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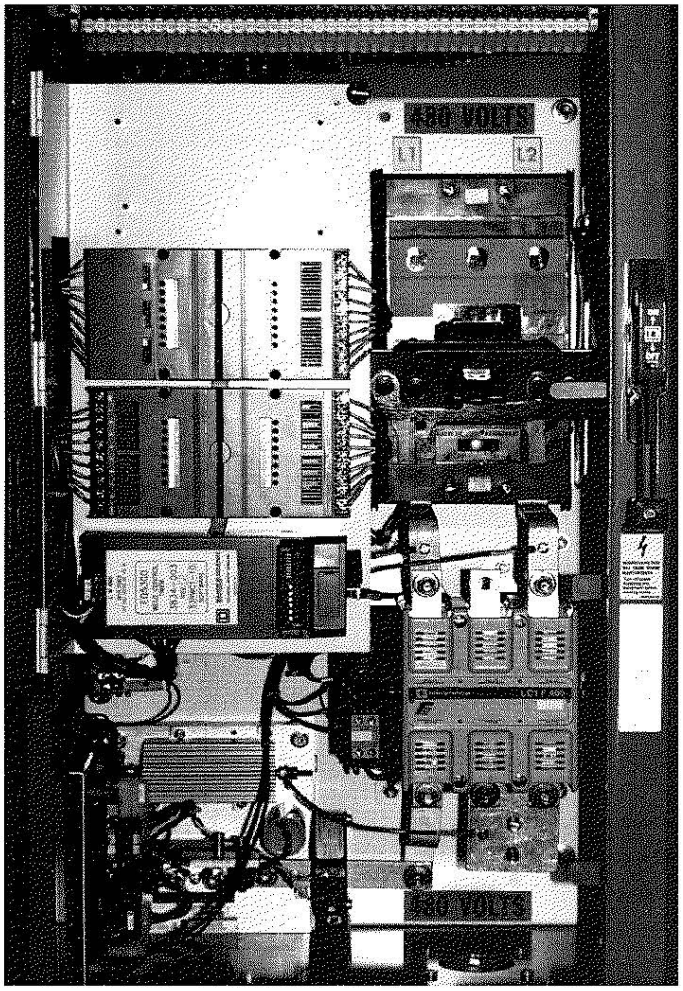
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Class 8993
EQ5300
Resistance Weld Control



The EQ5300 resistance weld control, Square D's fifth generation microprocessor-based weld control, is designed for a wide variety of applications such as robotic, automatic, and manual gun installations. By merging state-of-the-art technology with more than 50 years of controls expertise, Square D has taken another major step toward solving problems associated with producing high quality welds on a variety of materials, including high strength and galvanized steels.

Square D products are designed and built to the high quality standards demanded by our customers. The EQ5300 weld control is assembled in the Square D Columbia, South Carolina plant which, like the other Square D facilities, is ISO 9000 certified.

INSTALLATION FEATURES

Control Connections

- User control circuit connections are made to a connector, a terminal strip located in the main control cabinet, or to a variety of remote I/O blocks.

Operator Interfaces

- Weld schedules may be programmed and monitored along with pertinent weld data from a choice of three operator interfaces.

SCR Welding Contactor

- High power SCRs function as ON/OFF switches to control the alternating line voltage to the primary of the welding transformer. The reliable SCR welding contactors used in Square D controls have been field-proven and have initiated billions of welds in many resistance welding applications.

Circuit Breaker Disconnect

- A Square D 400 ampere magnetic-only shunt trip circuit breaker serves as a disconnect device. This permits de-energization of the control in emergency situations.

Welding Isolation Contactor

- An optional welding isolation contactor can be factory installed and operated by the weld control to meet safety requirements.

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EQ5300 Resistance Weld Control

TECHNOLOGICAL ADVANCES FOR IMPROVED WELD QUALITY

Absolute Accuracy Timing

- All weld control timing is referred to incoming line frequency resulting in absolute accuracy timing.

Digital Heat Control

- Precise weld current adjustment in 1% increments.

Automatic Power Factor Adjustment

- The EQ5300 automatically adjusts for varying power factor situations, simplifying installation, maintenance and setup.

Current Regulation

- Despite changes in line voltage and variations in welding circuit parameters, the control maintains constant primary welding current. If constant current is not used, the control utilizes automatic voltage compensation for adjusting to changes in weld circuit parameters.

Primary Amp Limit

- A low and high primary amp limit may be programmed for each SCR and schedule. If the proper values have been programmed, this fault indicates a suspect weld.

Slope Weld Schedule

- Slope schedule allows you to gradually increase the weld current at the beginning of the weld and to gradually decrease the current at the end of a weld. Slope considerably reduces expulsion and poor, brittle welds.

