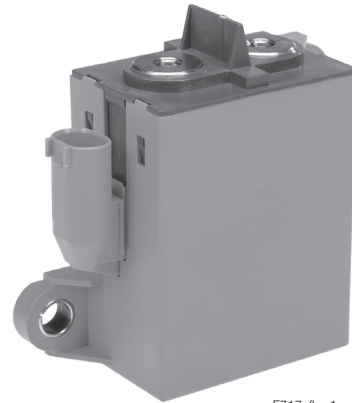


EVC 175 Main Contactor

- Limiting continuous current 175A at +85°C
- Suitable for voltage levels up to 500VDC
- High peak current carrying capability up to 5000A
- IEC 60664 compliant



F717_fw1

Typical applications

DC high voltage and high current applications, e.g. main contactors for larger hybrid electric vehicles (HEV), plug-in hybrids (PHEV) and full electric vehicles (BEV), battery charging systems.

All data preliminary.

Contact Data	
Contact arrangement	Form X (SPST NO DM)
Rated voltage	450VDC
Max. switching voltage	500VDC, depending on load characteristics ¹⁾
Limiting continuous current	
+85°C, load cable 25mm ²	160A
+85°C, load cable 30mm ² (rated)	175A
+85°C, load cable 35mm ²	190A
+85°C, load cable 40mm ²	210A
+85°C, load cable 50mm ²	235A
Limiting short-time current	500A 0.5min, 1500A 2s,
+85°C, load cable 35mm ²	5000A, 20ms
Limiting make/break current	
Forward current direction, cable 35mm ²	ON: 210A at 24VDC / OFF: 10A at 24VDC 100000 times, 0.05mH temperature collective 1 (LV24)
altitude max. 5500m	ON: 210A at 24VDC / OFF: 500A at 450VDC 10 times, 0.05mH +23°C
Limiting break current	
Forward current direction, cable 35mm ²	1500A at 450VDC, 1 time +23°C
altitude max. 5500m	210A at 200VDC ¹⁾
Reverse current direction, cable 35mm ² , 23°C	
altitude max. 5500 m	
Initial voltage drop at 100A	<40mV after 1min
Operate time max. (rated voltage at coil)	20ms
Release time max. (rated voltage at coil, w/o diode)	8ms
Mechanical endurance	>200000 ops.

1) Please contact TE Connectivity for details.

Coil Data (Coil 0001)	
Max. coil temperature	+155°C

Un-economized: single coil version for external economization				
Coil code	Rated voltage VDC	Operate Voltage VDC ⁴⁾	Min. inrush time ms	Max. inrush time ms ⁵⁾
0001 ²⁾	12	7.5	100	300

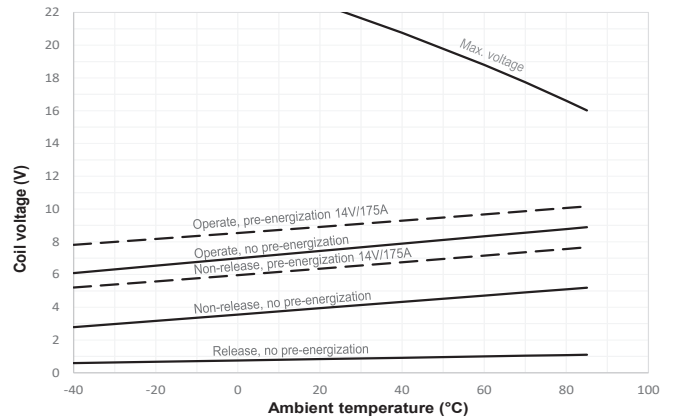
Coil code	Min. non-release current ADC	Max. continuous current ADC ⁵⁾	Release current ADC	Coil resistance Ω±10%
0001 ²⁾	0.4	0.77	0.06	5

Coil Data (Coil 0002)

