

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Multifunction Relay**

with type designation(s)  
**MTR-4, MTR-4R & MTR-4P**

Issued to

**DEIF A/S**  
**Skive Midtjylland, Denmark**

is found to comply with  
**DNV GL rules for classification – Ships, offshore units, and high speed and light craft**

**Application :**

**Multi-transducer and Protection**

**Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

Issued at **Høvik** on **2017-07-05**

This Certificate is valid until **2022-07-04**.

DNV GL local station: **Aalborg**

Approval Engineer: **Nicolay Horn**

for **DNV GL**

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**Andreas Kristoffersen**  
**Head of Section**

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.



## Product description

### MTR-4 Transducer:

The MTR-4 transducer with analogue outputs fully programmable and can be set to any of 6 full-scale ranges. Possible to choose between several standard output value ranges (100...0...100 %):

-10...0...10 V,  
 -1...0...1 V,  
 -20...0...20 mA,  
 10...0...10 mA,  
 5...0...5 mA,  
 1...0...1 mA,.

Within each of those 6 ranges it is possible to set any linear or bent (with maximum 5 break points) output characteristic.

### MTR-4P Multi Protection:

Multi function protection relay with the following protection functions:

ANSI Code	Protection Function
59	Overvoltage (>U, >>U)
27	Undervoltage (<U, <<U)
81O	Overfrequency (>f, >>f)
81U	Underfrequency (<f, <<f)
-	Voltage Unbalances (>U <sub>un</sub> )
46	Phase Imbalance (>I <sub>im</sub> , >>I <sub>im</sub> )
32R/U	Load Underrun (<P, <<P)
32	Load Overrun (>P, >>P)
-	Phase Shift (> dPhi/dt)
50	Overcurrent (>I, >>I)
50N/G	Overcurrent (>IE, >>IE)
87N	Overcurrent (>Idiff, >>Idiff)

Technical data\*:

Voltage input	Nominal range values	62.5, 125, 250, 500 VLN - Auto range
	Nominal voltage (UN)	500 VLN
	Measuring range (cont.)	2 to 600 VLN (1000 VLL) sinusoidal
Current	Nominal range values	1, 5, 10 A - Auto range
	Nominal current (IN)	5 A
	Measuring range MTR-4 / MTR-4R	1 mA to 12.5 A sinusoidal
	Measuring range MTR-4P	20 A (12.5-20 A for 60 s)
Frequency input	Nominal frequency (fN)	50, 60 Hz
	Measuring range	16...400 Hz
Power supply universal	Nominal voltage AC	48 ... 230 V ±20%
	Nominal frequency	45 ... 65 Hz
	Nominal voltage DC	24 ... 250 V ±20%

\*For additional technical data see DEIF Data Sheet.

## Application/Limitation

To be installed in a cabinet with an IP degree in accordance with DNV GL Rules w.r.t. location.

**Location classes :**

Job Id: **262.1-024833-1**  
Certificate No: **TAE00001SA**

Temperature: B  
Humidity: B  
Vibration: C  
EMC: A

## **Type Approval documentation**

### **Tests carried out**

Type tests (partly) in accordance with IEC 60255-1 (2009) and -127 (2010). Environmental tests in accordance with DNVGL -CG-0339 ed. November 2015: Temperature, Humidity, Cold, Vibration and EMC.

### **Marking of product**

DEIF, type designation

### **Periodical assessment**

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials. The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to 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.

Assessment to be performed at 2 and 3,5 years and at renewal.

END OF CERTIFICATE