



Specification for Resistance Welding Controls



American Welding Society®



**AWS J1.1M/J1.1:2013
An American National Standard**

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Specification for Resistance Welding Controls

1st Edition

Prepared by:
American Welding Society (AWS) J1 Committee on Resistance Welding Equipment

Under the Direction of
AWS Technical Activities Committee

Approved by
AWS Board of Directors

Abstract

This standard provides nomenclature pertaining to the design, construction, and programming of resistance welding controls. Standard calibration and performance parameters as well as labeling and documentation requirements are also outlined. The purpose is to promote standardization, safety, and proper application of resistance welding controls.

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Foreword

This foreword is not a part of AWS J1.1M/J1.1:2013, *Specification for Resistance Welding Controls*, but is included for informational purposes only.

The J1 Committee on Resistance Welding Equipment was formed by the American Welding Society in 2005 to establish standards related to the design, construction, calibration, safe operation, and maintenance of resistance welding equipment. This publication is the major product of work done by a Task Group in support of that purpose.

This document is intended to supersede the Resistance Welder Manufacturers' Association (RWMA) *Bulletin 5 – Resistance Welding Control Standard* published in 1994. RWMA Bulletin 5 had superseded the National Electrical Manufacturers Association (NEMA) document ICS-5:1979 of the same name. This document therefore perpetuates a long legacy to promote standardization, safety, and proper application of resistance welding controls.

The Resistance Welder Manufacturers' Association amalgamated with the American Welding Society in 2005. The RWMA Committee of the American Welding Society continues to promote the application and advancement of the resistance welding process. The guidance and support of the RWMA Committee has contributed to the successful execution of this document.

This first edition of this AWS publication, J1.1M/J1.1:2013, *Specification for Resistance Welding Controls*, builds on the efforts of the past and provides considerable revisions throughout. Control function definitions and label examples have been enhanced. Many design prescriptive requirements have been removed. Inverter technology has been added.

Your comments for improving J1.1M/J1.1:2013, *Specification for Resistance Welding Controls* are welcome. Submit comments to the Managing Director, Technical Services Division, American Welding Society, 8669 NW 36th Street, #130, Miami, FL 33166; telephone (305)443-9353; fax (305) 443-5951; e-mail info@aws.org; or via the AWS web site <<http://www.aws.org>>.

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Specification for Resistance Welding Controls

1 Scope and Applicability

1.1 Scope. This standard provides nomenclature pertaining to the design, construction, and programming of resistance welding controls. Standard calibration and performance parameters as well as labeling and documentation requirements are also outlined. As there are many available resistance welding control types, configurations, sizes and models, not every part of this standard may apply in every case. This document does not supersede regulations, codes and standards relating to electrical and electronic circuit design or implementation. The purpose is to promote standardization, safety, and proper application of resistance welding controls.

1.2 Units of Measure. This standard makes use of both the International System of Units (SI) and U.S. Customary units. The latter are shown within brackets [] or in appropriate columns in tables and figures. The measurements may not be exact equivalents; therefore, each system must be used independently.

1.3 Safety. Safety issues and concerns are addressed in this standard, although health issues and concerns are beyond the scope of this standard.

Safety and health information is available from the following sources:

American Welding Society:

- (1) ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*
- (2) AWS Safety and Health Fact Sheets
- (3) Other safety and health information on the AWS website

Material or Equipment Manufacturers:

- (1) Material Safety Data Sheets supplied by materials manufacturers
- (2) Operating Manuals supplied by equipment manufacturers

Applicable Regulatory Agencies

2 Normative References

The following standards contain provisions, which, through reference in this text, constitute mandatory provisions of this AWS Standard. For undated references, the latest edition of the referenced standard shall apply. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.

American Welding Society (AWS) document¹

AWS A3.0M/A3.0, *Standard Welding Terms and Definitions; Including Terms for Adhesive Bonding, Brazing, Soldering, Thermal Cutting, and Thermal Spraying*

¹ AWS standards are published by the American Welding Society, 8669 NW 36th St, #130, Miami, FL, 33166.