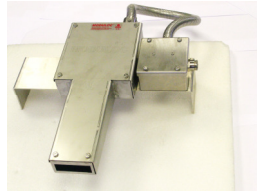
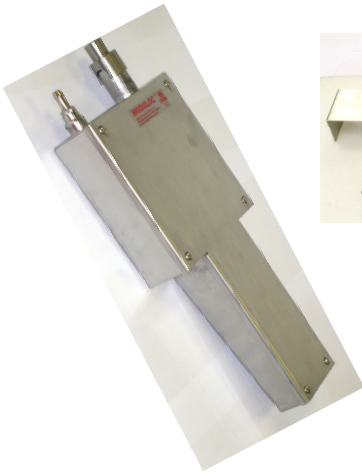




MDCLS SERIES - DIGITAL LASER LEVEL SENSORS



- **Non-contact measurement of molten metal level**
- **Internal CCD Camera determines level via Laser spot**
- **Air Vortex Cooler provided venting as air purge**
- **Auto-gain circuit brightens laser when heavy steam**
- **Operates off molten metal /mirror surfaces up to 1200°C**
- **Compact unit for inserting in confined space**
- **Single purged aperture viewing penetrates heavy steam.**
- **Purge nozzle baffles block IR reflections and contamination**
- **Stand-off of 700 and 400 mm and 300/400 mm working range**
- **Configurable group filtering removing zero readings**
- **Measurement frequency of 1000 Hz and 0.1 mm resolution**
- **Serial, 4-20mA Analogue and Digital Outputs**
- **Digital alarms for out of range and over temperature**
- **Digital Out-of-range and overheating alarms**

Model Performance

Model	MDCLS 700R400-RB	MDCLS 400R300-RB
Level Measured range (mm)	400	300
Clearance Stand-off (mm)	700	400
Resolution	0.1 mm	0.1 mm
Reproducibility	±0.1 mm	±0.1 mm
Laser Classification	IEC 3R	IEC 3R
Laser Spot size	Ø 3 mm	Ø3 mm

Typical Industrial Usages

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

In all these Industries long term reliable precise level control is essential on the Launders and Head boxes as well as on Casting Lines. With this in mind these Level Sensors incorporate digital outputs confirming level measurement is being transmitted and the internal temperature is within limits.

General Description

The MDCLS Digital Laser Level Sensors are compact units with integrated optics and signal processor for precise measurement of the molten metal level. A laser spot is illuminated on the molten metal and thereby the surface distance determined by internal CCD Camera processed via digital software with Window based software provided for setting mean and moving average values.

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 Laser units themselves are mounted within a Secondary robust stainless enclosure provided with Vortex cooled inlet venting as Air purge out of the protective nozzle. This enables replacement of the Camera without disturbing mounting configuration. The connection cable is encased in a stainless flexible conduit to protect it from hot metal splash. Either an attached terminal enclosure or a heavy duty metal plug and mating chassis mounting loose socket. Is provided.

MODULOC[®] Technology - Lasers for Precise Product Measurement

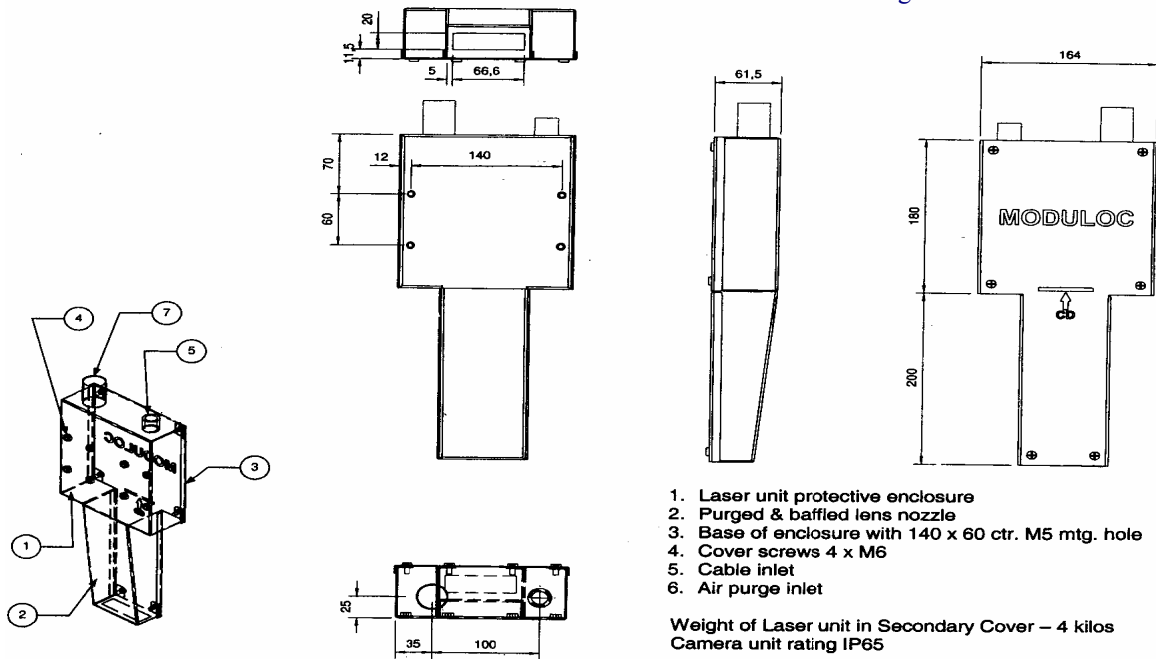
Configurable Filters

All Models have a programming/select functionality. 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

NOTE: Mounting Bracket not shown in illustration



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)
Connection Cable	Supported in flexible stainless conduit of 1.5 m	Product Temp. Limit	Standard 1000°C
Light Source	Visible Red 665 nm Laser	Laser Class	Class II, IEC 3R
Sensor Housing	IP65 Oven baked painted mild steel	Dimensions (mms)	Sensor 136x146x50 Enclosure 180x164x62
Protective Enclosure	Stainless Steel Housing and Nozzle	Weight	5 kg Enclosure , cabling and Plug

MODULOC[®] Technology - Lasers for Precise Product Measurement

MODULOC[®]
Control Systems

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

Your Local Sales Representative:

