



Technical catalogue

# Modular DIN rail components

## Installation contactors

Power and productivity  
for a better world™





# Installation Contactors



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## ESB Installation Contactors

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## ESB/EN Installation Contactors

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# Modular DIN rail components

## Installation Contactors ESB and EN

All over the world, commercial and industrial buildings such as hospitals, hotels, shopping and sport centers, domestic and residential installation are equipped with ABB low voltage products and systems.

From switchboard to light switch, ABB covers the complete range of equipment required for controlling and protecting electrical installations.



### Typical segments

1-2 Residential installations | 3 Hotels



For controlling and remote switching, ABB offers a complete range of installation contactors that are mainly used in the following applications:

- Lighting
- Heating
- Ventilation
- Pumps and motors.

ESB and EN installation contactors are designed to match the Modular DIN rail components for common use in dedicated panels.

The ESB range includes 4 ratings from 20 A to 63 A with 2 to 4-pole version.

The EN range includes 3 ratings from 20 A to 40 A.

Many contacts variations are available for managing all application. Products comply with standards IEC60947-4-1 and IEC61095.

#### Construction:

The ESB20, EN20 operates with an AC solenoid system.

Types ESB24...63, EN24...40 are fitted with a DC solenoid actuator and are therefore hum-free. The noise during switching is barely audible making it beneficial for use in buildings such as hospitals, hotels or houses. An incorporated varistor protects the coil against remote lightning strikes and overvoltages up to 5 kV.

In addition, it limits the interference voltage peaks of the solenoid system.

The contactors can therefore be combined with programmable logic controllers. There is no need for a protective circuit. The solenoid system is provided with radio interference suppression. Accessories are available, such as auxiliary contacts and sealing covers.

#### ESB advantages:

- Powerful for lamp switching
- Operation flag indicator
- DC coil: - Noiseless and hum free
  - Low power consumption
  - Integrated overvoltage protection.

The EN contactors have a built-in toggle switch for automatic and manual operation.

#### EN advantages:

- Facilitate commissioning
- Functional test before start-up
- Ease maintenance operation
- High degree of safety and availability in case of automation system failure.

#### 4 Shopping centers | 5 Hospitals | 6 Commercial & industrial buildings





20 A  
AC-1/AC-7a

## ESB20 Installation Contactors

### AC Operated



#### Application

The ESB contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

#### Certifications and Approvals



#### Description

The **ESB20** contactors are used for the control of single phase loads up to 20 A. They operate with an AC coil. You can choose between a various N.O. and N.C. contacts combination.