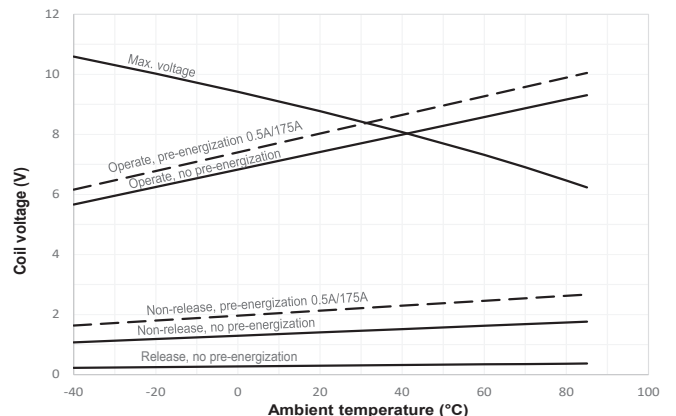
Economized: dual coil version with internal switch						
Coil code	Rated voltage VDC	Operate voltage VDC ⁴⁾	Nominal inrush current ADC ⁴⁾	Non-release voltage VDC ⁴⁾	Max. voltage VDC	Coil resistance Ω±10%
0002 ³⁾	12	7.5	4	4	16	33

- Un-economized coil: requires external coil economizer, min. clamp voltage 36V (see circuit recommendation).
- With internal economizer: contactor has two coils. Both are used for pull-in and after approx. 100ms one coil is switched off.
- Valid for cold coil at 23°C ambient temperature.
- To prevent over heating.

Coil operating range (coil 0002)



Coil operating range (coil 0001)



EVC 175 Main Contactor (Continued)

Insulation Data

Initial dielectric strength	
between open contacts	2800VDC/3mA ⁶⁾
between contact and coil	2800VDC/3mA ⁶⁾
Insulation resistance after 1500A abuse test	
between open contacts	≥2MΩ ⁷⁾
between contact and coil	≥100MΩ ⁷⁾
Clearance/creepage	
IEC 60664-1 (2007)	over voltage cat. I pollution degree 3
Altitude max.	5500m

6) ISO/DIS 6469-3:2011 (page 12-13).

7) EN 61810-1:2004 table 8, functional and basic insulation.

Other Data

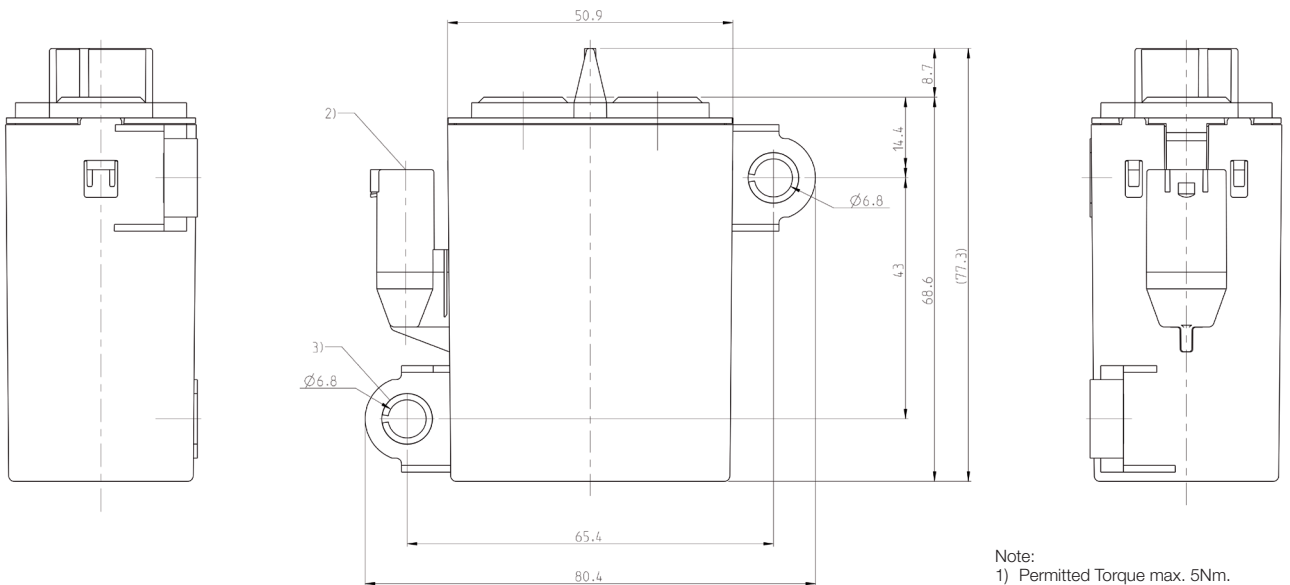
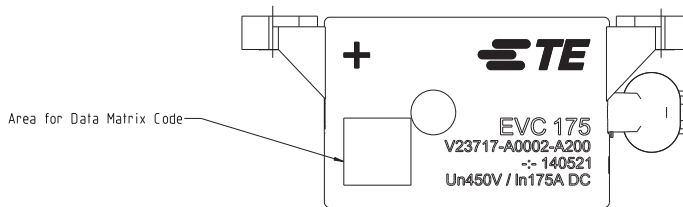
Ambient temperature	-40°C to +85°C	
Degree of protection	RT I (IEC 61810)	
Vibration resistance (functional)	IEC 60068-2-6 (sine sweep) ⁸⁾	(10 to 500)Hz / min. 10g
Shock resistance (functional)	IEC 60068-2-27 (half sine) ⁹⁾	ON: 6ms, min. 50g ⁹⁾ / 10 times OFF: 6ms, min. 20g / 10 times
Terminal type	connector (coil) and screw (load)	
Weight	approx. 295g	

