

High Current Relay 75



Features

- Limiting continuous current 75 A

Typical Applications

- Rear window defogger
- Battery disconnection
- Power distribution (clamp 15)
- Glow plug relay

Please contact Tyco Electronics for relay application support.



232_301

Design

- ELV/RoHS/WEEE compliant
- Dustproof; protection class IP54 to IEC 529 (EN 60 529)
- Sealed: sealing in accordance with IEC 68; immersion cleanable: protection class IP67 to IEC 529 (EN 60 529)

Weight

Approx. 38 g (1.3 oz.)

Nominal Voltage

12 V or 24 V

Terminals

- Quick connect terminals (coil)
- Screw terminals (load)

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, 998.9 ±33.9 hPa.

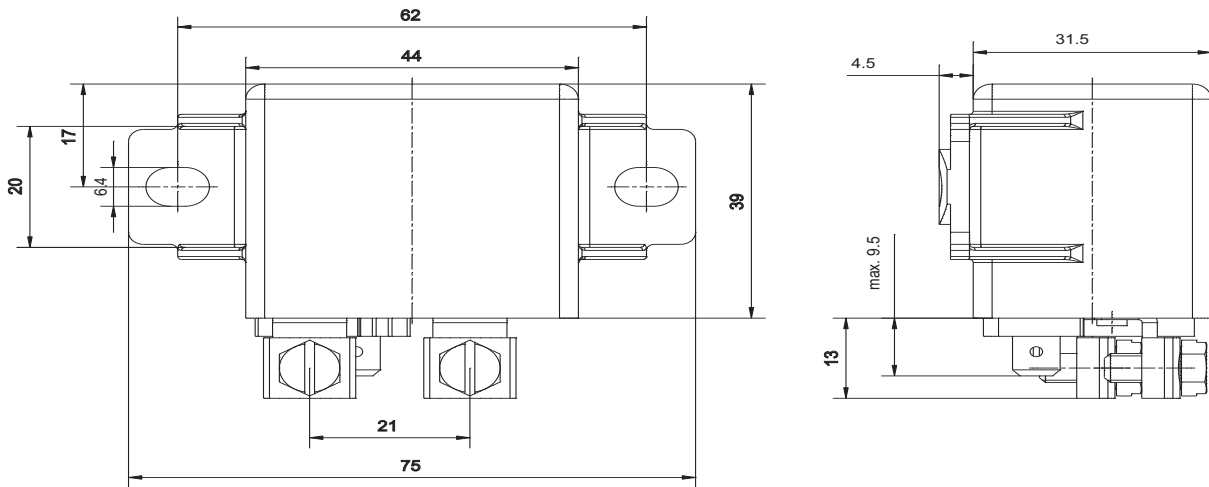
For general storage and processing recommendations please refer to our Application Notes and especially to *Storage* in the "Glossary" page 23 or at <http://relays.tycoelectronics.com/appnotes/>

Disclaimer

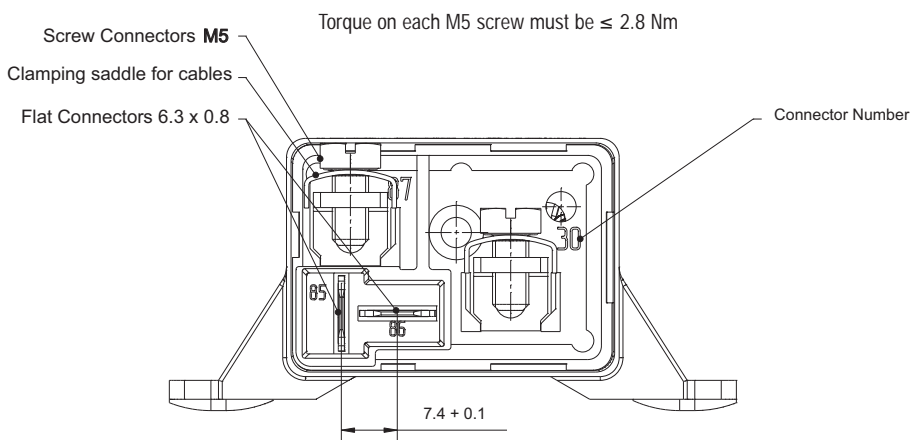
All technical performance data apply to the relay as such, specific conditions of the individual application are not considered. Please always check the suitability of the relay for your intended purpose. We do not assume any responsibility or liability for not complying herewith. We recommend to complete 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 Electronics are reserved.

High Current Relay 75

Dimensional Drawing





View of the Terminals (bottom view)



Fitting connector for coil terminals 85 and 86 is Tyco Electronics' 2 way FF receptacle housing Part Number 180907

