

6 Maintenance and care

6.3.5 Measurement of insulation resistance

The mains switch must be on before the insulation in the interior of the machine through to the transformer can be checked. If a mains contactor is fitted, this should be bridged or the measurement must be carried out on both sides.

The insulation resistance must not be less than:

Input power circuit (mains)	against	Welding current circuit and electronics	5 MΩ at test voltage 1000V=
Input power circuit (mains)	against	Casing (PE)	2.5 MΩ at test voltage 500V =
Welding current circuit and electronics	against	Casing (PE)	2.5 MΩ at test voltage 500V =

6.3.6 Measuring the leakage current (protective conductor and contact current)

These measurements cannot be carried out with a normal multimeter. Even test devices for VDE 0702 (especially older devices) are generally only intended for 50/60Hz. With inverter welding machines, however, significantly higher frequencies occur, which can interfere with some measuring devices, and results in others measuring the frequency incorrectly.

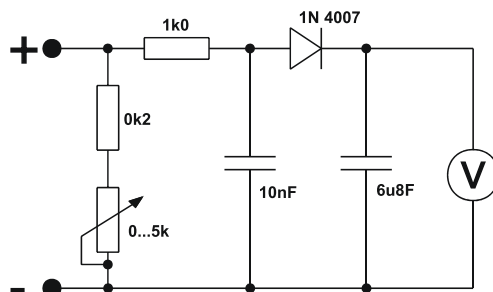
Test devices must meet the requirements of VDE 0404-2. For the frequency response measurement, please refer to DIN EN 61010-1 Appendix A – Measuring Circuit A1.



For these measurements the welding machine must be switched on and supplying open circuit voltage.

- 1. Protective conductor current: <3.5mA
- 2. Contact current from welding sockets separately to PE: <10mA
- 3. Contact current of accessible, conductive parts not connected to PE, to PE: <0.5mA

6.3.7 Measuring the open circuit voltage



Measuring circuit to DIN EN 60974-1

Connect the measuring circuit to the welding current sockets. The voltmeter must display mean values and must have an internal resistance $\geq 1 \text{ M}\Omega$. During the measurement, adjust the potentiometer from 0 kΩ to 5 kΩ. The voltage measured should not deviate from that given on the rating plate by more than $\pm 5\%$ and must not be greater than 113V (for machines with VRD: 35V).

6.3.8 Function test of the welding machine

Safety devices, selector switches and command units (if fitted) and the entire machine or the entire system for arc welding, must be functioning perfectly.

- 1. Main switch
- 2. Emergency stop devices
- 3. Danger reduction devices
- 4. Gas solenoid valve
- 5. Message and control lamps
- 6. Command devices and selector switches (including remote controls)
- 7. Locks