8) No change in the switching state >10µs.

9) Higher values (e.g. 60g) can be achieved by using coil 0001 with increased holding current applied.

Dimensions

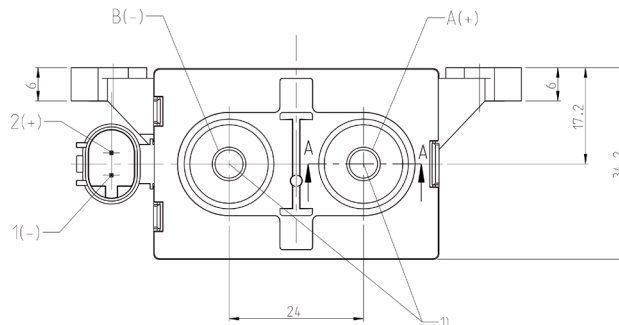
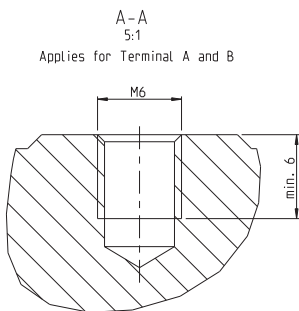
This view has been rotated by 180°.



Note:

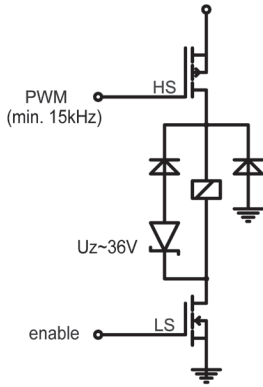
- 1) Permitted Torque max. 5Nm. One-time mounting only, no recurring screw fastening permitted.
- 2) Socket Housing TE Interface 2 Pos. MQS Code A. appropriate for Socket Housing 2 Pos. MQS. TE part number 1-967644-1.
- 3) Mount load connections first. Consult TE Connectivity for detailed mounting instructions.

Tolerances ISO8015 / ISO2768-cL.

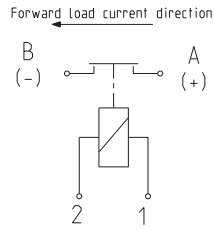


EVC 175 Main Contactor (Continued)

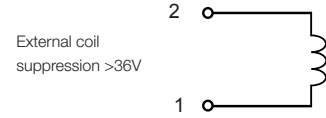
Circuit recommendation for coil 0001
Always use low-side switch "Enable" for switch-off.



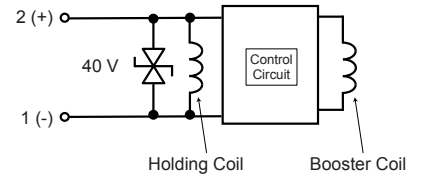
Terminal Assignment



Un-economized coil



Economized coil internal circuit



Product code structure	Typical product code V23717 -A 000 2 -A 2 0 0									
Type	V23717 EVC 175 Main Contactor									
Relay version	A Side mount fixation		B Bottom mount fixation							
Coil version	000 Standard coil 12V									
Coil system	1 Un-economized					2 Economized				
Load voltage	A 450VDC									
Contact material	2 Silver based									
Status monitoring	0 None									
Coil connector version	0 MQS sealed									

Product code	Relay version	Coil	Circuit	Coil suppr.	Part number ¹⁰⁾
V23717-A0001-A200	Side mount fixation	12VDC	External economizer	External >36V	6-1904123-6
V23717-A0002-A200			Internal economizer	Internal	2-1904070-1

10) Consult TE Connectivity for sample availability.