

EVC 250 Main Contactor

- Limiting continuous current 250A at 85°C
- Suitable for voltage levels up to 450VDC
- 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



F720_fw1

Contact Data

Contact arrangement	1 Form X (SPST NO DM)
Rated voltage	450VDC
Max. switching voltage	500VDC, depending on load characteristics ¹⁾
Rated current	
Forward load current direction, cable 50mm ²	250A
Limiting continuous current	
85°C, load cable 50mm ²	250A
Limiting short-time current	
85°C, load cable 50mm ²	400A 5min 600A 1min 6000A 20ms
Limiting make current	
resistive load, cable 50mm ² , 23°C, 50VDC	50000x 250A
Limiting break current	
Forward load current direction	1x2000A
altitude max 5000m, 400VDC	5000x200A 50000x100A
Limiting break current	
Reverse load current direction	
resistive load, cable 50mm ² , 23°C	20x200A
altitude max 5000m, 400VDC	10000x100A
Initial voltage drop at 100A	<40mV after 1min
Operate/release time max.	25ms at 14VDC (coil voltage)
Mechanical endurance	>500000 ops.

1) Please contact TE Connectivity for details

Values are influenced by system temperature and load current. Please contact TE Connectivity for details.

Coil Data

Max. coil temperature	155°C
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Coil version with external economizer²⁾

Coil code	Rated voltage VDC	Min. pull-in current A	Max. pull-in current A	Min. hold current mA (DC)	Coil resistance $\Omega \pm 10\%$
0001 ³⁾	12	1.7 ⁴⁾	4.0 ⁴⁾	360 ⁵⁾	4 ⁶⁾

2) Please refer to circuit recommendation diagram for coil 001.

3) Requires external coil economizer, min. clamp voltage 70V (see circuit recommendation).

4) Duration min. 100ms and max. 2s to avoid over temperature.

5) Fully compliant with shock and vibration requirements.

6) Avoid repetitive switching. The average dissipated power within a period of 10 seconds should not exceed 10W.

Double coil version with internal switch

Coil code	Rated voltage VDC	Pull-in voltage VDC	Hold voltage VDC	Maximum voltage VDC	Coil resistance $\Omega \pm 10\%$
0002 ⁷⁾	12	7.0 ⁸⁾	4.0	16	3/36 ⁹⁾

7) Max. duty cycle 0.5Hz.

8) Valid for cold coil at 23°C ambient temperature, max. rise time 100ms.

9) Internal switch from 3 Ω to 36 Ω coil max. 130ms after pull-in.

Insulation Data

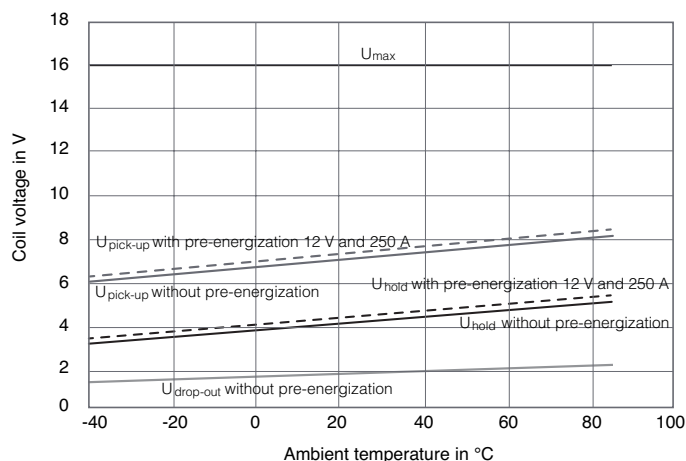
Initial dielectric strength	
between open contacts	2800VDC / 3mA
between contact and coil	2800VDC / 3mA
max. altitude	5000m
Insulation resistance after 2000A abuse test	
between open contacts	>200M Ω
between contact and coil	>200M Ω
Clearance/creepage	
acc. IEC 60664-1 (2007) for	over voltage category I, pollution degree 2

Other Data

Ambient temperature	-40°C to +85°C
Degree of protection	
dustproof:	IP54 (IEC 60529), RT I (IEC 61810)
Vibration resistance (functional)	
IEC 60068-2-6 (sine sweep)	10 to 500Hz, min. 10g.
Shock resistance (functional) ¹⁰⁾	
IEC 60068-2-27 (half sine)	closed: 11ms, min. 40g open: 11ms, min. 20g
Terminal type	connector (coil) and screw (load)
Weight	approx. 560g (19.7oz)
Packaging unit and delivery	24 pcs.

