

## RELIABILITY

09/18

### GENERAL DESCRIPTION

The GAP Level Sensor has been designed to measure the metal level in the molds and allow an extremely precise casting regulation despite the highly temperature present near a melted metal. The system consists of a suitable measuring head fixed on an electrical lifting jack. The last one is equipped with an incremental encoder for distance measurement and two limit switches.

The central command board collects the signals, transmits the calculated value of the level to the casting machine and ensure the head movements to avoid any metal collision. The calibration is an easy task that the customer can execute himself.

### MEASUREMENT

The head has a measuring range of 40 mm and the lifting jack has a travel of 160 mm or 200 mm. This offers a total measuring range up to 200 mm or 240 mm.

The signal provided therefore corresponds to the sum of the value measured by the head and the distance between the head and its maximum top position (given by the encoder and the upper limit switch).

As in earlier versions of the device, the electrical analog output signal is working inverted. This means that the zero corresponds to the maximum metal level.

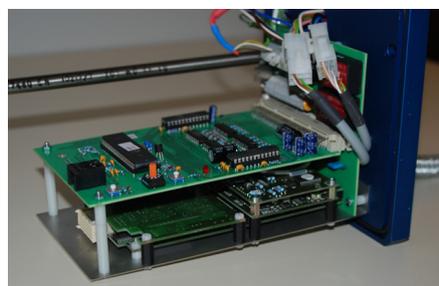
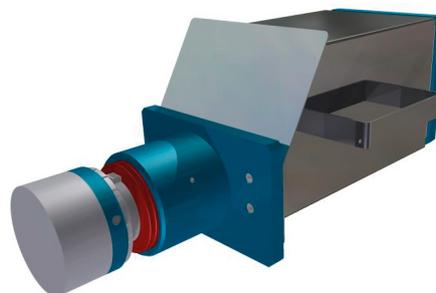
A digital output (NC) informs that the temperature is inside tolerances.

### MOVEMENT OF THE HEAD

This movement is autonomous and optimized to retain the value measured by the head as close as possible to the measuring range (20mm).

As long as the value measured by the head is within the margins of 10 mm to 30 mm, no motion occurs. This is to prevent an excessively large number of movements, something especially useful during the continuous phase, where the metal level variations are extremely small.

The output signal is continuously calculated with the sum of the measured signal and the distance given by the encoder. Its value is always exact, independently of the direction of movement.



## TECHNICAL SPECIFICATIONS

Measuring range	0 – 200 mm (7.87 in) / 0 – 240 mm (9.44 in) as option
Accuracy of reading	+/- 0.2 mm (+/- 1/127 in)
Power supply	24 VDC
Input / Output	1 digital output (Temperature alarm) 2 digital inputs (Automatic control) 1 analog output 0...20 mA or 4...20 mA (Metal level)
Cooling	Dry, free of oil and cool compressed air (3 to 5 bars and max 20°C) DIN1343 => 67Nm <sup>3</sup> /h DIN2533 => 70Nm <sup>3</sup> /h
Calibration	Factory calibrated
Testing	Autotest feature
Interchangeability	Less than 5 minutes

## MECHANICAL DIMENSIONS

