



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

**CERTIFICATE NO. E-9045**  
This Certificate consists of 3 pages

*This is to certify that the*  
**Fused Switch**  
*with type designation(s)*  
**OS\_**

*Manufactured by*  
**ABB OY, LOW VOLTAGE PRODUCTS**  
VAASA, Finland

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det  
Norske Veritas' Offshore Standards  
IEC 60947-1 (2007-06)  
IEC 60947-3 (2005-06)

*Application*  
Switch fuses for installation inside switchboards/enclosures onboard ships and mobile  
offshore units.

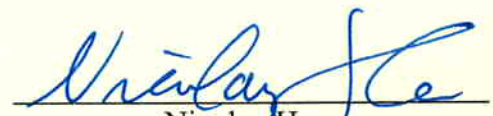
*Place and date*  
Høvik, 2008-06-17  
for DET NORSKE VERITAS AS

  
Trond Sjøvåg  
Head of Section



*Local Office*  
DNV Helsinki

*This Certificate is valid until*  
2011-12-31

  
Nicolay Horn  
Surveyor

**Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.**

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: E-9045  
File No.: 823.40

## Product description

Front or side operated fused switch in 3 or 4 – pole versions, type OS\_.

Rated insulation voltage,  $U_i$  1000 V  
 Rated impulse withstand voltage,  $U_{imp}$  12 kV  
 Degree of protection IP 20 (for OS Mini and OS 30 ... 63)  
 Optional IP 20 (for OS 100 ... 160)

Type	Rated operational current AC-23A <sup>1)</sup>	
	Up to 500 V	690 V
OS Mini Series		
16	16	16
20	20	20
25	25	25
30	30	30
32	32	32
35	35	35
40	40	40
OS 30 ...63 series		
30	30	30
32	32	32
50	50	50
60	60	60 <sup>2)</sup>
63	63	63 <sup>2)</sup>
OS 100 ...160 series		
100	100	100 <sup>2)</sup>
125	125	125 <sup>2)</sup>
160	160	160 <sup>2)</sup>

<sup>1)</sup> Current ratings are given for an ambient temperature of 40 °C in open air.  
Derating to be performed for the actual installation / use in accordance with instructions from ABB.

<sup>2)</sup> Rated operational current in accordance with AC23B

## Application/Limitation

Current rating to be derated with minimum 5% to fulfil the requirements for an ambient operating temperature of 45°C, for higher ambient temperatures derating to be performed in accordance with instructions from ABB.



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## **Type Approval documentation**

Technical documents:

OS\_OESA1GB 01\_99 (page 20 to 34)  
OS 40 GB 01\_09

Test reports:

9 AFX99-161, dated 1999-08-12  
9 AFX02-089, dated 2002-04-02  
224220-1, dated 2002-07-16  
224279-1, dated 2002-08-27  
224279-2, dated 2002-08-27  
224279-3, dated 2002-08-27

## **Tests carried out**

Type tests according to IEC 60947-1 and IEC 60947-3.  
Vibration test, cold test and damp heat test.

## **Marking of product**

ABB OS - type designation.

## **Certificate retention survey**

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

**END OF CERTIFICATE**