10) No change in the switching state >10 μ s.

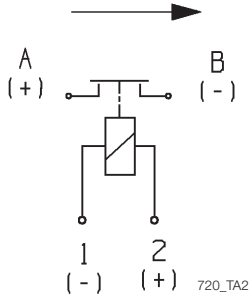
Coil operating range



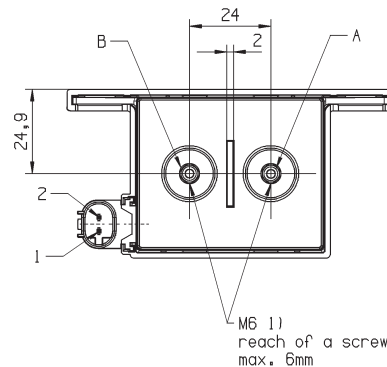
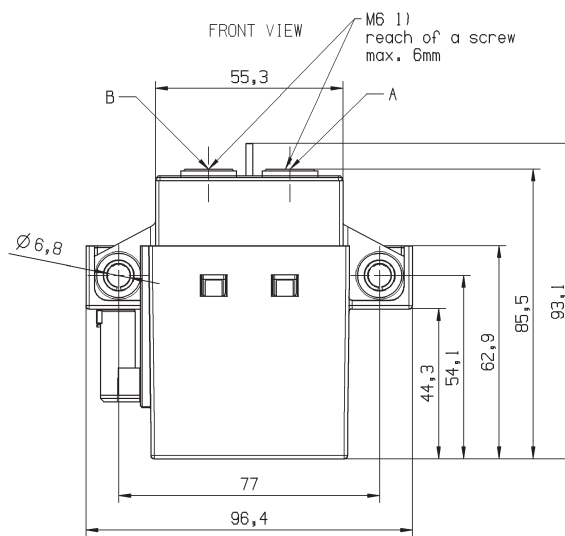
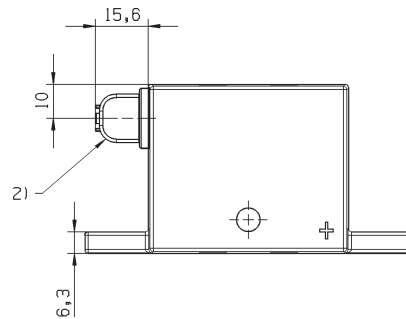
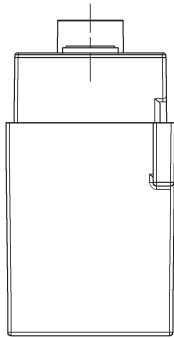
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Terminal Assignment

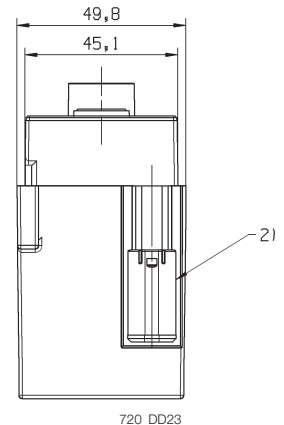
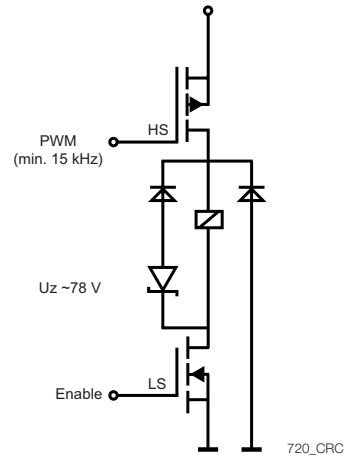
Forward load current direction



Dimensions



Circuit recommendation for coil 0001



- 1) Permitted torque 5Nm max.
- 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.

Tolerances ISO8015 / ISO2768-cL

EVC 250 Main Contactor (Continued)

Product code structure

Typical product code

V23720 -A 0001 -A 0 01

Type

V23720 EVC 250 Main Contactor

Contact arrangement

A SPST NO DM

Coil

0001 Single coil

0002 Double coil

Protection class

A IP54

Contact material

0 Standard

Standard version

01 Standard

Product code	Cont. arrang.	Coil	Circuit	Coil suppl.	Prot. class	Resistance	Part number
V23720-A0001-A001	SPDT-NO-DM	12VDC	No economizer	External >70V	IP54	4Ω	2-1904070-2
V23720-A0002-A001			Coil switch	Internal		Double coil 3/36Ω	4-1904065-7