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# DET NORSKE VERITAS

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## TYPE APPROVAL CERTIFICATE

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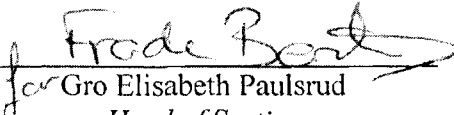
**CERTIFICATE NO. E-7008**  
This Certificate consists of 3 pages

*This is to certify that the*  
**Contact**  
*with type designation(s)*  
**DIL EM**

*Manufactured by*  
**Moeller GmbH**  
Bonn, Germany

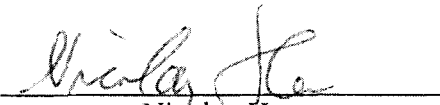
*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det  
Norske Veritas' Offshore Standards

*Place and date*  
Høvik, 2004-07-12  
for DET NORSKE VERITAS AS

  
for Gro Elisabeth Paulsrud  
Head of Section

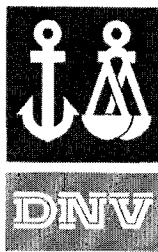
Local Office  
DNV Essen

*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.  
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-7008  
File No.: 823.20

## Product description

Contactor type:

DIL EM-10 (...)	DIL EEM-10 (...)
DIL EM-01 (...)	DIL EEM-01 (...)
DIL EM-10-G (...)	DIL EEM-10-G (...)
DIL EM-01-G (...)	DIL EEM-01-G (...)

General data:

Coil voltages: 12-415 V 50 Hz  
24-480 V 60 Hz  
12-250 V DC

Magnetic system with AC or DC power supply.

Contactor may be equipped with additional clip-on auxiliary contacts according to manufacturer's data sheet.

Auxiliary contacts rated current: 10 A

## Application/Limitation

Testing results:

Types:	DIL EM	DIL EM-G	DIL EEM	DIL EEM-G
Rated operational voltage AC (V)	690	690	690	690
Rating at utilization category AC1 (A)				
at 40°C	22	22	22	22
at 50°C	20	20	20	20
Rating at utilization category AC3 (A)				
at 230 V	8.8	8.8	6.6	6.6
at 400 V	8.8	8.8	6.6	6.6
at 500 V	6.4	6.4	5	5
at 690 V	4.8	4.8	3.5	3.5
Aux. contact rated voltage AC (V)	500	500	500	500



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### **Type Approval documentation**

Moeller catalogue 2004/2005 page 5/99.

IEC test reports: 2100-0190-004 dated 06.11.92.  
2100-0190-008 dated 05.05.93.  
2100-0189-004 dated 03.08.95.

Environmental test reports No.: 7 dated 14.05.93.

Drawing: ZZ 2100-0189-9800-01 dated 2001-06-12 Rev. j DIL (E)EM-...  
ZZ 2100-0189-9799-01 dated 2001-06-12 Rev. l DIL (E)EM-...-G(...)  
EZ 2100-0189-0060-01 dated 2003-09-10 Rev. AA

### **Tests carried out**

Type tests according to IEC 60947-4-1 and environmental tests.

### **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