

MARK

September 2006



Working to Better Meet Your Needs

New

Update – Technical Requirements

For a consultation for your equipment approvals, call our Customer Service at 1-800-559-5356.



You can find this Newsletter and other helpful information on our website at www.esapa.biz



**ESA
Field Evaluation
Services Group**

www.esapa.biz
1-800-559-5356

We'd like to hear from you. Contact us at field.evaluation@electricalsafety.on.ca

Responding to your field evaluation information needs.

Working to Better Meet Your Needs

- ESA's Field Evaluation Service's dedicated Customer Service Centre is located at: **Terence Matthews Dr, Suite 130, Ottawa, Ontario, K2M 2G3**. You can reach the Centre to request or to follow-up on Field Evaluation Services by one of the following four methods: Phone **1-800-559-5356**, or Local **(613) 271-1489**; by Fax at **1-800-559-5358**, or Local **(613) 271-6441**; or electronically at field.evaluation@electricalsafety.on.ca. You may also visit our NEW website at www.esapa.biz.
- ESA's Field Evaluation Services is licensed to apply CSA labels that are nationally recognized.
- ESA's Field Evaluation Services Group has received Accreditation from the Standards Council of Canada making our label Nationally Recognized.

New

- ESA's Field Evaluation Services Group offers same day processing on all applications received before 2:00 p.m. – please remember to include your account number on all correspondence and **if your company requires a PO# for payment, please include the Purchase Order Number when submitting your applications.**
- Please continue forwarding your **invoice payments** to the Accounts Receivable Department, PO Box 24143, Pinebush Postal Outlet, Cambridge, Ontario N1R 8E6.
- Personalized application forms are available to streamline your requests – contact our Customer Service Centre.
- ESA's Field Evaluation Services Group has now processed over 100000 requests for Field Evaluation!!!
- Inspector Jim Kendall celebrated his 25th year with our company, Senior Customer Service Representative Diane Roche celebrated her 35th year with our company, and Inspector Jack Connell celebrated his 40th year with our company.
- Inspectors Joseph Edmond, Ron Matthews, Mike Pizzola, and John Moore have all joined our dedicated team.

Look for ESA's Field Evaluation booth at this years I.A.E.I. Convention in the fall of 2006 in Ottawa!!



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Update – Technical Requirements

Subject

Suitability of products for fault levels when doing Field Evaluation

General

The following product lines need fault ratings on the nameplate:

- Industrial control equipment incorporating an overload relay (as per CSA Standard C22.2 No.14)
- Switchgear (as per CSA Standard C22.2 No. 31).
- Enclosed switches (as per CSA Standard C22.2 No 4).
- Switching and metering centers (as per CSA Standard C22.2 No 229).

CSA Standard C22.2 No14 does not require a rating if the control panel only has contactors and no motor overload relays (i.e. a lighting contactor panel).

For all other equipment (where the above standards do not apply) we recommend that the equipment be suitable for the available fault levels, but it is only a recommendation since the equipment standards do not require it.

The rating is determined by:

- Review the equipment in the following table.
- Determine if there are any series tested combinations.
- Note a series tested combination may have a higher rating than each individual component.
- Treat the series tested combination as one component for rating purposes.
- Select the lowest value and that is the rating to go on the overall nameplate.



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Technical Requirements continued

Equipment to be Checked	What to check for
Circuit Breakers	Marked interrupting rating
Fuses	Marked interrupting rating
Fuse holders	Marked interrupting rating
Overload and contactor combination	Suitability for use on a circuit capable of delivering not more than "_____" RMS symmetrical amperes, or interrupting rating etc.
Any approved product with many parts	Overall labeled interrupting rating (check for class R fuse rejecters when required)
Any individual component	Any individual labeling of a certified component with labels on the equipment showing the interrupting rating or withstand rating.
Equipment tested as series tested combination	The combined rating that is marked on the series tested combination

If a product requires an overall rating on the nameplate, then you should check with the customer to see what the customer needs in terms of a short circuit rating. Although selecting a very high rating such as 100,000 amperes will cover most applications, this may put the equipment costs very high.

The customer needs to decide what level of short circuit protection is needed for the particular product application. You may need to assist the customer with this concern. It is a business decision for the customer.

Where is this rating marked on the equipment?

One overall marking (covering the overall product) should be on the outside of the equipment where it is easy to see, near or on the equipment nameplate.



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Technical Requirements continued

BACKGROUND:

Ideally all equipment would be designed to be suitable for the available fault current, but the equipment standards have not been able to require this at this time. CSA Standard C22.2 No 14 requires this when there are motor overloads and this probably covers many of the industrial areas where there may be problems with frequent equipment failures

There are several different markings (withstand, interrupting etc.) that may be on approved equipment that describes the suitability of the equipment under short circuit conditions.

Equipment standards only require a marking on a limited amount of equipment, the labeling is to say it is suitable for a certain fault level.

SPE-1000 does not require the labeling of the suitability of products for operating where the fault amperes is high. The general rules for this are in the Ontario Electrical Safety Code 14-012 (a) and 2-100 (these are also a Canadian rules).

Various Canadian standards require different ratings for short circuit conditions. Equipment that has motor overloads per CSA Standard C22.2 No 14 (Section 5.45 and 5.46), or equipment built to CSA Standard C22.2 No 31 (switchgear) or CSA Standard C22.2 No 4 (enclosed switches), requires labeling to meet various short circuit conditions. There are safety concerns if the equipment has excessive arcing under short circuit conditions.

Some equipment (such as an enclosed switches), is marked with a withstand rating.

Because of the safety issues (fire and shock), there is concern that some equipment must be suitable for short circuit conditions and therefore the need to mark the rating on some products.

Background on CSA Standard C22.2 No 14 for Contactors with Overloads and Combination Starters

From CSA Standard C22.2 No 14:

“5.45 An overload relay or industrial control equipment incorporating an overload relay, other than a combination motor controller, shall be marked

SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN _____ RMS SYMMETRICAL AMPERES, _____ VOLTS MAXIMUM.”

Because of this, our interpretation is that equipment with overloads and contactors as well as combination starters, needs to be marked with one overall marking.

If the overload relay is protected by a fuse or a breaker, the following marking should be added along with the above marking:

“ WHEN PROTECTED BY _____ CLASS FUSE ”

or

“ WHEN PROTECTED BY A CIRCUIT BREAKER HAVING AN INTERRUPTING RATING NOT LESS THAN _____ RMS SYMMETRICAL AMPERES, _____ V MAXIMUM.”

“5.46 A combination controller shall be marked COMBINATION MOTOR CONTROLLER and SHORT-CIRCUIT CURRENT RATING, ___ A RMS SYMMETRICAL, ___ V MAXIMUM; or the equivalent.”

The reason for having this requirement, is that contactors with motor overloads can cause severe arcing under short-circuit conditions and the contacts may explode.



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