The Agellis Furnace Bath Level System is a unit for recording critical furnace level data when required. Can be used in all EAF furnace types where molten metal access is possible, a suitable slag door manipulator is already in place or a manipulator is to be installed and the process requires knowledge of bath and hot heel levels.

**Level Sensing**
The System is easy to use with a pre-prepared sensor performing a software controlled sequence of immersion and withdrawal. During the immersion sequence an electromagnetic sensor picks up conductivity changes as it passes through different materials and locates the exact position of the molten metal bath. The exact position is then fed to the plant PLC.

The Agellis measurement system is custom built to fit the most common slag door manipulators, permitting level measurements to be performed simultaneously with temperature and material sampling.

The system is capable of measuring a change of electromagnetic coupling and will provide accurate metal bath and hot heel levels. It can detect metal levels both during arcing (PON) and power off (POF).

The output from the system will measure metal level from a fixed reference point. This information can assist with crucial decision making such as optimizing injection lance position.

**Temperature Measurement and Sampling Mechanisms**
Many EAFs already have temperature and sampling mechanisms in place.

If the available temperature/sampling mechanism is suitable and can be adapted to take the Agellis Lance with sensor, it will work easily in conjunction with those procedures.

The level measurements will be performed together with temperature and metal sampling.

In fact correct temperatures or samples from a required level, (in the metal), are assured by knowledge of exact metal location.
By combining Steel Plant proven electromagnetic measurement with your slag door manipulator that already takes temperature and/or metal samples you can have a system which is both innovative and reliable. Equipping your manipulator with the Agellis electromagnetic sensor sword, you will be able to detect the metal levels that you need to know in your furnace thus assisting your decision making. Knowing your metal bath level whenever you require it and having an accurate hot heel level measurement is critical to furnace process optimization.

Manipulator encoder information is tied into the received electromagnetic sensor signals that make accurate level reading possible. Safety devices make sure the lance is not damaged during insertion or contact with the furnace refractory.

Sensors are enclosed inside the steel sword which is covered during operation by a protective sleeve. The design guarantees that equipment installed will work well year after year.

The Agellis system does not require special probes as the metal level is detected during the same immersion sequence in which your temperature is taken. The level detection system is simply added to the same manipulator lance. If you do not already have a manipulator, Agellis can also provide the complete mechanism with slag door entry for temperature and level measurement.

**User Benefits & Advantages**

- **Easy & fast system** – Automated procedure that takes seconds.
- **Bath and Hot Heel** – Sensor detects and measures the metal at all required levels.
- **Repeatable results** – Reliable information irrespective of operator.
- **Retro fit possible** – The ELP lance can be retro-fitted to existing slag door manipulators with only minor adjustments.
- **Optimizes production process** – Aids efficient decision making.
- **Improves safety** – Aids level control in furnace and removes requirement for operators to manually gauge furnace levels.

**Technical Information**

- **Sensor Unit**
  - **Power Supply:** 90 - 230 VAC 50/60 Hz max 500 W
  - **Frequency:** Selected for local application
  - **Compatibility:** Compatible with both slag door manipulators and vertical mechanisms
  - **Safety standard:** Complies with known safety standards
  - **Total System Accuracy:** +/-10mm depending on manipulator position encoder

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Agellis follows a policy of continual improvement of design and we must therefore reserve the right to supply equipment differing in detail from that described herein.

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