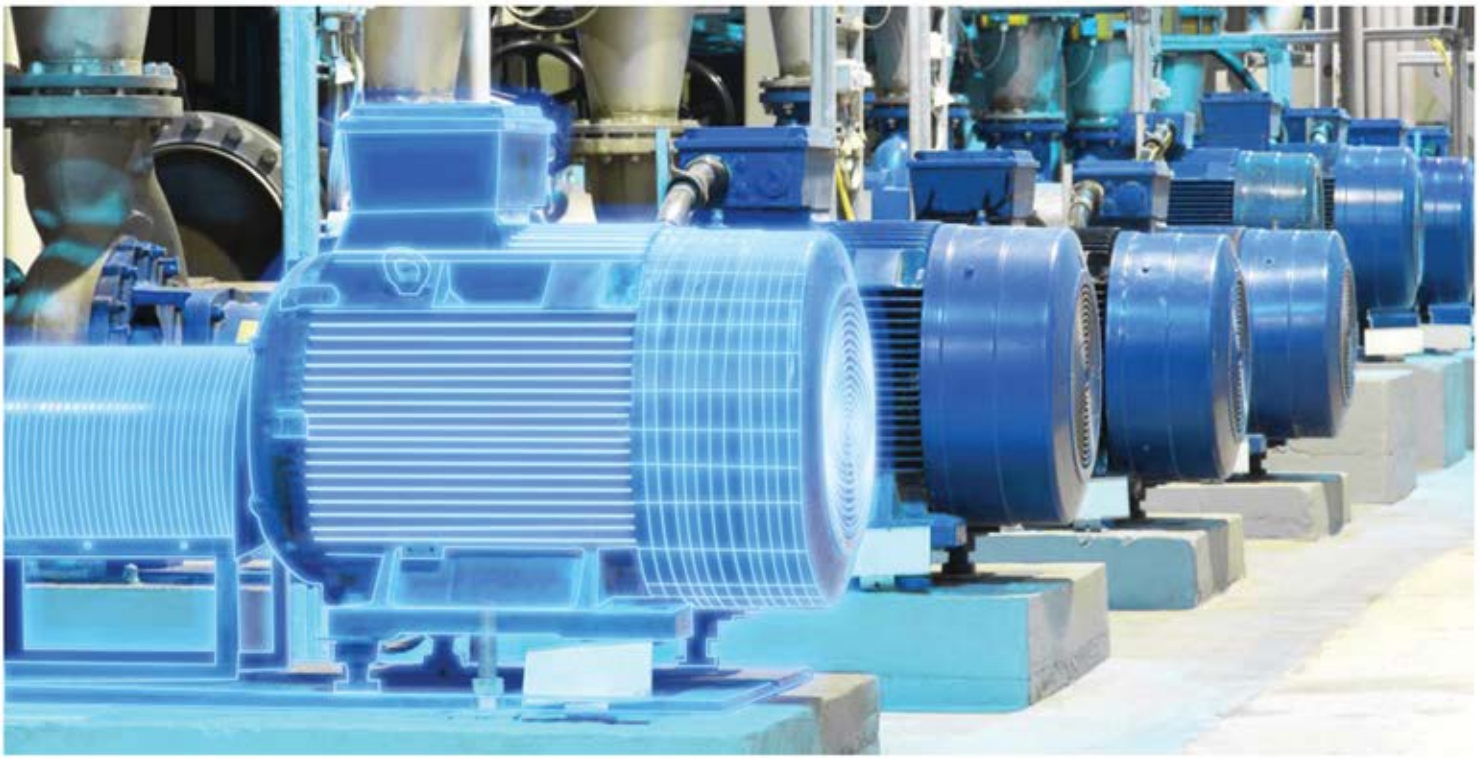
AMT Pro measures 3 phase Voltage and 3 phase current at 2500 Hz sampling rate. Motor tests are completed in 7 minutes. yielding to an automatic test report indicating motor health with bar charts, list of electrical parameters and PSD (Power Spectral Density) results. The test results simultaneously sync to the secure cloud-based server allowing access to the reports on an IOT platform.

The bar chart representation simplifies the analysis showing clear indications of different faults with severity information.

Electrical parameters are compared with standard reference values and indicating electrical faults as well as power quality issues.

PSD (Power Spectral Density) and waveform tools offer advanced level of use for root cause analysis.

