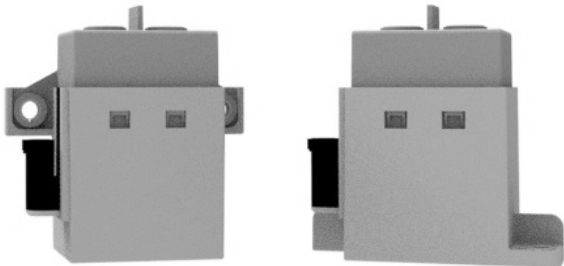


EVC 250-800 Main Contactor

- Limiting continuous current 250A at 85°C
- Suitable for voltage levels up to 900VDC
- High peak current carrying capability up to 6000A¹⁾

Typical applications

- DC high voltage high current applications
- Main contactors for hybrid, full battery electric vehicles and fuel-cell cars
- Battery charging systems



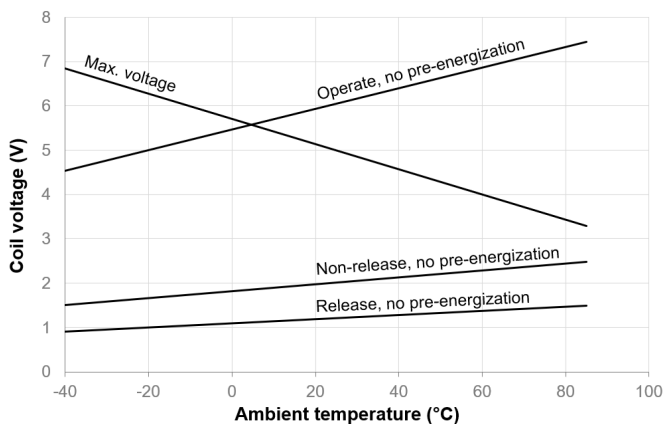
Contact Data	
Contact arrangement	1 form X (SPST NO DM)
Rated voltage	800VDC
Maximum switching voltage	900VDC, dep. on load characteristics ¹⁾
Rated current	load cable 50mm ²
Forward load current direction	250A
Limiting continuous current	load cable 50mm ²
85°C	250A
Limiting short time current	load cable 50mm ²
85°C	400A 3min 600A 1min 6000A 20ms
Limiting make current	5x10 ⁴ x250A at 50VDC

Contact Data (continued)	
Limiting break current	1x650A at 800VDC
Forward load current direction	5x10 ⁴ x50A at 800VDC
Limiting break current	1x415A at 300VDC
Reverse load current direction	20x50A at 800VDC
Voltage drop (initial) at 100A	max. 40mV after 60s ²⁾
Voltage drop (over lifetime) at 250A	typ. 50mV after 60s ³⁾
Operate time ⁴⁾	max. 25ms
Release time ⁴⁾	max. 10ms ⁵⁾
Mechanical endurance	>2x10 ⁵ ops.

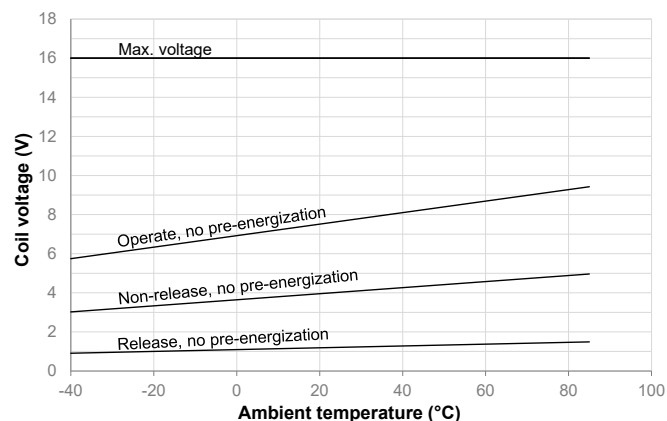
1) Please contact TE Connectivity for details.
2) Measurement condition: 370A for 2s followed by 100A for 60s.
3) Max. 600mV with current >1A.
4) At rated coil voltage.
5) Without arc duration (only mechanical contact opening considered).

