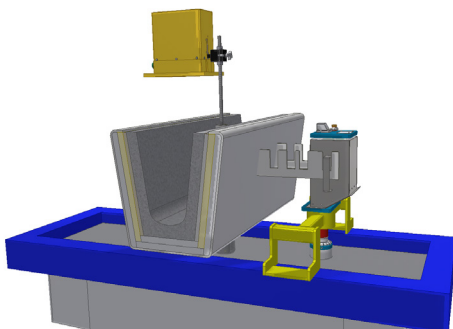
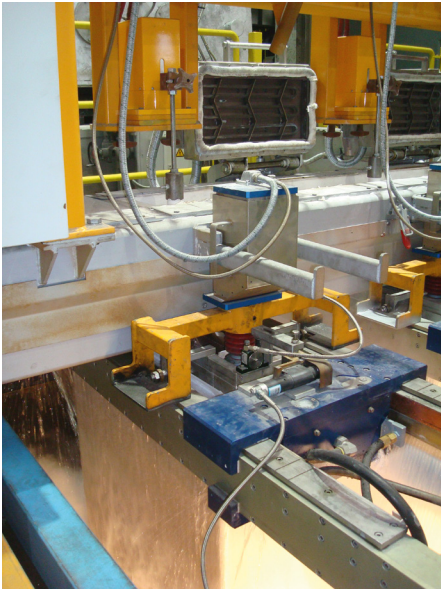


EFFICIENCY

09/18



GENERAL DESCRIPTION

Lack of molten metal level control during mold filling is the main reason for aborting continuous cast and it results in a consequent loss of material costs and time production. The GAP Molten Metal Level Control is a core solution for a casting machine that decidedly delivers an increasing productivity. With this system, each molds is equipped and monitored the best possible way.

The generally used inductive sensors in the usual automatic regulation have a measuring range of only 40 or 50 mm. Consequently, at first, the mold has to be filled without any regulation, maintaining the plugs just open at a fixed value. In this situation, if for any reason, the filling speeds of all molds differs too much, the cast has to be aborted to ensure safety of the machine.

The solution for the mold filling problem is to regulate the level as soon as the metal enters into the mold. However, this requires a particular sensor with a larger measuring range.

Our GLS (GAP Level Sensor), based on an inductive sensor fixed on a vertical moving mechanical system, is fully able to complete this task. This autonomous system covers a range of up to 200 mm with the help of an integrated microcontroller and a motional head. The device is entirely designed to withstand the heat over the molten metal.

The robust combination of GLS to a GLA (GAP Level Actuator) in every molds coupled to the PLC of the GAP MMLC allows the molten metal level to be adapted during all stages of the casting process. Thanks to its flexible parametrization, **this system can be build in a new or existing casting machine.**

FEATURES OF THE GLS/GLA SYSTEM

- Regulates the same molten metal level at the same time in several molds
- Enables a very good reproducibility (recipe)
- Assures better safety during the start of casting
- Provides close accuracy in the steady state phase (required for EMC casting)
- Allows low level casting (required for improved DC casting)
- Ensures safety with automatic and remote initiation of emergency procedure

INTEGRATION IN EXISTING AUTOMATION

A program running on the computer of the casting machines (PLC, PC or Real Time system) has to provide recipe parameters for filling and starting curves through PROFINET or PROFIBUS. This interface provides also requests to initiate checking procedures of molds equipment. We recommends executing it before every casting. The states of the process are also communicated through this bus. Only emergency signals are connected using physical wires.

In each case, our specialists need to examine and assist for the integration into an existing machine. However, in all cases, GLA and GLS remain integrated in a harmonious way for the simple reason that both components are independent units linked to the machine only by input and output signals.

METAL LEVEL REGULATION STAND-ALONE UNIT

- Integration up to 6 molds
- Regulation through **GLA** and **GLS**
- Interface to casting machine automation with Profinet or Profibus
- Selectable molds and filling curves (recipe)
- Any mechanical adaptation on request