Asset Management and **Energy Efficiency Toolkit**



Key Benefits

- Decrease on maintenance cost
- Productivity increase
- Equipment life extension
- Energy saving
- Improved process safety

Sectors

- Oil & Gas
- Energy
- Cement
- Metal
- Pharmaceutical
- Automotive
- Water
- Transportation
- Food & Beverages
- Buildings

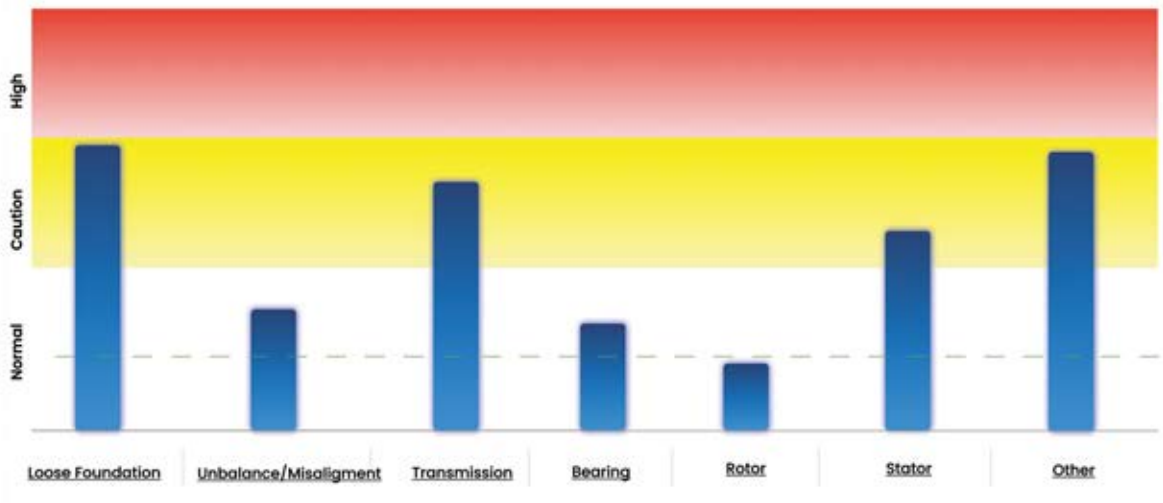
Applications

- Compressors
- Fans
- Pumps
- Conveyors
- Generators
- Motor Driven Equipment

Watch AMT Pro Video

AMT Pro
Condition Assesment Report

Asset Name: Asset 1	**Voltage:** 400V	**Freq:**50hz	**Rep. Name:** Report 1
Asset Type: Pump	**Rpm:** 1455 d/d	**Curr:**30A	**Date:** 02/09/2020



Detected faults and their effects on energy efficiency

Corrective maintenance action will save energy up to **3540 kWh per year**, increase productivity, reduce maintenance cost, and increase equipment life time.

Detected Faults and Warnings	Effects on Energy Efficiency (kWh)
Loose Foundation / Components	145
Unbalance / Misalignment	145
Transmission Elements	145
Bearing	145
Rotor	145
Stator	145
Total	**3456**

AMT Pro
Condition Assesment Report

Technical Specifications

Equipment Types	
Motor Type:	3 Phase AC Motors
Voltage Type	Low and Medium Voltage
Test Duration	7-10 minutes
Speed Control	Constant and variable Speed

Current Measurement Terminals	
Number of Connectors:	3
Connector Type:	BNC Connector
Transformer Type	Split Core, Female BNC with 10 cm cable
Measuring range:	CT1: 2.5A-10A | CT2: 10A-40A | CT3: 40A-150A | CT4: 150A-600A
Resolution:	0.5%

Voltage Measurement Terminals	
Number of Connectors:	3
Connector Type:	BNC Connector
Max Voltage:	Phase to phase 690V, with voltage calibration adjustment measurements can be made with voltage transformers at higher levels.

