



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAE00001SA**  
Revision No:  
**1**

## 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 **2022-07-01**

for **DNV**

This Certificate is valid until **2027-06-30**.

DNV local station: **Denmark CMC**

Approval Engineer: **Marcin Tobiasz**

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**Marta Alonso Pontes**  
**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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



## 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 (>lim, >>lim)
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 input	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 Rules w.r.t. location.

### Location classes :

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 DNV -CG-0339 ed. August 2021: 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 are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available.
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines.
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications.
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given.
- Ensuring traceability between manufacturer's product type marking and the type approval certificate.
- Ensuring that type approved documentation is available.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE