

Application example

Welding enamelled wires

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



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 TCS5 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 TCS5 process controller with a force and amplitude profile.