

MARINE DIVISION

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Certificate number: 14474/A0 BV

File number : ACE 2/106/6

Product code : 2631H

*This certificate is not valid when presented without the
full attached schedule composed of 7 sections*

TYPE APPROVAL CERTIFICATE

as per Bureau Veritas Classification Rules

This certificate is issued to

ABB OY Low Voltage Products

Vaasa - FINLAND

for the type of product

SWITCHES (LOW VOLTAGE)

Switches-disconnectors OT200, OT250, OT315, OT400

Regulations and standards :

BV Rules for the Classification of Steel Ships.
IEC 60947-1 - IEC 60947-3.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements of the Regulations and standards mentioned above.

This certificate is valid until : 05 Sep 2010

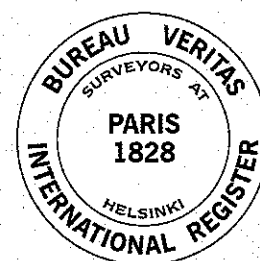
At Paris la Défense, on : 05 Sep 2005

For BUREAU VERITAS,
By order of the Secretary

Approval office

Local office : BV HELSINKI

J. BENOIT



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

SWITCH-DISCONNECTORS: OT200E_, OT250E_, OT315E_, OT400_E

Product Type	OT200E *	OT250E *	OT315E *	OT400E *
Number of Poles	3, 4	3, 4	3, 4	3, 4
Rated Insulation Voltage (V)	1000	1000	1000	1000
Rated Thermal Current (A) AC-20	200	250	315	400
Rated Operational Current (A) (I500V, 690V)	AC-21A	200	250	315
	AC-22A	200	250	315
	AC-23A	200	250	315
Rated Breaking Capacity (A)(I500V, 690V, AC-23)	1600	2000	2520	3200
Rated conditional short-circuit current I _p (R.M.S.) (kA)	500V	100	100	100
	690V	800	800	800
Rated Short-time withstand Current I _{ew} (kA) 690V - 1s	8	8	15	15
Making Capacity I _{cm} (kA) 690V - Peak value	30	30	65	65
Remarks	Characteristics as per IEC 60947-3			

* Extra information for options

2. DOCUMENTS AND DRAWINGS :

- IEC 60947 Series.
- Drawings and Specifications in document OT-OETL IGB 02-04.
- OT- 23 GB 04-11 (brochure).

3. TEST REPORTS :

- Mechanical tests : TA2004-21 issued on 07/12/2004 by Vaasa Polytechnic - Technology Research Center Technobothnia.
- Climatic tests : TA2004-23 issued on 16/12/2004 by Vaasa Polytechnic - Technology Research Center Technobothnia.
- CB test certificates n° FI 2952, FI 2953, FI 2994, FI 2995, issued by SGS Fimko Ltd on October, 29 2004.

4. APPLICATION / LIMITATION :

Other materials and/or components:

Nil.

Application / Limitation of use:

- According to BV Rules for the Classification of Steel Ships.

On board installation & Maintenance requirements:

- As per requirements of regulations stated on the front page of the certificate.
- IEC 60092 Series.
- Environmental category EC: 31C.

5. PRODUCTION SURVEY REQUIREMENTS :

- Arrangements shall be made for a Society's Surveyor to carry out, on a periodic basis, visits of the Manufacturer's premises and product audits.
- Each equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT :

According to IEC 60947-3 specifications.

7. OTHERS :

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the Switch Disconnectors at any time and that **ABB OY Low Voltage Products, Vaasa - Finland**, will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of use and general maintenance of the Equipment and the conditions of this approval.

***** END OF CERTIFICATE *****