The Comus International group of companies consists of:

Switch Voltage, Switching Current and

Power Rating

The listed Values for switching voltage, switching current, and power rating are absolute limits. If any of these values is exceeded, a reduction of life expectancy will result (see following power diagram).



Switching Time

This is defined as, the pull-in time including the bounce time at nominal voltage and 20 Hz: 1.5 - 3.5ms, and the release time (without diode) at nominal voltage and 20 Hz: 0.4 - 1.5ms.





The operating temperature is the internal temperature of the relay (ambient temperature plus self heating). If relays are operating at higher ambient temperatures than +20°C, the pull-in voltage and the maximum coil voltage must be calculated as follows:

Pull-in voltage = Pull-in voltage at 20° C x kl.

Maximum coil voltage = Max. coil voltage 20° C x k2.

When mounting relays side by side, a gap of approximately half the relay width is recommended to avoid magnetic interference from one relay to another.



HOW TO ORDER HIGH VOLTAGE RELAYS 3392 - 1270 - 12 - 6 Contact Code Coil Version Termination Voltage Number Style



Comus International 454 Allwood Road Clifton New Jersey 07012 U.S.A

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Assemtech Europe Limited Unit 7, Rice Bridge Industrial Estate Thorpe - Le - Soken Essex England COI6 OHL Tel: +44 (0)1255 862236 Fax: +44 (0)1255 862014 email: sales@assemtech.co.uk internet: http://www.assemtech.co.uk 02



Chennai 600 045 India Tel: +91 44 22628093 Fax: +91 44 22628271 email: stgltd@eth.net

Kadapperi

Tambaram

Note: All parts of the order code must be completed

We also have a large network of worldwide agents. These can be seen on any of our websites, or on our company profile brochure.

All dimensions are nominal, in millimetres unless otherwise stated. If further information is required, individual datasheets are available on our websites, and on CD. As part of the groups policy of continued product improvement, specifications may change without notice. Our sales office will be pleased to help you with the latest information on our products.

High Voltage Reed Relays



STG

Switching Technologies Gunther B-9, B-10, & C-1 Special Economic Zone (MEPZ)



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Com/4/Oct05/Iss.1

DESCRIPTION

Reed Relays consist of a reed switch and a coil fitted into a housing, which could be plastic, metal, or moulded. Compared with electromechanical relays, reed relays generally have a faster response time, lower coil consumption, and are smaller in size. Furthermore, the switch is sealed in a dry, inert atmosphere, preventing the ingress of contaminants.

OPERATION

High Voltage Relays have outstanding perfomance in insulation and stand-off voltage. Energizing the coil operates a reed switch causing the contacts to open or close. It is important that the switch is not overloaded by applying loads in excess of the switch ratings. For details on switch loads refer to the reed relay specifications, and the reed switch catalogue, available from our sales offices.

Shock and Vibration

During shock and vibration tests the relays must be energized with nominal voltage. The contact should not open or close longer than 10 µS. Vibration stability: 20g/50 - 500Hz. Shock stability: 35g/11ms half sine wave.

General Parameters

All characteristics for pull-in voltage, drop-out voltage, and coil resistance are at $20^{\circ}C \pm 3^{\circ}C$ ambient temperature. For other temperatures see diagram 'Operating Temperature.'

Contact Resistance

Initial value at nominal voltage is measured by Kelvin test method at 20V / 100mA.

Soldering

During Soldering make sure no mechanical stress is applied to the terminals because damage to the internal reed switch may occur.

Insulation Resistance

The insulation resistance is measured with a Tera Ohmmeter at 500VDC. The ambient climate is 20°C \pm 3°C and 50% relative humidity.

Dielectric Strength

Tested in a radiation (eg. light, x-ray) free environment by applying a DC voltage across the open contacts, between adjacent contacts and between the coil and contact. The test current is 50 µ A. The unused contacts should not be connected during the test.

Life Expectancy:

The life expectancy of a reed relay is dependent upon the load being switched. At maximum rated loads life expectancy is approximately 106 switching cycles. Lower load ratings can increase the life expectancy up to 5x108 operations. The mechanical life expectancy can reach at least 10⁹ operations. Through the switching of inductive, capacitive, and lamp loads, the life expectancy is considerably reduced due to exceeding the specified maximum current.

