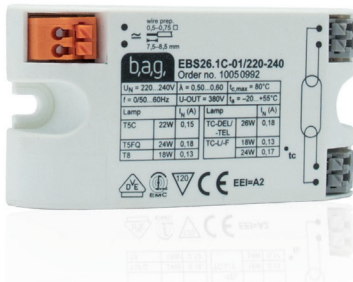


**EBS**  
Minipower

## Non-dimmable electronic control gear units

T5, T8 and compact lamps with system ratings ≤ 25W



### Performance characteristics

- Electronic control gear units for T5, T8 and compact lamps with system ratings ≤ 25W
- Flicker free light due to high frequency operation of the lamp; no stroboscopic effect
- Small ergonomic housing design; space-saving installation in luminaires
- Electrode preserving lamp warm start for maximum lamp life independent of the switching frequency; starting time < 1,2 s
- Suitable for use in protection class 2 luminaires
- Automatic restart after lamp replacement
- Automatic safety switch-off in case of abnormal lamp operation, e.g. defective electrodes and end of lamp life; tested acc. to EN 61 347-2-3
- Overvoltage protection up to 320 VAC (2h)
- Certified as thermally protected ballasts, e.g. for application in F-luminaires
- Suitable for direct current operation and application in emergency lighting installations
- Energy efficiency index EEI=A2
- Nominal life time: 40.000 h with failure rate ≤10% at t<sub>c</sub>=t<sub>c, max</sub>

### ECG model

| Version                                   | Order no.           | Lamp                   |
|---|---------------------|------------------------|
| EBS16.1C-01/220-240 & EBS16.1M-01/220-240 | 10050989 & 10050993 | 1 x T5 6 W             |
|   |                     | 1 x T5 8 W             |
|   |                     | 1 x T5 13 W            |
|   |                     | 1 x T8 16 W            |
|   |                     | 1 x TC-DD 10 W         |
|   |                     | 1 x TC-DD 16 W         |
|   |                     | 1 x TC-DEL 10 W        |
|   |                     | 1 x TC-SE 7 W          |
|   |                     | 1 x TC-SE 9 W          |
| 1 x TC-SE 11 W                            |                     |                        |
| EBS21.1C-01/220-240                       | 10050990            | 1 x TC-TEL 13 W        |
|   |                     | 1 x TC-DEL / -TEL 18 W |
| EBS21.1M-01/220-240                       | 10050994            | 1 x T5FH 14 W          |
|   |                     | 1 x T5FH 21 W          |
|   |                     | 1 x TC-TEL 13 W        |
|   |                     | 1 x TC-DEL / -TEL 18 W |
| EBS26.1C-01/220-240 & EBS26.1M-01/220-240 | 10050992 & 10050996 | 1 x T5C 22 W           |
|   |                     | 1 x T5FQ 24 W          |
|   |                     | 1 x T8 18 W            |
|   |                     | 1 x TC-L / -F 18 W     |
|   |                     | 1 x TC-L / -F 24 W     |
|   |                     | 1 x TC-DEL / -TEL 26 W |

### Markings



### Technical data

|   |   |
|---|---|
| <b>Mains voltage supply</b>                     |   |
| Rated voltage range                             | 220 V – 240 V   |
| Max. admissible voltage range (continuous)      | 198 V – 264 V   |
| Frequency                                       | 0, 50 Hz ... 60 Hz  |
| <b>Battery operation</b>                        |   |
| Voltage range for continuous operation          | 198 VDC – 278 VDC   |
| Lowest limiting value for temporary operation   | 176 VDC <sup>1)</sup>   |
| <b>Behaviour at mains overvoltage</b>           |   |
| Overvoltage protection                          | 320 VAC / 2 h   |
| <b>Leakage current</b>                          | < 0.5 mA / EVG  |
| <b>Ignition time of the lamp</b>                | < 1.2 s   |
| <b>Automatic restart after lamp replacement</b> | yes   |
| <b>Max. temperature at housing surface</b>      | + 120 °C<br>(acc. EN 61 347-2-3/C)  |
| <b>Nominal service life:</b>                    | 40,000 h with failure rate $\leq 10\%$ and operation at $t_c = t_{c, \text{max}}$ |
| <b>Lamp and mains terminals</b>                 |   |
|   | for solid or stranded wire<br>45°-connector with push button                      |
| Wire cross section                              | 0.5 mm <sup>2</sup> – 1.5 mm <sup>2</sup>   |
| Wire stripping length                           | 7.5 mm <sup>2</sup> – 8.5 mm <sup>2</sup>   |
| <b>Lamp wire lengths</b>                        | see "wiring diagrams"   |

