

SafeTac VRDT Series 3

Description & Operation

Series VRD tester is designed to test the turn on & turn off DC voltage levels of any DC MMA welding machine for compliance to Australian Standards 1674.2 2007.

The current law states when the resistance across the output terminal's of a welding machine drops to below 200 Ohms the VRD should turn off and reduced output will increase to full OCV.

When the resistance across the output terminals increases to above 200 Ohms then the VRD should turn on reducing the output level to a level deemed safe by AS 1674.2 2007 that level being 35 VDC peak.

The time taken to switch from high OCV to Low OCV should be less than 300 milli seconds.

AS 1674.2 2007 also states some method of indicating when the output of the welding machine is at a reduced value should be provided typically a green light for safe (Reduced OCV) & a Red light for Danger (Full OCV)

Note: To test the switching time a recording storage oscilloscope should be used.

VRD Tester 200 Ohm Resistor Checking Procedure:

For the test to comply with AS 1674.2 2007 a precision 200 Ohm resistor is internally fitted ,this value can be checked periodically by placing a calibrated ohm meter across the input terminals of the tester resistance should measure 200 Ohms plus or minus 1% at 25 degrees centigrade.

VRD Tester Voltage Level Indicator Operation:

The unit is fitted with a Green LED to indicate the output voltage is less than 35.2 volts DC & a Flashing Red led to indicate the output voltage is greater than 35.8 Volts DC, There is about 1 volt of hysteresis between the green & red lights.

VRD Tester Voltage Level Indicator Calibration Check Procedure:

To test the correct operation of the indicators place a calibrated voltmeter across the output leads of the tester. Place a variable voltage DC power supply (0 to 40 Volts or higher) across the input leads of the tester Increase the input voltage to the tester from 0 to about 35.8 VDC & observe the transition point from Green to Flashing red this should be around 35.8 VDC then reduce the voltage to below 35.4 VDC this time observing when the lights change from flashing red to green , this should occur around 34.2 VDC.

VRD Tester Connection:

If using a portable VRD connect the input leads of the VRD tester to the output leads of the VRD.

If using a machine with an inbuilt VRD connect input leads of the VRD tester to the stick welding terminals of the welding machine.

Connect welding leads (Electrode holder & Work clamp) to output of VRD tester, set current on welder to around 100 amps for a 2.5mm electrode then turn on welder.

VRD Tester Indicators:

If no lights are on press the green button on the tester Green light should turn on.

If flashing green red alternately at a fast rate battery is flat & needs changing.

If LED is flashing Red at turn on then either the welder is not fitted with a compliant VRD or VRD needs calibration.

If Green light is on weld on a piece of scrap material light will change to flashing red if voltage exceeds 35.8 Volts DC.

If when welding is complete Red light is still flashing & will not return to Green then VRD needs calibration.

When unit is disconnected and not used for around 3 minutes device will turn off to conserve battery life.

Calibration should be checked every 3 months, note unit is fitted with industrial micro processor & a temperature stabilized precision voltage reference to ensure very little change in calibration over time.

Replace 3.7 Volt Lithium Iron batteries are available from SafeTac or SafeTac distributors.

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