

## Inrush current limiter, current-controlled with no-load detection

**ESG 6**



1.1

1.2

1.3

2.1

2.2

3.1

3.2

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4.0

5.1

5.2

### General Data

Rated voltage 110 - 230 Vac  $\pm 10\%$

Rated current 16 A, (UL: 12 A)

Internal resistance 7,8 Ohms

Maximum ambient temperature 40 °C

Degree of protection IP 20

### Advantages

Dynamic limit times for optimum starting of consumers with high inrush currents

Current-controlled with no-load detection, hence full current limit protection, even if momentarily switched back on

Robust plastic housing for rail mounting, e.g. in consumer units or meter mounting boards

### Applications

Inrush current limiting option for limiting the inrush current in power tools, transformers and other loads with high switch-on or inrush currents.



### Approvals





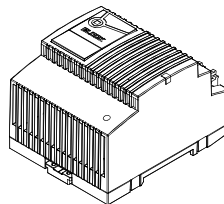
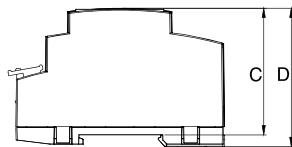
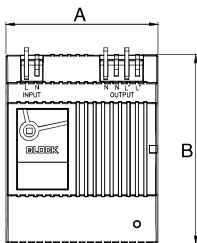
### Inrush current limiter, current-controlled with no-load detection **ESG 6**



|                 |                           |                                                                                     |
|-----------------|---------------------------|-------------------------------------------------------------------------------------|
| Electrical data | Typ                       | ESG 6                                                                               |
|                 | Operating data            |                                                                                     |
|                 | Rated voltage             | 110 - 230 Vac $\pm 10\%$                                                            |
|                 | Rated frequency           | 50 - 60 Hz                                                                          |
|                 | Rated current             | 16 A, (UL: 12 A)                                                                    |
|                 | Environment               |                                                                                     |
|                 | Ambient temperature max.  | 40 °C                                                                               |
|                 | Safety and protection     |                                                                                     |
|                 | Safety                    | integrated, non-replaceable thermal fuse in the input circuit                       |
|                 | Protection index          | IP 20                                                                               |
| Mechanical data | Safety class (prepared)   | II                                                                                  |
|                 | Internal impedance        | 7.80 $\Omega$                                                                       |
|                 | Order numbers             |                                                                                     |
|                 | Order Number              | ESG 6                                                                               |
|                 | Terminal and mounting     |                                                                                     |
|                 | Terminals Input           | Spring clamp terminal max. 2.5 mm <sup>2</sup>                                      |
|                 | Terminals Output          | Spring clamp terminal max. 2.5 mm <sup>2</sup>                                      |
|                 | Measures and weights      |                                                                                     |
|                 | Dimension (W x H x D)     | 72 x 90 x 59,2 mm                                                                   |
|                 | Weight                    | 0.17 kg                                                                             |
|                 | Dimension picture (in mm) |  |
|                 | A                         | 72                                                                                  |
|                 | B                         | 90                                                                                  |
|                 | C                         | 54.2                                                                                |
|                 | D                         | 59.2                                                                                |

### Dimension pictures

1



## Inrush current limiter ES 00 / ES 30



### General Data

|                                    |
|------------------------------------|
| Rated voltage 220 - 400 Vac        |
| Maximum rated current 16 A         |
| Internal resistance 3,75 Ohms      |
| Maximum ambient temperature 40 °C  |
| Degree of protection IP 00 / IP 30 |

### Advantages

Very good moisture protection thanks to XtraDenseFill resin encapsulation (ES30)

ES 00: Robust plastic housing for screwed mounting

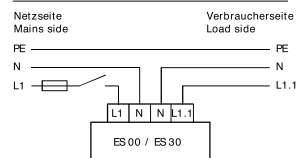
ES 30: Robust plastic housing for rail mounting, e.g. in consumer units or meter mounting boards

### Applications

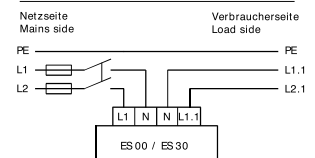
Inrush current limiting option for limiting the inrush current in transformers with high switch-on or inrush currents (not suited for electrical machinery or motors).

