



## D.C. – A.C. Plug-connector

2- or 3-pole with earth pin  
Built-in Rectifier

# 12

Product group

Type **Z KB X** **Z KB G** **Z KC X** **Z KC G**

### D.C. – Type Z KB X

2- or 3-pole and earth  
DIN-43650-AF

### A.C. – Type Z KB G

2-pole and earth with rectifier  
DIN-43650-AF

### D.C. – Type Z KC X

2-pole and earth

### A.C. – Type Z KC G

2-pole and earth with rectifier

- Supply connection upto 300 V D.C./250 V A.C.
- Z KB G and Z KC G with built-in silicon full-wave bridge rectifier  
Mains voltage peak damping metallic oxide  
Maximum voltage 240 V 50/60 Hz supply
- Cable connection with sealing gland
  - Type Z KB X or Z KB G in 4 settings (x 90°)
  - Type Z KC X or Z KC G in 2 settings (x 180°)
  - Terminals for connectors max. 1.5 mm<sup>2</sup>
  - Central screw fixing, M 3
- Leakage path and air gap in accordance with VDE-0110 insulation group C
- Protection classification – DIN VDE 0470/EN 60529 – IP 65 (mounted with sealing gasket)
- Ambient temperature max. 90° C (With special seal 125° C)
- Z KB X and Z KB G, Z KC X and Z KC G are interchangeable
- Connection plugs for pin bases on MSM  
D.C. and A.C.  
Solenoids, shotbolts, magnets, vibrators, clutches, brakes



Fig. 1  
Type Z KB X 211 B 01  
Z KB X 311 B 01

Type Z KB G 211 A 02  
with rectifier

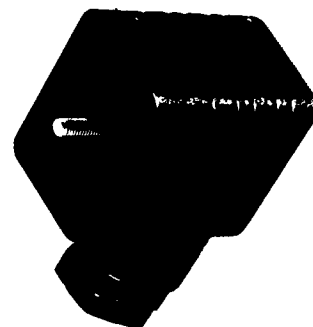


Fig. 2  
Type Z KC X 209 B 01

Type Z KC G 209 B 01  
with rectifier

## Performance tables for plug-connector Z KB X, Z KB G, Z KC X, Z KC G

Plug-connectors must **not** be connected or disconnected, when energised – (DIN VDE-0627).

Temperature resistance of plug-connector Z KB X and Z KB G – 25 up to + 90° C  
with special seal – 25 up to + 125° C

Temperature resistance of plug-connector Z KC X and Z KC G – 25 up to + 90° C  
with special seal – 25 up to + 125° C

| Type            | plug contacts |                      |                  | cable-gland size <sup>2)</sup> | cable-diam. (mm) <sup>2</sup> | max. cross section of conductor wire | rectifier input<br>~ 220 V<br>max. ~ 240 V | colour <sup>3)</sup> | dim. Fig. |
|-----------------|---------------|----------------------|------------------|--------------------------------|-------------------------------|--------------------------------------|--|----------------------|-----------|
|                 | number        | constant current (A) | rated Volt. (V)  |                                |                               |                                      |  |                      |           |
| Z KB X 211 B 01 | 2+ Earth      | 20 <sup>1)</sup>     | ~ 250<br>--- 300 | PG 11                          | 4,5 – 11                      | 3 x 1,5 mm <sup>2</sup>              | -  | black                | 9         |
| Z KB X 311 B 01 | 3+ Earth      |                      |                  |                                |                               | 4 x 1,5 mm <sup>2</sup>              |  |                      |           |
| Z KB G 211 A 02 | 2+ Earth      | 2 <sup>4)</sup>      | -                | PG 11                          | 4,5 – 11                      | 3 x 1,5 mm <sup>2</sup>              | output<br>--- 196 V                        | black                | 9         |
| Z KC X 209 B 01 | 2+ Earth      | 16 <sup>1)</sup>     | ~ 250<br>--- 300 | PG 9                           | 4,5 – 7                       | 3 x 1,5 mm <sup>2</sup>              | -  | black                | 10        |
| Z KC G 209 B 01 | 2+ Earth      | 2 <sup>4)</sup>      | -                | PG 9                           | 4,5 – 7                       | 3 x 1,5 mm <sup>2</sup>              | output<br>--- 196 V                        | black                | 10        |

### Notes:

#### 1) Current rating

Table lists current with connector cross section 1.5 mm<sup>2</sup> and maximum ambient temperature: Z KB X – 75° C : Z KC X – 45° C  
Current at higher temperatures are given in fig. 3 ( Z KB X) and fig. 4 ( Z KC X).

#### 2) Cable diameter

Varying cable diameters may be accommodated by modification of the cable gland rubber sealing ring.

#### 3) Colour

The standard colour is black, but can be provided in grey.