<sup>1)</sup> Reliable lamp ignition only for  $\geq 198$  VDC

### Admissible temperatures

| Version                               | Ambient ( $t_a$ ) | Case ( $t_c$ ) |
|---------------------------------------|-------------------|----------------|
| EBS16.1C-01; EBS16.1M-01; EBS21.1M-01 | - 20°C...+55°C    | max. + 75°C    |
| EBS21.1C-01; EBS26.1C-01; EBS26.1M-01 | - 20°C...+55°C    | max. + 80°C    |

### Inrush current/Circuit breaker

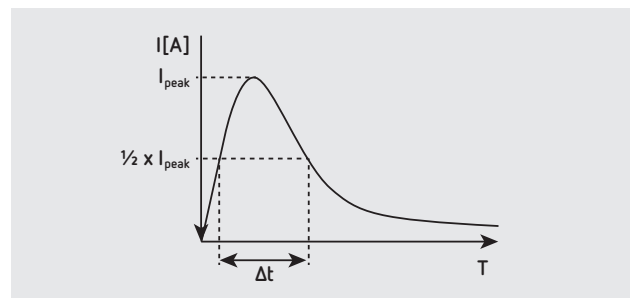
| Version     | typ $I_{\text{peak}} / \Delta t$ | No. of ECG at single-pole circuit breakers |      |      |      |      |
|-------------|----------------------------------|--|------|------|------|------|
|             |                                  | LS-Type                                    | 10 A | 16 A | 20 A | 25 A |
| EBS16.1C-01 | 14 A / 60 $\mu\text{s}$          | B  | 77   | 123  | 154  | 193  |
|             |                                  | C  | 129  | 206  | 258  | 322  |
| EBS16.1M-01 | 15 A / 72 $\mu\text{s}$          | B  | 65   | 104  | 131  | 164  |
|             |                                  | C  | 109  | 174  | 218  | 273  |
| EBS21.1C-01 | 14 A / 66 $\mu\text{s}$          | B  | 73   | 117  | 147  | 184  |
|             |                                  | C  | 123  | 196  | 246  | 307  |
| EBS21.1M-01 | 20 A / 108 $\mu\text{s}$         | B  | 33   | 52   | 66   | 82   |
|             |                                  | C  | 55   | 87   | 109  | 137  |
| EBS26.1C-01 | 29 A / 122 $\mu\text{s}$         | B  | 23   | 37   | 46   | 58   |
|             |                                  | C  | 38   | 62   | 77   | 96   |
| EBS26.1M-01 | 19 A / 86 $\mu\text{s}$          | B  | 50   | 80   | 101  | 126  |
|             |                                  | C  | 84   | 134  | 168  | 210  |

All data for  $U_{\text{supply}} = 230$  VAC, mains impedance = 1  $\Omega$

In case of multipolar CB the max. no. is reduced by 20%

The max. number may differ depending on CB manufacturer. Please consider the specifications of the manufacturer.

Basically, CB with C-characteristics are recommended to be used in lighting groups.



