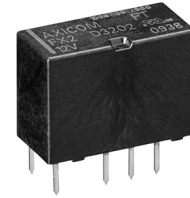


FX2 Relay

- Slim line 15x7.3mm (.590x.287")
- 2 form C bifurcated contacts (2 CO), switching current 2A
- High sensitivity for low power consumption, 80mW/140mW
- High dielectric characteristic, up to 2100Vrms between open contact
- High surge capability (1.2/50µs and 10/700µs) meets Telcordia GR 1089 and FCC Part 68, up to 2900V between open contacts, up to 6000V between coil and contacts
- High mechanical shock, up to 1500g survival
- Hermetically sealed (RT V)



Typical applications

Communications equipment, linecard application - analog, ISDN, xDSL, PABX, voice over IP, office and business equipment, measurement and control equipment, consumer electronics, set top boxes, HiFi, medical equipment



Approvals

UL 508 File No. E 111441
Technical data of approved types on request

Contact Data

| | |
|--|--|
| Contact arrangement | 2 form C (CO) |
| Max. switching voltage | 220VDC, 250VAC |
| Rated current | 2A |
| Limiting continuous current | 2A |
| Switching power | 60W, 62.5VA |
| Contact material | PdRu, Au covered |
| Contact style | bifurcated contacts |
| Min. recommended contact load | 100µV/1µA |
| Initial contact resistance | <70mΩ |
| Thermoelectric potential | <10µV |
| Operate time | typ. 3ms, max. 4ms |
| Release time | |
| without diode in parallel | typ. 1ms, max. 3ms |
| with diode in parallel | typ. 3ms, max. 4ms |
| Set/reset time min. | 20ms |
| Bounce time max. | typ. 1ms, max. 5ms |
| Electrical endurance | |
| at contact application 0 (≤ 30mV / ≤ 10mA) | min. 2.5x10 ⁶ operations |
| cable load open end resistive, 24V / 1.25A - 30W | min. 2.0x10 ⁶ operations |
| resistive, 30VDC / 2A - 60W | min. 5x10 ⁵ operations |
| resistive, 125VDC / 0.24A - 30W | min. 5x10 ⁵ operations |
| UL contact rating | 30VDC, 2A, 60W 125VDC, 0.5A, 62.5W 120VDC, 1.25A, 150W |
| Mechanical endurance | 100x10 ⁶ operations |

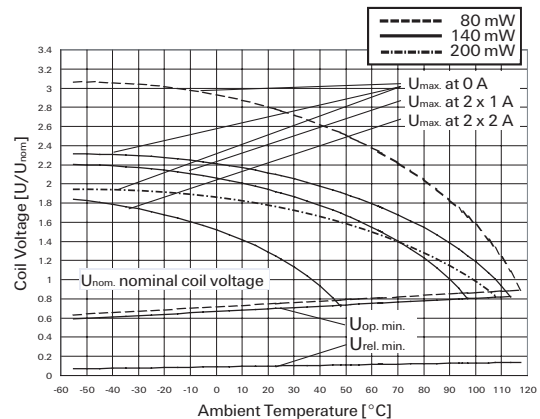
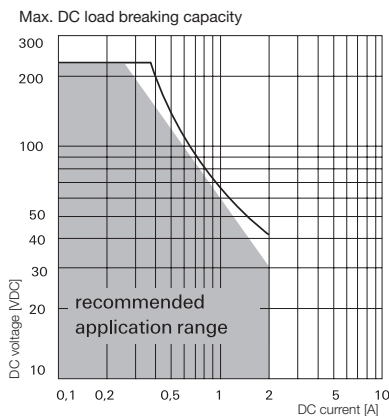
Coil Data

| | |
|-----------------------|---------------------------------|
| Magnetic system | polarized, monostable, bistable |
| Coil voltage range | 3 to 48VDC |
| Max. coil temperature | 125°C. |
| Thermal resistance | <165K/W |

