T72M

Powertrain Systems

Chassis Systems

Safety

Security

Body

Driver Information

Convenience

Description

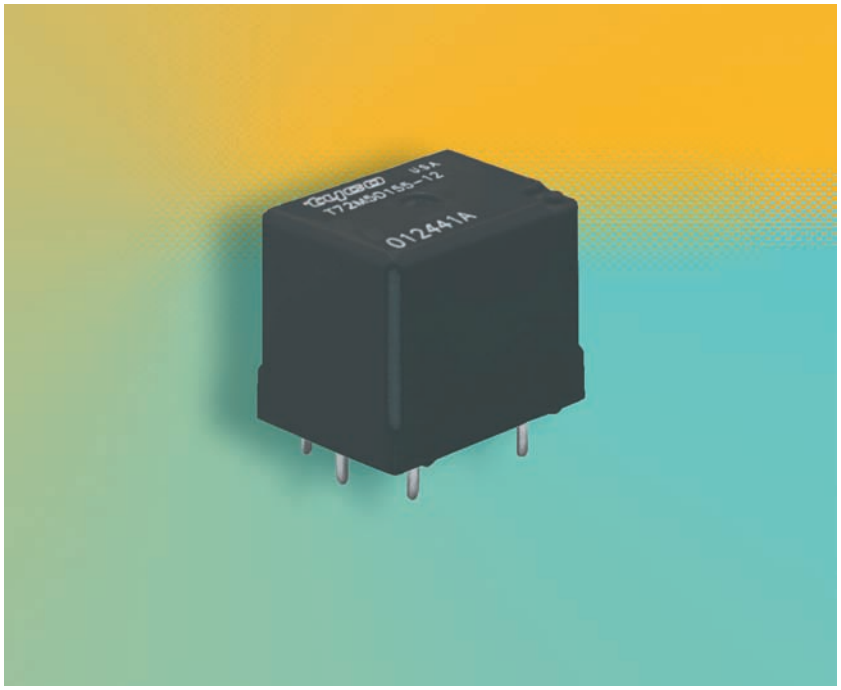
Features

- 20 A, 16 V switching rating
- 60 A inrush at 16 V
- 15 A continuous contact rating at 105 °C
- Immersion cleanable plastic case with nipp-off pin for ventilation
- Low profile package has a seated height of only 0.67" (17 mm)

Typical applications

- Lighting controls
- Power door locks, windows, sunroof
- Seat controls
- Remote keyless entry
- Body computer
- Wiper/washer control
- ABS/Traction control
- Body control modules
- Power sliding door

Please contact Tyco Electronics for relay application support.



T72_3d02

Car Industry

Truck Industry

Other Industry

Design

Sealed, immersion cleanable

Weight

Approx. 0.4 oz. (12 g)

Nominal voltage

6 V, 12 V or 24 V

Terminals

PCB terminals, for assembling in printed circuit boards

Conditions

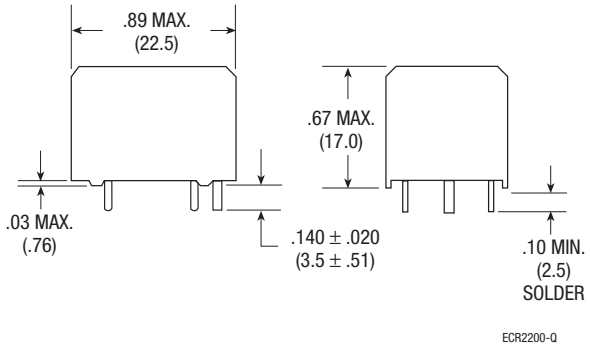
All parametric, environmental and endurance tests are performed according to EIA Standard RS-407-A at standard test conditions unless otherwise noted:
23 °C ambient temperature,
20-50% RH, 29.5 ± 1.0" Hg
(998.9 ±33.9 hPa).
Please also refer to the Application Recommendations in this catalog for general precautions.

Disclaimer

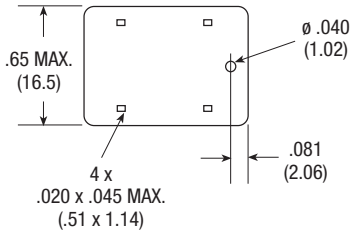
All technical performance data apply to the relay as such, specific conditions of the individual application are not considered. Please always check the suitability of the relay for your intended purpose. We do not assume any responsibility or liability for not complying herewith. We recommend to complete our questionnaire and to request our technical service. Any responsibility for the application of the product remains with the customer only. All specifications are subject to change without notification. All rights of Tyco are reserved.

T72M

Dimensional drawing

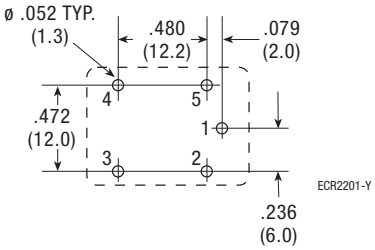


View of the terminals (Bottom view)



Mounting holes

View of the terminals (Bottom view)



Please observe the disclaimer.