#### Ordering Details

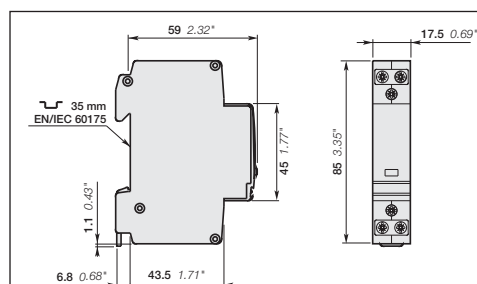
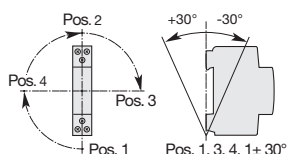
| Main poles                                                                                                       | Nb of modules | Control coil voltage | Type        | Order code | Pack <sup>(n)</sup> pieces | Weight kg (1 pce) |
|------------------------------------------------------------------------------------------------------------------|---------------|----------------------|-------------|------------|----------------------------|-------------------|
|                                                                                                                  |               | 50 Hz                | 60 Hz       |            |                            |                   |
| <br>1<br><br>2 N.O.             | 1             | 12 V                 | 14 V        | ESB20-20   | GHE3211102R1004            | 10 0.14           |
|                                                                                                                  |               | 20 V                 | 24 V        |            | GHE3211102R1005            | 10 0.14           |
|                                                                                                                  |               | 24 V                 | 28 V        |            | GHE3211102R0001            | 10 0.14           |
|                                                                                                                  |               | 42 V                 | 48 V        |            | GHE3211102R0002            | 10 0.14           |
|                                                                                                                  |               | 48 V                 | 55 V        |            | GHE3211102R0003            | 10 0.14           |
|                                                                                                                  |               | 110 V                | 125...127 V |            | GHE3211102R0004            | 10 0.14           |
|                                                                                                                  |               | 230 V                | 264 V       |            | GHE3211102R0006            | 10 0.14           |
|                                                                                                                  |               | 240 V                | 278 V       |            | GHE3211102R0005            | 10 0.14           |
| <br>1<br><br>2 N.C.            | 1             | 400 V                | -           |            | GHE3211102R0007            | 10 0.14           |
|                                                                                                                  |               | 12 V                 | 14 V        | ESB20-02   | GHE3211202R1004            | 10 0.14           |
|                                                                                                                  |               | 20 V                 | 24 V        |            | GHE3211202R1005            | 10 0.14           |
|                                                                                                                  |               | 24 V                 | 28 V        |            | GHE3211202R0001            | 10 0.14           |
|                                                                                                                  |               | 42 V                 | 48 V        |            | GHE3211202R0002            | 10 0.14           |
|                                                                                                                  |               | 48 V                 | 55 V        |            | GHE3211202R0003            | 10 0.14           |
|                                                                                                                  |               | 110 V                | 125...127 V |            | GHE3211202R0004            | 10 0.14           |
|                                                                                                                  |               | 230 V                | 264 V       |            | GHE3211202R0006            | 10 0.14           |
| <br>1<br><br>1 N.O.<br>1 N.C. | 1             | 240 V                | 278 V       |            | GHE3211202R0005            | 10 0.14           |
|                                                                                                                  |               | 400 V                | -           |            | GHE3211202R0007            | 10 0.14           |
|                                                                                                                  |               | 12 V                 | 14 V        | ESB20-11   | GHE3211302R1004            | 10 0.14           |
|                                                                                                                  |               | 20 V                 | 24 V        |            | GHE3211302R1005            | 10 0.14           |
|                                                                                                                  |               | 24 V                 | 28 V        |            | GHE3211302R0001            | 10 0.14           |
|                                                                                                                  |               | 42 V                 | 48 V        |            | GHE3211302R0002            | 10 0.14           |
|                                                                                                                  |               | 48 V                 | 55 V        |            | GHE3211302R0003            | 10 0.14           |
|                                                                                                                  |               | 110 V                | 125...127 V |            | GHE3211302R0004            | 10 0.14           |
|                                                                                                                  |               | 230 V                | 264 V       |            | GHE3211302R0006            | 10 0.14           |
|                                                                                                                  |               | 240 V                | 278 V       |            | GHE3211302R0005            | 10 0.14           |
|                                                                                                                  |               | 400 V                | -           |            | GHE3211302R0007            | 10 0.14           |
|                                                                                                                  |               |                      |             |            |                            |                   |

#### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                            |                                                                                                                       |                                                         |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>Main poles</b><br>acc to IEC 60947-4-1<br>and IEC 61095 | Rated operational voltage $U_e$                                                                                       | 250 V                                                   |
|                                                            | $I_e$ AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) | 20 A                                                    |
|                                                            | AC-3 / AC-7b Ratings (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ )                         |                                                         |
|                                                            | Rated operational power                                                                                               | 1 phase 230 V 1.1 kW                                    |
| <b>Magnet system</b>                                       | $I_e$ Rated operational current                                                                                       | 230 V 9 A                                               |
|                                                            | Coil operating limits (acc. to IEC 60947-4-1)                                                                         | 0.85 ... 1.1 $U_e$ (at $\theta \leq 55^\circ\text{C}$ ) |
|                                                            | Average pull-in coil consumption value                                                                                | 8 VA / 5 W                                              |
|                                                            | Average holding coil consumption value                                                                                | 3.2 VA / 1.2 W                                          |
| <b>Connecting capacity</b>                                 | Main pole terminals                                                                                                   | Rigid 1 x 1.5 ... 10 mm <sup>2</sup>                    |
|                                                            |                                                                                                                       | 2 x 1.5 ... 4 mm <sup>2</sup>                           |
|                                                            | Coil terminals                                                                                                        | Rigid 1 x 0.5 ... 4 mm <sup>2</sup>                     |
|                                                            |                                                                                                                       | 2 x 0.75 ... 2.5 mm <sup>2</sup>                        |

Mounting positions



Dimensions: mm, inches



24 A  
AC-1/AC-7a

## ESB24 Installation Contactors

AC / DC Operated



### Application

The ESB contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

### Description

The **ESB24** contactors are used for the control of single and three-phases loads up to 24 A. Due to their DC solenoid actuator, the **ESB24** can be connected to AC or DC voltages.

