

# Series UXP<sup>®</sup>-2000

2,000 W resistor at 125°C bottom case



A Miba Group Company

For variable speed drives, power supplies, control devices, robotics, motor control and other power designs, the easy mounting fixture assures an auto-calibrated pressure to the cooling plate of about 300 N.

## Features

- 2,000 W operating power
- Non-Inductive design
- ROHS compliant
- High insulation & partial discharge performance
- Materials in accordance with UL 94 V-0
- Resistor is also available with preapplied PCM (Phase Change Material) (ask for details)



## Technical Specifications

|   |   |
|---|---|
| <b>Resistance value</b>                                 | 0.15 Ω ≤ 0.99 Ω (HC-version)<br>> 0.99 Ω ≤ 6 KΩ (higher values on request)  |
| <b>Resistance tolerance</b>                             | ±5 % to ±10 %   |
| <b>Temperature coefficient</b>                          | ±150 ppm/°C Standard<br>lower TCR on special request for limited ohmic values   |
| <b>Power rating</b>                                     | 2,000 W at 125°C bottom case temperature<br>resp. 60°C heat sink temperature  |
| <b>Short time overload</b>                              | 2,400 W at 70°C for 10sec., ΔR = 0.4% max.  |
| <b>Maximum working voltage</b>                          | 5,000 V DC ≅ 3,500 V AC RMS (50 Hz)<br>higher voltage on request, not exceeding max. power  |
| <b>Maximum continuous current</b>                       | 120 A   |
| <b>Electric strength voltage</b>                        | 7 kVrms / 50 Hz / 500 VA, test time 1 min.<br>between terminal und case<br>(up to 12 kVrms on request)<br>voltages above 10 kVrms are tested at DC equivalent to<br>avoid pre damage of component |
| <b>Partial discharge</b>                                | 4 kVrms < 10 pC<br>(up to 7 kVrms < 10 pC on request)<br>acc. to IEC 60270  |
| <b>Pulse peak current</b>                               | up to 1,500 A depending on pulse length and<br>frequency (ask for details)  |
| <b>Insulation resistance</b>                            | > 10 GΩ at 1,000 V  |
| <b>Single shot voltage</b>                              | up to 12 kV norm wave (1.5/50 μsec)   |
| <b>Creeping distance</b>                                | > 42 mm (standard, higher on request)   |
| <b>Air distance</b>                                     | > 14 mm (standard, higher on request)   |
| <b>Inductance</b>                                       | ≥ 80 nH (typical), measuring frequency 10 kHz   |
| <b>Capacity/mass</b>                                    | ≥ 120 pF (typical), measuring frequency 10 kHz  |
| <b>Capacity/parallel</b>                                | ≥ 40 pF (typical), measuring frequency 10 kHz   |
| <b>Operating temperature</b>                            | -55°C to +155°C   |
| <b>Mounting - torque for contacts</b>                   | 1.8 Nm to 2 Nm  |
| <b>Mounting - torque</b>                                | 1.6 Nm to 1.8 Nm M4 screws  |
| <b>Internal temperature sensor available on request</b> | PT-1000 / PT-100 / Type K / Type J<br>(ask for details)   |
| <b>Cable variation available on request</b>             | HV-cable / Flying leads (ask for details)   |
| <b>Standard cable type</b>                              | H&S Radox 9 GKW AX 1,5mm <sup>2</sup><br>(other cable types on special request)   |
| <b>Weight</b>   | ~120 g  |

## General Specifications

### Electric support

Alumina ceramic metalized with EBG ALTOX film on the bottom for improved heat transfer and optimum discharge

### Encapsulation

Resin-filled epoxy casing with large creeping distance to mass, large air distance between the terminals and high insulation resistance (CTI 600)

### Resistance Element

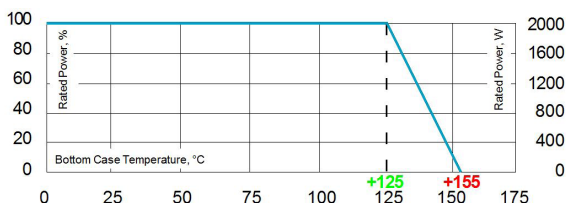
Special design for low inductance and capacitance values. The element employs our special METOXFILM, which demonstrates stability while covering high wattage and pulse loading

### Housing

Housings are made without color additives. The color definition is natural and can vary in different pigmentation

