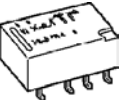


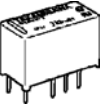
FTR-B3 Series Ultra Miniature Flat Signal Relay

This relay is most appropriate for compact and high density mounting. **Contact:** 2 Form C. **Contact Material:** Gold plated silver alloy. **Rating:** DC — 30 V-1 A, resistive load — 100,000 operations minimum; AC — 125 V-0.3 A, resistive load — 100,000 operations minimum. **Voltages:** 1.5-12 VDC. **Coil:** Operating — 79 mW; Nominal — 140 mW. **Dielectric Strength:** 1,500 VAC between coil and contact, 1,000 VAC between open contacts.



| Stock No. | Mfr.'s Type  | Coil Resistance (Ω) | Operate Voltage (VDC) | Release Voltage (VDC) | Nominal Power (mW) | EACH |         |
|-----------|--------------|---------------------|-----------------------|-----------------------|--------------------|------|---------|
|           |              |                     |                       |                       |                    | 1-99 | 100-499 |
| 791-1430  | FTR-B3GA4.5Z | 145                 | 3.38                  | 0.45                  | 140                | 4.08 | 3.47    |
| 791-1432  | FTR-B3GA12Z  | 1028                | 9.00                  | 1.20                  | 140                | 3.88 | 3.30    |

NA Subminiature PCB Relays



**Single Winding Non-Latching**  
**Contact Data.** **Arrangement:** 2 form C (bifurcated contact). **Material:** Gold over silver alloy. **Rated:** 125 VAC 0.5 A, 30 VDC 1 A (resistive load). **Life Expectancy:** Mechanical — 100 million operations min.; Electrical — 600,000 operations min. at 30 VDC 1 A, 200,000 operations min. at 125 VAC 0.5 A. **Coil Data.** **Voltages:** 3 to 48 VDC. **Power (at 20°C):** 0.14 W (0.2 W for 24 V coil). **General Data.** **Dielectric Withstanding:** 1000 VAC 1 min. between open contacts; 1000 VAC 1 min. between adjacent contacts; 1500 VAC 1 min. between contacts and coil. **Temperature Range:** -40°C to +85°C. **Dimensions (L × W × H):** 0.590" × 0.295" × 0.385".

| Stock No. | Mfr.'s Type | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | Release or Reverse Operating Voltage at 20°C (VDC) | Nominal Coil Power at 20°C | EACH |       |
|-----------|-------------|----------------------------|----------------------------------|------------------------------------|----------------------------------------------------|----------------------------|------|-------|
|           |             |                            |                                  |                                    |                                                    |                            | 1-49 | 50-99 |
| 791-1000  | NA-5W-K     | 5                          | 178                              | +3.75                              | +0.50                                              | 140                        | 2.83 | 2.40  |
| 791-1001  | NA-12W-K    | 12                         | 1028                             | +9.00                              | +1.20                                              | 140                        | 3.43 | 2.92  |
| 791-1002  | NA-24W-K    | 24                         | 2880                             | +18.00                             | +2.40                                              | 200                        | 3.76 | 3.20  |

A Subminiature PCB Relays

**Contact Data.** **Arrangement:** 2 form C (DPDT). **Material:** Stationary — gold over silver palladium; Movable — silver palladium. **Rated:** 30 VDC 1 A or 125 VAC 0.5 A (resistive). **Life Expectancy:** Mechanical — 100 million operations min.; Electrical — 500,000 operations min. at 30 VDC 1 A, 200,000 operations min. at 125 VAC 0.5 A. **Coil Data.** **Voltages:** 4.5 to 48 VDC. **Power (at 20°C):** Operate — 0.07 W (0.11 W for 24 V coil); Nominal — 0.14 W (0.2 W for 24 V coil). **General Data.** **Dielectric Strength:** 1000 VAC between open contact, coil contact and adjacent contact. **Temperature Range:** -40°C to +85°C at nominal voltage. **Dimensions (L × W × H):** 0.551" × 0.354" × 0.197". **Enclosures:** PBT.



Single Winding Non-Latching

| Stock No. | Mfr.'s Type | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | Release or Reverse Operating Voltage at 20°C (VDC) | EACH |       |
|-----------|-------------|----------------------------|----------------------------------|------------------------------------|----------------------------------------------------|------|-------|
|           |             |                            |                                  |                                    |                                                    | 1-49 | 50-99 |
| 791-1003  | A-5W-K      | 5                          | 178                              | +3.50                              | +0.50                                              | 2.99 | 2.54  |
| 791-1004  | A-12W-K     | 12                         | 1028                             | +8.40                              | +1.20                                              | 3.06 | 2.60  |
| 791-1005  | A-24W-K     | 24                         | 2880                             | +16.80                             | +2.40                                              | 3.13 | 2.67  |

Double Winding Latching

|          |          |   |     |        |        |      |      |
|----------|----------|---|-----|--------|--------|------|------|
| 791-1006 | AL-D5W-K | 5 | 125 | +3.50* | +3.50† | 3.50 | 2.98 |
|----------|----------|---|-----|--------|--------|------|------|

\*Single winding coil only. †Double winding coil only.

RY Subminiature PCB Relays



**Contact Data.** **Arrangement:** 2 form C. **Material:** Gold overlay silver palladium. **Rated:** 24 VDC 1 A or 120 VAC 0.5 A (resistive). **Life Expectancy:** Mechanical — 20 million operations min.; Electrical — 500,000 operations min. at 24 VDC 1 A, 200,000 operations min. at 120 VAC 0.5 A. **Coil Data.** **Voltages:** 4.5 to 48 VDC. **Power (at 20°C):** Operate — 0.075 W (0.098 W for 24 V coil); Nominal — 0.15 W (0.2 W for 24 V coil). **General Data.** **Dielectric Strength:** 500 VAC between open contacts; 1000 VAC between all other conductors. **Temperature Range:** -40°C to +85°C. **Dimensions (L × W × H):** 0.795" × 0.386" × 0.472". **Enclosure:** PBT.

B-M Sensitive Type

| Stock No. | Mfr.'s Type | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | Maximum Continuous Voltage (V) | EACH |       |
|-----------|-------------|----------------------------|----------------------------------|------------------------------------|--------------------------------|------|-------|
|           |             |                            |                                  |                                    |                                | 1-49 | 50-99 |
| 791-1021  | RY-5W-K     | 5                          | 167                              | +3.60                              | 12.50                          | 2.73 | 2.32  |
| 791-1022  | RY-12W-K    | 12                         | 960                              | +8.50                              | 30.00                          | 2.80 | 2.38  |
| 791-1023  | RY-24W-K    | 24                         | 2880                             | +16.80                             | 51.60                          | 2.87 | 2.45  |

B-M Standard Type

|          |           |    |      |        |       |      |      |
|----------|-----------|----|------|--------|-------|------|------|
| 791-1024 | RY-5WZ-K  | 5  | 45   | +2.50  | 7.00  | 2.54 | 2.16 |
| 791-1025 | RY-12WZ-K | 12 | 280  | +6.00  | 16.80 | 2.58 | 2.20 |
| 791-1026 | RY-24WZ-K | 24 | 1070 | +12.00 | 33.60 | 2.62 | 2.23 |

SY Subminiature PCB Relays

**Contact Data.** **Arrangement:** 1 form C. **Material:** Gold overlay silver palladium. **Rated:** 24 VDC 1 A or 120 VAC 0.5 A (resistive) switched; 2.0 A carrying current. **Life Expectancy:** Mechanical — 5 million operations min.; Electrical — 150,000 operations min. at rated load. **Coil Data.** **Voltages:** 1.5 to 24 VDC. **Power (at 20°C):** Operate — 0.075 W; Nominal — 0.15 W. **General Data.** **Dielectric Strength:** 500 VAC (50, 60 Hz) between open contacts; 1000 VAC between contacts and coil. **Temperature Range:** -40°C to +90°C. **Dimensions (L × W × H):** 0.492" × 0.291" × 0.374". **Enclosure:** PBT.



| Stock No. | Mfr.'s Type | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | EACH |       |
|-----------|-------------|----------------------------|----------------------------------|------------------------------------|------|-------|
|           |             |                            |                                  |                                    | 1-49 | 50-99 |
| 791-1018  | SY-5-K      | 5                          | 167                              | +3.50                              | 2.32 | 1.98  |
| 791-1019  | SY-12-K     | 12                         | 960                              | +8.40                              | 2.43 | 2.07  |
| 791-1020  | SY-24-K     | 24                         | 3290                             | +16.80                             | 3.24 | 2.76  |



FTR-F3 Series Slim Type Power Relay

**Contact Data.** **Arrangement:** 1 form A (SPST-NO). **Material:** Silver alloy. **Rating:** 1/8 HP, 277 VAC; 1/10 HP, 125 V, 3 A, 30 VDC/277 VAC res. **Voltage:** 5 to 24 VDC. **Dielectric:** 750 VAC one minute between open contacts; 4,000 VAC 1 minute between coil and contacts. **Operating Temperature:** -40°C to +70°C. **Life Expectancy:** Mechanical — 5 × 10 operations minimum; Electrical — 200 × 10 operations minimum.

| Stock No. | Mfr.'s Type  | Nominal Voltage | Coil Resistance | Operate Voltage | Release Voltage | EACH |         |
|-----------|--------------|-----------------|-----------------|-----------------|-----------------|------|---------|
|           |              |                 |                 |                 |                 | 1-99 | 100-499 |
| 791-1400  | FTR-F3AA005E | 5 VDC           | 125             | 3.75 VDC        | 0.5 VDC         | 1.14 | .97     |
| 791-1402  | FTR-F3AA012E | 12 VDC          | 720             | 9.00 VDC        | 1.2 VDC         | 1.14 | .97     |
| 791-1404  | FTR-F3AA024E | 24 VDC          | 2880            | 18.00 VDC       | 2.4 VDC         | 1.29 | 1.10    |

\*Note: All values in the table are measured at 20°C.

FTR-F1/FTR-H1 Series Miniature Power Relays

**Contact Data.** **Arrangement:** H1 — 1 form A or 1 form C 150/10 A; F1 — 2 form C 5 A. **Material:** Silver nickel. **Rated:** 4 10/15 A at 24 VDC or 240 VAC, 1/8 or 1/10 HP 120 VAC motor load. **Life Expectancy:** Mechanical — 5 million operations min.; Electrical — 100,000 operations min. at 5 or 10 A 24 VDC or 240 VAC; 200,000 operations min. at 5 or 10 A 120 VAC (resistive), 3.5 or 7 A 24 VDC or 240 VAC. **Coil Data.** **Voltages:** 3.0 to 48 VDC. **Power (at 20°C):** Operate — 0.26 W; Nominal — 0.53 W; Maximum 1.4 W. **General Data.** **Dielectric Strength:** 1000 VAC between open contacts; 5000 VAC between coil and contacts. **Temperature Range:** -40°C to +75°C. **Dimensions (L × W × H):** 1.150" × 0.508" × 0.650". **Enclosure:** PBT.



| Stock No. | Mfr.'s Type   | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | EACH |         |
|-----------|---------------|----------------------------|----------------------------------|------------------------------------|------|---------|
|           |               |                            |                                  |                                    | 1-99 | 100-499 |
| 791-1051  | FTR-H1CA005V* | 5                          | 36.00                            | +3.50                              | 1.88 | 1.60    |
| 791-1052  | FTR-H1CA012V* | 12                         | 200.00                           | +8.40                              | 1.88 | 1.60    |
| 791-1053  | FTR-H1CA024V* | 24                         | 820.00                           | +16.80                             | 2.03 | 1.73    |
| 791-1054  | FTR-F1CA005V† | 5                          | 36.00                            | +3.50                              | 2.29 | 1.94    |
| 791-1055  | FTR-F1CA012V† | 12                         | 200.00                           | +8.40                              | 2.29 | 1.94    |
| 791-1056  | FTR-F1CA024V† | 24                         | 820.00                           | +16.80                             | 2.43 | 2.07    |

\*SPDT 10 A. †DPDT 5 A.

JS Miniature Power Relays



**Contact Data.** **Arrangement:** 1 form A or 1 form C. **Material:** Gold plated silver alloy. **Rated:** 24 VDC 8 A or 250 VAC (resistive). **Life Expectancy:** Mechanical — 5 million operations min.; Electrical — 100,000 operations min. at rated load. **Coil Data.** **Voltages:** 5.0 to 60 VDC. **Power (at 20°C):** Operate — 110-140 mA; Nominal — 220-280 mW. **General Data.** **Dielectric Strength:** 1000 VAC between open contacts; 5000 VAC between coil and contacts. **Temperature Range:** -40°C to +85°C. **Dimensions (L × W × H):** 1.142" × 0.394" × 0.492". **Enclosure:** PBT.

Standard

| Stock No. | Mfr.'s Type | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | Must Release Voltage at 20°C (VDC) | EACH |         |
|-----------|-------------|----------------------------|----------------------------------|------------------------------------|------------------------------------|------|---------|
|           |             |                            |                                  |                                    |                                    | 1-99 | 100-499 |
| 791-1048  | JS-5F-K     | 5                          | 112.00                           | +3.50                              | 0.50                               | 2.87 | 2.45    |
| 791-1049  | JS-12E-K    | 12                         | 660.00                           | +8.50                              | 1.20                               | 2.87 | 2.45    |
| 791-1050  | JS-24E-K    | 24                         | 2350.00                          | +16.80                             | 2.40                               | 2.95 | 2.51    |

JY Miniature Power Relays

**Contact Data.** **Arrangement:** 1 form A (SPST-NO). **Material:** Gold plated silver cadmium oxide alloy. **Rated:** 30 VDC 5 A or 250 VAC (resistive). **Life Expectancy:** Mechanical — 20 million operations min.; Electrical — 100,000 operations min. at rated load. **Coil Data.** **Voltages:** 4.5 to 24 VDC. **Power (at 20°C):** Operate — 0.098 W; Nominal — 0.2 W. **General Data.** **Dielectric Strength:** 750 VAC (50, 60 Hz) between open contacts. **Temperature Range:** -40°C to +80°C. **Dimensions (L × W × H):** 0.795" × 0.394" × 0.504". **Enclosure:** PBT.



Standard

| Stock No. | Mfr.'s Type | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | Maximum Continuous Voltage (V) | EACH |         |
|-----------|-------------|----------------------------|----------------------------------|------------------------------------|--------------------------------|------|---------|
|           |             |                            |                                  |                                    |                                | 1-99 | 100-499 |
| 791-1045  | JY-5-H-K    | 5                          | 125.00                           | +3.50                              | 11.50                          | 2.91 | 2.48    |
| 791-1046  | JY-12-H-K   | 12                         | 720.00                           | +8.40                              | 27.60                          | 2.91 | 2.48    |
| 791-1047  | JY-24-H-K   | 24                         | 2880.00                          | +16.80                             | 55.20                          | 2.99 | 2.54    |

FBR160 Series Miniature Power Relays



**Contact Data.** **Arrangement:** 1 form C. **Material:** Silver tin oxide alloy. **Rated:** 120 VAC 10 A (NO); 120 VAC 7 A (NC). **Life Expectancy:** Mechanical — 10 million operations min.; Electrical — 100,000 operations min. at rated loads. **Coil Data.** **Voltages:** 5.0 to 24 VDC. **Power (at 20°C):** 0.36 W. **General Data.** **Dielectric Strength:** 1500 VAC 1 min. between coil and contacts; 500 VAC 1 min. between open contacts. **Temperature Range:** -30°C to +80°C. **Dimensions (L × W × H):** 0.85" × 0.64" × 0.64". **Enclosure:** PBT.

Standard

| Stock No. | Mfr.'s Type     | Nominal Coil Voltage (VDC) | Coil Resistance ±10% at 20°C (Ω) | Must Operate Voltage at 20°C (VDC) | Maximum Continuous Voltage (V) | EACH |         |
|-----------|-----------------|----------------------------|----------------------------------|------------------------------------|--------------------------------|------|---------|
|           |                 |                            |                                  |                                    |                                | 1-99 | 100-499 |
| 791-1072  | FBR161NED005UHB | 5                          | 70                               | 4.0                                | 8.5                            | 1.29 | 1.10    |
| 791-1073  | FBR161NED012UHB | 12                         | 400                              | 9.6                                | 20.4                           | 1.29 | 1.10    |
| 791-1074  | FBR161NED024UHB | 24                         | 1600                             | 19.2                               | 40.8                           | 1.36 | 1.16    |