#### 4) Plug rectifier current

Table lists current for maximum ambient temperature of 30° C and currents at higher temperatures are given in fig. 6 ( Z KB G) and fig. 7 ( Z KC G).

### Plug rectifier – Z KB G - Z KC G

The supply circuit should be arranged to avoid voltage peaks, and if large capacitance or inductance is in circuit the solenoid should be appropriately protected by chokes etc.

### Load diagram for plug Z KB X, Z KC X

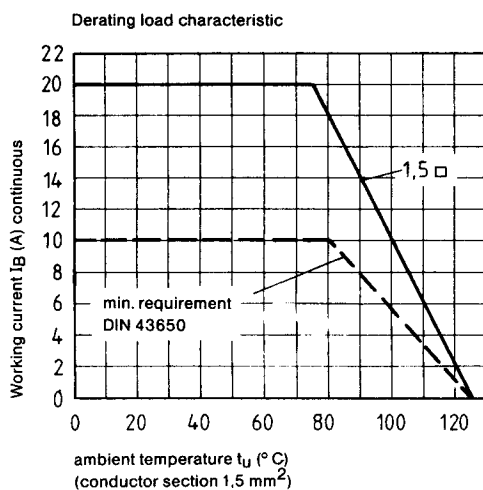


Fig. 3  
Derating load characteristic for  
plug-connector Z KB X  
Temperature/current

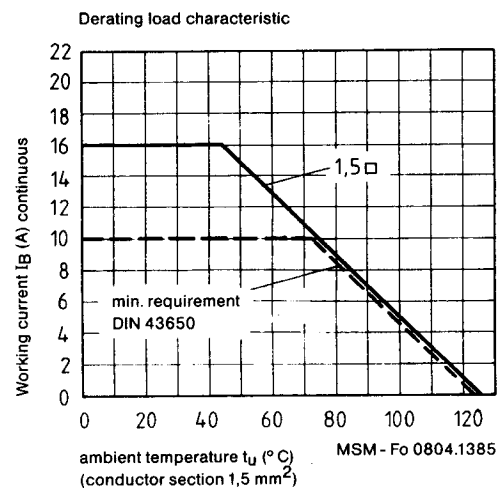


Fig. 4  
Derating load characteristic for  
plug-connector Z KC X  
Temperature/current

## Performance and dimension tables for plug-connector Z KB X, Z KB G, Z KC X, Z KC G

### Load and connection diagram for rectifier plug Z KB G, Z KC G

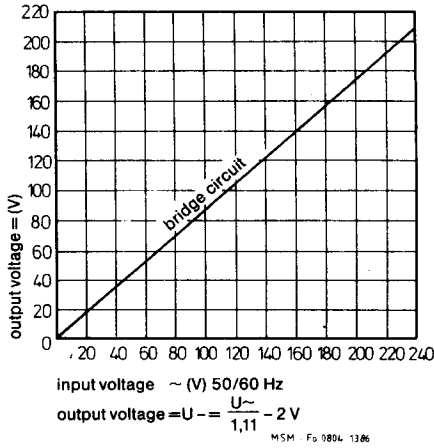


Fig. 5  
Output/input voltage  
for plug-connector with  
rectifier Type Z KB G 211 A 02  
Type Z KC G 209 B 01

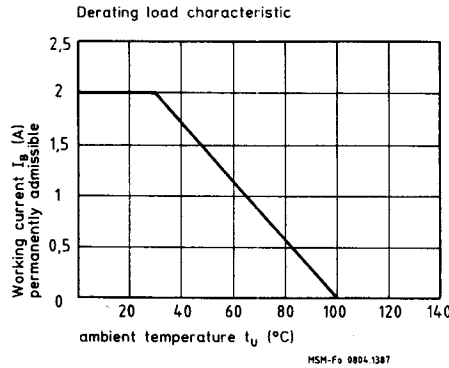


Fig. 6  
Derating load characteristic  
ED 100 % for plug-connector with  
rectifier Type Z KB G 211 A 02  
Temperature/current

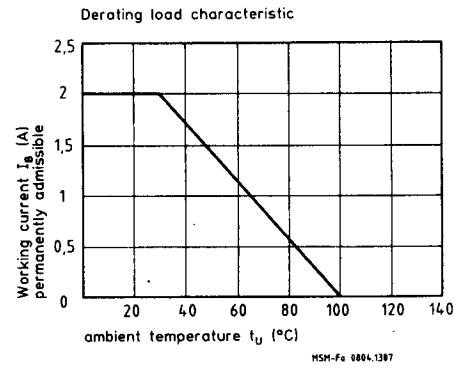


Fig. 7  
Derating load characteristic  
ED 100 % for plug-connector with  
rectifier Type Z KC G 209 B 01  
Temperature/current