### Contacts

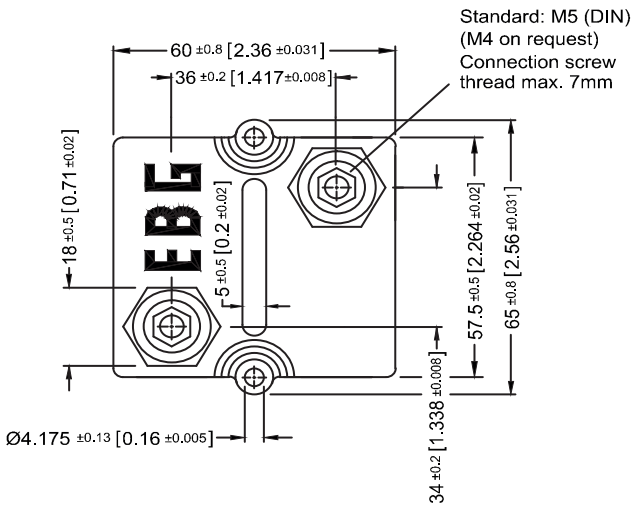
- Easy load connection with M4 and M5 screws (Inch thread terminals on request)
- Connector height available from 25 to 42 mm
- Various sleeves for increasing creeping distance up to 85 mm or potted cable connections are available on request
- Contacts standard M5 (M4 on special request - connection screw thread max. 7 mm)



Derating (thermal resist.) UXP-2000: 66.6 W/K (0.015 K/W)  
Power rating: 2,000 W at 125°C bottom case temperature\*  
Please ask for detailed mounting procedure!

Best results can be reached by using a thermal transfer compound with a heat conductivity of at least 2.9 W/mK. The flatness of the cooling plate must be better than 0.05 mm overall. Surface roughness should not exceed 6.4 μm.

## Dimensions in mm [inches]



## How to make a request

### ■ Standard terminal

UXP-2000\_Ohmic Value\_Tolerance\_Terminal Height\_Contact

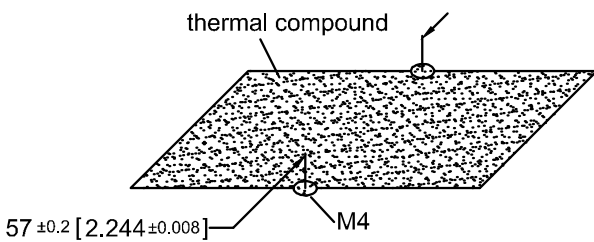
For example

UXP-2000 10R 10% 30/32 M5

### ■ Examples for optional terminals

UXP-2000 24R 10% 25/25 M5

## Borehole Distance



## Test Specifications\*

| Test                  | Method                          | Tolerance Drift** |
|-----------------------|---------------------------------|-------------------|
| Short time overload   | 2,400 W/10sec.                  | 0.40%             |
| Humidity steady state | 56 days/40°C/95%                | 0.25%             |
| Temp. Cycling         | -55/+125/5cycles                | 0.20%             |
| Shock                 | 40g/4,000 times                 | 0.25%             |
| Vibrations            | 2-500Hz/10g                     | 0.25%             |
| Load life 3,000cyl    | PN 30 min. on / 30 min off      | 0.40%             |
| Terminal strengths    | 200 N for hexa. thread contacts | 0.05%             |

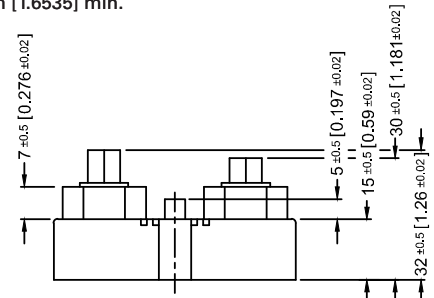
Please note most all of our UXP customers have their own custom designed drawing. Therefore please do not hesitate to discuss your special needs with the local representative or contact us directly.

## Standard Terminals

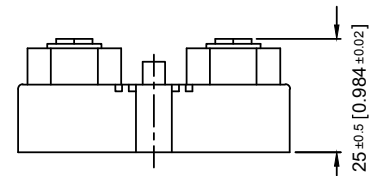
Air distance: 14mm [0.5512] min.

Creeping distance: 42mm [1.6535] min.

### Terminal height 30/32 Standard



### Terminal height 25/25 Optional



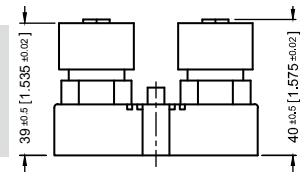
## Terminal Options (for increased air & creeping distances)

Other terminal dimensions available, contact for more information

### UXP-2000-9

Air distance: 25mm [0.984] min.

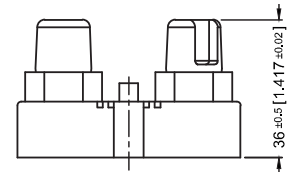
Creeping distance: 83mm [3.267] min.



### UXP-2000-7

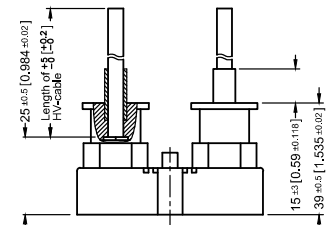
Air distance: 26.7mm [1.0512] min.

Creeping distance: 50mm [1.968] min.



### UXP-2000-8

Air and creeping distance depends on length of HV-cable



\* The test methods are according to IEC 60068-2

\*\* The tolerance drift is the possible change of the resistance value because of the certain test