EVC 250-800 Main Contactor (Continued)

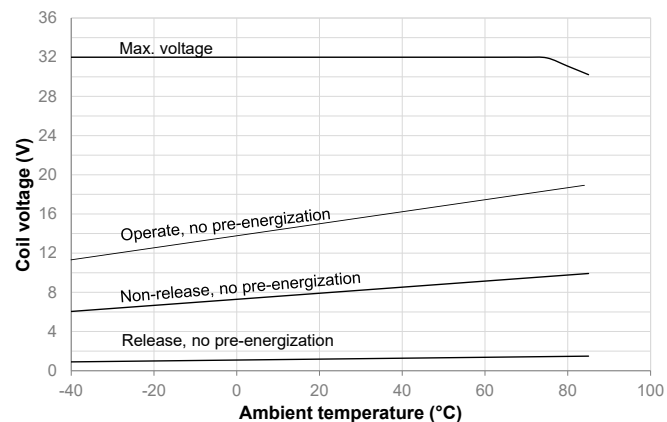
Coil operating range (12V single coil version)



Coil operating range (12V dual coil version)



Coil operating range (24V dual coil version)



Coil Data⁶⁾

Un-economized: single coil version for external economization⁷⁾

Coil code	Rated voltage [VDC]	Operate voltage [VDC]	Max. cont. voltage [VDC]	Non-release voltage [VDC]	Coil resistance [Ω]
0101	12	6.0	5.0	2.0	±10% 3.9

Recommended parameters for external economization with PWM⁷⁾

Min. frequency [kHz]	Controlled current Max. current [A]	PWM Min. current [A]	Controlled voltage Max. voltage [V]	equivalent Min. voltage [V]
15	1.0	0.5	5.9	2.6

Economized: dual coil version with internal switch⁸⁾⁹⁾

Coil code	Rated voltage [VDC]	Operate voltage ¹⁰⁾ [VDC]	Nominal inrush current [ADC]	Non-release voltage [VDC]	Max. voltage [VDC]	Coil resistance [Ω]
0102	12	7.6	5.1	4.0	16.0	2.6/26 ¹¹⁾
0112	24	15.2	4.0	8.0	32.0	6.4/100 ¹¹⁾

Insulation Data

Initial dielectric strength	
between open contacts	4000VDC / 3mA
between contact and coil	4000VDC / 3mA
Insulation resistance after abuse test	
between open contacts	>200MΩ
between contact and coil	>200MΩ
Clearance/creepage	
acc. IEC 60664-1 (2007) for	over voltage category I, pollution degree 2
Max. altitude	5500m

Other Data

Ambient temperature	-40°C to +85°C
Degree of protection	
IEC 60529 (2000-09)	IP54 ¹²⁾
Vibration resistance (functional)	
IEC 16750-3 (2023)	27.1m/s ²
wide band random (profile IV)	No change of switching state >10μs
Shock resistance (functional)	
IEC 60068-2-27(2008-02)	closed: 11ms, min. 40g
half sine	open: 11ms, min. 20g
	No change of switching state >10μs
Terminal type	connector (coil) and screw (load)
Weight	approx. 525 / 580g (18.5 / 20.5oz), depending on version
Packaging unit	18 pcs.

6) All values valid for 23°C ambient temperature with no pre-energization if not noted otherwise. Refer to diagram for values at other temperatures.

7) Requires external coil economization that must start 100-300ms after coil activation. Avoid repetitive switching. Minimum clamp voltage 60V (see circuit recommendation).

8) Demagnetization voltage is clamped at ~70V. External coil suppression is not necessary and could reduce switching capability. Contact TE Connectivity for details.

9) Max. duty cycle 0.5Hz.

10) Max. rise time 100ms.