AUTOMATION CAPABILITY

Compatibility

- The EQ5300 series weld controls will interface with existing robotic control, machine control, and hand gun operations.

31 Programmable Schedules

- Thirty-one fully programmable multi-pulse weld schedules are available. Freestyle programming is also available.

Fault/Alert Ouputs

- Serious system malfunctions cause control shutdown (faults) while less serious malfunctions result in warnings (alert). Certain malfunctions can beprogrammed as fault or alert outputs. Both fault and alert situations cause diagnostic displays on the Operator Interface. Fault/alert outputs simultaneously energize and are available for interrogation by the network.

Communication

- A network port is provided enabling computers and other industrial communication devices to interrogate the welder for weld schedule data, weld status, fault status, and other diagnostic information.

ADDITIONAL FEATURES

Calibration of Secondary Current

- The control will accept a transformer turns ratio for secondary current calculations or it can be calibrated, using a 1or 2 point sample, to a known secondary current reading obtained from a welder checker at the weld gun.

Tracking High/Low Current Limits

- The EQ5300 features two methods of current tracking limits. The first adds a percentage of the current boost from the steppers to the high/low limit as the steppers add current to compensate for tip wear. The second method sets the current limits to track a curve that is automatically developed by the control from a signature, application, and operating history of a particular gun.

Automatic Weld Retry

- The user can program the control so that under designated faults, such as low current, the control will automatically retry the weld sequence a programmable number of times before issuing a fault. This feature can eliminate nuisance faults, costly repairs, and missed welds.

Memory Pack

- The weld control timer contains a memory pack to store all static program and configuration data in the timer. Additionally, the memory pack contains diagnostic LEDs to monitor data transfers.

Programming Software

- EQ5300 programming software permits the weld control to be programmed from a PC-based programmer such as a robot operator interface. This software is windows compatible.

SCR

- Square D's modular SCR is designed to be removed from the control without disconnecting water lines.

Control Designed with MTTSWA

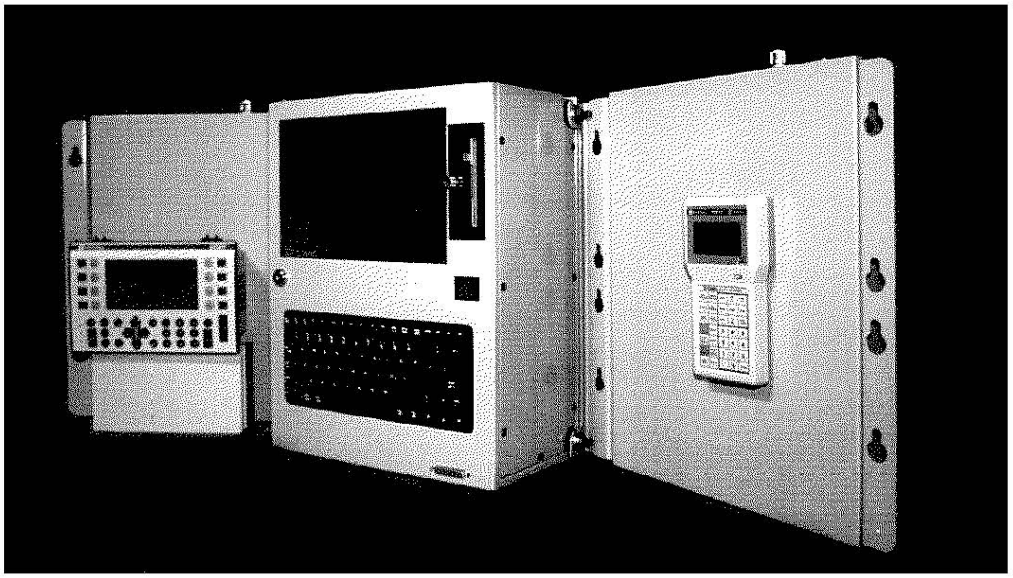
- Mean Time To Start Welding Again. The control features enhanced diagnostics, easily replaced components, and program backup capability to get the control up and producing quality welds quickly.

Fault Diagnostics

- The weld control fault diagnostic messages have been expanded to accurately report the fault condition. They are available at the robot control, hand-held programmer, data entry panel or over the network.

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OPERATOR INTERFACES



The EQ5300 weld control can be programmed by a *family* of three Operator Interfaces, the C600, C1600, and C3600.

C-600 HAND-HELD PROGRAMMER

- This hand-held programmer provides display and keyboard for data entry and includes:
- Four line, 16 character CD display panel
- Dedicated function, arrow, escape and return keys complement the 0-9 numeric keys
- The keypad is used to enter data, set up welding schedules, set parameters, program, and review the faults and alerts
- Designed to be used by designated personnel and attached to the welder only when information is to be displayed or to make program changes
- The C-600 is also capable of communicating with any control on a network from the control to which it is attached.

