

## Shrouded Power Relay F7 A

- Pin assignment similar to ISO 7588 part 1
- Customized versions on request
  - Integrated components (e.g. resistor, diode)
  - Customized marking/color
  - Special cover with bracket

### Typical applications

Cross carline up to 70A for example: ABS control, blower fans, cooling fan, energy management, engine control, fuel pump, heated front screen, ignition, lamps: front, rear, fog light, main switch/supply relay, wiper control.



F136\_fw1\_bw

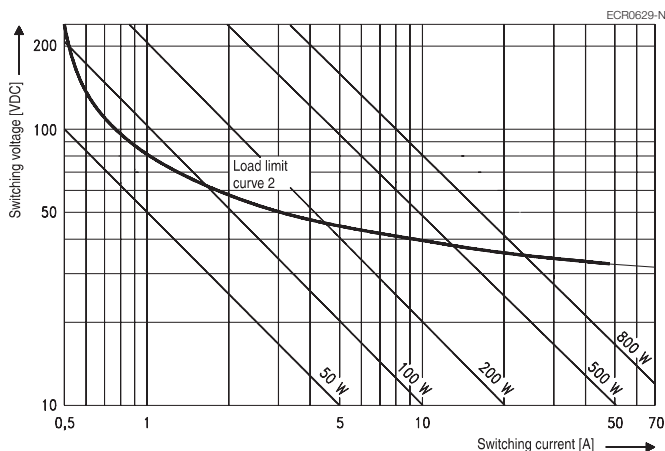
Contact Data	
Contact arrangement	1 form A, 1 NO
Rated voltage	12VDC
Limiting continuous current	
23°C	70A
85°C	50A
125°C	30A
Limiting making current <sup>1)</sup>	240A
Limiting breaking current	70A
Limiting short-time current	
overload current, ISO 8820-3 <sup>2)</sup>	1.35 x 50A, 1800s 2.00 x 50A, 5s 3.50 x 50A, 0.5s 6.00 x 50A, 0.1s
Jump start test, ISO 16750-1	24VDC for 5min, conducting nominal current at 23°C
Contact material	Silver based
Min. recommended contact load <sup>3)</sup>	1A at 5VDC
Initial voltage drop at 10A, form A (NO) contact, typ./max.	15/200mV
Frequency of operation at nominal load	6 ops./min (0.1Hz)
Operate/release time typ.	7/2ms <sup>4)</sup>
Electrical endurance	>2x10 <sup>5</sup> ops.
resistive load, NO contact	50A, 14VDC

Contact Data (continued)	
Mechanical endurance	>1x10 <sup>6</sup> ops.
<ol style="list-style-type: none"> <li>1) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 14VDC for 12VDC or 28VDC for 24VDC load voltages. For a load current duration of maximum 3s for a make/break ratio of 1:10.</li> <li>2) Current and time are compatible with circuit protection by a typical automotive fuse. Relay will make, carry and break the specified current.</li> <li>3) See chapter Diagnostics of Relays in our Application Notes or consult the internet at <a href="http://relays.te.com/appnotes/">http://relays.te.com/appnotes/</a></li> <li>4) For unsuppressed relay coil. A low resistive suppression device in parallel to the relay coil increases the release time and reduces the lifetime caused by increased erosion and/or higher risk of contact tack welding.</li> </ol>	

Coil Data					
Rated coil voltage	12VDC				
Coil versions, DC coil					
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance <sup>5)</sup> Ω±10%	Rated coil power <sup>5)</sup> W
004	12	7.2	1.6	90	1.6

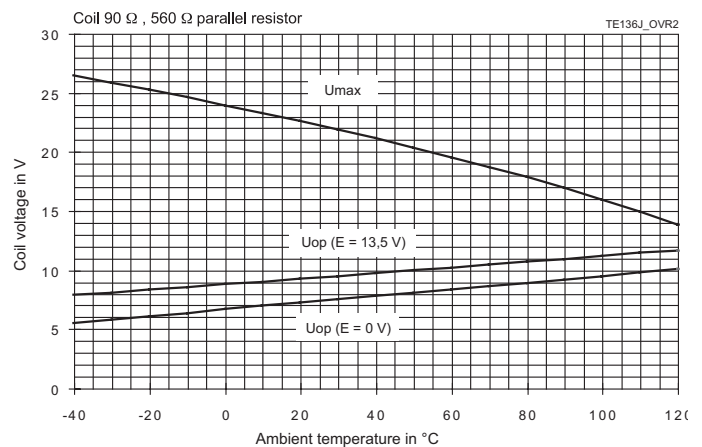
5) Without components in parallel.  
All figures are given for coil without pre-energization, at ambient temperature +23°C.

### Max. DC load breaking capacity



Load limit curve 1: arc extinguishes during transit time (changeover contact).  
Load limit curve 2: safe shutdown, no stationary arc (make contact).  
Load limit curves measured with low inductive resistors verified for 1000 switching events.

### Coil operating range



Does not take into account the temperature rise due to the contact current  
E = pre-energization.

