

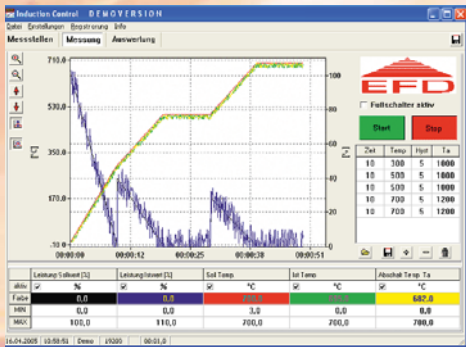
## Induction Soldering



*Programmable PID Controller PI 6000*



*Induction Brazing of Stainless Steel in Protective Atmosphere (Brazing Temperature)*



*Graphic Presentation of Multiple Measuring Lines*

### The Task

In induction brazing and soldering applications, **correct temperature and heating rates**, precise dosing and concentration of heat input and high **process repeatability** are instrumental in meeting the specified quality requirements and achieving optimum utilization of energy. Particular importance is attached not only to the **continuous monitoring** of these process parameters but especially to **full process coverage for documentation purposes**. At the same time, the acquired data must be usable for **closed-loop process control**.

With regard to product quality, the **process temperature** is the most important factor. Excessive temperatures will adversely affect the action of fluxes, cause porosity in joints or brittleness in materials. Low temperatures, in contrast, will cause insufficient wetting and incomplete filling of the air gap in the joint. The only possibility to obtain reliable temperature measurements in induction processes is to use **infrared-based non-contact methods**.

### Our Solution

#### Pyrometer-based process monitoring

- Continuous measurement and monitoring of process temperatures
- Reliable temperature readings of hot metals using pyrometers measuring in the short waveband
- Small fields of view and short acquisition times for spot-on measurements

#### Process control by programmable controller (PI 6000)

- Closed-loop temperature control of brazing/soldering process (operating temperature)
- Specification of heating and cooling rates, e.g. to prevent distortion in the parts to be joined and cracking in brittle materials
- Specification of multiple holding steps for soaking of massive components or for automated feeding of filler wire

#### Special InductionControl software

- Full-coverage process documentation
- Monitoring and validation of process reliability

### Your Benefits

- High-quality production to customer specifications
- Easy and fast process optimization
- Robust, repeatable production processes
- High flexibility through multiple-program controllers

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