### Sample applications

Beschaltung für Einphasenverbraucher zwischen L und N  
Wiring for single-phase loads between L and N

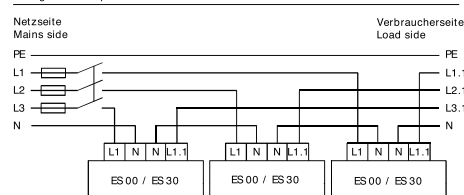


Beschaltung für Einphasenverbraucher zwischen L und L  
Wiring for single-phase loads between L and L



Verbraucher dürfen nicht gegen L3 oder gegen N angeschlossen werden!  
It's not allowed to connect loads against L3 or N!

Beschaltung für Drehstromverbraucher  
Wiring for three-phase consumers



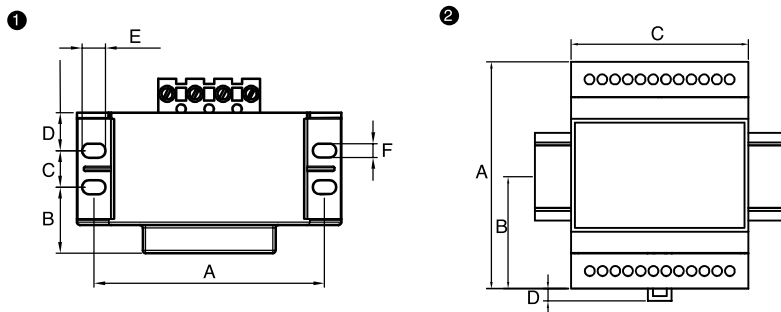


### Inrush current limiter ES 00 / ES 30



| Type                      | ES 00                                                         | ES 30                                                         |
|---------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
|                           |                                                               |                                                               |
| <b>Electrical data</b>    |                                                               |                                                               |
| Operating data            |                                                               |                                                               |
| Rated voltage             | 220 - 400 Vac                                                 | 220 - 400 Vac                                                 |
| Rated frequency           | 50 - 60 Hz                                                    | 50 - 60 Hz                                                    |
| Rated current             | max. 16 A                                                     | max. 16 A                                                     |
| Environment               |                                                               |                                                               |
| Ambient temperature max.  | 40 °C                                                         | 40 °C                                                         |
| Safety and protection     |                                                               |                                                               |
| Type                      | Mounting lugs with fixing holes                               | Fixing holes and for panel installation on mounting rails     |
| Protection index          | IP 00                                                         | IP 30                                                         |
| Safety class (prepared)   | II                                                            | II                                                            |
| Internal impedance        | 3.75 Ω                                                        | 3.75 Ω                                                        |
| Safety                    | integrated, non-replaceable thermal fuse in the input circuit | integrated, non-replaceable thermal fuse in the input circuit |
| Order numbers             |                                                               |                                                               |
| Order Number              | ES 00                                                         | ES 30                                                         |
| <b>Mechanical data</b>    |                                                               |                                                               |
| Terminal and mounting     |                                                               |                                                               |
| Terminals                 | Screw terminal                                                | Screw terminal                                                |
| Fixing method             | Fixing holes in the housing                                   | DIN rail mounting                                             |
| Measures and weights      |                                                               |                                                               |
| Weight                    | 0.27 kg                                                       | 0.47 kg                                                       |
| Dimension (W x H x D)     | 60 x 60 x 94 mm                                               | 71 x 90,4 x 58 mm                                             |
| Dimension picture (in mm) | ①                                                             | ②                                                             |
| A                         | 60                                                            | 90,4                                                          |
| B                         | 23,5                                                          | 44,6                                                          |
| C                         | 13                                                            | 71                                                            |
| D                         | 13,5                                                          | 5                                                             |
| E                         | 8,4                                                           | -                                                             |
| F                         | 5                                                             | -                                                             |

### Dimension pictures



## Inrush current limiter ESG 1 / ESG 2



### General Data

|                                   |
|-----------------------------------|
| Rated voltage 220 - 250 Vac       |
| Maximum rated current 16 A        |
| Internal resistance 3,75 Ohms     |
| Maximum ambient temperature 40 °C |
| Degree of protection IP 20        |

### Advantages

|                                                                           |
|---------------------------------------------------------------------------|
| Very good moisture protection thanks to XtraDenseFill resin encapsulation |
| May be used anywhere for stationary and mobile applications               |
| ESG 1: Integrated safety plug and built-in safety socket                  |
| ESG 2: 1.4 m connecting cable with safety plug and built-in safety socket |

### Applications

Inrush current limiting option for limiting the inrush current in transformers with high switch-on or inrush currents (not suited for electrical machinery or motors).

