

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Disconnection Switch

with type designation(s)
OTDC16 - 1600

Issued to

**ABB Oy, Protection and Connection
VAASA, Finland**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60947**

Application :

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

This Certificate is valid until **2024-03-14**.

Issued at **Høvik** on **2019-03-15**

DNV GL local station: **Turku**

for **DNV GL**

Approval Engineer: **Nicolay Horn**

**Trond Sjøvåg
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.

Job Id: **262.1-029610-1**
Certificate No: **TAE0000383**

Product description

DC Switch-disconnector OTDC16 - 1600,

Technical data:

			OTDC16F	OTDC25F	OTDC32F
Rated insulation voltage U_i	Polution degree 3		1000	1000	1000
Rated impulse voltage U_{imp}			8	8	8
Rated thermal current $I_{th}(A)$	In open air		25	32	45
	In enclosure 40 °C		25	32	45
	In enclosure 60 °C		25	32	45
Rated operation current / poles in series DC21B (A)	500 V	One circuit	-	-	-
	660 V	One circuit	16/2	25/2	32/2
		Two circuits	-	25/2	32/2
	1000 V	One circuit	10/2,16/3	16/2,25/3	20/2,32/3
		Two circuits	10/2	16/2	20/2
		Three circuits	-	-	-
Rated short circuit withstand current 1000 V, 1 sec. I_{cw} (kA)	1500 V	One circuit	-	-	-
			0.4	0.6	0.8
Rated short circuit making capacity I_{cm} (kA)			0.4	0.6	0.8
Rated conditunal short circuit capacity I_p (kA)	I_p rms.		-	-	-
	Max fuse size		-	-	-

			OTDC16U	OTDC25U	OTDC32U
Rated insulation voltage U_i	Polution degree 3		1000	1000	1000
Rated impulse voltage U_{imp}			8	8	8
Rated thermal current $I_{th}(A)$	In open air		40	50	63
	In enclosure 40 °C		32	40	50
	In enclosure 60 °C		25	32	40
Rated operation current / poles in series DC21B (A)	500 V	One circuit	-	-	-
	660 V	One circuit	16/2	25/2	-
		Two circuits	16/2	25/2	32/2
	1000 V	One circuit	10/2	16/2	-
		Two circuits	10/2	16/2	20/2
		Three circuits	10/2	-	-
Rated short circuit withstand current 1000 V, 1 sec. I_{cw} (kA)	1500 V	One circuit	-	-	-
			1	1	1
Rated short circuit making capacity I_{cm} (kA)			1	1	1
Rated conditunal short circuit capacity I_p (kA)	I_p rms.		10	10	10
	Max fuse size		80	80	80

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			OTDC100E	OTDC160E OTDC100U	OTDC200E
Rated insulation voltage Ui	Polution degree 3		1500	1500	1500
Rated impulse voltage			12	12	12
Rated thermal current Ith(A)	In open air		100	160	200
	In enclosure 40 °C		100	160	200
	In enclosure 60 °C		100	160	200
Rated operation current / poles in series DC21B (A)	500 V	One circuit	100/1	160/1	200/1
	660 V	One circuit	-	-	-
		Two circuits	-	-	-
	1000 V	One circuit	100/2	160/2	200/2
		Two circuits	100/2x2	160/2x2	200/2x2
		Three circuits	100/3x2	160/3x2	200/3x2
	1500 V	One circuit	100/2x2	160/2x2	200/2x2
Rated short circuit withstand current 1000 V, 1 sec. Icw (kA)			10	10	10
Rated short circuit making capacity Icm (kA)			10	10	10
Rated conditunal short circuit capacity Ip (kA)	Ip rms.		-	-	-
	Max fuse size		-	-	-

			OTDC250E OTDC245U OTDC200U OTDC180U	OTDC315E OTDC250U	OTDC400E OTDC320U
Rated insulation voltage Ui	Polution degree 3		1500	1500	1500
Rated impulse voltage			12	12	12
Rated thermal current Ith(A)	In open air		250	315	400
	In enclosure 40 °C		250	315	400
	In enclosure 60 °C		200	315	400
Rated operation current / poles in series DC21B (A)	500 V	One circuit	250/1	-	-
	1000 V	One circuit	250/2	315/2	400/2
		Two circuits	250/2x2	315/2	400/2
		Three circuits	-	315/2	400/2
	1500 V	One circuit	-	315/3	400/3
		Two circuits	-	315/4	400/4
		Three circuits	-	315/3	400/3
Rated short circuit withstand current 1000 V, 1 sec. Icw (kA)			10	10	10
Rated short circuit making capacity Icm (kA)			-	-	-
Rated conditunal short circuit capacity Ip (kA)	Ip rms.		-	-	-
	Max fuse size		-	-	-

			OTDC500E OTDC400U	OTDC630E	OTDC800E OTDC600U
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Rated insulation voltage Ui	Polution degree 3		1500	1500	1500
Rated impulse voltage			12	12	12
Rated thermal current Ith(A)	In open air		630	630	800
	In enclosure 40 °C		550	630	800
	In enclosure 60 °C		440	630	680
Rated operation current / poles in series DC21B (A)	500 V	One circuit	-	-	-
	660 V	One circuit	-	-	-
		Two circuits	-	-	-
	1000 V	One circuit	500/2	630/2	800/2
		Two circuits	500/2	-	-
		Three circuits	500/2	-	-
	1500 V	One circuit	500/2	-	-
		One circuit	500/4	-	-
		Two circuits	500/3	-	-
Rated short circuit withstand current 1000 V, 1 sec. Icw (kA)			10	10	10
Rated short circuit making capacity Icm (kA)			-	-	-
Rated conditunal short circuit capacity Ip (kA)	Ip rms.		-	-	-
	Max fuse size		-	-	-

			OTDC1000E	OTDC1250E OTDC800U	OTDC1600E OTDC1000U
Rated insulation voltage Ui	Polution degree 3		1500	1500	1500
Rated impulse voltage			12	12	12
Rated thermal current Ith(A)	In open air		1000	1250	1600
	In enclosure 40 °C		1000	1250	1250
	In enclosure 60 °C		800	1000	1000
Rated operation current / poles in series DC21B (A)	500 V	One circuit	-	-	-
	660 V	One circuit	-	-	-
		Two circuits	-	-	-
	1000 V	One circuit	1000/4	1250/4	1600/4
		Two circuits	-	-	-
		Three circuits	-	-	-
	1500 V	One circuit	-	-	-
Rated short circuit withstand current 1000 V, 1 sec. Icw (kA)			10	10	10
Rated short circuit making capacity Icm (kA)			10	10	10
Rated conditunal short circuit capacity Ip (kA)	Ip rms.		-	-	-
	Max fuse size		-	-	-

Application/Limitation

Ingress protection IP20. To be installed inside switchboard / enclosures.

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Installation procedures according to the manufacturer's instructions to be followed.

Environmental categories: Vibration A, Temperature D, Humidity B.

Type Approval documentation

Tests carried out

Type tests in accordance with IEC 60947-1 (Third Ed +A1:2012) and IEC 60947-3 (Fifth Ed + A1:2010).
Environmental tests in accordance with DNV GL-CG-0339.

Marking of product

ABB Oy – Disconnecting switch – 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 Routine tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type 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, 3.5 year and at renewal.

END OF CERTIFICATE