Coil versions, monostable

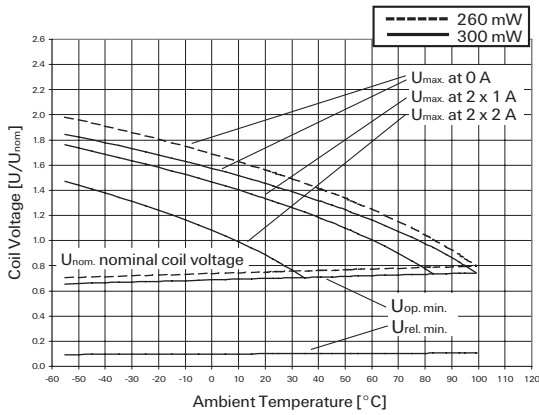
| Coil code | Rated voltage VDC | Operate voltage VDC | Limiting voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|--|-------------------|---------------------|----------------------|---------------------|-----------------------|---------------------|
| Standard version, monostable, 1 coil | | | | | | |
| 06 | 3 | 2.10 | 6.30 | 0.30 | 64 | 140 |
| 07 | 4 | 2.80 | 8.40 | 0.40 | 114 | 140 |
| 04 | 4.5 | 3.15 | 9.40 | 0.45 | 145 | 140 |
| 09 | 5 | 3.50 | 10.50 | 0.50 | 178 | 140 |
| 05 | 6 | 4.20 | 12.60 | 0.60 | 257 | 140 |
| 10 | 9 | 6.30 | 18.90 | 0.90 | 574 | 140 |
| 02 | 12 | 8.40 | 25.20 | 1.20 | 1028 | 140 |
| 12 | 24 | 16.80 | 42.20 | 2.40 | 2880 | 200 |
| 13 | 48 | 33.60 | 68.90 | 4.80 | 7680 | 300 |
| High sensitive version, monostable, 1 coil | | | | | | |
| 21 | 3 | 2.10 | 8.30 | 0.30 | 113 | 80 |
| 22 | 4.5 | 3.15 | 11.10 | 0.45 | 253 | 80 |
| 23 | 5 | 3.50 | 12.50 | 0.50 | 313 | 80 |
| 24 | 6 | 4.20 | 13.90 | 0.60 | 450 | 80 |
| 25 | 9 | 6.30 | 16.70 | 0.90 | 1013 | 80 |
| 26 | 12 | 8.40 | 33.40 | 1.20 | 1800 | 80 |
| 27 | 24 | 16.80 | 50.40 | 2.40 | 4114 | 140 |
| 28 | 48 | 36.00 | 70.00 | 4.80 | 8882 | 260 |
| High dielectric version, monostable, 1 coil | | | | | | |
| 91 | 3 | 2.25 | 6.3 | 0.30 | 45 | 200 |
| 92 | 4.5 | 3.15 | 9.45 | 0.45 | 101 | 200 |
| 96 | 12 | 8.40 | 25.2 | 1.20 | 720 | 200 |

All figures are given for coil without pre-energization, at ambient temperature +23°C.



FX2 Relay (Continued)

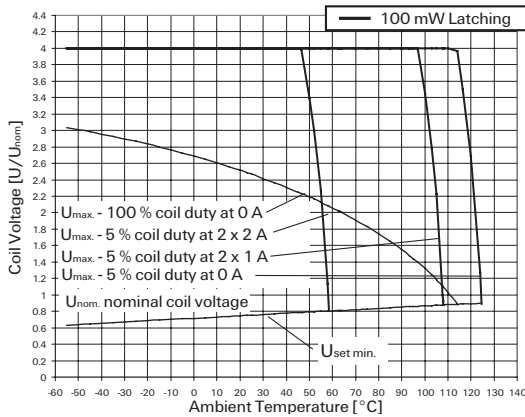
Coil Data (continued)