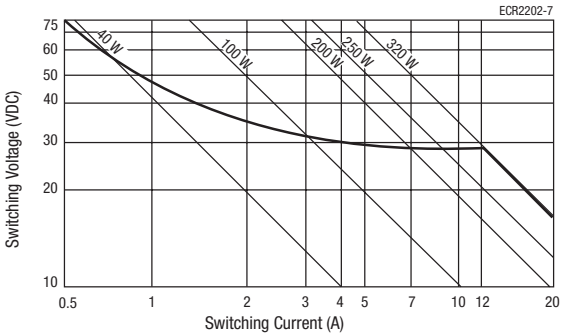
T72M

Contact data

Typical areas of application	Resistive / inductive loads	Indicator / lamp loads
Contact configuration	Changeover contact/ Form C	
Circuit symbol (see also Pin assignment)		
Rated voltage	12 V	
Rated current at 85 °C	NC/NO 10/20 A	
Contact material	AgNi0.15	$AgSnO_2$
Max. switching voltage/power	See load limit curve	
Max. switching current[1] On[2] Off	NC/NO 12 A/60 A 20 A/20 A	NC/NO 15 A/80 A[3] 20 A/20 A
Min. recommended load[4]	1 A at 5 V	
Voltage drop at 10 A (initial)	Typ. 50 mV, 300 max. for NC/NO contacts	
Mechanical endurance (without load)	> 10^7 operations	
Electrical endurance (example of resistive load)	10^5 operations at 20 A, 14 V, resisitive load on NO contact	
Max. switching rate at nominal load	6 operations per minute (0.1 Hz)	

[1] The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5 V for 12 V or 27 V for 24 V load voltages.
[2] For a load current duration of maximum 3 s for a make/break ratio of 1:10.
[3] Corresponds to a peak inrush current on initial actuation (cold filament).
[4] See chapter Diagnostics in our Application Recommendations on page 18 of this catalog or consult the internet at http://relays.tycoelectronics.com/application.asp

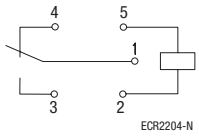
Load limit curve



Safe breaking, arc extinguished (normally open contact) for resistive loads.

Pin assignment

1 changeover contact/
1 form C



Please observe the disclaimer.

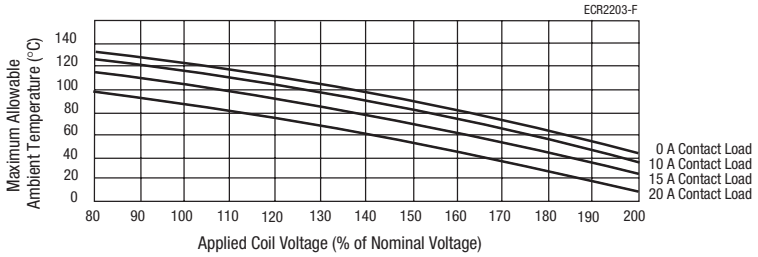
T72M

Coil data

Available for nominal voltages	6, 12, 24 V
Nominal power consumption of the unsuppressed coil at nominal voltage	0.8 W
Test voltage winding/contact	500 VAC_{rms}
Maximum ambient temperature range[1)]	– 40 to + 105 °C
Operate time at nominal voltage	5 ms
Release time at nominal voltage[2)]	2 ms

1) See also diagram Ambient temparature vs. coil voltage for continuous duty.
2) Measured at nominal voltage without coil suppression unit.
N.B.
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.

Ambient temperature vs. coil voltage for continuous duty



Assumptions:

1. Still air
2. Nominal coil resistance
3. Maximum mean coil temperature = 155 °C
4. Coil temperature rise due to load
   = 8 °C at 10 A
   = 20 °C at 15 A
   35.5 °C at 20 A
5. Curves are based on nominal coil power at 23 °C
6. When full lifetime is at high ambient and high load current, subtract 25 °C from maximum allowable ambient temperature.

Mechanical data

Audible sound (14 V coil voltage)	95 dBA at 10 cm 77 dBA at 1 m
Enclosures Sealed	Sealed relay is suitable for immersion cleaning of PCB assembly. Please refer to the Application Recommendations in this catalog. Relay may be vented after cleaning by cutting the vent protection from the corner of the relay after processing using a razor knife or equivalent.

Operating conditions

Temperature range, storage	Refer to *Storage* in the "Glossary"			
Test	Relevant standard	Testing as per	Dimension	Comments
Vibration resistance	1.27 mm double amplitude 5 g constant 0.5 mm double amplitude 10 g constant		10-40 Hz 40-70 Hz 70-100 Hz 100-500 Hz	Valid for NC contacts. NO contacts are significantly higher
Shock resistance	half sine pulse form		11 ms 20 g	No change in the switching state > 1 ms
Jump start	24 V for 5 minutes conducting nominal current at 23 °C			
Drop test	Capable of meeting specifications after 1.0 m (3.28 foot) drop onto concrete in final enclosure			
Flammability	UL94-HB or better (meets FMVSS 302)			

Please observe the disclaimer.

T72M

Ordering information

Part numbers (see table below for coil data)		Contact arrangement	Contact material	Enclosure	Terminals
Relay part number	Tyco order number				
T72M5D121-12	1393289-9	1 Form C	AgNi0.15	Sealed, plastic cover	Printed circuit
T72M5D155-12	2-1393289-4	1 Form C	AgNi0.15	Sealed, plastic cover	Printed circuit

Coil versions

Coil data for T72M	Rated coil voltage (V)	Coil resistance +/- 10% (Ω)	Must operate voltage (V)	Must release voltage (V)	Allowable overdrive [1] voltage (V)	
					at 23 °C	at 105 °C
T72M*D***-**	6	45	3.2	0.6	12.3	7.2
T72M*D***-**	12	180	6.3	1.2	24.6	14.3
T72M*D***-**	24	720	12.6	2.4	49.3	28.7

[1] Allowable overdrive is stated with 10A load current flowing through the relay contacts and minimum coil resistance with power applied for 30 s max. (20% max. duty cycle).

Standard delivery packs (orders in multiples of delivery pack)

T72M: 1000 pieces

Please observe the disclaimer.