"SS1200" 3 PHASE INVERTER A.C DRUM WELDING CONTROL

A QUANTUM LEAP IN ENERGY SAVING TECHNOLOGY

1.0 INTRODUCTION

AC versus DC drum seam welding:-

• Single-phase DC welding has been operated on British Federal drum welding machines since 1990, to reduce the installation and running costs of the large primary electrical supply demanded by conventional single-phase AC welding.
In recent years; 1000Hz / Medium Frequency inverter controlled three-phase DC welding was introduced for similar reasons, with the added advantage of balanced loading across all three phases of the electrical supply.

• Based on above experience, it is generally recognized that high speed AC drum welding is less sensitive to issues such as the machine mechanical settings and / or to changes in steel specification; both of which must be very closely controlled to ensure satisfactory results when DC welding.

• SS1200 is a new type of inverter welding control, utilising the latest power switching and electronics to allow AC drum welding to be allied with the reduced installation and operating costs previously only possible with DC welding.

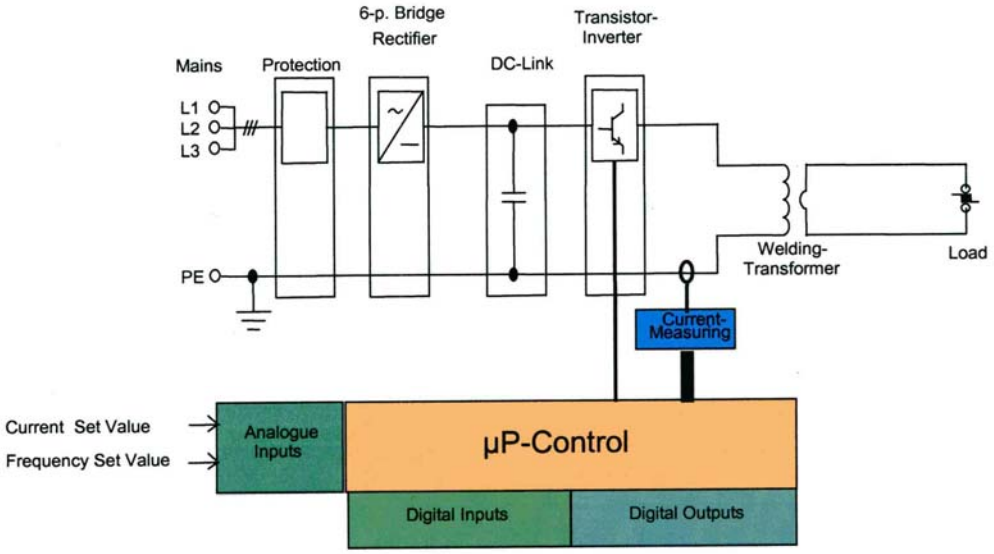
1.1 General Description

• S1200 is supplied in a separate floor-standing cabinet complete with mains electrical circuit breaker, suitable for connection between a conventional single-phase AC drum welding machine transformer and a three-phase electrical supply; and comprises of the following elements:-

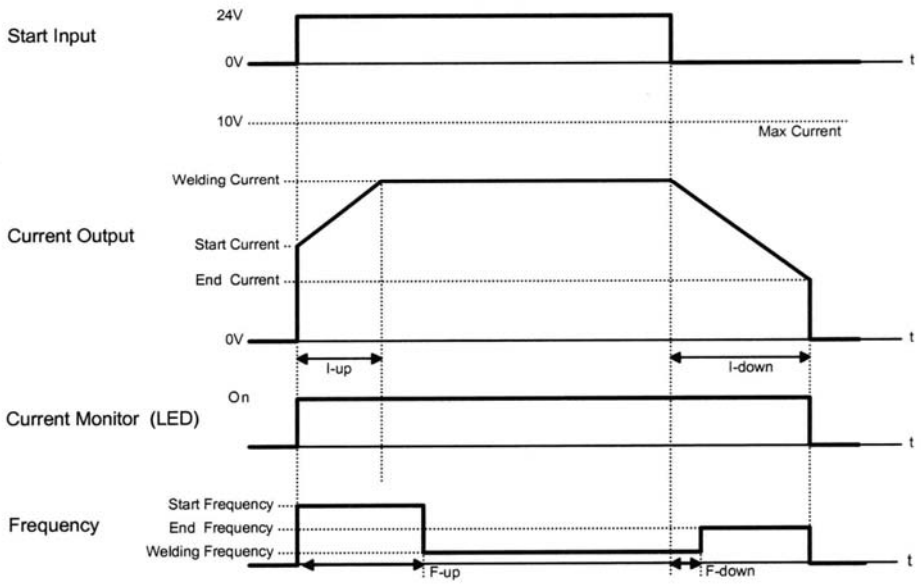
• Power control: comprises a Bridge Rectifier, DC Capacitors, Transistors (IGBT's) and drive circuitry.
This element converts primary supply three phase AC to DC, then converts to single phase AC for supply to the welding transformer.

