Application example

**Welding enamelled wires**

**Task**
Individually enamelled copper wires need to be securely welded to a copper terminal without having to remove the enamel beforehand. Residual enamel must not affect the electrical conductivity and the connection must exhibit sufficient welding strength.

**Solution**
The connection was created using a linear MPX spot welding system – without having to insulate the wires in advance. In order to remove the enamel layer in a preceding cleaning phase, a pressure and amplitude profile is created with suitable parameters. The connection is then welded with a high level of pressure and energy in a second stage.

**Configuration advantages**
As a result, the enamel is easily removed from the wire before welding and without having to move the wire. The TCSS process controller offers extensive quality assurance options. A sonotrode with multiple spare weld surfaces keeps operating costs to a minimum. This welding system’s modular structure allows it to be flexibly integrated into automatic production lines.

The application was welded with a linear 20kHz, 3.6kW MPX metal welding system, MAG generator and TCSS process controller with a force and amplitude profile.

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