Datasheet

BEL-TS

Thyristor switch H2@690 V

Fast capacitors switching
in Low-voltage-grids

Beluk GmbH
Taubenstrasse 1
86956 Schongau
Germany

Tel.: +49/(0)8861/2332-0
Fax: +49/(0)8861/2332-22
E-Mail: blr@beluk.de
Web: http://www.beluk.de

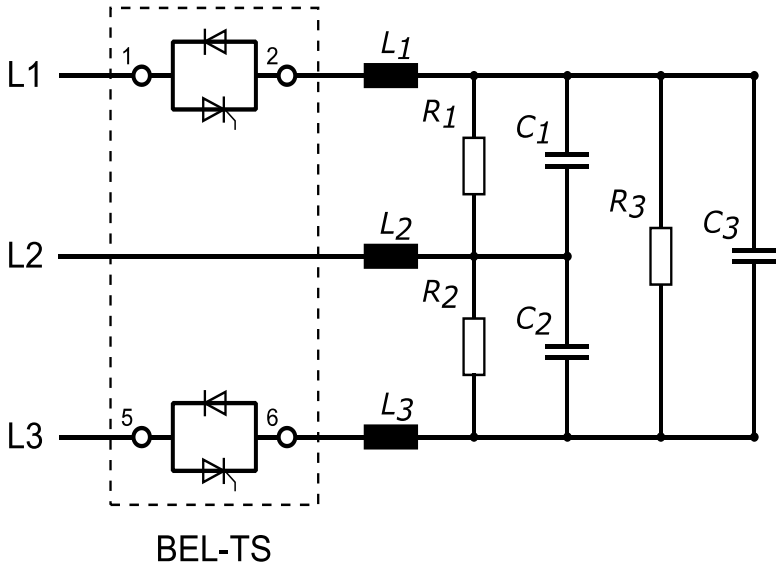
Contents

1. Revision History

Date	Name	Revision	Comment
05.12.17	ChP	1.0	Initial datasheet release
06.12.17	ChP	2.0	Update technical data
18.01.18	ChP	3.0	Add kind of module type to technical data, connection scheme changed, mechanical drawings updated, note about discharging updated
30.08.18	SMi	4.0	Layout changes
04.04.19	SMi	4.1	New revision numbering, revised connection schematic, temperature dependent rated current and reactive power added, inductive/capacitive assignment, layout changes, composition of the product name

