

Export is becoming an increasingly important business for U.S. manufacturers of machines and their electrical controls. With these opportunities also comes the responsibility to meet the codes and standards of the country where the equipment will be installed.

Siemens is a manufacturer of equipment for the global market and manufactures products for global application.

European Union/EEA

Effective January 1997, equipment exported into the EEA, comprising of 18 countries of the EU and EFTA, must be provided with the CE mark, symbolizing conformity to the relevant directives issued by the European Union. Conformity with the directives is obtained when the equipment is manufactured in accordance with the appropriate EN standard published in the Official Journal of the European Union. Manufacturers are required to issue a Declaration of Conformity (DOC) normally based on self-certification. Third party certification is required on certain high risk machines, such as punch presses and saws. These machines are listed in Annex IV of the Machine Directive (89/392/EEC). The directive also specifies that technical documentation is established and made available, on request, to European authorities.

The EU issued many directives for a variety of products and services, but for most electrical products only three directives apply:

Low Voltage Directive

(73/23/EEC and amendments)

Applies to all equipment with a voltage rating between 50V and 1000V AC or 75V and 1500V DC, and must not endanger the safety of persons, animals, or property when installed and operated as intended.

Electromagnetic Compatibility (EMC) Directive (89/336/EEC and amendments): It states that all equipment placed on the EU market must meet the electromagnetic compatibility criteria with regard to EMC emission and EMC immunity.

Machine Safety Directive

(89/392/EEC and amendments): This directive specifies safety requirements which are wide reaching and include operator safety, machine design and controls and the potential for machinery to create hazardous situations or unsafe conditions. Manufacturers of machines are required to perform a risk analysis and employ the appropriate safety devices, such as protective doors, interlocks, emergency stops and safety relays.

Domestic Sources for Information and Standards

EU Directives and other EU publications EC Affairs Offices, International Trade Administration, Tel. 202.482.5823.

Lists of harmonized standards:

Standards:

To purchase standards:

ANSI: Tel: 212.642.4900
Fax: 212.302.1286

Global Engineering:

Tel: 800.854.7179
Fax: 303.397.2740

Glossary

AUTHORIZED REPRESENTATIVE: a person expressly appointed by the manufacturer to act on his behalf within the EU.

CE: *Communauté Européenne*, (Conformity Europe).

COMPETENT BODY: see Notified Body.

DOC: Declaration of Conformity, a statement by the manufacturer that a product complies with the relevant directive.

EC: the European Community, an earlier term, now replaced by EU.

EN: European Norms, harmonized standards issued by the European Committee for standardization (CEN) for non-electrical products, or by the European Committee for Electro-technical Standardization (CENELEC).

EMC: Electromagnetic compatibility.

CEN: European Committee for Standardization which writes non-electrical standards for the EEA.

CENELEC: European Committee for Electrotechnical Standardization, issues electrical standards for the EEA, based mostly on IEC standards.

EEA: European Economic Area, consisting of the EU and EFTA.

EFTA: European Free Trade Association.

IEC: International Electrotechnical Commission, a non-governmental organization, prepares and publishes standards for the electrical and electronic field.

NOTIFIED BODY: An independent testing company authorized by member states of the EU to perform testing and certification. Must be established in the EU.

TECHNICAL FILE: A compilation of relevant documentation, description of products, drawings, test reports which must be available to authorities.

Application

Products contained in this catalog are generally stocked and are readily available. They do meet the requirements of the North American market, such as NEMA, UL and CSA and can be installed in accordance with the National Electrical Code. Many of these products were designed to also meet the international standards and, therefore, can be used on equipment for domestic and overseas installation without local restrictions. Additionally, Siemens & Furnas offers a variety of electrical products which are primarily

intended for use in countries which are based on the IEC and/or EN standards. These products are also available. They are stocked on a limited basis.

Main differences between North America and Europe are in the standards, NEMA, UL, CSA, NEC and IEC/EN, DIN, ISO, just to mention a few and, of course, in the application. The following are a few examples:

Circuit Protection

- US and IEC type fuses are physically not compatible.
- In Europe, the fuses are located ahead of the disconnecting means, requiring special means to facilitate replacement.
- In motor branch circuits, the motor overload protection is generally integrated into the circuit breaker. The thermal trip unit is adjustable.
- Circuit breakers are permitted for ratings less than 15 Amps.
- All devices need to be of the touch-save design.
- Safety circuits must comply with the requirements of EN 60204.
 - redundancy in control circuits
 - direct opening action of contacts in safety circuits
 - control relays with mechanically linked contact elements (positive guided contacts)