DNV·GL

Certificate No:
TAE00000UW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Disconnection Switch

with type designation(s)
3KD...

Issued to
Siemens AG Low Voltage
REGENSBURG, Germany

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Environmental Category C

This Certificate is valid until **2021-01-11**.

Issued at **Hamburg** on **2016-01-12**

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Harald Amberger**

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

Ratings **Type**		**3KD.-M**	**3KD.-N**	**3KD.-P**	**3KD.-Q**	**3KD.-R**
$U_{e,\ max}$ = 690VAC (3, 4-pole), $I_{e,\ max}$	A	63	200	400	800	1600
$U_{e,\ max}$ = 440VDC (3, 4-pole), $I_{e,\ max}$	A	63	160	400	800	1600
Rated operational voltage U_e						
AC [50/60 Hz]	V	400, 500, 690				
DC - 2 poles in series	V	220				
DC - 3 poles in series	V	440				
Rated insulation voltage U_i	V	1000				
Rated impulse withstand voltage U_{imp}	kV	8		12		

Type **Switching Capacity**		**3KD..-.M**			**3KD..-.N**				
Rated uninterrupted current I_u	A	16	32	63	80	100	125	160	200
Continuous free-air thermal current I_{th}	A	16	32	63	80	100	125	160	200
Rated operational current I_e [40°C]									
AC-21A, AC-22A, 400 to 690 V	A	16	32	63	80	100	125	160	200
AC-23A, 400 V	A	16	32	63	80	100	125	160	160
AC-23A, 500 V	A	16	32	63	80	100	125	160	160
AC-23A, 690 V	A	16	32	63	80	100	125	125	125
DC-21A, DC-22A, DC-23A, 220/440 V	A	16	32	63	80	100	125	160	160
Short-circuit characteristics									
Rated short-time withstand current I_{cw}[1] 1s, 690V AC	kA	3	3	3	4	4	4	4	4
Rated short-circuit making capacity I_{cm}[1] 690V AC	kA	7	7	7	12	12	12	12	12
Rated conditional short circuit current I_q[1] 690V AC	kA	100	100	100	65	65	65	65	50

Type **Switching Capacity**		**3KD..-.P**				**3KD..-.Q**		
Rated uninterrupted current I_u	A	200	250	315	400	500	630	800
Continuous free-air thermal current I_{th}	A	200	250	315	400	500	630	800
Rated operational current I_e [40°C]								
AC-21A, AC-22A, 400 to 690 V	A	200	250	315	400	500	630	800
AC-23A, 400 V	A	200	250	315	400	500	630	670
AC-23A, 500 V	A	200	250	315	350	500	630	630
AC-23A, 690 V	A	200	250	315	315	500	500	500
DC-21A, DC-22A, DC-23A, 220/440 V	A	200	250	315	400	500	630	800
Short-circuit characteristics								
Rated short-time withstand current I_{cw}[1] 1s, 690V AC	kA	13	13	13	13	30	30	30
Rated short-circuit making capacity I_{cm}[1] 690V AC	kA	26	26	26	26	63	63	63
Rated conditional short circuit current I_q[1] 690V AC	kA	65	65	35	35	65	65	65

Type **Switching Capacity**		**3KD..-.R**		
Rated uninterrupted current I_u	A	1000	1250	1600
Continuous free-air thermal current I_{th}	A	1000	1250	1600
Rated operational current I_e [40°C]				
AC-21A, AC-22A, 400 to 690 V	A	1000	1250	1600
AC-23A, 400 to 690 V	A	800	800	800
DC-21A, 220/440 V	A	1000	1250	1600
Short-circuit characteristics		**3KD..-.R**		
Rated short-time withstand current I_{cw}[1] 1s, 500V AC	kA	50	50	50
Rated short-circuit making capacity I_{cm}[1] 500V AC	kA	105	105	105
Rated conditional short circuit current I_q[1] 500V AC	kA	100	100	65
[1] Back-up NH Fuse required acc. manufacturer documentation				

Application/Limitation

Type Approval documentation
Tests carried out

GL Guidelines for the Performance of Type Approvals VI-7 Part 2, Edition 2012
IEC 60947-1(ed.5):am1, 60947-3(ed.3):am1

Marking of product

Siemens AG – Type designation – Rated voltage – Rated current – Rated frequency – IEC Standard
Continuous free-air thermal current - Rated impulse withstand voltage – Country of production

Periodical assessment

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

END OF CERTIFICATE