Contact Capacitance (Typical Values)

| Across open contacts | 0.8 - 1.2 pF |
|----------------------------------|--------------|
| Between open contact and coil | 1.4 - 2.2 pF |
| Between closed contacts and coil | 2.3 - 3.5 pF |

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| HIGH VOLTAGE REED REL | AYS | | € (2. (2. (2. (2. (2. (2. (2. (2. | 0 7) (0.8Ø (0.0315) 36) Pin La | 0.5 (0.019) (0.019) | | 60.0 (2.36) (2.36) (0.0 (0.0 (0.0 (0.827) (0.827) (0.827) (0.827) (0.827) (0.827) (0.827) (0.827) (0.2 (2.67) | 0.5 (0.019 (0.019 ↓ 0315) ↓ | Outer Ø4.0 Wire Ø0.8 | 60.0 (2.36) (2.36) (0.394) (0.394) (0.827) (0.827) (0.827) (0.827) (0.827) (0.827) (0.68) (2.67) | ((0.80 0.0315) Pin Layout | | 60.0 (2.36) (2.36) (0.1 (0.1 (0.1 (0.1 (0.1) (0.227) (0.227) (0.227) (0.227) (0.227) (0.227) (0.227) (0.1) (| © 0 (0.0 0.80 0315) Pin Layout | 1.5 019) ↓ (0.394) ↓ (0.394) | | 5.0(2.95) 0.88 0.0315) 1.0(2.756) 0 0 0 0 0 0 0 0 0 0 0 0 0 | | + 25.0(0.9 + 25.0(0.9 + 21.0 (0.827) + 21.0 (0.827) + 21.0 (0.827) + 21.0 (0.827) + 21.0 (0.827) + 21.0 (0.827) + 21.0 (0.83) + 1 (0.83) + 1 (0 | $\begin{array}{c} \hline \\ & \hline \\ 84 \\ \hline \\ -55.0(2.165) \\ \hline \\ 0 \\ \hline \hline \\ 0 \\ \hline \\ 0 \\ \hline \\ 0 \\ \hline \hline \hline \hline$ | 0.88 (0.0315) Pin Layout Bottom View B⊕ | | | 4.0 (0.158) ↓ ↓ | | (2.67) (0.80 (1.00) (2.36) | 0.5 (0.019) 4 (0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | | | 0.5 (0.019) ↓ ↓ ↓ ↓ ↓ ↓ | Outer 04.0 Wire 00.8 (0.158) (| 60.0 (2.36) (2.36) (0.394) (0.397) (0.327) | 0.8Ø (0.0315) Pin Layout 2 - | 0.5 (0.019) ↓ (0.394)+ ↓ (15) + | | $\begin{array}{c} 1,95) \\ \hline \\ 1,956) \\ \hline \\ 1,9560 \\ \hline 1,9560 \\ \hline \\ 1$ | | + 21.0 (1.083) + 27.0 (1.063) → (0.189) + 27.0 (1.063) → (0.189) Outer 04.0 Wire 00.8 | 75.0(2.95) → (1 + 0.80 + (0.0315) Pin Layout A+0-2 (0.0315) A+0-2 C 0-2 0.5 C 0-2 Bottom View ⊕ C A+ B | P + 200.0 (7.37) 1 0.0 - 1 (0.354) + - (0.354) + - 0 B- 0 B 0 B- 0 B 0 B- 0 B | | |
|-------------------------------|---------------|---------|---|---|---------------------------|------|--|---|---|--|-------------------------------------|----------|---|--|---------------------------------------|-------------------|---|-------|---|--|---|---|--|--------------------------|---------|--|--|-------------------------|-------------------|--|---|---|---------------------------------------|---|---------------------|--|-------|---|--|---|--|--|
| Version Number | | 6 | 6 | 6 | 6 | 6 | 6 6 | 6 | 6 | 6 | 6 6 | 6 | 6 | 6 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 Version Number | | 6 | 6 | 6 | 6 | 6 | 6 6 | 6 | 6 | 6 | 6 | 6 6 | 6 | 6 | 6 | 6 6 | 6 | 6 | | |
| Contact Form | | | l Norm | ally Open | | | I Normally Ope | n | | l Normally O | pen | | 2 Normally O | lly Open | | 4 Normally Oper | | | 4 Normally Open | | oen | Contact Form | | I Normally Closed | | | | I Normally Closed | | | | l Normally | 11 | I Normally Open & I Normally Closed | | | | I Normally Open & I Normally Closed | | | | |