• Microprocessor control: for operator programming of the weld parameters.
This element send and receives all the output and input signals for independent digital regulation of the welding current and the frequency to ensure the required welding current is delivered via primary current feedback from the transformer.

1.2 Diagram



1.2 Welding current profile



1.3 Utilities

• Electrical (welding)	400 to 480V 50 or 60 Hz (to be specified); One- three phase plus earth connection via HRC fuses to factory supply rated for 200 A continuous primary current.
• Electrical (control)	One-24V DC factory supply
• Water	One- factory supply to single inlet. Maximum water inlet temperature: 25˚C Clean water with minimum 6 litres per minute flow rate. One- factory return from single outlet.

1.4 ADVANTAGES OF SS1200 INVERTER

- Balanced power connection across 3 phases
- Reduced power consumption of circa 60%
- Increase in power efficiency Cos μ 0.98
- Superior weld quality with use of full sine wave
- Superior edge weld with precision initiation
- Constant current regardless of electrode condition or material resistance
- Smaller heat band due to higher welding frequency
- Improved weld wheel life
- Simplified weld control settings
- Can be connected to standard AC transformer

2.0 Safety

• SS1200 will comply with E.U safety regulations, supplied with C.E Certificate of Incorporation where required;(based on its installation with British Federal / Federal Welder drum welding machines).

3.0 Installation ,Commissioning & Training

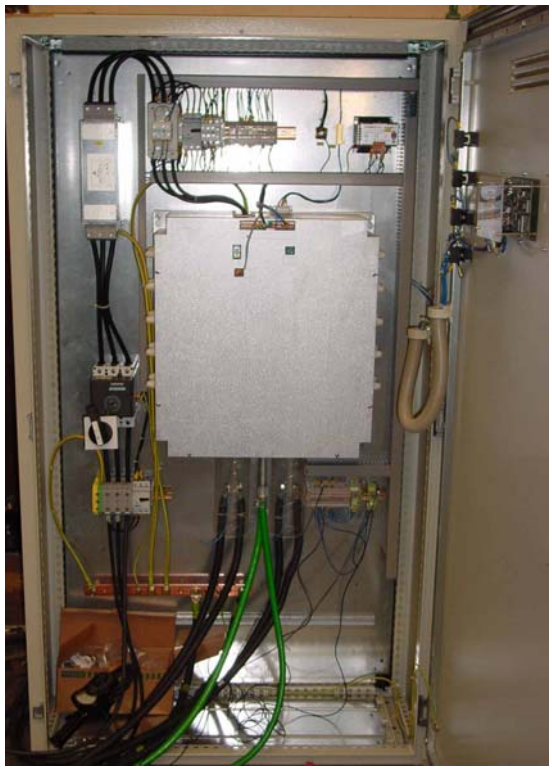
• The control will require a 3 phase supply were as your existing control is connected to 2 phases only. The control is supplied in a self contained cabinet that will stand in place of or next to the existing control cabinet.
A Federal Welder technician can commission the control and train your operators- see quotation.

4.0 Warranty

• Warranty is provided for one year operation from date of completion of commissioning, or 30 days from date of delivery in the event of commissioning is delayed by factors outside of Federal Welder control; whichever is soonest.

5.0 Documentation

- One instruction manual will be provided in English language; containing...
- Set up / calibration procedure.
- Programming procedure.
- Electrical schematics.



Dimensions: width x depth x height (mm)	1000 x 400 x 2000
Colour	RAL 7032 light grey