2. Wiring Diagram

2.1 Capacitive Compensation

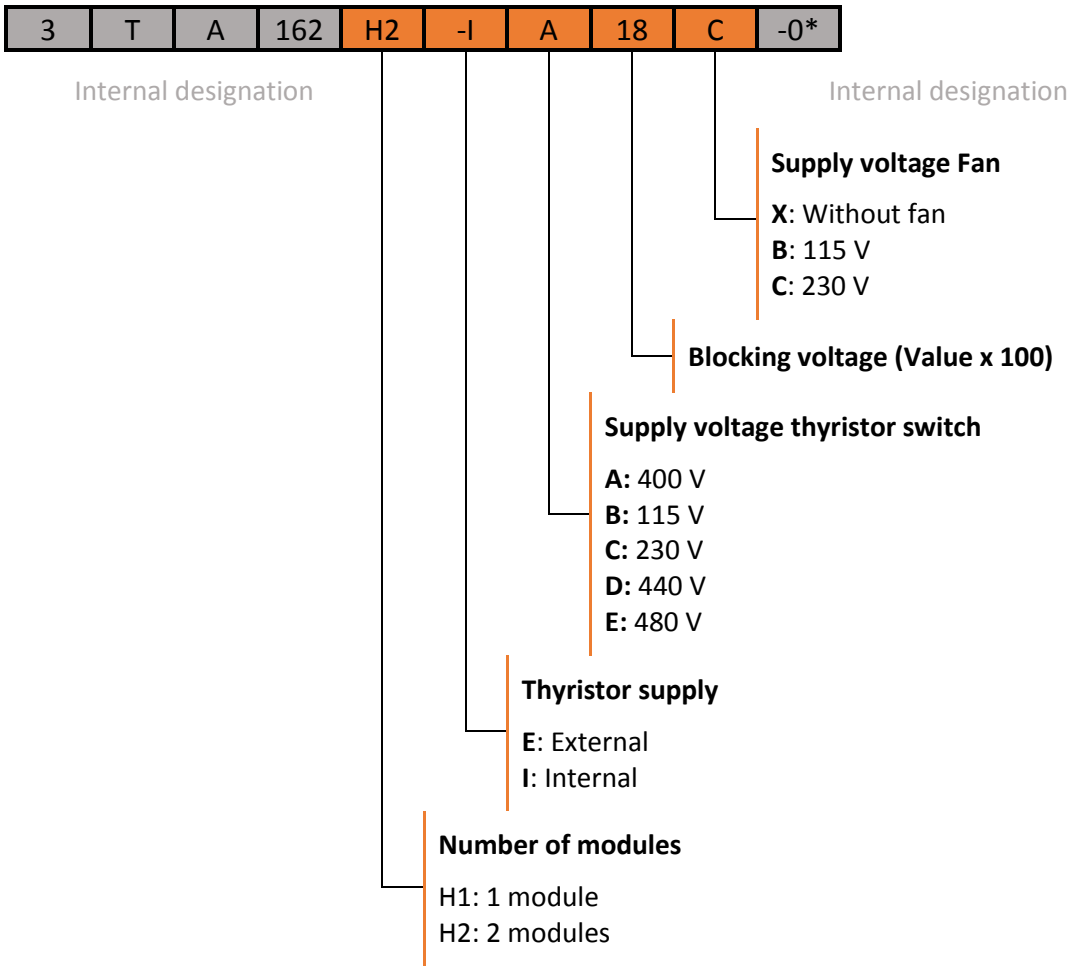


External components:

- L_1, L_2, L_3: Chokes (detuning)
- R_1, R_2, R_3: Discharge resistors
- C_1, C_2, C_3: Capacitors (compensation)

3. Product Name Composition

The names of the Beluk thyristor switches are composed according to the following principle.



4. Technical Data

4.1 50 kVAr capacitive, 690 V

Type		**3TB115H2-E*36X-0***
Nominal power	at 45 °C at 25 °C	50 kVAr (capacitive) 65 kVAr (capacitive)
Nominal voltage		690 V (+/- 10 %)
Nominal current	at 45 °C at 25 °C	42 A 54 A
i^2t (T_{vj} = 125 °C; 8.3 … 10 ms)		29000 A^2s
V_{RRM}, V_{DRM}		3600 V
Modules		2 x Thyristor-Diode
Discharge capacitors		**CAUTION!** It's **not allowed** to use discharge reactors! Using **special discharging resistors** with thyristor switches is **mandatory**! Please contact your capacitor manufacturer!
Recovery time		Typically 1 period
Switched phases		2, half controlled
Supply voltage		External supply voltage **B** = 115 V AC or **C** = 230 V AC, 50/60 Hz
Max. consumption power supply		9 VA
Voltage trigger signal		8 – 30 V DC
Consumption trigger input		5 mA at 12 V DC 10 mA at 24 V DC
Over temperature protection		Integrated
Dimensions H x W x D		Approx. 200 mm x 156 mm x 243 mm
Weight		Approx. 5.5 kg
Power losses at nominal current		82 W
Cooling		Air Natural (AN)
Protection class		IP10
Humidity		10 % - 95 % (without moisture condensation)
Max. altitude		1000 m above sea level Operation at a higher altitude is possible with reduced power
Min. ambient temperature		-10 °C
Max. ambient temperature		+45 °C (operation with nominal power) +65 °C (operation with reduced power)