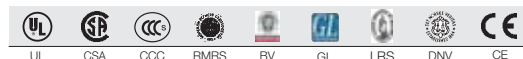
This provides the following benefits:

Hum-free operating system, no vibration, silent in operation, low power consumption, integrated high overvoltage protection 5 kV. You can choose between a various N.O. and N.C. contacts combination.

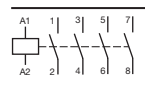
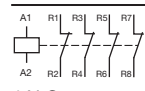
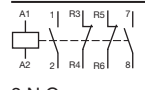
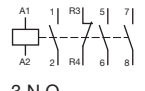
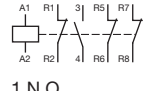
### Main accessories:

Auxiliary contact blocks **EH04**.

### Certifications and Approvals



### Ordering Details

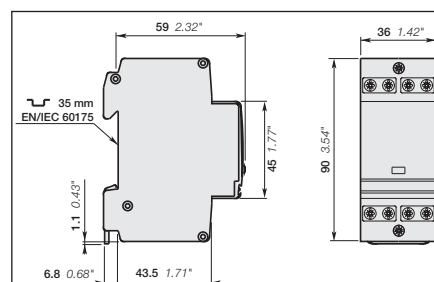
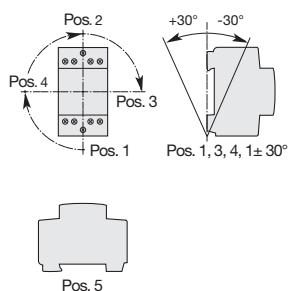
| Main poles                                                                                              | Nb of modules | Control coil voltage | Type     | Order code      | Pack <sup>(1)</sup> pieces | Weight kg (1 pce) |
|---------------------------------------------------------------------------------------------------------|---------------|----------------------|----------|-----------------|----------------------------|-------------------|
|                                                                                                         |               | 40... 450 Hz DC      |          |                 |                            |                   |
| <br>4 N.O.             | 2             | 12 V                 | ESB24-40 | GHE3291102R1004 | 5                          | 0.28              |
|                                                                                                         |               | 24 V                 |          | GHE3291102R0001 | 5                          | 0.28              |
|                                                                                                         |               | 42 V                 |          | GHE3291102R0002 | 5                          | 0.28              |
|                                                                                                         |               | 48 V                 |          | GHE3291102R0003 | 5                          | 0.28              |
|                                                                                                         |               | 110...120 V          |          | GHE3291102R0004 | 5                          | 0.28              |
|                                                                                                         |               | 230...240 V          |          | GHE3291102R0006 | 5                          | 0.28              |
| <br>4 N.C.             | 2             | 12 V                 | ESB24-04 | GHE3291202R1004 | 5                          | 0.28              |
|                                                                                                         |               | 24 V                 |          | GHE3291202R0001 | 5                          | 0.28              |
|                                                                                                         |               | 42 V                 |          | GHE3291202R0002 | 5                          | 0.28              |
|                                                                                                         |               | 48 V                 |          | GHE3291202R0003 | 5                          | 0.28              |
|                                                                                                         |               | 110...120 V          |          | GHE3291202R0004 | 5                          | 0.28              |
|                                                                                                         |               | 230...240 V          |          | GHE3291202R0006 | 5                          | 0.28              |
| <br>2 N.O.<br>2 N.C. | 2             | 12 V                 | ESB24-22 | GHE3291302R1004 | 5                          | 0.28              |
|                                                                                                         |               | 24 V                 |          | GHE3291302R0001 | 5                          | 0.28              |
|                                                                                                         |               | 42 V                 |          | GHE3291302R0002 | 5                          | 0.28              |
|                                                                                                         |               | 48 V                 |          | GHE3291302R0003 | 5                          | 0.28              |
|                                                                                                         |               | 110...120 V          |          | GHE3291302R0004 | 5                          | 0.28              |
|                                                                                                         |               | 230...240 V          |          | GHE3291302R0006 | 5                          | 0.28              |
| <br>3 N.O.<br>1 N.C. | 2             | 12 V                 | ESB24-31 | GHE3291602R1004 | 5                          | 0.28              |
|                                                                                                         |               | 24 V                 |          | GHE3291602R0001 | 5                          | 0.28              |
|                                                                                                         |               | 42 V                 |          | GHE3291602R0002 | 5                          | 0.28              |
|                                                                                                         |               | 48 V                 |          | GHE3291602R0003 | 5                          | 0.28              |
|                                                                                                         |               | 110...120 V          |          | GHE3291602R0004 | 5                          | 0.28              |
|                                                                                                         |               | 230...240 V          |          | GHE3291602R0006 | 5                          | 0.28              |
| <br>1 N.O.<br>3 N.C. | 2             | 12 V                 | ESB24-13 | GHE3291702R1004 | 5                          | 0.28              |
|                                                                                                         |               | 24 V                 |          | GHE3291702R0001 | 5                          | 0.28              |
|                                                                                                         |               | 42 V                 |          | GHE3291702R0002 | 5                          | 0.28              |
|                                                                                                         |               | 48 V                 |          | GHE3291702R0003 | 5                          | 0.28              |
|                                                                                                         |               | 110...120 V          |          | GHE3291702R0004 | 5                          | 0.28              |
|                                                                                                         |               | 230...240 V          |          | GHE3291702R0006 | 5                          | 0.28              |
|                                                                                                         |               | 400...415 V          |          | GHE3291702R0007 | 5                          | 0.28              |

### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                            |                                                                                                                                      |                                                                        |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Main poles</b><br>acc to IEC 60947-4-1<br>and IEC 61095 | Rated operational voltage <b>U<sub>e</sub></b>                                                                                       | 400 V                                                                  |
|                                                            | <b>I<sub>e</sub></b> AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) | 24 A                                                                   |
|                                                            | AC-3 / AC-7b Ratings (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ )                                        |                                                                        |
|                                                            | Rated operational power                                                                                                              | 3 phases 400 V 4 kW                                                    |
| <b>Magnet system</b>                                       | <b>I<sub>e</sub></b> Rated operational current                                                                                       | 3 phases 400 V 9 A                                                     |
|                                                            | Coil operating limits (acc. to IEC 60947-4-1)                                                                                        | 0.85 ... 1.1 <b>U<sub>e</sub></b> (at $\theta \leq 55^\circ\text{C}$ ) |
|                                                            | Average pull-in coil consumption value                                                                                               | 4 VA / 4 W                                                             |
|                                                            | Average holding coil consumption value                                                                                               | 4 VA / 4 W                                                             |
| <b>Connecting capacity</b>                                 | Main pole terminals                                                                                                                  | Rigid 1 x 1.5 ... 10 mm <sup>2</sup>                                   |
|                                                            |                                                                                                                                      | 2 x 1.5 ... 4 mm <sup>2</sup>                                          |
|                                                            | Coil terminals                                                                                                                       | Rigid 1 x 1 ... 4 mm <sup>2</sup>                                      |
|                                                            |                                                                                                                                      | 2 x 0.75 ... 2.5 mm <sup>2</sup>                                       |

Mounting positions



Dimensions: mm, inches

1SBC103005S0201



**40 A**  
**AC-1/AC-7a**

## ESB40 Installation Contactors

AC / DC Operated



### Application

The ESB contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

### Description

The **ESB40** contactors are used for the control of single and three-phases loads up to 40 A. Due to their DC solenoid actuator, the **ESB40** can be connected to AC or DC voltages.

This provides the following benefits:

Hum-free operating system, no vibration, silent in operation, low power consumption, integrated high overvoltage protection 5 kV. You can choose between a various N.O. and N.C. contacts combination.

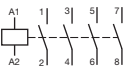
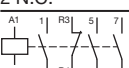
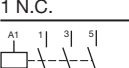
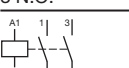
### Main accessories:

Auxiliary contact blocks **EH04**.

### Certifications and Approvals



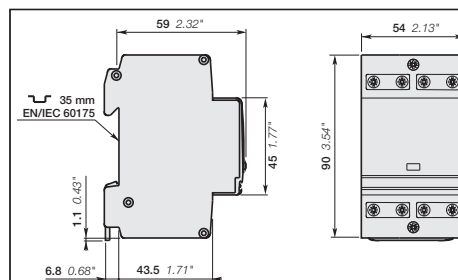
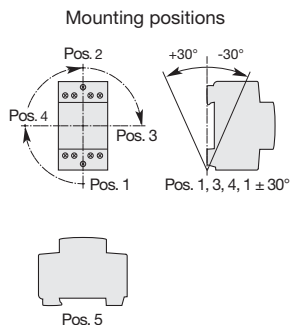
### Ordering Details

