



MARINE DIVISION

Certificate number: 14474/B0 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

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

ABB OY Low Voltage Switches

Vaasa - FINLAND

for the type of product

SWITCHES (LOW VOLTAGE)

Switches-disconnectors OT200, OT250, OT315, OT400

Requirements:

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 mentioned above.

This certificate will expire on: 09 Sep 2015

For BUREAU VERITAS,

At BV HELSINKI, on 09 Sep 2010,

Tommy Andersson



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 available on the internet site www.veristar.com. 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_, OT400E_

Product Type		OT200E_*	OT250E_*	OT315E_*	OT400E_*
Number of Poles		3, 4	3, 4	3, 4	3, 4
Rated Insulation Voltage U_i (V)		1000	1000	1000	1000
Rated Thermal and operational Current I_{th} , I_e (A) AC-20, DC-20 at 40°C		200	250	315	400
Rated Operational Current I_e (A) ($\leq 500V$, 690V, 1000V)	AC-21A	200	250	315	400
	AC-22A	200	250	315	400
	AC-23A	200	250	315	400
Rated Breaking Capacity I_c (A) ($\leq 500V$, 690V, AC-23)		1600	2000	2520	3200
Rated conditional short-circuit current I_p (R.M.S.) (kA)	500V	100	100	100	100
	690V	80	80	80	80
Rated Short-time withstand Current I_{cw} (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 1GB 10-02, 1SCC301001C0201

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 5619, FI 5649, issued on March 2nd, 2009 and April 1st, 2009 by SGS Fimko Ltd.
- CB Test Report: 254107-1 and 254108-1 issued on February 20th and April 1st, 2009 by SGS Fimko Ltd.

4. APPLICATION / LIMITATION:

- 4.1 - According to BV Rules for the Classification of Steel Ships.
- 4.2 - IEC 60092 Series.
- 4.3 - Environmental category EC: 31C.
- 4.4 - Each equipment is to be supplied with manual(s) for installation, use and maintenance.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be manufactured, examined and tested by **ABB OY Low Voltage Switches** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **ABB OY Low Voltage Switches** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **ABB OY Low Voltage Switches** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production site:

ABB OY
Low Voltage Products
Strömberg Park, Muottitie 2A
FI-65100 VAASA, FINLAND

6. MARKING OF PRODUCT:

According to IEC 60947 specifications.

7. OTHERS:

7.1 - 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 Switches, 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.

7.2 - This certificate supersedes the Type Approval Certificate N° 14474/A0 BV issued on September 5th, 2005 by the Society.

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