| Contact Code | | 3316 | 3390 | 3391 | 3392 | 3316 | 3390 339 | 3392 | 3316 | 3390 33 | 391 339 | 92 3316 | 3390 3 | 391 339 | 92 33 | 6 3390 | 3391 | 3392 | 3316 | 3316 3390 3391 | | 3392 Contact Code | | 3316 3390 3391 339 | | | 3392 | 392 3316 3390 3391 3392 | | | 3316 3390 3391 3392 | | | 392 3316 | 3316 3390 3391 3392 | | | | 3316 3390 3391 3392 | | | |
| Termination Style | | | Ľ | 70 | | | 1280 | | | 1290 | | | 1272 | | | | 1274 | | | 1294 | | Termination Style | | 4270 | | | | | | | 4290 | | | | 5272 | | | | 5292 | | | |
| Contact Parameters | | | - [| | | | | | , <u>, , , , , , , , , , , , , , , , , , </u> | | | | | | | | | | | | | Contact Parameters | | | | | | | | | 1 | | | | | | | | | | | |
| Switching Voltage max | «. VACpeak/VE | DC 1500 | 5000 | 7500 | 10000 | 1500 | 5000 750 | 00001 000 | 1500 | 5000 7. | 500 100 | 000 1500 | 5000 7 | 500 100 | 00 150 | 00 5000 | 7500 | 10000 | 1500 | 5000 75 | 00 | 10000 Switching Voltage | max. VACpea | ak/VDC 150 | 00 5000 | 7500 | 10000 | 500 | 000 7500 | 10000 | 1500 | 5000 | 7500 10 | 000 1500 | 5000 | 7500 | 10000 | 1500 500 |) 7500 | 10000 | | |
| Dielectric Strength min | . VDC | 3000 | 7000 | 10000 | 14000 | 3000 | 7000 100 | 00 14000 | 3000 | 7000 10 | 000 140 | 000 3000 | 7000 | 0000 140 | 00 300 | 00 7000 | 10000 | 14000 | 3000 | 7000 10 | 000 | 14000 Dielectric Strengt | h min. VI | DC 300 | 00 7000 | 10000 | 14000 | 000 | 000 10000 | 14000 | 3000 | 7000 | 10000 14 | 1000 3000 | 7000 | 10000 | 14000 | 3000 700 | 00001 | 14000 | | |
| Switching Capacity max | к. W | 30 | 50 | 50 | 50 | 30 | 50 50 |) 50 | 30 | 50 | 50 50 | 0 30 | 50 | 50 50 | 0 30 |) 50 | 50 | 50 | 30 | 50 5 | 0 | 50 Switching Capaci | y max. V | N 30 | 0 50 | 50 | 50 | 30 | 50 50 | 50 | 30 | 50 | 50 5 | 50 30 | 50 | 50 | 50 | 30 50 | 50 | 50 | | |
| Switching Current max | с. A | I. | 2 | 2 | 2 | 1 | 2 2 | 2 | I | 2 | 2 2 | 2 1 | 2 | 2 2 | . I | 2 | 2 | 2 | 1 | 2 | 2 | 2 Switching Curren | t max. I | A I | 2 | 2 | 3 | 1 | 2 2 | 2 | I | 2 | 2 | 2 I | 2 | 2 | 2 | I 2 | 2 | 2 | | |
| Carrying Current max | с. A | 2 | 3 | 3 | 3 | 2 | 3 3 | 3 | 2 | 3 | 3 3 | 2 | 3 | 3 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 Carrying Current | max. | A 2 | 3 | 3 | 5 | 2 | 3 3 | 3 | 2 | 3 | 3 | 3 2 | 3 | 3 | 3 | I 3 | 3 | 3 | | |
| Contact Resistance max | c. mOhms | 80 | 250 | 250 | 250 | 80 | 250 25 | 0 250 | 80 | 250 2 | 50 25 | 50 80 | 250 | 250 25 | 0 80 |) 250 | 250 | 250 | 80 | 250 2 | 50 | 250 Contact Resistant | e max. mO | hms 80 | 0 250 | 250 | 250 | 80 | 250 250 | 250 | 80 | 250 | 250 2 | 250 80 | 250 | 250 | 250 | 80 250 | 250 | 250 | | |
| Coil Parameters (Options) | | | | | | | | | | | | | | | | | | | | | | Coil Parameters | (Options) | | | | | | | | | | | | | | | | | | | |
| Nominal Coil Voltage | VDC | 5 | | 2 | 24 | 5 | 12 | 24 | 5 | 12 | 24 | 5 | 12 | 24 | | 5 | 12 | 24 | 5 | 12 | | 24 Nominal Coil Vol | age VI | DC | 5 | 12 | 24 | 5 | 12 | 24 | 5 | 12 | 24 | 5 | | 12 | 24 | 5 | 12 | 24 | | |
| Pull-in Voltage max | k. VDC | 4 | | 0 | 20 | 4 | 10 | 20 | 4 | 10 | 20 | 4 | 10 | 20 | | 4 | 10 | 20 | 4 | 10 | | 20 Pull-in Voltage | max. VI | DC | 4 | 10 | 20 | 4 | 10 | 20 | 4 | 10 | 20 | 4 | | 10 | 20 | 4 | 10 | 20 | | |
