About Talas Electric

• Based in Helsinki, Finland

• Company was founded in 2015

• Finnish technology company focusing on developing, manufacturing and marketing technologies for predictive maintenance and for improving durability and energy efficiency of electric motor driven mechanisms.

• Talas Electric’s all devices are designed, engineered and manufactured in Finland.
Problem no.1

Damp and dusty conditions lower the insulation resistance eventually causing a motor failure.

Approximately 25% of all motor failures are caused by flooding, dust and humidity.
Reality no. 1
Electric motors are operating in harsh condition

- Generator
- Yaw Motors
- Pitch Motors

Windmill

Rain

- Pump
- Motor

38°C
Humidity 100%

Tunnel

Ground Level

Water Flowing in

Flooding

Ventilator

This eventually leads to broken motors
(Short circuit caused by low insulation resistance)
Broken Motors Cause

- Lost Fuel
- Great Refinery Corp.
- Reservoir
- Tunnel
- Motor
- Ground Level
- Great Maintenance Corporation

Money lost to unnecessary maintenance

Lost Money

Angry People

Lost Money

Dirty water on the street

Well

Street road level

Tunnel

Motor

Ventilator

Ground Level

Reservoir

Lost Fuel

NO

Fuel production

NO

Sales
<table>
<thead>
<tr>
<th>Talas Measurer</th>
<th>Talas Heater</th>
<th>Talas Dryer</th>
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<tbody>
<tr>
<td>Monitoring</td>
<td>Automatic energy efficient anti-condensation heating</td>
<td>Intellectual combined Monitoring and Heating</td>
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<tr>
<td>• Automatic insulation resistance monitoring when motor is not running</td>
<td>• Automatic anti-condensation heating with full heating power output control</td>
<td>• Talas Measurer and Talas Heater combined</td>
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<tr>
<td>• Installed in MCC (NO cabling needed)</td>
<td>• Adjustable heating cycles</td>
<td>• Heating can be activated only if insulation resistance is low (maximum energy efficiency)</td>
</tr>
<tr>
<td>• Suitable for all AC and DC Motors</td>
<td>• Temperature regulated heating</td>
<td>• Full control of insulation resistance. Monitoring and Heating</td>
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<tr>
<td>• Allows you to plan your maintenance work. #Predictive maintenance</td>
<td>• Keeps bearings warm and dry</td>
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<td></td>
<td>• The most energy efficient anti-condensation heating available at the market</td>
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<td>• Can be used together with Talas Measurer</td>
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Problem no.2

Many industrial companies and municipalities report that failure of power electronics has become a new "industry standard"

Power electronics are a great innovation but they might not always be the correct solution
Reality no.2
VFDs and Solid State Soft Starters are not Always the Correct Solution

Overvoltage

Lighting or other grid disturbances does brake electronics

Harmonics

Harmonics may cause significant problems to transformers and other electric devices

Reactive Power

Reactive power should always be compensated at its source

Stable 50 or 60 Hz

Becomes instable something

Waste heat from reactive power
• 100% Harmonic free soft starter

• Optional automatic reactive power compensation

• Zero electronics

No sensitive components -> Extreme durability

No waste heat from semiconductors -> High energy efficiency
**Devices**

**Talas Leaker**
Automatic leakage current logger for safer operations and more predictable maintenance.

**Talas Measurer**
Automatic insulation resistance measurer for AC and DC motors.

**Talas Heater**
Automatic direct current anti-condensation heater for AC and DC motors. Can be used together with Talas Measurer.

**Talas Dryer**
The only device in the world combining automatic insulation resistance measuring and direct current drying of AC and DC electric motors.

**Talas Starter**
Harmonic free electromechanical soft starter for AC electric motors with automatic reactive power compensation.

**Portable Dryer**
Fully automated portable device for winding insulation recovery without expensive dismantling work.
Application Examples

- Pumping Stations
- Power generation
- Pulp Mills
- Ski Infrastructure
- and many other places
Application Examples
Pumping Stations

Predictive Maintenance

Pumps are often located underwater (submersible pumps), underground, inside a humid cave or outside. In most cases these pumps are driven by electric motors that are difficult to change and their availability is very important for the production process.

Durable and Harmonic Free Soft Start

Especially municipal pumping stations are often located in remote places on stand-alone basis. In these remote places power electronics are prone to overvoltage caused by lightings and the grid might not be strong enough to withstand harmonics and reactive power.
Due to high humidity in refuse-derived and solid fuel storages electric motors driving the conveyors fail on regular basis. Talas Devices can significantly decrease the number of unexpected motor failures, lower the maintenance expenses and improve the production process stability.
Pulp dryers have hundreds of electric motors operating in high humidity leading to regular insulation resistance failures. Talas Devices can significantly decrease the number of unexpected motor failures, lower the maintenance expenses and improve the production process stability.
Ski Infrastructure

Application Examples

Predictive Maintenance

Ski center snow making systems and lifts are used only for few months a year and even during these few months snow making systems and lifts are not operating 24/7. Significant temperature changes and irregular operational time make the electric motors prone to low insulation resistance.

Durable, Reliable and Energy Efficient Soft Start

For safe and convenient operations of ski lifts and snow making systems require soft and smooth start of electric motors. Remote locations of the ski lifts and snow making systems increase the energy loses from reactive power and make it difficult to protect standard power electronic starters from lighting, temperature changes, dust, etc.
The world is full of places where electric motors, transformers and generators are operating in remote places, humid conditions or they are operated on irregular basis making them prone low insulation resistance. Would you like to increase the life span and operational reliability of your electric equipment?
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