

'The Weld Checker'



EWM-1

SPOT WELD MONITOR



The ESL Weld Checker is a measurement and alarm unit designed for operation with all types of spot welders.

The Weld Checker measures the energy content of the weld, as it is forming, and compares it to upper and lower levels of acceptability.

The Weld Checker is specifically designed to release the skilled machine setters and supervisors from constant monitoring of production spot welding.

There are several parameters which affect spot weld quality:

Power Level	Squeeze Pressure
Weld Time	Tip Shape
Tip Condition	Material Condition

As these parameters vary with time and wear the effect is indicated on the digital display. Therefore the Weld Checker also performs the role of diagnostic tool during machine setting and trouble shooting.

At the end of each weld the Weld Checker compares the measured energy of the weld against preset values determined by the machine setter during setup.

The result of the comparison is signalled by either a green light for OK, or one of two red alarm lights - high or low.

The alarm condition is also indicated by a brief high pitched audible tone.

Each of the three conditions also has associated relay contacts which change state briefly, for use in external monitoring or control applications.

FEATURES

Simple operation - can be put into immediate productive use.

Spring loaded clips ease connection to welding arms / electrode holders. (Easily removed for permanent connection of sensor wires to welder).

No mechanical alteration to welder required to fit or remove the weld Checker.

Unique measurement method detects effects of electrode wear on weld quality - indicates when to tip dress electrodes before they effect quality.

Detailed manual describes different methods for determining set points with goal of having alarms indicate time for maintenance before creating faulty welds.

No need to ever create faulty or weak, "out of 'spec", spot welds again!

Measurement Method

The measurement performed by the ESL Weld Checker is: $V \times t$ millivolt Seconds

We know from Ohms law that : $V = I \times R$

So the Weld Checker measurement $= I \times R \times t$ millivolt Seconds

It should be noted that: $\text{Energy} = I^2 \times R \times t$ Watt Seconds (or Joules)

Note that the ESL Weld Checker is measuring every element of the energy equation, and the measurement will alter if there is a change to any of the parameters affecting weld quality.

The Weld Checker is therefore not calibrated in in engineering units (Watt Seconds or Joules) but the unit may be correctly described as measuring and displaying non-specific "Energy Units".

Specifications

POWER SUPPLY

230 VAC +/- 10% 25VA

DIMENSIONS

280mm D x 200mm W x 75mm H

WEIGHT

2Kg

DISPLAY

3 Digit Red LED

MOUNTING

Free standing on any level surface

ACCURACY

+/-2%

The unit displays mV Seconds multiplied by the range switch setting.

ALARM OUTPUT

Audible tone 3KHz 85dB min at 1M

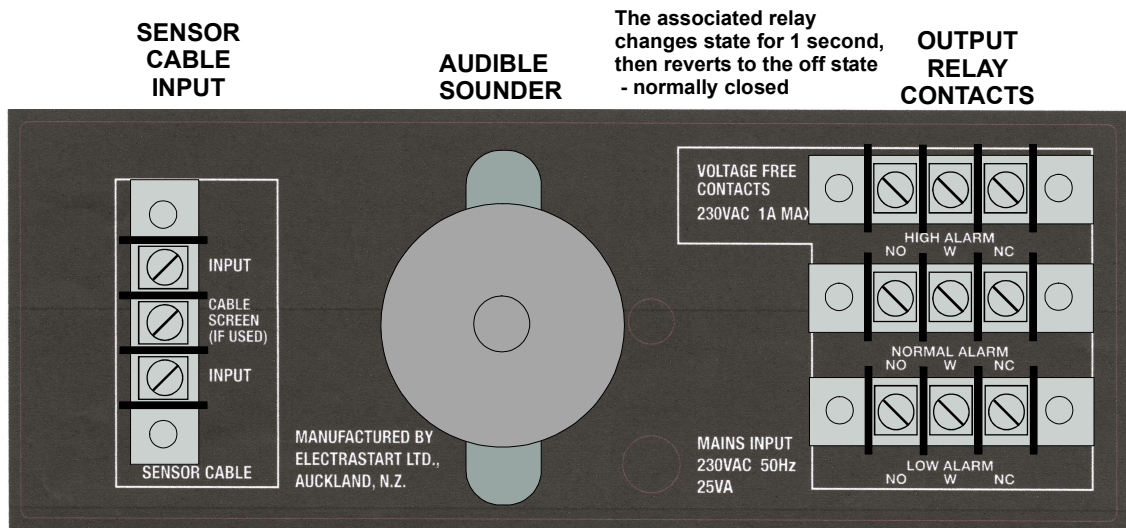
2 x RED LED - high and low indication

Relay Contacts: 230VAC 1A max.

NORMAL INDICATION

Green LED

Relay Contacts: 230VAC 1A max.



CONNECTIONS ON THE BACK OF THE WELDCHECKER

Manufactured by

Electrastart Ltd
Auckland
New Zealand



WWW.Electrastart.nz

Supplied with:

Comprehensive operator manual.

1.5M mains lead with molded 230V plug.

Pair of 1.5M Sensor Leads terminated with spring clips.