C-1600 DATA ENTRY PANEL

- This fixed data entry panel provides display and keyboard for data entry and includes:
- Four line, 40 character vacuum fluorescent display
- Dedicated function, arrow, escape, and return keys complement the 0-9 numeric keys
- The keypad is used to enter data, set up welding schedules, set parameters, program, and review the faults and alerts
- This device is designed to remain attached to the weld control at all times for information display and program changes.
- The C-1600 communicates with the control to which it is attached, or it can provide network functionality.

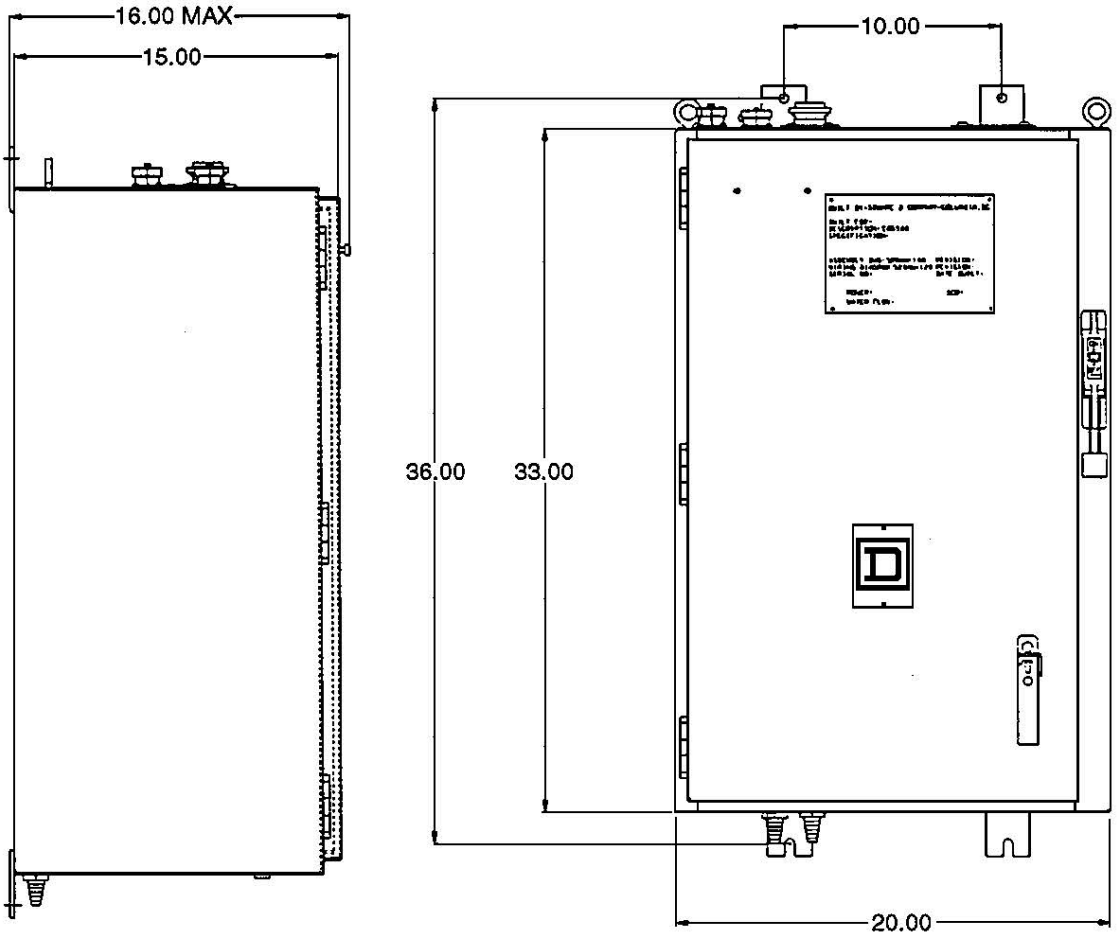
C-3600 PC-BASED PROGRAMMER/WORKSTATION

- The C-3600 programmer/workstation is a PC-compatible operator interface. It performs the normal functions of an operator interface on a large, friendly platform. The C-3600 provides the following additional functionality:
- 386 microprocessor
- Back-lit LCD display
- Membrane keyboard for plant floor use
- Capable of programming up to 31 EQ5300 controls over an RS485 network
- Can be utilized as a common point for feeding the welder network data to a host computer.

THE EQ5300 WELD CONTROL IS MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING UNITED STATES LETTERS PATENTS: 4104724, 4251764, 4254466, 4282417, 4289948, 4289951, 4301351, 4388515, 4399511, 4456809, 4459456, 4459457, 4463244, 4516008, 4910659, 4945210, OTHER PATENTS PENDING.

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EQ5300 Resistance Weld Control



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