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5.2

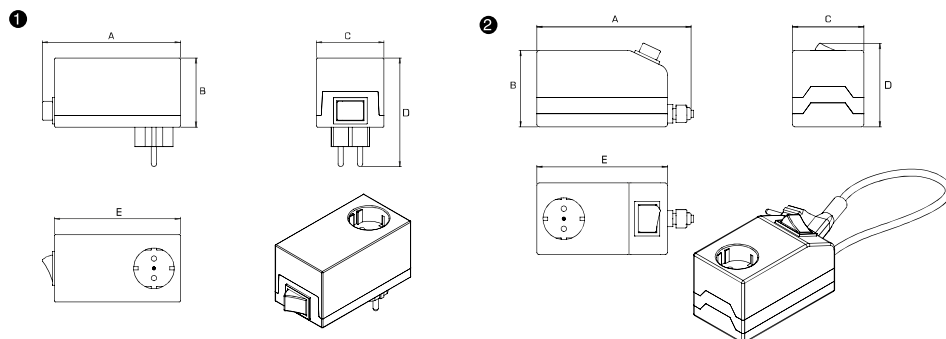


## Inrush current limiter ESG 1 / ESG 2



| Electrical data       | Type                      | ESG 1                                                         | ESG 2                                                         |
|-----------------------|---------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
|                       | Operating data            |                                                               |                                                               |
|                       | Rated voltage             | 220 - 250 Vac                                                 | 220 - 250 Vac                                                 |
|                       | Rated frequency           | 50 - 60 Hz                                                    | 50 - 60 Hz                                                    |
|                       | Rated current             | max. 16 A                                                     | max. 16 A                                                     |
| Environment           | Environment               |                                                               |                                                               |
|                       | Ambient temperature max.  | 40 °C                                                         | 40 °C                                                         |
| Safety and protection | Safety                    | integrated, non-replaceable thermal fuse in the input circuit | integrated, non-replaceable thermal fuse in the input circuit |
|                       | Type                      | Resin encapsulated transformer                                | Resin encapsulated transformer                                |
|                       | Protection index          | IP 20                                                         | IP 20                                                         |
|                       | Safety class (prepared)   | I                                                             | I                                                             |
|                       | Internal impedance        | 3,75 Ω                                                        | 3,75 Ω                                                        |
|                       | Order numbers             |                                                               |                                                               |
|                       | Order Number              | ESG 1                                                         | ESG 2                                                         |
| Mechanical data       | Terminal and mounting     |                                                               |                                                               |
|                       | Terminals Input           | Integrated safety plug                                        | Mains connecting cable with safety plug                       |
|                       | Terminals Output          | Safety socket                                                 | Safety socket                                                 |
|                       | Measures and weights      |                                                               |                                                               |
|                       | Weight                    | 0.40 kg                                                       | 0.55 kg                                                       |
|                       | Dimension (W x H x D)     | 64 x 132 x 65,5 mm                                            | 66 x 145 x 70,5 mm                                            |
|                       | Dimension picture (in mm) | ①                                                             | ②                                                             |
|                       | A                         | 132                                                           | 145                                                           |
|                       | B                         | 65,5                                                          | 70,5                                                          |
|                       | C                         | 64                                                            | 66                                                            |
|                       | D                         | 105                                                           | 80                                                            |
|                       | E                         | 119,5                                                         | 121                                                           |

## Dimension pictures



## Inrush current limiter, current-controlled with no-load detection

### ESG 3 / ESG 7



#### General Data

|                                                                |
|----------------------------------------------------------------|
| Rated voltage 230 Vac $\pm 10\%$                               |
| Maximum rated current 16 A                                     |
| Internal resistance 7,8 Ohm                                    |
| Maximum ambient temperature 40 °C                              |
| Degree of protection IP 65 (Enclosure); IP 44 (plug/connector) |

#### Advantages

|                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------|
| Dynamic limit times for optimum inrush of loads with high inrush currents                                            |
| Current-controlled with no-load detection, hence full current limit protection, even if momentarily switched back on |
| Very good moisture protection thanks to XtraDenseFill resin encapsulation                                            |
| May be used anywhere for stationary and mobile applications                                                          |
| High degree of protection                                                                                            |
| ESG 3: 2 x Mains cables with safety plug and with safety plug and safety coupling DIN 49440-1 (GER) for mobile use   |
| ESG 7: 2 x Mains cable with low-heat device connection C13 IEC 60321-1 (GER) for mobile use                          |

#### Applications

Inrush current limiting option for limiting the inrush current in power tools, transformers and other loads with high switch-on or inrush currents.

