



MDCLS SERIES - DIGITAL CAMERA LEVEL SENSORS



- **CCD Camera** determines level via digital signal processing.
- **Non-contact measurement** of Launder and Head box level
- **Auto-gain circuit** brightens laser beam when steam in FOV
- **Operates directly off molten metal surfaces at up to 1000°C**
- **Compact unit for inserting in confined space away from heat**
- **Single purged aperture viewing penetrates heavy steam.**
- **Purge nozzle baffles block IR reflections and contamination**
- **Stand-off clearances of 700 mm s and 400 mms**
- **Measurement frequency of 1000 Hz and 0.5 mm resolution**
- **Serial, Analogue and Digital Outputs**
- **Digital alarm of Out-of-range and overheating**

Model Performance

Model	MDCLS 700R400-RB	MDCLS 400R300-RB
Level Measured range (mm)	400	300
Clearance Stand-off (mm)	700	400
Resolution	0.5 mm	0.5 mm
Reproducibility	±0.5mm	±0.5 mm
Linearity	±0.5 mm	±0.5 mm
Laser Spot size	Ø 3 mm	Ø3 mm

Typical Industrial Usages

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

In all these Industries long term reliable precise level control is essential on the Launder, 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.

General Description

The MDCLS 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. 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.

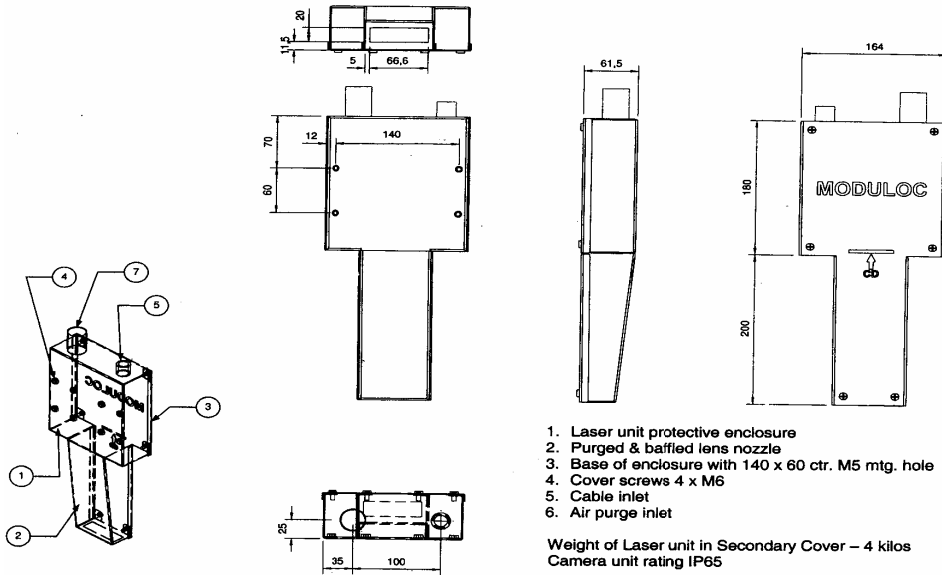
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Configurable Filters

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.

Protective Housing Dimensions



1. Laser unit protective enclosure
2. Purged & baffled lens nozzle
3. Base of enclosure with 140 x 60 ctr. M5 mtg. hole
4. Cover screws 4 x M6
5. Cable inlet
6. Air purge inlet

Weight of Laser unit in Secondary Cover – 4 kilos
Camera unit rating IP65

General Specifications

Serial Output	RS232 Baud Rate 38400	Supply Voltage	24VDC $\pm 10\%$
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	$\pm 0.03\%$ of F.S./°C	Product Temp. Limit	Standard 1000°C
Light Source	Visible 665 nm Laser	Laser Class	Class II, IEC 2

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Control Systems

Your Local Sales Representative:

We reserve the right to alter specifications without prior notice. Specifications without tolerances are typical values.



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