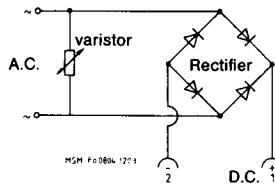


Fig. 8  
Connections  
for plug  
rectifier  
Type Z KB G 211 A 02  
Type Z KC G 209 B 01

#### Conversion factors

1 N = 0.102 kp  $\approx$  0.1 kg  
1 kg = 2.2 lb  
1 mm = 0.039 in  
1 Ncm = 0.086 in lb

### Dimensions (mm)

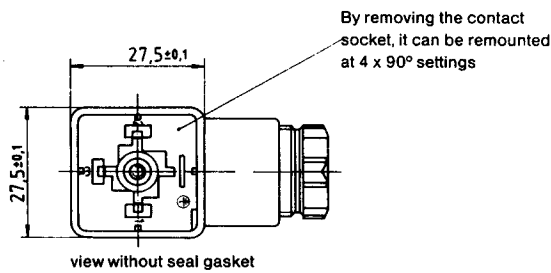


Fig. 9  
Type Z KB X 211 B 01  
Z KB X 311 B 01  
Z KB G 211 A 02

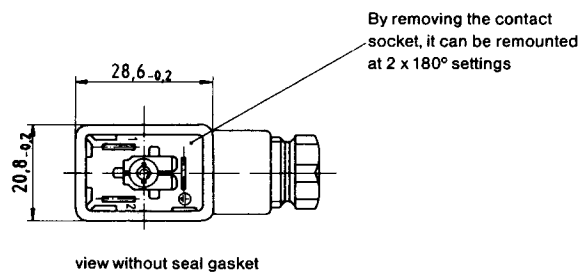
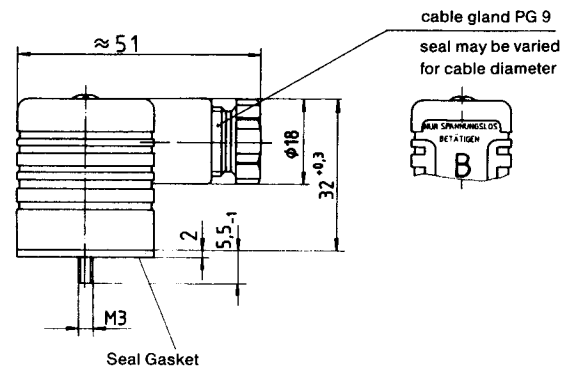
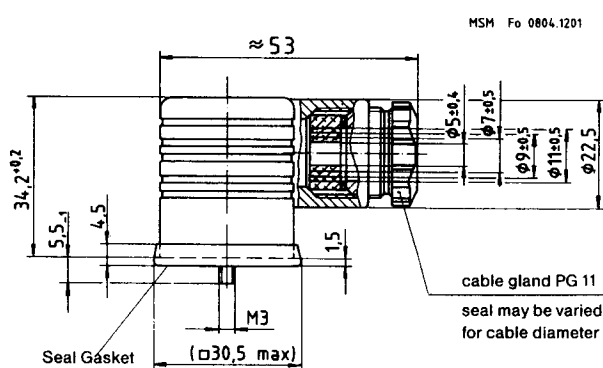
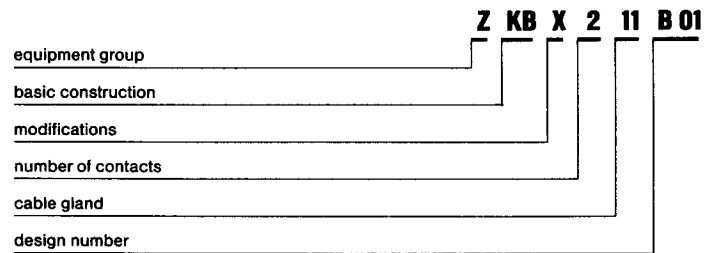


Fig. 10  
Type Z KC X 209 B 01  
Z KC G 209 B 01



## Classification for plug connectors Z KB X, Z KB G, Z KC X, Z KC G

### Type Code



### Order Example

Type Z KB X 211 B 01  
2 pole, earth, gland Pg. 11

Type Z KB X 311 B 01  
3 pole, earth, gland Pg. 11

Type Z KB G 211 A 02  
2 pole, earth, gland Pg. 11  
rectifier, full-wave, max. 240 V 50/60 Hz

Type Z KC X 209 B 01  
2 pole, earth, gland Pg. 9

Type Z KC G 209 X B 01  
2 pole, earth, gland Pg. 9  
rectifier, full-wave, max. 240 V 50/60 Hz

### Special

Plugs are available to meet various requirements  
such as, high temperature  
crimp or other connections  
different cable size  
knurled nut fixing  
indicator lights  
built-in electronics  
over voltage

Plug bases are available