| Main poles                                                                                              | Nb of modules | Control coil voltage | Type        | Order code | Pack <sup>(ing)</sup> pieces | Weight kg (1 pce) |
|---------------------------------------------------------------------------------------------------------|---------------|----------------------|-------------|------------|------------------------------|-------------------|
|                                                                                                         |               | 40... 450 Hz         | DC          |            |                              |                   |
| <br>4 N.O.             | 3             | 12 V                 | 12 V        | ESB40-40   | 3                            | 0.40              |
|                                                                                                         |               | 24 V                 | 24 V        |            |                              |                   |
|                                                                                                         |               | 42 V                 | 42 V        |            |                              |                   |
|                                                                                                         |               | 48 V                 | 48 V        |            |                              |                   |
|                                                                                                         |               | 110...120 V          | 110...120 V |            |                              |                   |
|                                                                                                         |               | 230...240 V          | 230...240 V |            |                              |                   |
|                                                                                                         |               | 400...415 V          | 400...415 V |            |                              |                   |
|                                                                                                         |               | 415 V                | 415 V       |            |                              |                   |
| <br>2 N.O.<br>2 N.C.   | 3             | 24 V                 | 24 V        | ESB40-22   | 3                            | 0.40              |
|                                                                                                         |               | 230 V                | 230 V       |            |                              |                   |
|                                                                                                         |               |                      |             |            |                              |                   |
| <br>3 N.O.<br>1 N.C. | 3             | 24 V                 | 24 V        | ESB40-31   | 3                            | 0.40              |
|                                                                                                         |               | 230 V                | 230 V       |            |                              |                   |
| <br>3 N.O.           | 3             | 24 V                 | 24 V        | ESB40-30   | 3                            | 0.39              |
|                                                                                                         |               | 230 V                | 230 V       |            |                              |                   |
|                                                                                                         |               | 400 V                | 400 V       |            |                              |                   |
| <br>2 N.O.           | 3             | 24 V                 | 24 V        | ESB40-20   | 3                            | 0.38              |
|                                                                                                         |               | 230 V                | 230 V       |            |                              |                   |

### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                             |                                                                                                                                                                 |          |                                                         |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------|
| <b>Main poles</b><br>acc to. IEC 60947-4-1<br>and IEC 61095 | Rated operational voltage $U_e$                                                                                                                                 |          | 400 V                                                   |
|                                                             | $I_e$ AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ )                                           |          | 40 A                                                    |
|                                                             | AC-3 / AC-7b Ratings (for 1500 r.p.m., 50 Hz or 1800 r.p.m., 60 Hz, 3-phase motors)<br>(for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) |          |                                                         |
|                                                             | Rated operational power                                                                                                                                         | 3 phases | 400 V                                                   |
| <b>Magnet system</b>                                        | $I_e$ Max. Rated operational current                                                                                                                            | 3 phases | 400 V                                                   |
|                                                             | Coil operating limits (acc. to IEC 60947-4-1)                                                                                                                   |          | 0.85 ... 1.1 $U_e$ (at $\theta \leq 55^\circ\text{C}$ ) |
|                                                             | Average pull-in coil consumption value                                                                                                                          |          | 5 VA / 5 W                                              |
|                                                             | Average holding coil consumption value                                                                                                                          |          | 5 VA / 5 W                                              |
| <b>Connecting capacity</b>                                  | Main pole terminals                                                                                                                                             | Rigid    | 1 x 1.5 ... 25 mm <sup>2</sup>                          |
|                                                             |                                                                                                                                                                 |          | 2 x 1.5 ... 10 mm <sup>2</sup>                          |
|                                                             | Coil terminals                                                                                                                                                  | Rigid    | 1 x 1 ... 4 mm <sup>2</sup>                             |
|                                                             |                                                                                                                                                                 |          | 2 x 0.75 ... 2.5 mm <sup>2</sup>                        |



Dimensions: mm, inches



**63 A**  
**AC-1/AC-7a**

## ESB63 Installation Contactors

AC / DC Operated



### Application

The ESB contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

### Description

The **ESB63** contactors are used for the control of single and three-phases loads up to 63 A. Due to their DC solenoid actuator, the **ESB63** can be connected to AC or DC voltages.

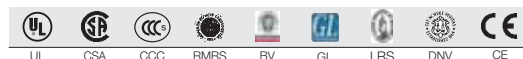
This provides the following benefits:

Hum-free operating system, no vibration, silent in operation, low power consumption, integrated high overvoltage protection 5 kV. You can choose between a various N.O. and N.C. contacts combination.

