Electromagnetic Level Profile
AGELLIS ELP-W SYSTEM

Electromagnetic Level Profile
Winch System
Electronic Replacement for Sounding Bar Mechanisms

The Agellis Electromagnetic Level Profile Winch system for furnaces is a measurement device that directly replaces a sounding bar. By attaching the Agellis Sensor Lance to an integral winch/lance position drum unit it will, when immersed, electronically record level information in a furnace. Can be used in all furnace types where access is possible and the process requires knowledge of material levels. True matte/metal level can be provided quickly and easily.

System Capabilities

Level Sensing
The System is easy to use with a pre-prepared lance attached to a special cable drum unit containing both winch and lance position mechanisms performing an operator controlled sequence of immersion and withdrawal. During the immersion sequence an electromagnetic sensor picks up the conductivity change when passing from slag to matte/metal. This information, in combination with the Lance Position output is provided to the plant. The system is capable of measuring a change of conductivity in the order of 2% and will produce a slag to matte/metal conductivity profile. The output from the system will be a lance position combined with the material conductivity and which can be presented as two 4-20mA signals or in Profibus format.

As an option, the system can also be supplied with software providing a signal processing algorithm which is adapted to a particular furnace profile signature. This processed signal will be used to provide the matte position, as related to a reference point.

The system comes as a complete measurement unit with the electronics, measurement/control software, drum containing immersion drive/lance position mechanisms and main system cabling. Customer supply will consist of power cables and standard signal cabling.

Lance access to the furnace can be via the original sounding bar port or via a separate access port if required. Sufficient space above the access port to mount drum unit is required to allow vertical lance entry to the furnace.
Technical Information
AGELLIS ELP-W System

System Overview

By combining Steel Plant proven electromagnetic measurement with controlled and tracked lance delivery, we have created a system which is both accurate and reliable. The lance, equipped with sensor, is designed to detect the change of electromagnetic conductivities as it passes from slag to matte/metal in the furnace.

Lance position information is tied into the received electromagnetic sensor signals that make accurate level reading possible. Safety devices, such as cable motion detection and protection sleeves make sure the lance is not damaged during immersion or on contact with solid surfaces.

Sensors are enclosed inside the steel lance which is covered during operation by protective sleeves. The design guarantees that equipment installed will work well year after year. Agellis electromagnetic sensor systems are still in operation after 20 years.

Operators can obtain accurate and reliable furnace level information without relying on their own powers of observation and analysis. They can do so by following a procedure that is very similar to the sounding bar operation with which they are already familiar.

User Benefits & Advantages

Easy & fast system
– Operator procedure that takes seconds.

Material Level Position
– True matte/metal level measurement provided

Repeatable results
– Reliable information irrespective of operator.

Optimizes production process
– Aids efficient decision making.

Improves safety
– Reliable level information reduces risk of too high matte level.

Cost effective
– Excellent return on investment.

Technical Information

Electrical: As required locally.

Dimensions: According to local specifications matched to furnace size/depth.

System Power Supply: 90 - 230 VAC 50/60 Hz max 500 W

Frequency: Selected for local application

Sensitivity: 2%

Safety standard: Complies with known safety standards

System Description and Options

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.