

ABSTRACT

In the metal casting process, one of the methods used is the centrifugal casting method with several important parameters that must be considered, one of which is the rotational speed of the cast and the G Factor acting on the casted object. However, centrifugal casting machines usually still lack indicators to meet the parameters needed to monitor the casting process. Given these shortcomings, it is necessary to add a G Factor indicator to ensure the parameters in the casting process to be more measurable with the hope of better print results. This system uses infrared sensor and photodiode to detect rotation based on the number of pulses from the sensor detected per second. The results of the calculation of machine speed, will be processed and calculated by the microcontroller into G Factor. The results of the G Factor calculation are displayed on the LCD display and sent to the company server so that it can be viewed on the company intranet network to support the development of industry 4.0. Based on the test results, the prototype of this tool can detect engine speed up to 3000RPM. However, the measurement results are still not accurate. This tool is able to calculate the G Factor accurately. This tool calculates a G Factor of 319.43 at a rotational speed of 3000RPM at a 2.5-inch casting radius. Therefore, by building and testing the prototype of this tool, it is hoped that it can be further developed so that it can be applied directly to the industrial environment.

Keywords: Centrifugal casting, G Factor, IoT, RPM