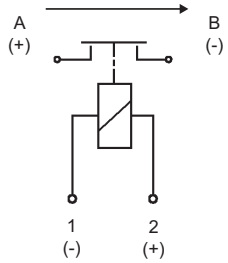
11) 2.6Ω coil / 6.4Ω coil is switched off internally max. 250ms after pull-in

12) Protection class applicable for all mounting orientations except load terminals upwards.

EVC 250-800 Main Contactor (Continued)

Terminal Assignment

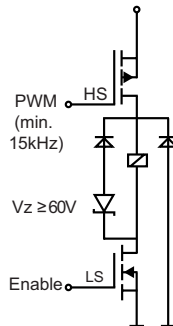
Forward load current direction



720_TA2

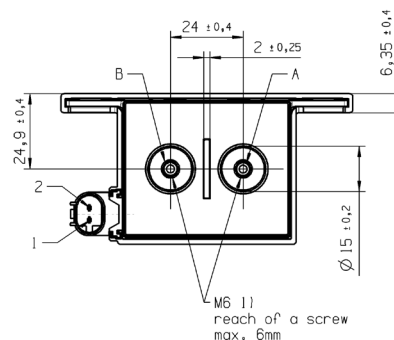
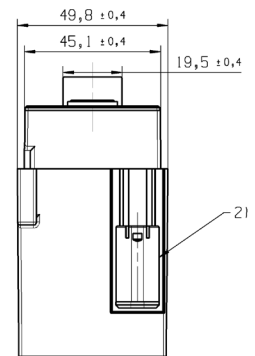
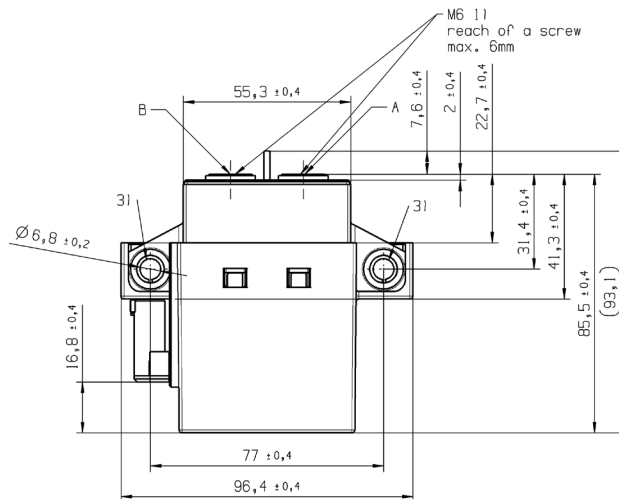
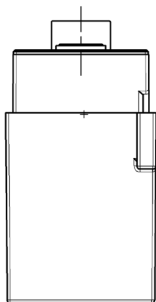
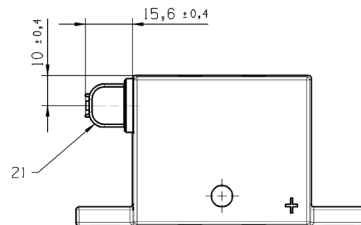
Circuit recommendation for coil 0101

Always use low-side switch "Enable"
for switch off



Dimensions

Side Mount Version



- 1) Permitted torque max. 6Nm at min. 5 turns one-time mounting only, no recurring screw fastening permitted.
- 2) Socket Housing
TE Interface 2 pos. MQS code A, appropriate for socket housing 2 pos. MQS, TE part no. 1-967644-1 prescribed wire cross section = 0.35mm² min.
- 3) Mount load connections first.
- 4) Screw and washer or screw with washer are recommended for fastening.

