Enclosures for Air Core Dry Type Reactors

Trench has developed an enclosure specifically for use with Air Core Dry-Type Reactors. The standard design is 14 gauge steel, but in certain contaminated environments, fibreglass or aluminium may be necessary, or if space restrictions are present, a fibreglass enclosure may be required. For installations with space restrictions or harsh environments, please include the detail in your specification and Trench will offer the optimum type of enclosure.

The enclosure is not weatherproof, but since the reactor is suitable for outdoor installation, the reactor and enclosure combination can be installed indoors or outdoors.

Construction

The size of the steel enclosure has been optimized taking a number of factors into consideration. Electrical clearances, proper ventilation area to allow efficient air cooling of the enclosed reactor, and proper magnetic clearances must all be incorporated into the final design.

The walls and roof of the enclosure are made up of electrically isolated panels, sized to provide minimal induced losses under steady state conditions, which ensures an acceptable temperature rise in all components. In addition, the correct amount of sectionalization guarantees that the forces being produced during short circuit conditions are kept well within safe loading limits.

Ventilation area is achieved using a series of typically 1x1/4 inch perforation in the steel which eliminates the potential of vibration and noise associated with an attached screen or louvre.

The enclosure panels are painted using an electrostatic process and a baked enamel finish to provide maximum adhesion.
Features

• Each enclosure is custom designed to house a specific reactor, ensuring optimum performance and price.

• Access is by a removable panel. One section will have handles to allow unbolting and removal. This enables convenient access while supplying protection against unauthorized entry.

• An internal grounding system is incorporated into the enclosure which automatically grounds all sections without forming any closed loops. A single external ground connection is provided.

• Full scale testing (269 kA peak short circuit current and heat run) has been successfully completed on a unit housing a 5000 Amp single phase reactor.

• Full scale short circuit testing (84.9 kA mechanical pk, 30 kA for 1 second thermal) has been performed simultaneously on all three phases of a reactor in a steel enclosure.

• The reactor and enclosure combination can be seismically qualified by means of physical testing and/or finite element computer analysis if the installation is in a seismic zone.

• The enclosure is shipped partially assembled, as complete sides including the framework, one panel high. Field assembly entails bolting sections and roof together.

Buswork:
For three phase vertically stacked reactors, it is recommended that Trench supply the buswork within the enclosure. It can then be ensured that all electrical clearances are maintained and that proper bracing is supplied to limit movement of the buswork under short circuit conditions.

Terminals can be brought to the top or base of the enclosure or to any location at the sides depending on the incoming bus.
The Trench Group is your partner of choice for electrical power transmission and distribution solutions today; and for the development of your new technology solutions of tomorrow.

Trench Facilities

Trench® Austria GmbH  
Paschinger Strasse 49  
Postfach 13  
A-4060 Linz-Leonding  
Austria  
Phone: 43-732-6793-0  
Fax: 43-732-671341

Trench® Brasil Ltda  
Via Expressa de Contagem, 2685  
Contagem, Minas Gerais  
CEP 32370-485  
Brazil  
Phone: 55-31-3391-5959  
Fax: 55-31-3391-1828

Trench® China  
MWB (Shanghai) Co., Ltd.  
No. 3658, Jiancheng Road  
Minhang, Shanghai  
Peoples Republic of China  
200245  
Phone: 86-21-54720088  
Fax: 86-21-54723118

Trench® High Voltage Products Ltd., Shenyang  
No. 2 Zhengliang Er. Road  
Jing Shen Xi San Street  
Dao Yi Economic Development Zone  
Shenyang 110136 P.R. China  
Phone: 86-24-89722688  
Fax: 86-24-89737200

Trench® Limited  
Instrument Transformer Division  
390 Midwest Road  
Scarborough, Ontario  
Canada M1P 3B5  
Phone: 416-751-8570  
Fax: 416-751-6952

Trench® Limited  
Power Line Carrier Division  
815 Middlefield Road, Unit 6A  
Scarborough, Ontario  
Canada M1V 2P9  
Phone: 416-291-8544  
Fax: 416-291-5581

Trench® France S.A.  
16, Rue du Général Cassagnou  
B.P. 70 F-68 302  
St. Louis, Cedex  
France  
Phone: 33-3 89-70-2323  
Fax: 33-3 89-67-2663

Trench® Germany GmbH  
Nürnberger Strasse 199  
D-96050 Bamberg  
Germany  
Phone: 49-951-1803-0  
Fax: 49-951-1803-224

Trench® Switzerland AG  
Lehenmattstrasse 353  
CH-4028  
Basel  
Switzerland  
Phone: 41-61-315-51-11  
Fax: 41-61-315-59-00

Trench® (UK) Limited  
South Drive  
Hebburn  
Tyne & Wear  
NE 31 1 UW  
Phone: 44-191-483-4711  
Fax: 44-191-430-0633

www.trenchgroup.com

E 600.21  
Subject to change without notice (05.2006)  
Printed in Canada.