High Current Relay 75

Contact Data

Contact configuration	1 Make contact/ 1 Form A		1 Bifurcated contact (Double contact make)/ 1 Form A (bifurcated)
Circuit symbol (see also Pin Assignment)			
Rated voltage	12 V	24 V	12 V
Rated current	50 A	30 A	50 A
Limiting continuous current			
23°C	75 A	50 A	75 A
85°C	50 A	30 A	50 A
105°C	20 A	8 A	20 A
Contact material	Silver based		
Max. switching voltage/power	See load limit curve		
Max. switching current ¹⁾			
On ²⁾	75 A	50 A	150 A
Off	75 A	50 A	100 A
Min. recommended load ³⁾	1 A at 5 V		
Voltage drop at 100 A (initial)	Typ. < 100 mV, 200 mV max.		Typ. < 50 mV, 200 mV max.
Mechanical endurance (without load)	> 10 ⁶ operations		
Example of electrical endurance with resistive load and copper wire with cross section ≥ 10 mm ²	> 1.25 x 10 ⁵ operations at 23°C 75 A on NO, 13.5 V	> 1 x 10 ⁵ operations at 85°C 75 A on NO, 13.5 V	> 5 x 10 ⁴ operations at 23°C 50 A on NO, 27 V
Max switching rate at nominal load	6 operations per minute (0.1 Hz)		

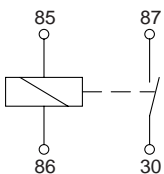
¹⁾ The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5 V for 12 V or 27 V for 24 V load voltages.

²⁾ For a resistive load of maximum 1 s on and a minimum of 45 s off.

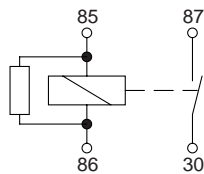
³⁾ See chapter Diagnostics of Relays in our Application Notes page 31 or consult the internet at <http://relays.tycoelectronics.com/appnotes/>

Circuit Diagram

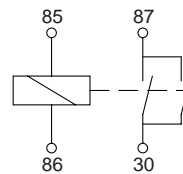
A0
1 Make contact/1 Form A



AR
1 Make contact/1 Form A
with Resistor



E0
1 Bifurcated contact (Double contact make)/
1 Form A (bifurcated)



Polarity for all HCR 75: Terminals 30 and 86 on +

Coil Data

Available for nominal voltages	12 V / 24 V
Nominal power consumption of the unsuppressed coil at nominal voltage	3.1 W / 4.4 W
Nominal power consumption at nominal voltage with suppression resistor	7.2 W / n.a.
Test voltage winding/contact	500 VAC _{rms}
Maximum ambient temperature range	-40 to +125°C
Operate time at nominal voltage	Typ. 7 ms
Release time at nominal voltage ¹⁾	Typ. 2 ms

¹⁾ For unsuppressed relay coil.

Note:

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.

High Current Relay 75

Mechanical Data

Cover retention	
Axial force	150 N
Pull force	200 N
Push force	200 N
Terminals	
Pull force	100 N
Push force	100 N
Torsion	0.3 Nm
Enclosures	
Dust cover	Protects relay from dust. For use in passenger compartment or enclosures.

Environmental Conditions

Temperature range, storage	Refer to <i>Storage</i> in the "Glossary" catalog page 23 or http://relays.tycoelectronics.com/appnotes/			
Test	Relevant standard	Testing as per	Dimension	Comments
Climatic cycling with condensation	EN ISO 6988		6 cycles	Storage 8/16 h
Temperature cycling	IEC 68-2-14	Nb	10 cycles	-40/+85°C (5°C per min)
Damp heat				
cyclic	IEC 68-2-30	Db	6 cycles	Upper air temperature 55°C
constant	IEC 68-2-3	Ca	56 days	
Corrosive gas	IEC 68-2-42	10 ±2 cm ³ /m ³ SO ₂	10 days	
	IEC 68-2-43	1 ±0.3 cm ³ /m ³ H ₂ S	10 days	
Vibration resistance	IEC 68-2-6 (sine sweep)		10 - 500 Hz min. 5 g	No change in the switching state > 10 µs Valid for NC contacts, NO contact values significantly higher
Shock resistance	IEC 68-2-27 (half sine form single pulses)		11 ms min. 20 g	
Load dump	ISO 7637-1 (12 V) ISO 7637-2 (24 V)	Test pulse 5 Test pulse 5	Vs = +86.5 V Vs = +200 V	
Jump start	24 V for 5 minutes conducting nominal current at 23°C			
Flammability	UL94-HB or better (meets FMVSS 302) ¹⁾			

¹⁾ FMVSS: Federal Motor Vehicle Safety Standard.

Ordering Information

Part Numbers (see table below for coil data)		Circuit/Contact Arrangement	Contact Material	Enclosure	Coil Suppression
Relay Description	Part Number				
12 V					
V23232-D0001-X001	1904000-1	E0/1 Form A (bifurcated)	Silver based	Dust cover	
V23232-A0001-X005	2-1904001-3	AR/1 Form A	Silver based	Dust cover	Resistor
24 V					
V23232-A0002-X008	1904001-4	A0/1 Form A	Silver based	Dust cover	

Coil Versions

Coil Data for HCR 75	Rated Coil Voltage (V)	Coil Resistance ³⁾ ±10% (Ω)	Must Operate Voltage (V)	Must Release Voltage (V)	Allowable Overdrive ¹⁾ Voltage (V)	
					at 23°C	at 100°C
V23232-D0001-X001	12	46	8.8	1.5	22	15
V23232-A0001-X005	12	20 ²⁾	7.5	0.5	22	15
V23232-A0002-X008	24	130	19.0	1.0	32	32

¹⁾ Allowable overdrive is stated with no load applied and minimum coil resistance.

²⁾ Including resistor as suppression device.

³⁾ Measured between the terminals 85 and 86.

Standard Delivery Packs (orders in multiples of delivery pack)

HCR 75: 50 pieces