Selcom Xline2™ DeltaLine2™ Laser Sensors for Molten Metal Measurement Applications

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Overview

**Xline2™**

**METAL LEVEL MEASUREMENT**

Selcom XLine2™ family of Laser Sensors cover a range of molten metal level measurement applications within the Aluminium and Magnesium Industry.

Laser Line Technology together with 2D detector and advanced image processing make the sensors impervious to steam and smoke. XLine2™ sensors offer enhanced accuracy through the use of laser line projection. A laser line projector projects a laser line onto the measurement surface, which is optically expanded in one dimension. This line image across the molten metal surface is viewed by the sensor as a two-dimensional array broken down into pixels. Using triangulation, these pixels are used to obtain up to 100 simultaneous measurements over this line. Through algorithm analysis, a single value is derived. Because of the sensor’s multi-point analysis, this metal level measurement is more reliable and accurate than prior laser technology. The sensor’s features also eliminate problems with reflectivity, caused by shininess of aluminium surface and eliminate inaccuracies generated by smoke, steam and other environmental influences found in the casting process.

- Optimized for specific applications
- Not affected by smoke or steam
- RS232 and Ethernet, Analog and Digital outputs
- Output signals can be scaled to replicate other sensors - ideal for retrofitting
- Rugged insulated stainless steel heat shields

**DeltaLine2™**

**TRUE METAL LEVEL MEASUREMENT**

Selcom DeltaLine2™ Laser Sensor is the ultimate solution for molten metal level measurement in Aluminium and Magnesium Rolling Ingot Casters.

The differential measurement principle ensures accurate mold level readings during all conditions - leading to reliable, consistent high-quality production. Laser Line Technology together with 2D detector and advanced image processing make the sensors impervious to steam and smoke. Similar to the XLine2™ sensor, the Differential™ sensor optically expands a laser line on to the metal surface and performs multipoint analysis to determine molten metal level in the mold. However, unique to the patented Differential sensor is the use of a second laser beam, which is projected on to the mold face. The output signal is deduced from the differences of the detected distances and mirrors the exact distance from mold face to the molten metal within the mold. Since the mounting of the DeltaLine™ sensor can vary throughout the table, and from setup to setup, the length of the two laser beams provides greater accuracy in determining the level measurement. The differential measurement also negates variations in the sensor mounting structure and eliminates the need for pre-cast calibrating.

- Patented differential measurement principle, not affected by vertical movements in the mounting structure
- Not affected by smoke or steam
- RS232 and Ethernet; Analog and Digital outputs
- Output signals can be scaled to replicate other sensors - ideal for retrofitting
- Rugged insulated stainless steel heat shields

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SPS Industrie-Elektrik GmbH is exclusive distributor for Selcom Laser Sensors for molten aluminium and magnesium applications in the following countries: Austria, Belgium, Germany, France, Italy, Luxembourg, Netherlands, Portugal, Spain, Slovenia and Switzerland.

Selcom-Laser Sensors specifically designed for casting applications, are installed at furnaces, launders and molds, to consistently and accurately provide metal level information as input to casting control systems. More and more casthouses are increasingly integrating Selcom Laser Sensors in their process control systems. This innovative technology provides significant advantages by comparison with prior measurement methods. Introduction of laser line sensor technology increases accuracy, reliability and robustness of measurement, improving performance of fully automated casting control systems.

THE BENEFITS ARE CLEAR!

Leveraging these advancements in precision molten metal level control applications, can

► lower overall casting costs
► optimize operator safety and
► improve product quality on a constant high level.

TYPICAL APPLICATIONS

A family of products cover a wide range of applications

► CastLine™ Sensor - mold level, DC Caster
► DeltaLine™ Sensor - differential measurement, DC Caster
► ContinuousLine™ Sensor - headbox level, Continuous Strip Caster
► LaunderLine™ Sensor - launder/trough level control (with tilting furnace)
► FurnaceLine™ Sensor - level detection in furnaces or ladles for Robot and Data Acquisition
► XLine2™ Sensor - level measurement in Ingot Lines, Sand Moulds and High Pressure Die Casting

LOOK AND SEE OUR RANGE OF INNOVATIVE PRODUCTS
### CastLine2 MR200 CD400 3R
- **Laser Class**: 3a / 3R
- **Lifetime Expectancy**: > 100,000 hours
- **Wavelength**: 635 - 670 nm (visible red)
- **Sensor Enclosure**: IP65 / NEMA 4
- **Ambient Temperature**: 0-40°C / 32-104°F
- **Sensor Weight**: 2 kg
- **Heat Shield Weight**: 8 kg

### LaunderLine2 MR300 CD700
- **Laser Class**: 3a / 3R
- **Lifetime Expectancy**: > 100,000 hours
- **Wavelength**: 635 - 670 nm (visible red)
- **Sensor Enclosure**: IP65 / NEMA 4
- **Ambient Temperature**: 0-40°C / 32-104°F
- **Sensor Weight**: 2 kg
- **Heat Shield Weight**: 8 kg

### FurnaceLine2 MR1300 CD1500
- **Laser Class**: 3a / 3R
- **Lifetime Expectancy**: > 100,000 hours
- **Wavelength**: 635 - 670 nm (visible red)
- **Sensor Enclosure**: IP65 / NEMA 4
- **Ambient Temperature**: 0-40°C / 32-104°F
- **Sensor Weight**: 2 kg
- **Heat Shield Weight**: 8 kg

### Mold, DC Caster + Head Box, Continuous Caster
- **Laser Class**: 3a / 3R
- **Lifetime Expectancy**: > 100,000 hours
- **Wavelength**: 635 - 670 nm (visible red)
- **Sensor Enclosure**: IP65 / NEMA 4
- **Ambient Temperature**: 0-40°C / 32-104°F
- **Sensor Weight**: 2 kg
- **Heat Shield Weight**: 8 kg