**Shrouded Power Relay F7 A** (Continued)

**Insulation Data**

Initial dielectric strength	
between open contacts	500V <sub>rms</sub>
between contact and coil	500V <sub>rms</sub>
between adjacent contacts	500V <sub>rms</sub>
Load dump test	
ISO 7637-1 (12VDC), test pulse 5	V <sub>s</sub> =+86.5VDC
ISO 7637-2 (24VDC), test pulse 5	V <sub>s</sub> =+200VDC

**Other Data**

EU RoHS/ELV compliance	compliant
Protection to heat and fire according UL94	HB or better <sup>6)</sup>
Ambient temperature	-40 to 125°C
Climatic cycling with condensation, EN ISO 6988	6 cycles, storage 8/16h
Temperature cycling, IEC 60068-2-14, Nb	10 cycles, -40/+85°C (5°C/min)
Damp heat cyclic, IEC 60068-2-30, Db, Variant 1	6 cycles, upper air temp. 55°C
Damp heat constant, IEC 60068-2-3, Ca	56 days
Category of environmental protection, IEC 61810	RT III – sealed
Degree of protection, IEC 60529	IP67 (sealed) only with special connector
Vibration resistance (functional) IEC 60068-2-6 (sine sweep)	10 to 500Hz, min. 10g <sup>7)</sup>
Shock resistance (functional) IEC 60068-2-27 (half sine)	6ms, min. 30g <sup>7)</sup>
Drop test, free fall, IEC 60068-2-32	1m onto concrete

**Other Data** (continued)

Terminal type	plug-in, QC
Cover retention	
axial force	150N
pull force	200N
push force	200N
Terminal retention <sup>8)</sup>	
pull force	100N
push force	100N
Weight	approx. 60g (2.1oz)
Packaging unit	108 pcs.

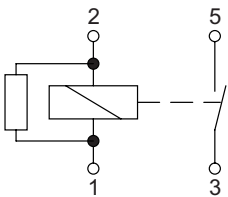
- 6) Refers to used materials.
- 7) No change in the switching state >10µs. Valid for NC contacts, NO contact values significantly higher.
- 8) Values apply 2mm from the end of the terminal. When the force is removed, the terminal must not have moved by more than 0.3mm.

**Accessories**

For fitting connectors please contact us via online Support Center

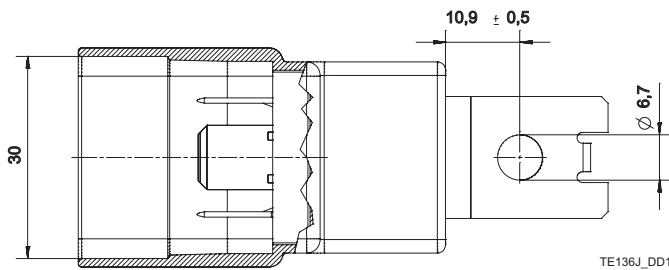
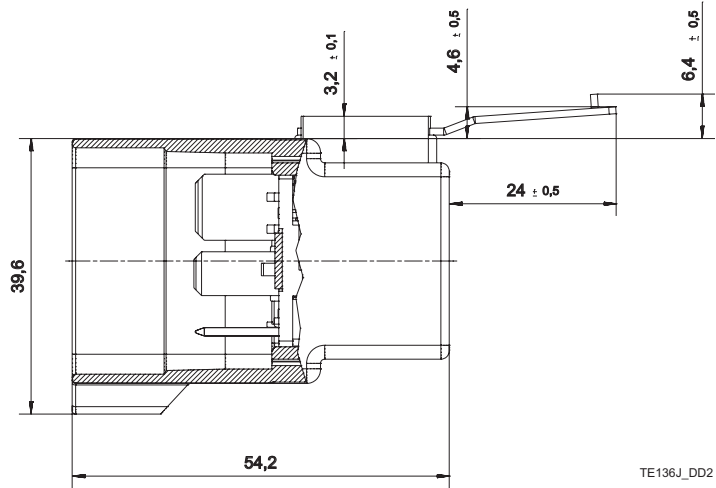
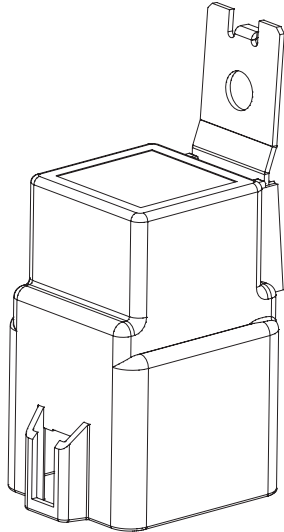
**Terminal Assignment**

NOR  
1 form A, NO with resistor

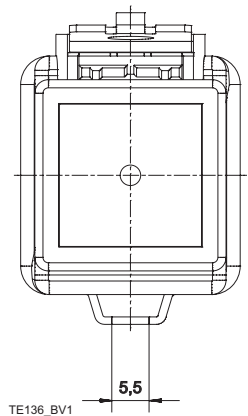
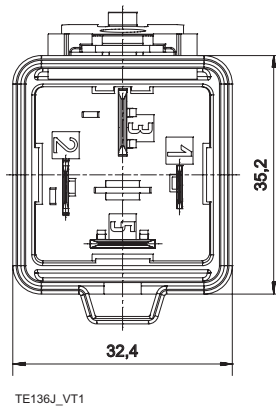


**Shrouded Power Relay F7 A** (Continued)

**Dimensions**



View of the terminals (bottom view)



**Product code structure**

Typical product code **V23136 -J 1 004 -X050**

<b>Type</b>	<b>V23136</b> Power Relay F7 A
<b>Contact arrangement</b>	<b>J</b> 1 form A, 1 NO
<b>Cover</b>	<b>1</b> Bracket at terminal 3
<b>Coil</b>	<b>004</b> 12VDC
<b>Terminal/arrangement</b>	<b>Xnnn</b> Customized (nnn: version number)

Product code	Arrangement	Cover	Coil suppr.	Circuit <sup>1)</sup>	Coil	Contact material	Terminals	Part number
V23136-J1004-X050	1 Form A, 1 NO	Standard	Resistor 560Ω	NOR	12VDC	Silver based	Plug-in, QC	1-1414122-0

1) See terminal assignment diagrams.

Other types on request.

This list represents the most common types and does not show all variants covered by this datasheet.