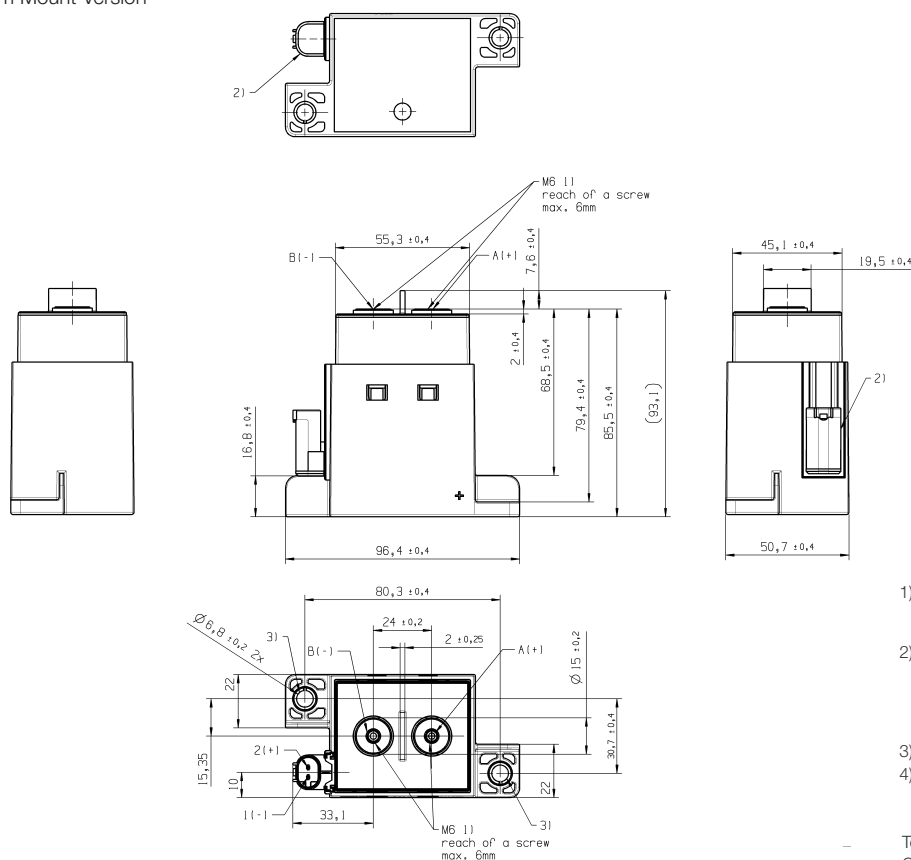
Tolerances ISO2768-cL.

Consult TE Connectivity for detailed mounting instructions.

EVC 250-800 Main Contactor (Continued)

Dimensions

Bottom Mount Version



- 1) Permitted torque max. 6Nm at min. 5 turns one-time mounting only, no recurring screw fastening permitted.
- 2) Socket Housing
TE Interface 2 pos. MQS code A, appropriate for socket housing 2 pos. MQS, TE part no. 1-967644-1
prescribed wire cross section = 0.35mm² min.
- 3) Mount load connections first.
- 4) Screw and washer or screw with washer are recommended for fastening.

Tolerances ISO2768-cL.
Consult TE Connectivity for detailed mounting instructions.

Product code structure

Typical product code

V23720	-A	0101	-B	0	0	1
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Designator

V23720 EVC 250-800 Main Contactor

Relay Version

A Side mount fixation

B Bottom mount fixation

Coil

0101	12V single coil for external economization	0102	12V dual coil with internal switch
		0112	24V dual coil with internal switch

Rated voltage

B 800VDC

Contact material

0 Silver alloy

Special features

0 None

Coil connector

1 MQS sealed

Product Code	Arrangement	Coil Suppr.	Circuit	Coil	Relay Type	Resistance	Part Number
V23720-A0101-B001	SPST-NO-DM	External ≥60V	No economizer	12VDC	800VDC	3.9Ω	2-1904136-5
V23720-A0102-B001	SPST-NO-DM	Internal	Coil switch	12VDC	800VDC	Double coil 2.6/26Ω	7-1904137-6
V23720-A0112-B001	SPST-NO-DM	Internal	Coil switch	24VDC	800VDC	Double coil 6.4/100Ω	2-2317670-1
V23720-B0101-B001	SPST-NO-DM	External ≥60V	No economizer	12VDC	800VDC	3.9Ω	2340516-1