

EuroBLECH 2008:

plasmo ProcessObserver series:

The high-performance process monitoring system for industrial welding production

- **Online process monitoring during laser welding, cutting and drilling**
- **Automatic quality assurance in real-time**
- **Fault assessment during the processing procedure**
- **Detection of faults such as pores/weld contraction, ejections/weld spatter, changes in the welding depth, poor connectivity and impurities**
- **Documentation and storage of measurement data in accordance with ISO 9001/2**

New 2008: ProcessObserver advanced

- **Process monitoring over two independent channels**
- **Process monitoring and performance measurement with one device**

plasmo ProcessObserver

The plasmo ProcessObserver series is a system for online process monitoring in laser material processing (welding, cutting, drilling and soldering). The monitoring is performed through observation of the - occurring during the processing procedure - process light in the visible and invisible (NIR) area. Fast signal processors and RISC processors provide online classification and fault assessment directly during the processing procedure. The visualisation and parameterisation is carried out by an industrial PC. The ProcessObserver series quickly and reliably detects irregularities and faults such as welding interruptions, pores (also inside the material), etc.

Many uses

Numerous customers from the most varied of sectors of the manufacturing industry are convinced by the merits of the ProcessObserver classic. Hence, the plasmo ProcessObserver fulfils testing tasks in welding applications in body-shell lines or power-train plants as well as in the production of:

- tubes and profiles
- sensors and switches
- tailored blanks
- construction, furniture and window fittings
- car seats and seat belt pre-tensioners
- turbine blades
- white goods – from the refrigerator across the dishwasher through to the washing machine
- ...

New 2008 - Further development: ProcessObserver advanced

The plasmo ProcessObserver advanced is an evolved version of the ProcessObserver classic. The plasmo ProcessObserver advanced is based on the newest technologies. Welding, cutting and drilling can thus be checked and documented in real-time without any contact and non-destructively. All recorded data are available for a detailed off-line analysis. Process monitoring and performance measurement is now possible in one device. An advancement, which completely meets customer requirements. "We develop our products for and with the customers," said Arnold Braunsteiner, CEO of plasmo Industrietechnik. "The possibility of process monitoring over two channels provides our customers with numerous new possibilities for further improving the quality of their products, making quality assurance more efficient, and in turn providing their customers with the best product," added Thomas Grünberger, CTO of plasmo Industrietechnik.

What is the plasmo ProcessObserver advanced capable of?

An automatic process monitoring system that is integrated into the manufacturing process.

- Faults are detected immediately; the analysis is conducted without any contact and non-destructively.
- All production data are fully documented in accordance with ISO 9001/2.
- Two independent channels (performance measurement and process monitoring).
- The statistical long-term analysis of the ProcessObserver advanced is an effective means for process optimisation!
- The entire welding process can be optimised. This reduces manufacturing costs.
- Systematic welding defects are diagnosed with the software package for off-line analysis.

How does the ProcessObserver advanced work?

The process light is transferred to a RISC computer (power PC) via an optics fitting, fibre holder, or a fibre integrated in a processing head by means of an optical fibre. The digitised and processed signal is analysed and evaluated by the RISC processor. The result is displayed in real time on the front display and one of the digital PLC outputs through an IO/NIO analysis (IO = OK; NIO = Not OK) at the end of the welding stage. In addition, the recorded signal data is forwarded to a super-ordinated workstation via the RS232 or Ethernet interface for visualisation. Parameterisation tools and visualisation software (online/offline) are available for the workstation. In addition to a statistics module for short-term and long-term analysis, other useful software tools are available.

Photo download and further information: <http://www.plasmo.eu>