



WELDING PROCESS MONITORING

Online welding defect detector which allows to estimate the presence of defects during the welding. This early detection of defects can translate into great savings in time and material.

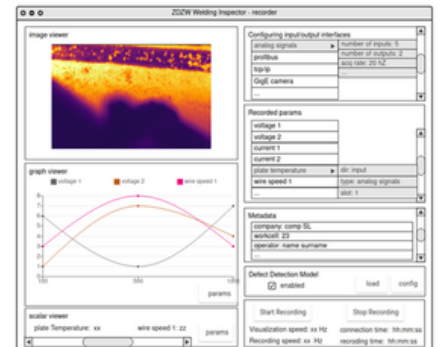
SOLUTION DESCRIPTION

The Welding Process Monitoring solution is a tool that helps welding SMEs, with a relevant degree in automation but a low/medium level of digitalization, to monitor their systems and utilize advanced analysis techniques for data modeling. This enables them to achieve an online defect detection system that alerts to the presumable presence of defects during the welding process.

The Welding Process Monitoring solution is implemented in two stages.

Firstly, a software and hardware system is deployed in welding facilities to collect real-time data from the welding process. The hardware is designed to integrate with existing machines and sensors, allowing for the monitoring of process parameters such as current, voltage, and wire speed.

In the second stage, the collected dataset is analyzed and correlated with Non-Destructive Testing (NDT) information to develop models for online defect prediction. The monitoring system is then updated by selecting relevant sensors, eliminating unused ones, and deploying the defect prediction models.



MAIN BENEFITS

With the Welding Process Monitoring solution it's now possible to predict online defects with AI analysis that is scalable and adaptable to different welding processes

- ▶ Enables an early actuation on defect correction, reducing waste on reworking time and scrap.
- ▶ Offers a powerful tool to analyze the real welding process.
- ▶ Easy to add new sensor and communication protocols.
- ▶ Can be adapted to different welding processes.

PRODUCT OWNER



The ZDZW project has received funding from the European Union's Horizon Europe programme under grant agreement No 101057404.