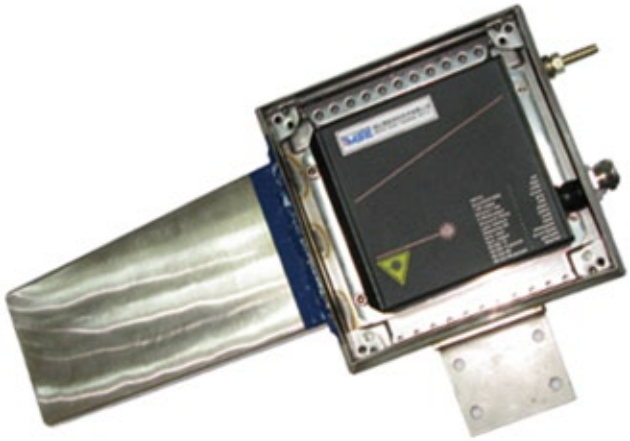
MODULOC SYSTEM ENGINEERING

MSE-AL500



- CCD Camera determining with digital signal processing.
- Non-Contact Measurement of Launder and Head box level
- Operates directly off molten metal surfaces.
- Measures off hot metal liquid of up to 1000°C
- Level change ranges: 300, 400 and 500 mms
- Resolution: 0.5 mm to 1.5mm according to Model
- Measurement frequency of 1000 Hz
- Serial, Analog and Digital Outputs
- No eye protection needed as Class II Visible Laser
- Secondary Vortex air cooled Stainless Enclosure

General Description

The MSE-AL500 Digital Camera Level Sensors are compact units with integrated optics and signal processor for precise measurement of the liquid level. A focused laser spot is illuminated on the liquid surface and the image distance determined by internal CCD Camera. LED's clearly indicate when the object is at center or at limit of measuring range. Installation software is provided for connection to a PC and to display measured values. Measurement of data is via both RS232 and 4-20 mA analog output.

All models operate at a measuring frequency of 1000 measurements per second a serial output update frequency of 1000 measurement points per sec. or lower.

The Camera Unit is further housed in a Secondary robust stainless enclosure provided with Vortex Cooled air inlet venting as Air purge out of the protective nozzle. This enables replacement of the Camera without disturbing mounting configuration. The connection cable is also encased in a stainless flexible conduit to protect it from hot metal splash.

Typical Industrial Usage

Aluminium Casting Industry - Cast Aluminium Moulders - Lead and Copper Foundries

In all these Industries long term reliable precise level control is essential on the Launders, Troughs and Head boxes in use throughout the typical casting plant. With this in mind these Level Sensors incorporate digital outputs confirming level measurement is being transmitted and the other internal temperature is within limits.

Model Performance

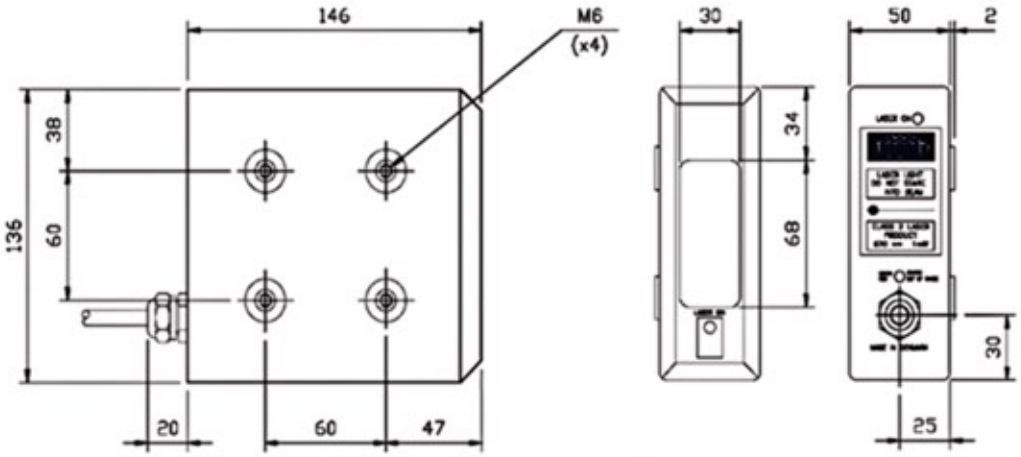
Model	*MDCLS 700R300-RB*		*MDCLS 800R400-RB*		*MDCLS 900R500-RB*	
Level Measured range (mm)	300		400		500	
Clearance Stand-off (mm)	700		800		900	
Resolution	0.5 mm		0.8 mm		1 mm	
Reproducibility	±0.5mm		±0.8 mm		± 1 mm	
Linearity	±0.7 mm		±1.0 mm		±1.5 mm	
Laser Spot size	Ø 3 mm		Ø4 mm		Ø5 mm	

Configurable Filters

All Models have a programming/select functionality. Group mode is the main feature. In Group Mode a running average is calculated over a user specified number of measuring points. The user also programs the sensor to disregard a number of, usually all, bad (zero) measuring points before calculating the average value. The average values are calculated at full measuring frequency and are used for converting the analog signals.

Several other filters are available to ensure robust measurement values are provided.

Camera Unit Dimensions



Camera unit Rating: IEC IP65

Protective Stainless Steel Housing:

Dimensions: 200 X 200 X 80 mm
Purged Protective Nozzle : 230 mm long
Mounting: Base Plate or angle Bracket
Weight w/o Cable/Conduit : 2.5 Kg
Cable Conduit Length: 2.5 M

General Specification

Serial Output	RS232 Baud Rate 38400	Supply Voltage	24VDC ±10%
Serial Output	RS422/485 (optional)	Power Consumption	4.5 Watt
Digital Output	1/10 mm	Digital Outputs (Two)	Temp okay and device measuring
Analog Output[2)]	4-20mA	Operating Temperature	0°C to +45°C (32°F to 113°F)
Measuring Frequency	1000 Hz	Storage Temperature	-20°C to +70°C (-4°F to 158°F)
Temperature Deviation	±0.03% of F.S./°C	Product Temp. Limit	Standard 1000°C
Light Source	Visible 665 nm Laser	Laser Class	Class II, IEC 2

Moduloc System Engineering Ltd. & Co.

Kexin Building No. 212, Changjiang Road, Yantai Development Zone,
Yantai, Shandong, China P. R.
phone: +86-535-2161058
e-mail: info@mse-intl.com

Zip code: 264006
fax: +86-535-2161090
web: www.mse-intl.com