



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

**CERTIFICATE NO. E-6481**  
This Certificate consists of 3 pages

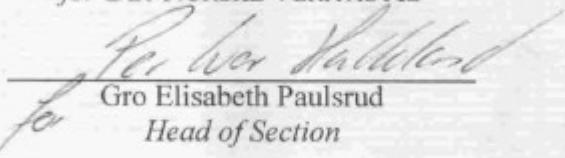
*This is to certify that the*  
**Contactor**  
*with type designation(s)*  
**Contactors A 9, 12, 16, 26, 30, 40, 50, 63, 75.**

*Manufactured by*  
**ABB Control**  
Chassieu Cedex, France

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units

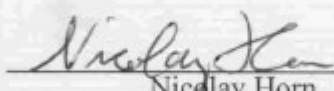
*Application*  
For installations inside switchboard/enclosures onboard ships and offshore units.

*Place and date*  
Høvik, 2003-02-11  
for DET NORSKE VERITAS AS

  
Gro Elisabeth Paulsrud  
Head of Section



*This Certificate is valid until*  
2006-12-31

  
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.**

It is agreed that save as provided below Det Norske Veritas, its subsidiaries, bodies, officers, directors, employees and agents shall have no liability for any loss, damage or expense allegedly caused directly or indirectly by their mistake or negligence, breach of warranty, or any other act, omission or error by them, including gross negligence or willful misconduct by any such person with the exception of gross negligence or willful misconduct by the governing bodies or senior executive officers of Det Norske Veritas. This applies regardless of whether the loss, damage or expense has affected anyone with whom Det Norske Veritas has a contract or a third party who has acted or relied on decisions made or information given by or on behalf of Det Norske Veritas. \* However, if any person uses the services of Det Norske Veritas or its subsidiaries or relies on any decision made or information given by or on behalf of them and in consequence suffers a loss, damage or expense proved to be due to their negligence, omission or default, then Det Norske Veritas will pay by way of compensation to such person a sum representing his proved loss. \* In the event Det Norske Veritas or its subsidiaries may be held liable in accordance with the sections above, the amount of compensation shall under no circumstances exceed the amount of the fee, if any, charged for that particular service, decision, advice or information. \* Under no circumstances whatsoever shall the individual or individuals who have personally caused the loss, damage or expense be held liable. \* In the event that any provision in this section shall be invalid under the law of any jurisdiction, the validity of the remaining provisions shall not in any way be affected.



Cert. No.: E-6481  
File No.: 823.20

### Product description

Contactors for use up to 690 volt.

|                           |                |
|---------------------------|----------------|
| Poles                     | 3 or 4         |
| Max. Current              | see list below |
| Frequency                 | 50 or 60 Hz    |
| Coil voltage              | Various        |
| Insulating medium         | Air            |
| Impulse withstand voltage | 8 kV           |
| Rated Making current      | 10 x Ie        |
| Rated Breaking current    | 8 x Ie         |
| Rated Withstand current   | see list below |

List of current and power ratings for 690 volt.  
See manufacturers catalogue for current and power ratings for lower voltages.

| Type | Nom. Current<br>AC-1, at 690V<br>t ≤ 55°C | Nom. Current<br>AC-3, at 690V<br>t ≤ 55°C | Withstand<br>current*, 1s<br>t = 40°C | Max power<br>at 690V<br>t ≤ 55°C |
|------|---|---|---------------------------------------|----------------------------------|
| A 9  | 22 A                                      | 7 A                                       | 250 A                                 | 5.5 kW                           |
| A 12 | 25 A                                      | 9 A                                       | 280 A                                 | 7.5 kW                           |
| A 16 | 27 A                                      | 10 A                                      | 300 A                                 | 9 kW                             |
| A 26 | 40 A                                      | 17 A                                      | 400 A                                 | 15 kW                            |
| A 30 | 55 A                                      | 21 A                                      | 600 A                                 | 18.5 kW                          |
| A 40 | 60 A                                      | 25 A                                      | 600 A                                 | 22 kW                            |
| A 50 | 85 A                                      | 35 A                                      | 1000 A                                | 30 kW                            |
| A 63 | 95 A                                      | 43 A                                      | 1000 A                                | 37 kW                            |
| A 75 | 105 A                                     | 46 A                                      | 1000 A                                | 40 kW                            |

\*Withstand current must be derated by 5% as DNV rules state max ambient temp of 45°C onboard ships not 40°C as stated by IEC. Separate case-by case approval is needed in each case to use the figures as listed.



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### **Type Approval documentation**

LOVAG: FR 95.007, FR 97-018, FR 97-019, FR 7-020, FR 97-021, FR 97-037, FR 97-008,  
FR 97-009, FR 97-043, FR 97-039, FR 97-080, FR 97-082.

Witnessed by DNV: ABB Control Test no. 16998

Manufacturers catalogue. FRCTL 0107 97.

### **Tests carried out**

Type tests according to: IEC 60947-4-1.

Other tests: Make and break, Insulation, power supply variation, inclination, vibration,  
damp heat, dry heat, high voltage.

### **Marking of product**

Manufacturers type, standard reference, ratings

### **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 renewal only.

END OF CERTIFICATE