Coil versions, bistable 1 coil

| Coil code | Rated voltage VDC | Set voltage VDC | Limiting voltage VDC | Reset voltage VDC | Coil resistance $\Omega \pm 10\%$ | Rated coil power mW |
|---|-------------------|-----------------|----------------------|-------------------|-----------------------------------|---------------------|
| Standard, bistable 1 coil | | | | | | |
| 41 | 3 | 2.25 | 7.50 | -2.25 | 90 | 100 |
| 42 | 4.5 | 3.38 | 11.20 | -3.38 | 203 | 100 |
| 43 | 5 | 3.75 | 12.40 | -3.75 | 250 | 100 |
| 44 | 6 | 4.50 | 14.90 | -4.50 | 360 | 100 |
| 45 | 9 | 6.75 | 22.40 | -6.75 | 810 | 100 |
| 46 | 12 | 9.00 | 29.80 | -9.00 | 1440 | 100 |
| 47 | 24 | 18.00 | 48.70 | -18.00 | 3840 | 150 |
| High dielectric version, bistable 1 coil | | | | | | |
| 62 | 4.5 | 3.15 | 11.20 | -3.15 | 203 | 100 |

All figures are given for coil without pre-energization, at ambient temperature +23°C.



Other coil voltages on request.

U_{max} upper limit of the operative range of the coil voltage (limiting voltage) when coils are continuously energized

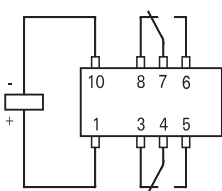
$U_{op.min}$ lower limit of the operative range of the coil voltage (reliable operate voltage)

$U_{rel.min}$ lower limit of the operative range of the coil voltage (reliable release voltage)

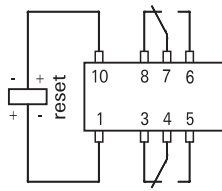
Terminal assignment

TOP view on component side of PCB

Monostable



Bistable, 1 coil



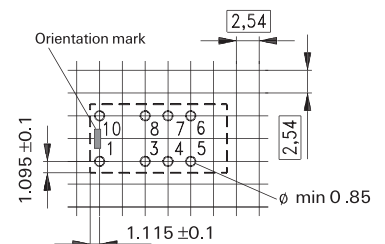
Contacts are shown in reset condition.

Both coils can be used as either set or reset coils.

Contact position might change during transportation and must be reset before use.

PCB layout

TOP view on component side of PCB



Insulation

| | standard* | high dielectric* |
|---|----------------------|----------------------|
| Initial dielectric strength | | |
| between open contacts | 1800V _{rms} | 2100V _{rms} |
| between contact and coil | 1800V _{rms} | 4000V _{rms} |
| between adjacent contacts | 1800V _{rms} | 2100V _{rms} |
| Initial surge withstand voltage | | |
| between open contacts | 2500V | 2900V |
| between contact and coil | 3500V | 6000V |
| between adjacent contacts | 2500V | 2900V |
| Initial insulation resistance | | |
| between insulated elements | >10 ⁹ Ω | >10 ⁹ Ω |
| Capacitance | | |
| between open contacts | | max. 4pF |
| between contact and coil | | max. 2pF |
| between adjacent contacts | | max. 2pF |
| Cross talk at 100MHz/900MHz | | -34.0dB/-15.1dB |
| Insertion loss at 100MHz/900MHz | | 0.03dB/0.60dB |
| Voltage standing wave ratio (VSWR) at 100MHz/900MHz | | |
| | | 1.07/1.45 |

*this relay contains SF6 (Sulfur hexafluoride, CAS number: 2551-62-4) for dielectric strength enhancement, SF6 is hermetically sealed in relay without leaks to air during normal application as recommended per the applicable product specification. It is clarified that the usage of SF6 in mini signal relay is not prohibited by related regulations. Please contact TE local sales or field engineer for further information and detailed material declaration.

