

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Surge Protection Devices**with type designation(s)
Valvetrab SEC

Issued to

Phoenix Contact GmbH & Co. KG
Blomberg, Germany

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2017-07-12**This Certificate is valid until **2022-07-11**.DNV GL local station: **Magdeburg**Approval Engineer: **Harald Amberger**for **DNV GL**

Duy Nam Le
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

Valvetrab SEC-T2..., Type 2 surge protection device for the power supply

Type:	Mode of Protection	
VAL-SEC-T2-3S-350-FM	VAL-SEC-T2-3S-175-FM	5-conductor system; L1, L2, L3, N, PE
VAL-SEC-T2-3C-350-FM	VAL-SEC-T2-3C-175-FM	4-conductor system; L1, L2, L3, PEN
VAL-SEC-T2-3C-440-FM		
VAL-SEC-T2-2S-350-FM	VAL-SEC-T2-2S-175-FM	4-conductor system; L1, L2, N, PE
VAL-SEC-T2-2C-350-FM	VAL-SEC-T2-2C-175-FM	3-conductor system; L1, L2, PEN
VAL-SEC-T2-1S-350-FM	VAL-SEC-T2-1S-175-FM	3-conductor system; L1, N, PE
VAL-SEC-T2-2+0-48DC-FM	VAL-SEC-T2-2+0-120DC-FM	3-conductor system; DC+, DC-, PE
VAL-SEC-T2-2+0-220DC-FM	VAL-SEC-T2-2+0-380DC-FM	
VAL-SEC-T2-350-P	VAL-SEC-T2-175-P	Replacement plug; L-N/L-PEN
VAL-SEC-T2-440-P		
VAL-SEC-T2-N/PE-350-P	VAL-SEC-T2-N/PE-175-P	Replacement plug; N-PE
VAL-SEC-T2-48DC-P	VAL-SEC-T2-120DC-P	Replacement plug; DC+, DC-, PE
VAL-SEC-T2-220DC-P	VAL-SEC-T2-380DC-P	

Ratings			
Rated voltage U_n	SEC DC	up to 350-400 VDC	
	SEC 175	120/208 VAC	
	SEC 350	240/415 VAC	
	SEC 440	400/690 VAC	
MCOV U_c	SEC DC	up to 450 VDC	
	SEC 175	up to 175 VAC	
	SEC 350	up to 350 VAC	
	SEC 440	440 VAC	
Voltage protection level U_p	SEC DC	up to 3 kV / ≤ 1.5 kV	
	SEC 175	(L-N / L-PE / N-PE) ≤ 0.85 kV / ≤ 1.3 kV / ≤ 0.95 kV	(L-PEN) ≤ 0.85 kV
	SEC 350	(L-N / L-PE / N-PE) ≤ 1.5 kV / ≤ 1.9 kV / ≤ 1.5 kV	(L-PEN) ≤ 1.5 kV
	SEC 440	(L-PEN) ≤ 1.9 kV	
IEC test classification		T2	
Rated discharge current I_n (8/20) μ s		20 kA	
Max. discharge current I_{max} (8/20) μ s		40 kA	
Back up fuse max.		315 A (gG), 20 A (gG / B)*	*SEC DC
Degree of protection		IP20	

Application/Limitation

Location Classes:

Temperature: B, Humidity: B, Vibration: B

VAL-SEC-T2-...models also available without "-FM" remote indication contact.

Operating instruction of the manufacturer to be observed

Type Approval documentation

Tests carried out

IEC 61643-11:2011, EN 61643-11:2012, cold, dry heat, damp heat, vibration, flame retardancy

Marking of product

Phoenix Contact - Type designation - Main data.

All type designation may be followed by suffix such as color or packaging options.

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 Routine Tests (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.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE