

# Miniature Relay W11

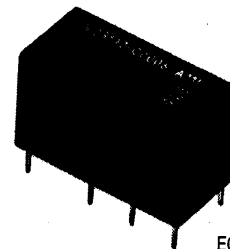
V23102-C0★★★

2 changeover contacts,  
bifurcated

Immersion cleanable

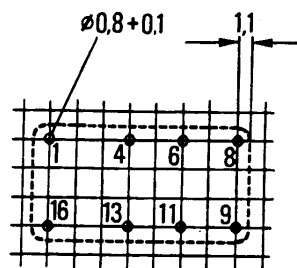
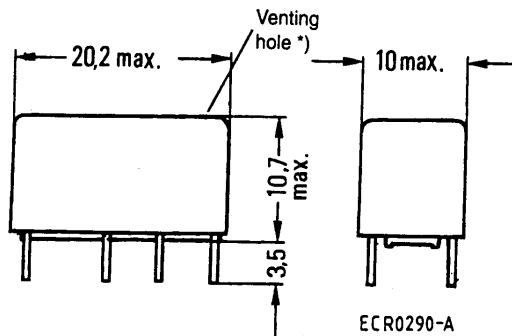
Standard or sensitive

For printed circuit mounting,  
pin arrangement suits 2.54 mm grid  
in acc. with DIN 40801 and DIN 40803, average



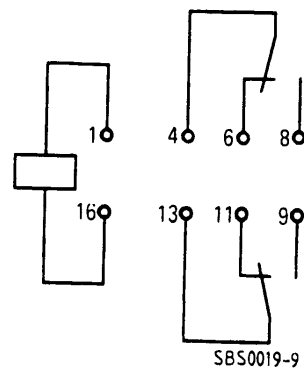
ECR3017-D

Illustration approx. original size  
Approx. weight 5 g

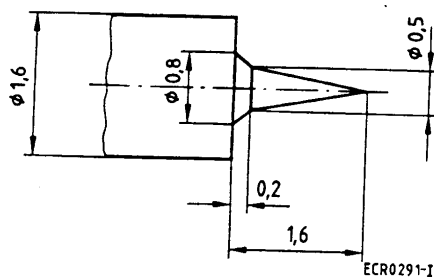


Mounting hole layout  
View onto the terminals

Base terminals



Dimensions of pin



\*) After soldering and cleaning the venting hole is to be punctured by a pin (self-made, dimensions as shown in figure above).

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## Ordering code

| Digit                                                                                                                                                  | Block 1 |   |   |   |   |   | Block 2 |   |   |    |    | Block 3 |    |    |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---|---|---|---|---|---------|---|---|----|----|---------|----|----|----|
|                                                                                                                                                        | 1       | 2 | 3 | 4 | 5 | 6 | 7       | 8 | 9 | 10 | 11 | 12      | 13 | 14 | 15 |
|                                                                                                                                                        |         |   |   |   |   |   |         |   |   |    |    |         |    |    |    |
|                                                                                                                                                        |         |   |   |   |   |   |         |   |   |    |    |         |    |    |    |
| Basic type number<br>and version of miniature relay W11<br>V23101-D0 = 1 changeover contact, single<br>V23102-C0 = 2 changeover contacts, bifurcated   |         |   |   |   |   |   |         |   |   |    |    |         |    |    |    |
| Coil number<br>see table 2                                                                                                                             |         |   |   |   |   |   |         |   |   |    |    |         |    |    |    |
| Contact arrangement/material<br>A201 = 1 changeover, terminal configuration A<br>B201 = 1 changeover, terminal configuration B<br>A211 = 2 changeovers |         |   |   |   |   |   |         |   |   |    |    |         |    |    |    |
|                                                                                                                                                        |         |   |   |   |   |   |         |   |   |    |    |         |    |    |    |

silver palladium,  
gold-plated

Ordering example: V23101-D0104-B201

Miniature relay W11 with 1 changeover (single), terminal configuration B, coil 6 V nominal voltage, sensitive version, contact material silver/palladium, gold-plated

## SCS – Preferred standard types

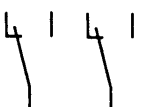
|                   |                   |
|-------------------|-------------------|
| V23101-D0003-A201 | V23102-C0003-A211 |
| -D0003-B201       | -C0006-A211       |
| -D0006-A201       | -C0007-A211       |
| -D0006-B201       |                   |
| -D0007-A201       |                   |
| -D0007-B201       |                   |
| -D0106-A201       |                   |
| -D0107-B201       |                   |

# Miniature Relay W11

**Table 1 Characteristics**

| Contact arrangement                                     |          | 1 changeover | 2 changeovers |
|---------------------------------------------------------|----------|--------------|---------------|
| <b>Energising side</b>                                  |          |              |               |
| Operating voltages                                      | V DC     | see table 2  |               |
| Power consumption: standard<br>sensitive                | mW<br>mW | 450<br>200   | 550<br>300    |
| Maximum temperature                                     | °C       | 105          | 105           |
| Continuous thermal load<br>at 20 °C ambient temperature | W        | 0.7          | 0.95          |
| Thermal resistance                                      | K/W      | 120          | 85            |

## Contact side

|                                                                                                   |              |                                                                                      |                                                                                       |
|---------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Ordering code block 3                                                                             |              |                                                                                      |                                                                                       |
| Single contacts, terminal configuration A <sup>1)</sup><br>terminal configuration B <sup>1)</sup> |              | A201<br>B201                                                                         | –<br>–                                                                                |
| Bifurcated contacts                                                                               |              | –                                                                                    | A211                                                                                  |
| Contact material                                                                                  |              | silver palladium,<br>gold-plated                                                     | silver palladium,<br>gold-plated                                                      |
| Contact description                                                                               |              | 21                                                                                   | 21 – 21                                                                               |
| Symbols<br>(see also base terminals)                                                              |              |  |  |
| Maximum switching voltage                                                                         | V DC<br>V AC | 60<br>125                                                                            | 150<br>125                                                                            |
| Maximum switching current                                                                         | A            | 2                                                                                    | 2                                                                                     |
| Maximum power rating                                                                              |              |                                                                                      |                                                                                       |
| DC voltage                                                                                        | W            | 30                                                                                   | 30                                                                                    |
| AC voltage                                                                                        | VA           | 60                                                                                   | 60                                                                                    |
| Maximum continuous current                                                                        | A            | 1                                                                                    | 1.25                                                                                  |

## General

|                                 |                     |                               |                             |
|---------------------------------|---------------------|-------------------------------|-----------------------------|
| Permissible ambient temperature |                     |                               |                             |
| standard version                | °C                  | – 25 ... + 55                 | – 30 ... + 55               |
| sensitive version               | °C                  | – 25 ... + 75                 | – 30 ... + 75               |
| Operate time                    |                     |                               |                             |
| standard version                | ms                  | approx. 3                     | approx. 4                   |
| sensitive version               | ms                  | approx. 5                     | approx. 6                   |
| Release time                    | ms                  | approx. 2                     | approx. 1                   |
| Maximum switching rate          | ops./s              | 20                            | 20                          |
| Test voltage                    |                     |                               |                             |
| contact/contact                 | V AC <sub>rms</sub> | –                             | 1500                        |
| contact tip/contact tip         | V AC <sub>rms</sub> | 500                           | 1000                        |
| contact/winding                 | V AC <sub>rms</sub> | 500                           | 1000                        |
| Electrical life                 |                     |                               |                             |
| DC voltage 28 V/1 A             | operations          | approx. 3 × 10 <sup>5</sup>   | approx. 5 × 10 <sup>5</sup> |
| AC voltage 120 V/0.5 A          | operations          | approx. 1.5 × 10 <sup>5</sup> | approx. 1 × 10 <sup>5</sup> |
| Mechanical life                 | operations          | approx. 1 × 10 <sup>7</sup>   | approx. 1 × 10 <sup>7</sup> |

<sup>1)</sup> Terminal configuration A and B for version with 1 changeover only

# Miniature Relay W11

**Table 2 Coil versions**

| Nominal<br>voltage<br><br>V DC       | Operating voltage range<br>at 20 °C |                                     | Resistance<br>at 20 °C<br><br>$\Omega$ | Coil<br>number<br>Ordering<br>code<br>block 2 |
|--------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|-----------------------------------------------|
|                                      | Minimum<br>voltage $U_I$<br>V DC    | Maximum<br>voltage $U_{II}$<br>V DC |                                        |                                               |
| Standard version with 1 changeover   |                                     |                                     |                                        |                                               |
| 5                                    | 3.75                                | 7.1                                 | 56 ± 6                                 | 003                                           |
| 6                                    | 4.5                                 | 8.6                                 | 80 ± 8                                 | 004                                           |
| 12                                   | 9.0                                 | 17.1                                | 320 ± 32                               | 006                                           |
| 24                                   | 18.0                                | 34.3                                | 1280 ± 130                             | 007                                           |
| Standard version with 2 changeovers  |                                     |                                     |                                        |                                               |
| 5                                    | 3.5                                 | 7,5                                 | 45 ± 4.5                               | 003                                           |
| 6                                    | 4.2                                 | 9.2                                 | 67 ± 6.7                               | 004                                           |
| 12                                   | 8.4                                 | 18.7                                | 280 ± 28                               | 006                                           |
| 24                                   | 16.8                                | 36.6                                | 1070 ± 10.7                            | 007                                           |
| Sensitive version with 1 changeover  |                                     |                                     |                                        |                                               |
| 5                                    | 3.5                                 | 12                                  | 120 ± 12                               | 103                                           |
| 6                                    | 4.2                                 | 14                                  | 180 ± 18                               | 104                                           |
| 12                                   | 8.4                                 | 29                                  | 700 ± 70                               | 106                                           |
| 24                                   | 16.8                                | 58                                  | 2800 ± 280                             | 107                                           |
| Sensitive version with 2 changeovers |                                     |                                     |                                        |                                               |
| 5                                    | 3.8                                 | 10                                  | 82 ± 8.2                               | 103                                           |
| 6                                    | 4.6                                 | 12                                  | 120 ± 12                               | 104                                           |
| 12                                   | 9.2                                 | 24                                  | 480 ± 48                               | 106                                           |
| 24                                   | 18.3                                | 48                                  | 1920 ± 192                             | 107                                           |

The operating voltage limits  $U_I$  and  $U_{II}$  depend on temperature and can be calculated by:

$$U_{I\ t_u} = k_I \cdot U_{I\ 20\ ^\circ\text{C}} \text{ and } U_{II\ t_u} = k_{II} \cdot U_{II\ 20\ ^\circ\text{C}}$$

$t_u$  = ambient temperature

$U_{I\ t_u}$  = minimum voltage at ambient temperature  $t_u$

$U_{II\ t_u}$  = maximum voltage at ambient temperature  $t_u$

$k_I$  and  $k_{II}$  = factors

| $t_u$    | 20 °C | 30 °C | 40 °C | 50 °C | 55 °C | 60 °C | 70 °C | 75 °C |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| $k_I$    | 1.0   | 1.04  | 1.08  | 1.12  | 1.14  | 1.16  | 1.20  | 1.22  |
| $k_{II}$ | 1.0   | 0.94  | 0.87  | 0.80  | 0.77  | 0.73  | 0.64  | 0.59  |