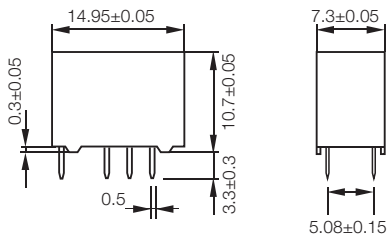
Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customer-support/rohssupportcenter

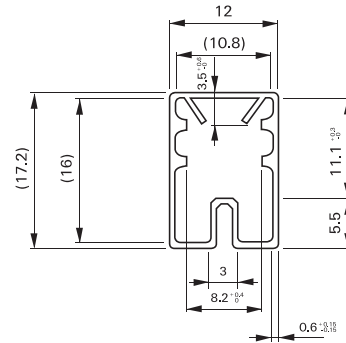
| | |
|--|-----------------------------|
| Ambient temperature | -40°C to +85°C |
| Category of environmental protection | IEC 61810 |
| Degree of protection, IEC 60529 | RT V - immersion cleanable |
| Vibration resistance (functional) | IP 67, immersion cleanable |
| Vibration resistance (destructive) | 20g, 10 to 500Hz |
| Shock resistance (functional), half sinus | 11ms 50g |
| Shock resistance (destructive), half sinus | 0.5ms 1500g |
| Weight | max. 2.5g |
| Resistance to soldering heat THT | Peak value |
| | IEC 60068-2-20 |
| | 265°C/10s |
| Ultrasonic cleaning | not recommended |
| Packaging/unit | tube/50 pcs., box/1000 pcs. |

FX2 Relay (Continued)

Dimensions



Packing



Product code structure

Typical product code **D32 04**

Type

D32 Signal Relays FX2
2 form C, 2 CO

Coil

- Coil code: please refer to coil versions table
Performance and coil type
- 0x, 1x** Standard version, monostable
 - 2x** High sensitive version, monostable
 - 4x** Standard version bistable
 - 9x** High dielectric version, monostable
 - 6x** High dielectric version, bistable

| Product code | Arrangement | Perf. type | Coil type | Coil | Part number | | | |
|--------------|-----------------|-------------|------------|-----------------|-----------------|------------|--------|-------------|
| D3206 | 2 form C (2 CO) | Standard | Monostable | 3VDC | 1462034-6 | | | |
| D3207 | | | | 4VDC | 1462034-8 | | | |
| D3204 | | | | 4.5VDC | 1462034-2 | | | |
| D3209 | | | | 5VDC | 1462034-9 | | | |
| D3205 | | | | 6VDC | 1462034-5 | | | |
| D3210 | | | | 9VDC | 1-1462034-3 | | | |
| D3202 | | | | 12VDC | 1462034-1 | | | |
| D3212 | | | | 24VDC | 1-1462034-4 | | | |
| D3213 | | | | 48VDC | 1-1462034-5 | | | |
| D3221 | | | | 2 form C (2 CO) | High sensitive | Monostable | 3VDC | 1-1462034-9 |
| D3222 | 4.5VDC | 2-1462034-0 | | | | | | |
| D3223 | 5VDC | 2-1462034-1 | | | | | | |
| D3225 | 9VDC | 2-1462034-3 | | | | | | |
| D3226 | 12VDC | 2-1462034-4 | | | | | | |
| D3227 | 24VDC | 2-1462034-5 | | | | | | |
| D3228 | 48VDC | 2-1462034-6 | | | | | | |
| D3241 | 2 form C (2 CO) | Standard | Bistable | | | | 3VDC | 2-1462034-8 |
| D3242 | | | | | | | 4.5VDC | 2-1462034-9 |
| D3243 | | | | | | | 5VDC | 3-1462034-0 |
| D3246 | | | | 12VDC | 3-1462034-3 | | | |
| D3247 | | | | 24VDC | 3-1462034-4 | | | |
| D3291 | | | | 2 form C (2 CO) | High dielectric | Monostable | 3VDC | 6-1462034-6 |
| D3292 | | | | | | | 4.5VDC | 6-1462034-8 |
| D3296 | 12VDC | 6-1462034-7 | | | | | | |
| D3262 | 4.5VDC | 6-1462034-3 | | | | | | |

This list represents the most common types and does not show all variants covered by this data sheet.
Other types on request

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[2F-RF-S-DC12](#) [ER114DM4-26A](#) [G6KU-2F-RF DC4.5](#)