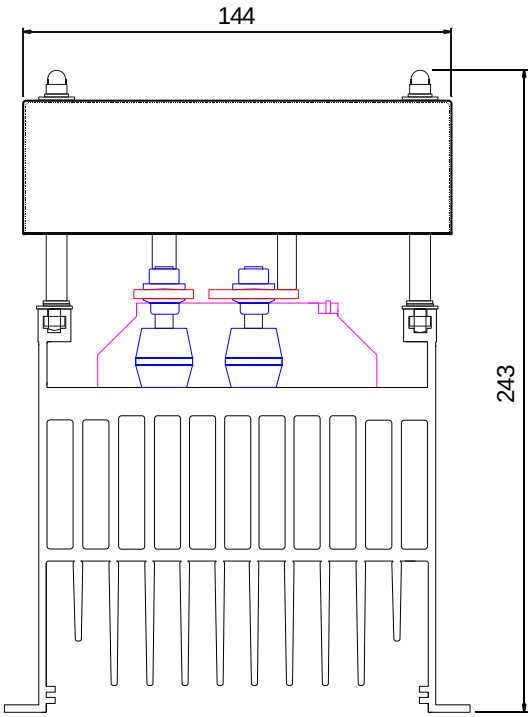
4.2 100 kVAr capacitive, 690 V

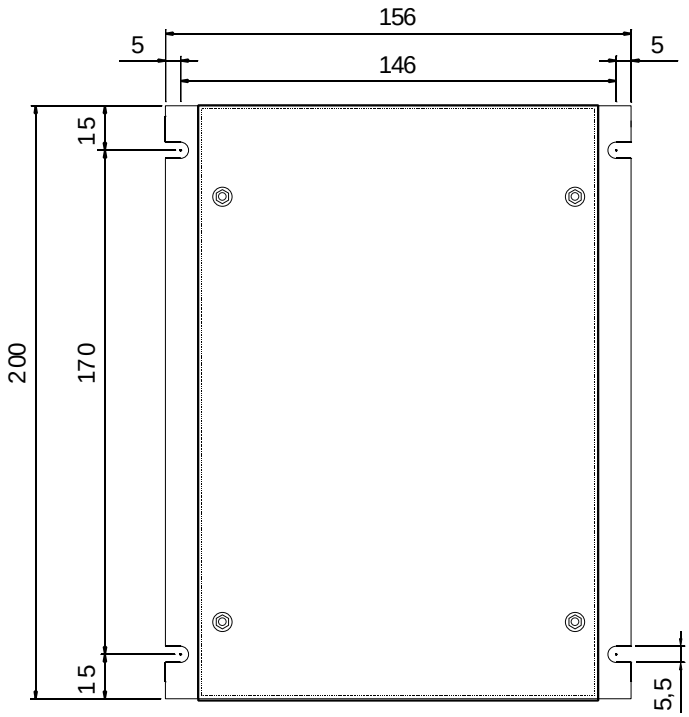
Type		**3TB115H2-E*36B-0*, 3TB115H2-E*36C-0***
Nominal power	at 45 °C at 25 °C	100 kVAr (capacitive) 131 kVAr (capacitive)
Nominal voltage		690 V (+/- 10 %)
Nominal current	at 45 °C at 25 °C	84 A 109 A
i^2t (T_{vj} = 125 °C; 8.3 … 10 ms)		29000 A^2s
V_{RRM}, V_{DRM}		3600 V
Modules		2 x Thyristor-Diode
Discharge capacitors		**CAUTION!** It's **not allowed** to use discharge reactors! Using **special discharging resistors** with thyristor switches is **mandatory**! Please contact your capacitor manufacturer!
Recovery time		Typically 1 period
Switched phases		2, half controlled
Supply voltage		External supply voltage **B** = 115 V AC or **C** = 230 V AC, 50/60 Hz
Max. consumption power supply		9 VA
Voltage trigger signal		8 – 30 V DC
Consumption trigger input		5 mA at 12 V DC 10 mA at 24 V DC
Over temperature protection		Integrated
Dimensions H x W x D		Approx. 250 mm x 156 mm x 243 mm
Weight		Approx. 6.0 kg
Power losses at nominal current		186 W
Cooling		Forced convection Fan supply voltage **B** = 115 V AC or **C** = 230 V AC, 50/60 Hz
Protection class		IP10
Humidity		10 % - 95 % (without moisture condensation)
Max. altitude		1000 m above sea level Operation at a higher altitude is possible with reduced power
Min. ambient temperature		-10 °C
Max. ambient temperature		+45 °C (operation with nominal power) +65 °C (operation with reduced power)

5. Dimensions

Without cooler:

- 3TB115H2-E*36X-0*





With cooler:

- 3TB115H2-E*36B-0*
- 3TB115H2-E*36C-0*