| Drop-out Voltage min | . VDC | l I | | 2 | 4 | I. | 2 | 4 | I | 2 | 4 | 0.5 | 1.2 | 2.4 | | 0.5 | I | 2 | 0.5 | l I | | 2 Drop-out Voltage | min. VI | DC (| 0.5 | 1 | 2 | 0.5 | l I | 2 | 0.5 | I | 2 | 0. | 5 | I I | 2 | 0.5 | I I | 2 | | |
| Operating Voltage max | k. VDC | 8 | | 8 | 36 | 8 | 18 | 36 | 8 | 18 | 36 | 7 | 16 | 29 | | 7 | 14.5 | 27 | 7 | 14.5 | | 27 Operating Voltage | max. VI | DC é | 6.5 | 14.5 | 27 | 6.5 | 14.5 | 27 | 6.5 | 14.5 | 27 | 7. | 5 I- | 4.5 | 27 | 7.5 | 14.5 | 27 | | |
| Coil Resistance +15 | %. Ohms | 35 | 2 | 00 | 720 | 35 | 200 | 720 | 35 | 200 | 720 | 15 | 85 | 275 | | 12 | 42 | 175 | 12 | 42 | | 175 Coil Resistance | +15%. Oh | ims ! | 50 | 400 | 675 | 50 | 400 | 675 | 50 | 400 | 675 | 5 27 | I | 35 | 345 | 27 | 135 | 345 | | |
| Relay Parameters | | | | | | | | | | | | | | | | | | | | | | Relay Parameters | | | | | | | | | | | | | | | | | | | | |
| Dielectric Strength coil/c | ontact VDC | | 20 | 000 | | | 20000 | | | 20000 | | | 10000 | | | | 10000 | | | 10000 | | Dielectric Strengt | h coil/contact VI | DC | 2 | 20000 | | | 20000 | | | 20000 | | | 10 | 000 | | | 10000 | | | |
| Dielectric Strength contact/c | contact VDC | | | - | | | - | | | - | | | 10000 | | 8000 | | | 8000 | | | Dielectric Strengt | Dielectric Strength contact/contact VDC | | | t VDC - | | | - | | | - | | | 8000 | | | 8000 | | | | | |
| Insulation Resistance coil/c | ontact Ohms | | b | 10 ⁹ | | | lx10 ⁹ | | | Ix10 ⁹ | | | lx10 ⁹ | | | lx10 ⁹ | | | lx10 ⁹ | | | Insulation Resista | Insulation Resistance coil/contact Ohm | | | Ohms Ix10 ⁹ | | | lx10 ⁹ | | | lx10 ⁹ | | | Ix10 ⁹ | | | 1x10 [°] | | | | |
| Storage Temperature | °C | | -35 | +90 | | | -35 +90 | | | -35 +90 | | | -35 +90 | | | -35 +90 | | | -35 +90 | | | Storage Tempera | ° | °C | -35 +90 | | | -35 +90 | | | -35 +90 | | | | -35 +90 | | | -35 +90 | | | | |
| Operating Temperature | °C | | -20 | +70 | | | -20 +70 | | | -20 +70 | | | -20 +70 | | | -20 +70 | | | -20 +70 | | | Operating Tempe | ° rature | °C | -20 +70 | | | -20 +70 | | | -20 +70 | | | | -20 +70 | | | -20 +70 | | | | |
| Pull-in Time incl. Bounce 1 | Fime ms | | 3 | .5 | | | 3.5 | | | 3.5 | | | 3.5 | | | | 3.5 | | | 3.5 | | Pull-in Time incl | Bounce Time | ms | | 3.5 | | | 3.5 | | | 3.5 | | | 3 | 8.5 | | | 3.5 | | | |
| Drop-out Time | ms | | l | .5 | | | 1.5 | | | 1.5 | | | 1.5 | | | 1.5 | | | 1.5 | | | Drop-out Time | I | ms | 1.5 | | | 1.5 | | | 1.5 | | | | 1.5 | | | 1.5 | | | | |
| Weight, approx. | g | | | 5 | | | 55 | | | 55 | | | | | | 130 | | | I30 Weig | | | Weight, approx. | | g | 55 | | | 55 | | | | 55 | | 130 | | | 130 | | | | | |
| | | | COMUS 3390.1270 | 28:05 | | | 2392.1280.0 | 556 ⁸ 8 | COMUS 8 3392.1290,246 8 | | | | COMUS 18-08 3391.1272.246 | | | C 339 | COMUS 8 11.1274.246 8 | | | | | | COMUS 3390.4270.246 | | | S 16-05 1270.246 | CONTUS 3392.4280.056 8 3392.4280.056 | | | | COMUS 8 3392.4290.246 8 | | | | | | | | | | | |

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