

VH28 Half Width



Features

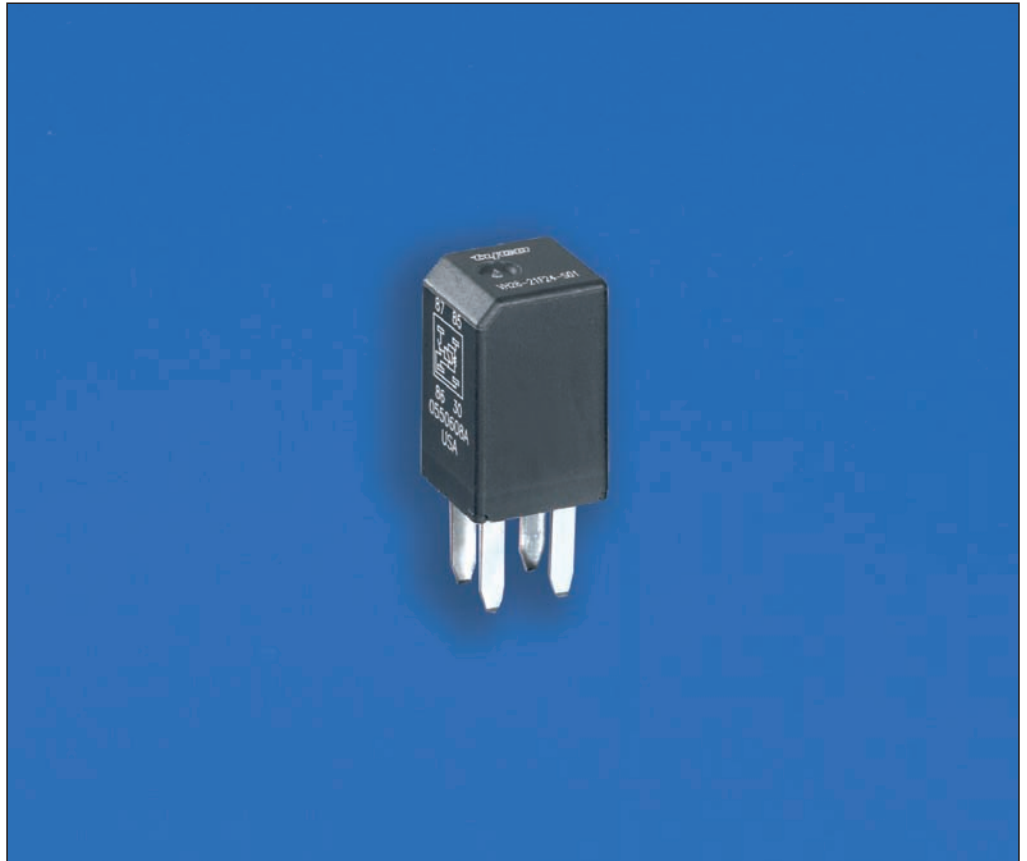
- Limiting continuous current 20 A
- 2.8 mm quick connect terminals (per SAE J1744)
- Maximum utilization of terminal spacing

Typical Applications

Cross carline up to 20 A
for example:

- ABS control
- Blower fans
- Cooling fan
- Door control
- Door lock
- Fuel pump
- Heated front screen
- Immobilizer
- Interior lights
- Seat control
- Seatbelt pretensioner
- Sun roof
- Trunk lock
- Valves
- Window lifter
- Wiper control

Please contact Tyco Electronics for relay application support.



VH28_303

Design

- ELV compliant
- Sealed or dust cover plastic enclosure
- Dustproof: protection class IP54 to IEC 529 (EN 60 529)
- Sealed: protection class IP67 to IEC 529 (EN 60 529)

Weight

Approx. 12.7 g (0.45 oz.)

Nominal Voltage

12 V

Terminals

Quick connect terminals per SAE J1744; coil and load 2.8 mm dual in-line

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.

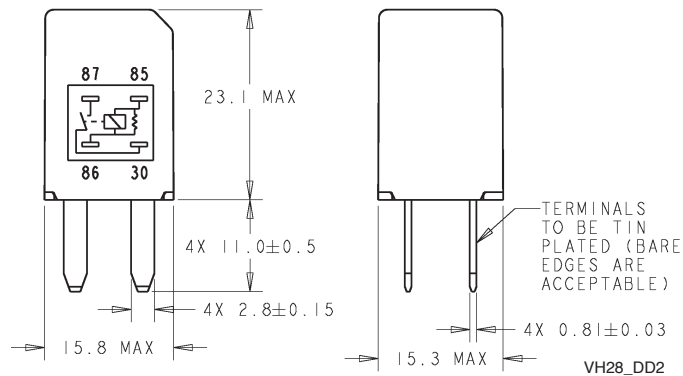
For general storage and processing recommendations please refer to our Application Notes and especially to *Storage* in the "Glossary" page 23 or at <http://relays.tycoelectronics.com/appnotes/>

Disclaimer

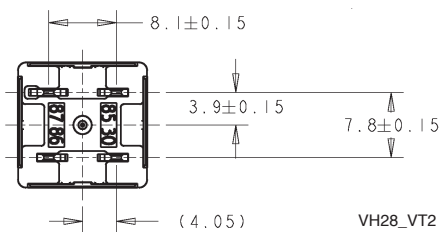
All technical performance data apply to the relay as such, specific conditions of the individual application are not considered. Please always check the suitability of the relay for your intended purpose. We do not assume any responsibility or liability for not complying herewith. We recommend to complete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