Frequency Range	
Frequensy Range:	20-120Hz

Display	
Type:	LCD, Touch, Can be used with Glove.
Dimension:	10.1”
Resolution:	1920x1200
Brightness	550nits

Memory	
Internal Memory	64GB

Communication	
Wireless connection	Wifi, Bluetooth

Physical Properties	
Dimension:	354x233x70 mm
Weight:	2 kg
Design:	Protection in corners against falling
IP Class	IP54
Operating Temperature	-10 ~ +50°C

Power Specifications	
Input Type	Type C (PD)
Input Voltage	5-20Vdc
Input Current	1.8A-5A
Battery Capacity	7600mAh
Battery Type	Lithium Polymer

Standards	
EMC	EN61326-1
Safety	EN61010-1

Functions

Measurement Parameters	
Mechanical Fault Parameters	• Loose Foundation / Soft foot • Unbalance / Misalignment • Transmission / Driven Equipment • Bearing
Electrical Fault Parameters	Stator Rotor
Electrical Parameters	• Vr, Vs, Vt [Vrms] • Ir, It, Is [Arms] • Frequency [Hz] • Voltage Unbalance [%] • Current Unbalance [%] • THDv, THDi, 3rd, 5th, 7th, 9th, 11th and 13th Harmonics • Active Power [kW] • Reactive power [kVAr] • Power Factor • Motor Load [%]

Equipment Report	
Bar Chart	The level of electrical and mechanical faults are shown in 3 fields (normal, warning and fault) graphics. If a fault is detected in any parameter, required action tasks will be included. Includes Table of annual energy losses that may arise due to malfunction.
Electrical Parameters	Parameters specified in the measurement values are evaluated accordingly against reference values and includes notes about the actions to be taken.
PSD	It contains the power spectral density curve for the equipment.
Waveform	It shows the waveform of the measured signal for 6 seconds long and 3-channel current and 3-channel voltage of the equipment's.

Accessories

Cables	
Voltage	3 pieces (black, red blue), 2 meters It has silicone insulation and high flexibility. Includes both ends 4 mm banana connector and fuse. 1000V, CAT IV, 8A
Current	3 pieces (black, red blue), 2 meters It has silicone insulation and high flexibility. Touch-proof BNC connector 1000V, CAT II (600V, CAT III), 50 ohms

Probes	
Dolphin Crocodile	3 pieces (black, red, blue) 1000V, CAT III, 32A Compatible with 4 mm banana connector 39.5 mm maximum mouth opening
Magnetic Probe	3 pieces (black, red blue) 1000V, CAT III, 2A Compatible with 4 mm banana connector 7 mm magnet diameter

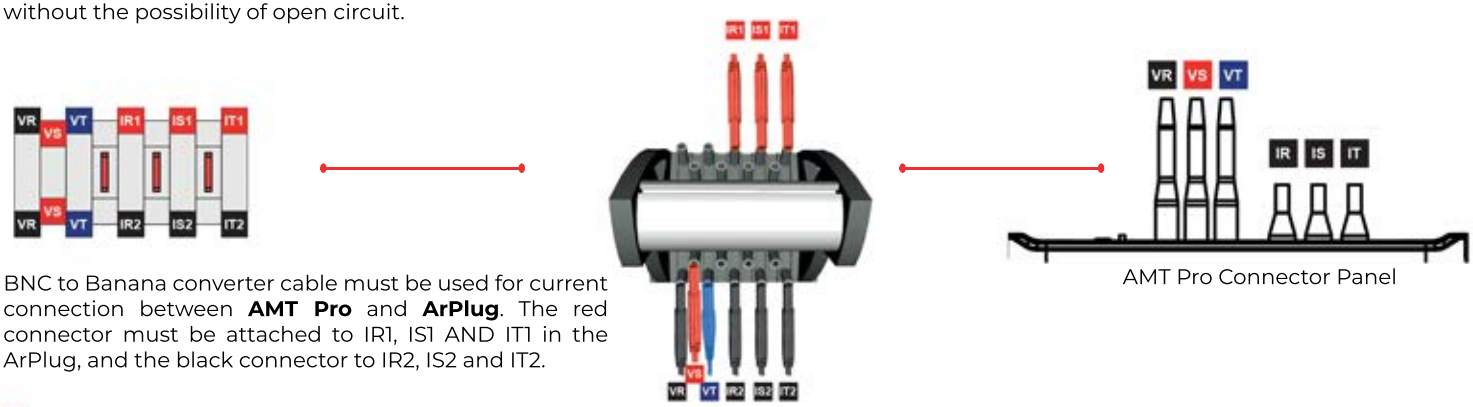
Current Transformers	
CT1	3 pieces, Split Core type, 25 mm window size 100mA secondary current, 10A max. primary current 600VAC, CAT III 10 cm cable with female BNC connector
CT2	3 pieces, Split Core type, 25 mm window size 100mA secondary current, 40A max. primary current 600VAC, CAT III 10 cm cable with female BNC connector
CT3	3 pieces, Split Core type, 25 mm window size 100mA secondary current, 200A max. primary current 600VAC, CAT III 10 cm cable with female BNC connector
CT4	3 pieces, Split Core type, 35 mm window size 100mA secondary current, 600A max. primary current 600VAC, CAT III 10 cm cable with female BNC connector

ArPlug

ArPlug	Automatic serial connection to current transformer 690V phase to phase voltage connection High security with banana sockets Ready to test in 10 seconds

With the ArPlug system, you can now perform tests automatically, securely, and faster. The test can be started quickly by making a contactless and safe connection to current transformers and voltage points while the motor is running.