#### Approvals



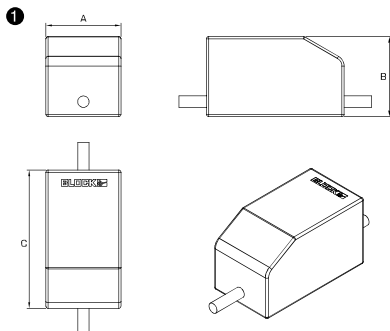


## Inrush current limiter, current-controlled with no-load detection **ESG 3 / ESG 7**



|                          |                                                               |                                                                                 |                                                                                  |  |  |  |  |
|--------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--|--|--|--|
| Electrical data          | Type                                                          | ESG 3                                                                           | ESG 7                                                                            |  |  |  |  |
|                          | Operating data                                                |                                                                                 |                                                                                  |  |  |  |  |
|                          | Rated voltage                                                 | 230 Vac                                                                         | 230 Vac                                                                          |  |  |  |  |
|                          | Voltage range                                                 | 99 ... 253 Vac                                                                  | 99 ... 264 Vac                                                                   |  |  |  |  |
|                          | Rated frequency                                               | 50 - 60 Hz                                                                      | 50 - 60 Hz                                                                       |  |  |  |  |
|                          | Rated current                                                 | 16 A                                                                            | 10 A                                                                             |  |  |  |  |
|                          | Internal impedance                                            | 7.80 Ω                                                                          | 7.80 Ω                                                                           |  |  |  |  |
|                          | Approvals                                                     |                                                                                 |                                                                                  |  |  |  |  |
|                          | Approvals                                                     | -                                                                               | cURus                                                                            |  |  |  |  |
|                          | Environment                                                   |                                                                                 |                                                                                  |  |  |  |  |
| Ambient temperature max. | 40 °C                                                         | 40 °C                                                                           |                                                                                  |  |  |  |  |
| Safety and protection    |                                                               |                                                                                 |                                                                                  |  |  |  |  |
| Safety                   | integrated, non-replaceable thermal fuse in the input circuit | integrated, non-replaceable thermal fuse in the input circuit                   |                                                                                  |  |  |  |  |
| Type                     | Resin encapsulated transformer                                | Resin encapsulated transformer                                                  |                                                                                  |  |  |  |  |
| Protection index         | housing IP 65, housing connections IP 44                      | housing IP 65, housing connections IP 44                                        |                                                                                  |  |  |  |  |
| Safety class (prepared)  | I                                                             | I                                                                               |                                                                                  |  |  |  |  |
| Order numbers            |                                                               |                                                                                 |                                                                                  |  |  |  |  |
| Order Number             | ESG 3                                                         | ESG 7                                                                           |                                                                                  |  |  |  |  |
| Mechanical data          | Terminal and mounting                                         |                                                                                 |                                                                                  |  |  |  |  |
|                          | Terminals Input                                               | Mains connecting cable with DIN49440,1 protected contact plug DIN 49440-1 (GER) | Mains cable with low#heat device plug C14 IEC 60321#1                            |  |  |  |  |
|                          | Terminals Output                                              | Connecting cable with DIN49440,1 protected contact coupling DIN 49440-1 (GER)   | Mains cable with low#heat device connection C13 IEC 60321#1 (GER) for mobile use |  |  |  |  |
|                          | Measures and weights                                          |                                                                                 |                                                                                  |  |  |  |  |
|                          | Weight                                                        | 0.75 kg                                                                         | 0.75 kg                                                                          |  |  |  |  |
|                          | Dimension (W x H x D)                                         | 66 x 70 x 121 mm                                                                | 66 x 70 x 121 mm                                                                 |  |  |  |  |
|                          | Dimension picture (in mm)                                     | 1                                                                               | 1                                                                                |  |  |  |  |
|                          | A                                                             | 66                                                                              | 66                                                                               |  |  |  |  |
|                          | B                                                             | 70                                                                              | 70                                                                               |  |  |  |  |
|                          | C                                                             | 121                                                                             | 121                                                                              |  |  |  |  |

## Dimension pictures





## Inrush current limiter, current-controlled with no-load detection **ESG 4 / ESG 5**



### General Data

|                                                                |
|----------------------------------------------------------------|
| Rated voltage 115 Vac (ESG 5), 230 Vac (ESG 4)                 |
| Rated current 13 A                                             |
| Internal resistance 7,8 Ohms (ESG 4), 4,4 Ohms (ESG 5)         |
| Maximum ambient temperature 40 °C                              |
| Degree of protection IP 65 (Enclosure); IP 20 (plug/connector) |

