

C800

1 pole bi-directional DC NO contactors
up to 500 amps for automotive applications

DC



C800 - 1 pole bi-directional DC NO contactors for automotive applications

Schaltbau's new compact bi-directional DC contactors C800 series for automotive applications in the modern mobility industry. They switch high power in a small space and have a making capacity of up to 4,500 amps.

The contactors permanently carry up to 500 amps; in the event of a short circuit, even 6,000 amps may flow for 20 milliseconds without the contacts welding. Thus, the contactor retains its full function to switch large powers when required, for example up to 1,200 amps and 450 volts – regardless of the direction of the current.

This makes C800 series contactors ideal for use in the Battery Disconnect Unit (BDU) of modern e-vehicles. The BDU connects the high-performance battery with the electrical components of the drive train. And it performs an important safety function: in the event of danger, it disconnects the high-voltage battery from the high-voltage grid. In the event of thermal overload or a short circuit, the electrical drive train is thus reliably galvanically isolated from the battery.

- Compact dimensions – high rated insulation voltage U_i up to 1,000 volts
- High thermal continuous current I_{th} of up to 500 amps and high short-time withstand current rating I_{cw} of up to 6,000 amps
- High making capacity I_{cm} of up to 4,500 amps, due to high contact forces and burn-off resistant silver contacts
- Full bi-directionality – reliable switching of high performances, regardless of the current direction
- Auxiliary switch with mirror contact function according to IEC 60947-4-1, annex F

Ordering code

C800-500-G0T-24E-V1

Series, contact configuration	C800 1 pole DC NO contactor for automotive applications	Auxiliary switch, number / type	V1 1x Integrated aux. contact NC
Conventional thermal current	500 $I_{th} = 500$ A	Coil control	E External *1
Assembly	G Mounting holes	Coil voltage *2	12 12 volts 24 24 volts
Design fixed contacts	0 Hole \varnothing 8.75 mm, fixed contacts solid copper 1 Thread M6, fixed contacts solid copper		
Connector coil and aux. switch*1	T Tyco TE 5-104361 4-pol		

Note: Presented in this flyer are only stock items. For some variants minimum quantities apply.

*1 Coil control: External, PWM control and suppressor diode to be implemented by customer.
*2 Please ask for customer-specific versions

Dimension diagram, circuit diagram

Main contact system with arc chamber

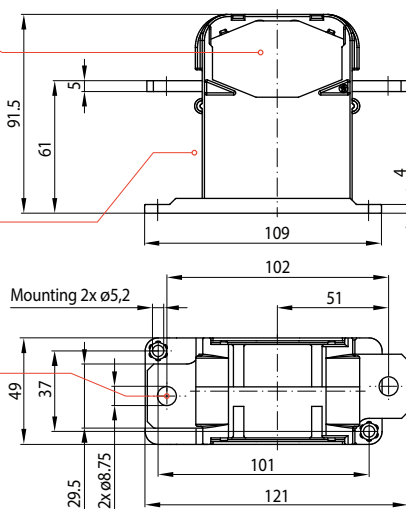
- Massive designed 1-pole contact system
- Highly efficient arc chamber with permanent magnetic blowing

Connector coil and aux. contact

- Pin 1, Pin 2: coil terminal
- Pin 3, Pin 4: 1 pole NC, with mirror contact function

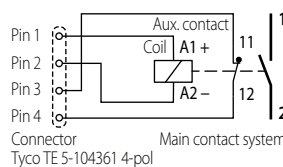
Main contact terminals

- Material: Copper
- Thickness: 5 mm
- Connection: 8.75 mm (for M8) or thread M6



Circuit diagram

- Main contact 1 Fixed contact 1
2 Fixed contact 2
- Coil terminal Pin 1 Coil A1+ U_s+
Pin 2 Coil A2- U_s-
- Aux. contact Pin 3 Contact 11
Pin 4 Contact 12



Specifications

Series	C800-500
Type of voltage	DC bi-directional
Main contacts, configuration	1 NO
Main contacts	
Rated operational voltage	U_e 1,000 V
Rated insulation voltage	U_i 1,000 V
Rated impulse withstand voltage	U_{imp} 2.5 kV
Pollution degree	PD3
Overvoltage category	OV3
Conventional free air thermal current	I_{th} 500 A / 600 A / 2,500 A
	8 h / 10 min / 10 sec
	@ Connection cross section 185 mm ²
Rated short-time withstand current	I_{cm} 4,500 A @ $t < 50 \mu s$
Rated short-time withstand current	I_{cw} 6,000 A @ $t = 20$ ms
Aux contact	
Number, configuration	1 NC
Rated insulation voltage U_i	24 V
Conv. free air thermal current I_{th}	2 A
Magnetic drive	
Coil U_s	12 V 24 V
Pull in (1 sec max.)/Hold	11.6 V DC / 3.8 V DC 15.8 V DC / 5.2 V DC
	3.2 A DC / 1.1 A DC 2.4 A DC / 0.8 A DC
PWM control / coil suppression	External / external*1
Vibration	LV 124, M04 / ISO 16750-3 Profile D / profile IV
Shock	LV 124, M05 / ISO 16750-3 50g / 6 ms (Temporary contact closing @ > 20g / 6 ms)
Mechanical endurance	200,000 operations
Mounting position	horizontal, vertical
Temperatures	-40 °C ... +85 °C
Weight	< 0.75 kg