VH28 Half Width

Dimensional Drawing



View of the Terminals (bottom view)



Contact Data	
Contact configuration	1 Make contact/ 1 Form A
Circuit symbol (see also Pin assignment)	
Rated voltage	12 V
Rated current	15 A
Limiting continuous current	
23°C	20 A
85°C	15 A
125°C	8 A
Contact material	Silver based
Max. switching voltage/power	See load limit curve
Max. switching current ¹⁾	
On ²⁾	100 A at 16 V (lamp)
Off	30 A at 16 V (resistive)
Min. recommended load ³⁾	1 A at 5 V
Voltage drop (initial) NO contact at 20 A	Typ. 20 mV, 200 mV max.
Mechanical endurance (without load)	Typ. 10 ⁷ operations at 20 operations/s max.
Electrical endurance (example of resistive load, further information on request)	> 1 x 10 ⁵ operations 20 A, 14 V
Max. switching rate at nominal load	6 operations per minute (0.1 Hz)

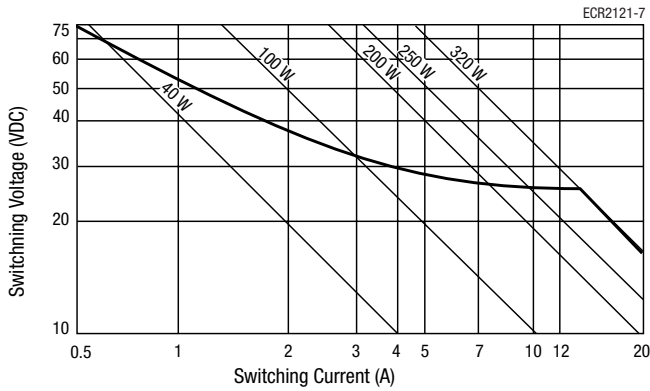
¹⁾ The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5 V for 12 V.

²⁾ For a load current duration of maximum 3 s for a make/break ratio of 1:10.

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

VH28 Half Width

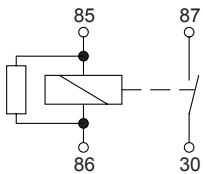
Load Limit Curve



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

Circuit Diagram

AR
1 Make contact/1 Form A
with Resistor



Coil Data

Available for nominal voltages	12 V
Nominal power consumption of the unsuppressed coil at nominal voltage	1.03 W
Nominal power consumption at nominal voltage with suppression resistor	1.17 W
Test voltage winding/contact	500 VAC _{rms}
Ambient temperature range	-40 to +125°C
Operate time at nominal voltage	Typ. 5 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.

Mechanical Data

Cover retention	
Pull force	220 N
Push force	220 N
Terminals	
Pull force	110 N
Push force	110 N
Resistance to bending, force applied to front	10 N ¹⁾
Resistance to bending, force applied to side	10 N ¹⁾
Torsion	0.3 Nm
Enclosures	
Dust cover	Protects relay from dust. For use in passenger compartment or enclosures
Sealed	Protects relay from moisture. For use in areas where exposure to moisture is possible.

¹⁾ Values apply 2 mm from the end of the terminal. When the force is removed, the terminal must not have moved by more than 0.3 mm.

VH28 Half Width

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
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	No change in the switching state > 1 ms
Shock resistance	IEC 68-2-27 (half sine form single pulses)		20 g 11 ms	No change in the switching state > 1 ms deenergized. Values are significantly higher in the energized state
Drop test	Capable of meeting specifications after 1.0 m (3.28 ft) drop onto concrete			
Flammability	UL94-HB or better (meets FMVSS 302) ¹⁾			
Overload Current ²⁾	40.5 A, 1800 s 60 A, 60 s 180 A, 1 s			

¹⁾ FMVSS: Federal Motor Vehicle Safety Standard.

²⁾ Current and time are compatible with circuit protection by a typical 30 A automotive fuse. Relay will make, carry and break the specified current. Testing performed at 23°C.

Ordering Information

Part Numbers ¹⁾ (see table below for coil data)		Circuit/Contact Arrangement	Contact Material	Enclosure	Coil Suppression	Terminals
Relay Description	Part Number					
VH28-11F24-S01	1432833-1	AR/1 Form A	AgSnO ₂	Dust cover	Resistor 1000 Ω	Quick connect
VH28-21F24-S01	1432726-1	AR/1 Form A	AgSnO ₂	Epoxy sealed	Resistor 1000 Ω	Quick connect

¹⁾ Contact factory for mating connector information

Coil Versions

Coil Data for VH28	Rated Coil Voltage (V)	Coil Resistance ²⁾ ±10% (Ω)	Must Operate Voltage (V)	Must Release Voltage (V)	Allowable Overdrive ¹⁾ Voltage (V)	
					at 23°C	at 125°C
VH28-*1F24-S01 ³⁾	12	123	7.2	1.2	24	16

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

²⁾ Including parallel resistor.

³⁾ Coil suppression suffix: S01 for 12 V (1000 Ω parallel resistor).

Standard Delivery Packs (orders in multiples of delivery pack)

VH28: 900 pieces