### Advantages

|                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------|
| Dynamic limit times for optimum inrush of loads with high inrush currents                                            |
| Current-controlled with no-load detection, hence full current limit protection, even if momentarily switched back on |
| Very good moisture protection thanks to XtraDenseFill resin encapsulation                                            |
| May be used anywhere for stationary and mobile applications                                                          |
| High degree of protection                                                                                            |
| ESG 4: 2 x Connection cable with plug and coupling BS 1363 (UK) for mobile use                                       |
| ESG 5: 2 x Connection cable with plug and coupling NEMA5-15 (USA) for mobile use                                     |

### Applications

Inrush current limiting option for limiting the inrush current in power tools, transformers and other loads with high switch-on or inrush currents.

### Approvals





## Inrush current limiter, current-controlled with no-load detection

### ESG 4 / ESG 5



|                       | Type                      |  | ESG 4                                                         | ESG 5                                                           |  |  |  |  |
|-----------------------|---------------------------|--|---------------------------------------------------------------|-----------------------------------------------------------------|--|--|--|--|
|                       |                           |  |                                                               |                                                                 |  |  |  |  |
| Electrical data       | Operating data            |  |                                                               |                                                                 |  |  |  |  |
|                       | Rated voltage             |  | 230 Vac                                                       | 115 Vac                                                         |  |  |  |  |
|                       | Voltage range             |  | 99 ... 253 Vac                                                | 99 ... 132 Vac                                                  |  |  |  |  |
|                       | Rated frequency           |  | 50 - 60 Hz                                                    | 50 - 60 Hz                                                      |  |  |  |  |
|                       | Rated current             |  | 13 A                                                          | 13 A                                                            |  |  |  |  |
|                       | Internal impedance        |  | 7.80 Ω                                                        | 4.40 Ω                                                          |  |  |  |  |
|                       | Approvals                 |  |                                                               |                                                                 |  |  |  |  |
|                       | Approvals                 |  | -                                                             | cURus                                                           |  |  |  |  |
|                       | Environment               |  |                                                               |                                                                 |  |  |  |  |
|                       | Ambient temperature max.  |  | 40 °C                                                         | 40 °C                                                           |  |  |  |  |
| Safety and protection | Safety                    |  |                                                               |                                                                 |  |  |  |  |
|                       |                           |  | integrated, non-replaceable thermal fuse in the input circuit | integrated, non-replaceable thermal fuse in the input circuit   |  |  |  |  |
|                       | Type                      |  | Resin encapsulated transformer                                | Resin encapsulated transformer                                  |  |  |  |  |
|                       | Protection index          |  | housing IP 65, housing connections IP 20                      | housing IP 65, housing connections IP 20                        |  |  |  |  |
|                       | Safety class (prepared)   |  | I                                                             | I                                                               |  |  |  |  |
|                       | Order numbers             |  |                                                               |                                                                 |  |  |  |  |
| Mechanical data       | Order Number              |  | ESG 4                                                         | ESG 5                                                           |  |  |  |  |
|                       | Terminal and mounting     |  |                                                               |                                                                 |  |  |  |  |
|                       | Terminals Input           |  | Connecting cable with BS 1363 protected contact plug (UK)     | Connecting cable with NEMA5-15 protected contact plug (USA)     |  |  |  |  |
|                       | Terminals Output          |  | Connecting cable with BS 1363 protected contact coupling (UK) | Connecting cable with NEMA5-15 protected contact coupling (USA) |  |  |  |  |
|                       | Measures and weights      |  |                                                               |                                                                 |  |  |  |  |
|                       | Weight                    |  | 0.75 kg                                                       | 0.75 kg                                                         |  |  |  |  |
|                       | Dimension (W x H x D)     |  | 66 x 70 x 121 mm                                              | 66 x 70 x 121 mm                                                |  |  |  |  |
|                       | Dimension picture (in mm) |  | ①                                                             | ①                                                               |  |  |  |  |
|                       | A                         |  | 66                                                            | 66                                                              |  |  |  |  |
|                       | B                         |  | 70                                                            | 70                                                              |  |  |  |  |
|                       | C                         |  | 121                                                           | 121                                                             |  |  |  |  |

## Dimension pictures

