



MARINE DIVISION

Certificate number: 23331/A0 BV

File number: ACE2/163/1

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)

Switch-Disconnectors OT600, OT630, OT800, OT1000, OT1250, OT1600

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 609457-3, in conjunction with IEC 60947-1.

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: 30 Nov 2016

For BUREAU VERITAS,

At BV HELSINKI, on 30 Nov 2011,

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: OT600U_*, OT630E_*, OT800E_*, OT1000E_*, OT1250E_*, OT1600E_*

Product Type	OT600*	OT630*	OT800*	OT1000*	OT1250*	OT1600*	
Number of Poles	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	
Rated Insulation Voltage U_i (V)	1000	1000	1000	1000	1000	1000	
Rated operational voltage (V)	690	690	690	690	690	690	
Rated Frequency (Hz)	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	
Rated Thermal and operational Current I_{th}, I_e (A)	800	630	800	1000	1250	1600	
Rated Operational Current I_e (A) (690V, 1000V)	AC-21A	800	630	800	1000	1250	1600
	AC-22A	800	630	800	1000	1250	1600
	AC-23A	800	630	800	1000	1250	1250
Rated conditional short-circuit current I_p (r.m.s.)	3 poles : 690 V, 80 kA (fuse 1000A aM) 4 poles : 690V, 80 kA (fuse 1000A aM and 800 A gG)			415V, 80 kA (fuse aM 1250 A) 500V, 100 kA (fuse gG1250 A)			
Rated Short-time withstand Current I_{cw}	20 kA 1s, 36 kA 0.25s 38kA 0.15s			50 kA, 1s			
Making Capacity I_{cm} Peak value	1000V, 80 kA			110 kA (3 poles) , 92 kA (4 poles)			
Remarks	Characteristics as per IEC 60947-3						

* Extra information for options

2. DOCUMENTS AND DRAWINGS:

- IEC 60947 Series.
- Drawings and Specifications in document OT16...2500, OETL 3150, 1SCC301001C0201.

3. TEST REPORTS:

- Mechanical tests: TA2008-93 issued on 19/12/2008 by Vaasa Polytechnic - Technology Research Center Technobothnia.
- Climatic tests: L09-011 issued on 04/05/2009 by ABB
- CB test certificates n° FI 5838, issued on august 18st, 2009 SGS Fimko Ltd.
- CB Test certificates n° FI 6331 and FI 6332, issued on August 18st, 2010 by SGS Fimko Ltd.
- CB Test certificates n° FI 6334, issued on August 19st, 2010 by SGS Fimko Ltd.

4. APPLICATION / LIMITATION:

- 4.1 - According to BV Rules for the Classification of Steel Ships.
- 4.2 - Environmental category EC: **31C**.
- 4.3 - 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:

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.

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