**Non-dimmable electronic control gear units**  
T5, T8 and compact lamps with system ratings  $\leq 25$ W

**Operating data**



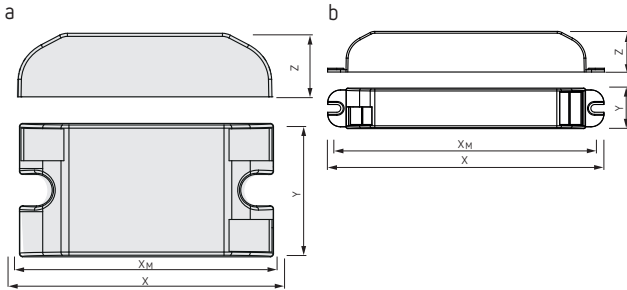
| Version                                   | Lamp                 | System rating | Input current* | Operating frequenz | Power factor | Lamp power | EEI | Approvals |
|---|----------------------|---------------|----------------|--------------------|--------------|------------|-----|-----------|
|   |                      | W             | A              | kHz                |              | W          |     |           |
| EBS16.1C-01/220-240 & EBS16.1M-01/220-240 | 1 x T5 6 W           | 6,9           | 0,06           | > 40               | > 0,50       | 6          | A2  | a,b       |
|   | 1 x T5 8 W           | 9             | 0,07           | > 40               | > 0,50       | 8          | A2  | a,b       |
|   | 1 x T5 13 W          | 15            | 0,09           | > 40               | > 0,50       | 11         | A2  | a,b       |
|   | 1 x T8 16 W          | 15            | 0,10           | > 40               | > 0,50       | 14         | A2  | a,b       |
|   | 1 x TC-DD 10 W       | 12            | 0,08           | > 40               | > 0,50       | 9          | A2  | a,b       |
|   | 1 x TC-DD 16 W       | 14            | 0,10           | > 40               | > 0,50       | 15         | A2  | a,b       |
|   | 1 x TC-DEL 10 W      | 12            | 0,08           | > 40               | > 0,50       | 9          | A2  | a,b       |
|   | 1 x TC-SE 7 W        | 8             | 0,06           | > 40               | > 0,50       | 7          | A2  | a,b       |
|   | 1 x TC-SE 9 W        | 10            | 0,07           | > 40               | > 0,50       | 8          | A2  | a,b       |
|   | 1 x TC-SE 11 W       | 12            | 0,09           | > 40               | > 0,50       | 10         | A2  | a,b       |
| EBS21.1C-01/220-240                       | 1 x TC-DEL/ TEL 13 W | 14            | 0,12           | > 40               | > 0,55       | 13         | A2  | a,b       |
|   | 1 x TC-DEL/-TEL 18 W | 17            | 0,13           | > 40               | > 0,55       | 16         | A2  | a,b       |
| EBS21.1M-01/220-240                       | 1 x T5FH 14 W        | 17            | 0,12           | > 40               | > 0,55       | 14         | A2  | a,b       |
|   | 1 x T5FH 21 W        | 22            | 0,16           | > 40               | > 0,55       | 21         | A2  | a,b       |
|   | 1 x TC-DEL/ TEL 13 W | 14            | 0,12           | > 40               | > 0,55       | 13         | A2  | a,b       |
|   | 1 x TC-DEL/-TEL 18 W | 17            | 0,13           | > 40               | > 0,55       | 16         | A2  | a,b       |
| EBS26.1C-01/220-240 & EBS26.1M-01/220-240 | 1 x T5C 22 W         | 21            | 0,15           | > 40               | > 0,55       | 18         | A2  | a,b       |
|   | 1 x T5FQ 24 W        | 24            | 0,18           | > 40               | > 0,55       | 22         | A2  | a,b       |
|   | 1 x T8 18 W          | 16            | 0,13           | > 40               | > 0,55       | 13         | A2  | a,b       |
|   | 1 x TC-L/-F 18 W     | 16            | 0,13           | > 40               | > 0,55       | 13         | A2  | a,b       |
|   | 1 x TC-L/-F 24 W     | 24            | 0,17           | > 40               | > 0,55       | 20         | A2  | a,b       |
|   | 1 x TC-DEL/-TEL 26 W | 25            | 0,18           | > 40               | > 0,55       | 23         | A2  | a,b       |

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## Non-dimmable electronic control gear units

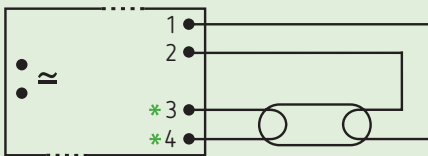
T5, T8 and compact lamps with system ratings  $\leq 25W$

### Dimensions



| Version     | X   | X <sub>M</sub> | Y  | Z  | Skizze | Weight |
|-------------|-----|----------------|----|----|--------|--------|
|             | mm  | mm             | mm | mm |        | kg     |
| EBS16.1C-01 | 80  | 70             | 41 | 19 | a      | 0,05   |
| EBS16.1M-01 | 150 | 140            | 22 | 22 | b      | 0,05   |
| EBS21.1C-01 | 80  | 70             | 41 | 19 | a      | 0,05   |
| EBS21.1M-01 | 150 | 140            | 22 | 22 | b      | 0,05   |
| EBS26.1C-01 | 80  | 70             | 41 | 19 | a      | 0,05   |
| EBS26.1M-01 | 150 | 140            | 22 | 22 | b      | 0,05   |

### Wiring diagrams



\* keep lamp wires as short as possible

Wire lengths terminal 1, 2: max. 1.0 m

Wire lengths terminal 3, 4: max. 2.0 m

### Conformance with regulations

EN 61 347-1 General and safety requirements

EN 61 347-2-3

EN 61 347-2-3/C Requirements for thermally protected ballasts

EN 61 000-3-2 Limits for harmonic current emissions

EN 61 000-3-3 Limitation of voltage fluctuations and flicker

General EMC immunity:

EN 61 000-4-2 Electrostatic discharge

EN 61 000-4-3 Radiated, radio-frequency, electromagnetic field

EN 61 000-4-4 Electrical fast transient/burst

EN 61 000-4-5 Surge

EN 61 000-4-6 Conducted disturbances, induced by radio-frequency fields

EN 61 000-4-8 Power frequency magnetic field

EN 61 000-4-11 Voltage dips, short interruptions and voltage variations

EN 61 547 EMC immunity: equipment for general lighting purposes

EN 55 015 Radio disturbances, frequencies < 300MHz (CDN method)

Quality management certified according to ISO 9001