Thanks to its smart contact structure, it offers serial connection to current transformers in the system without the possibility of open circuit.

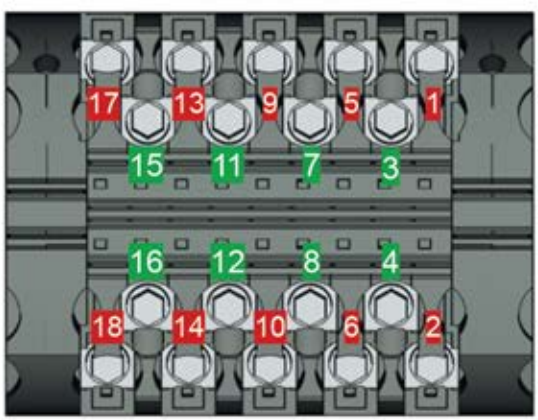


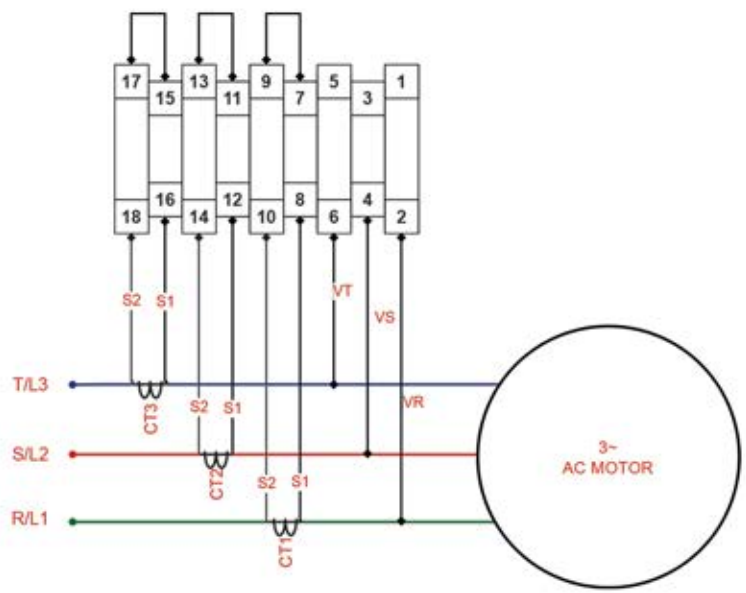
AMT Pro Connector Panel

- BNC to Banana converter cable must be used for current connection between **AMT Pro** and **ArPlug**. The red connector must be attached to IR1, IS1 AND IT1 in the ArPlug, and the black connector to IR2, IS2 and IT2.

Attention!
ArPlug should not be plugged into the socket on the panelbefore making a connection between AMTPro and ArPlug. Otherwise, current transformers will become open circuit.

- For the voltage connection of the R, S and T phases, a 1A circuit breaker can be used.
- The ports 1-3, 5-7 and 9-11 should be short-circuited between themselves. Otherwise current transformers will remain in open-circuit state.
- Cable lug suitable for M3.5 screw should be used





ROKADE™

ROKADE RoTek India Pvt. Ltd.

EXCLUSIVE DISTRIBUTOR FOR INDIA

Address : R-375 TTC Industrial Area, Rabale, Navi Mumbai - 400 701
Contact : 022 - 2173 7777 / 022 - 4924 7777
Email : sales@rokadegroup.com
www.rokadegroup.com

MUMBAI | PUNE | THANE | CHENNAI | DELHI | KOLKATA

Artesis

Artesis Technology Systems

Headquarter

Kemal Nehrozoğlu Cad. GOSB Teknoparkı
Hightech Binası No:B10, 41480
Gebze/Kocaeli, TURKEY

+90-262-678-8860

+90-262-678-8855

enquiry@artesis.com

US Office

58 Thomas St, #4 New York,
NY 10013,USA

+1 (201) 793-7150

usa@artesis.com

www.artesis.com

@artesisglobal