### Main accessories:

Auxiliary contact blocks **EH04**.

### Certifications and Approvals



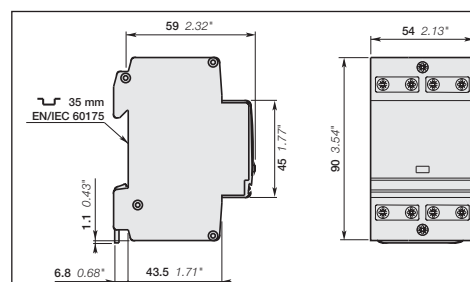
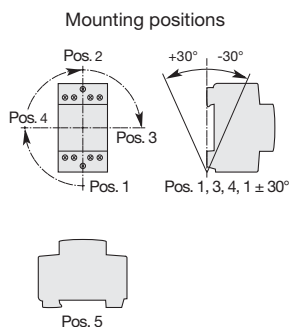
### Ordering Details

| Main poles        | Nb of modules | Control coil voltage | Type     | Order code             | Pack <sup>(ing)</sup> pieces | Weight kg (1 pce) |
|-------------------|---------------|----------------------|----------|------------------------|------------------------------|-------------------|
|                   |               | 40... 450 Hz DC      |          |                        |                              |                   |
| <br>4 N.O.        | 3             | 12 V                 | ESB63-40 | <b>GHE3691102R1004</b> | 3                            | 0.42              |
|                   |               | 24 V                 |          | <b>GHE3691102R0001</b> | 3                            | 0.42              |
|                   |               | 42 V                 |          | <b>GHE3691102R0002</b> | 3                            | 0.42              |
|                   |               | 48 V                 |          | <b>GHE3691102R0003</b> | 3                            | 0.42              |
|                   |               | 110...120 V          |          | <b>GHE3691102R0004</b> | 3                            | 0.42              |
|                   |               | 230...240 V          |          | <b>GHE3691102R0006</b> | 3                            | 0.42              |
|                   |               | 400...415 V          |          | <b>GHE3691102R0007</b> | 3                            | 0.42              |
|                   |               | 415 V                |          | <b>GHE3691102R0008</b> | 3                            | 0.42              |
| <br>2 N.O. 2 N.C. | 3             | 400 V                | ESB63-22 | <b>GHE3691302R0007</b> | 3                            | 0.42              |
|                   |               | 400 V                |          |                        |                              |                   |
| <br>3 N.O. 1 N.C. | 3             | 110 V                | ESB63-31 | <b>GHE3691602R0004</b> | 3                            | 0.42              |
|                   |               | 230 V                |          | <b>GHE3691602R0006</b> | 3                            | 0.42              |
| <br>3 N.O.        | 3             | 230 V                | ESB63-30 | <b>GHE3691502R0006</b> | 3                            | 0.41              |
|                   |               | 400 V                |          | <b>GHE3691502R0007</b> | 3                            | 0.41              |
| <br>2 N.O.        | 3             | 24 V                 | ESB63-20 | <b>GHE3691402R0001</b> | 3                            | 0.40              |
|                   |               | 230 V                |          | <b>GHE3691402R0006</b> | 3                            | 0.40              |
| <br>1 N.O. 1 N.C. | 3             | 230 V                | ESB63-11 | <b>GHE3691802R0006</b> | 3                            | 0.40              |

### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                         |                                                                                                                                                              |                                                                        |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Main poles</b><br>acc to IEC 60947-4-1 and IEC 61095 | Rated operational voltage <b>U<sub>e</sub></b>                                                                                                               | 400 V                                                                  |
|                                                         | <b>I<sub>e</sub></b> AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ )                         | 63 A                                                                   |
|                                                         | AC-3 / AC-7b Ratings (for 1500 r.p.m., 50 Hz or 1800 r.p.m., 60 Hz, 3-phase motors) (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) |                                                                        |
|                                                         | Rated operational power                                                                                                                                      | 3 phases 400 V 15 kW                                                   |
| <b>Magnet system</b>                                    | <b>I<sub>e</sub></b> Max. rated operational current                                                                                                          | 3 phases 400 V 30 A                                                    |
|                                                         | Coil operating limits (acc. to IEC 60947-4-1)                                                                                                                | 0.85 ... 1.1 <b>U<sub>e</sub></b> (at $\theta \leq 55^\circ\text{C}$ ) |
|                                                         | Average pull-in coil consumption value                                                                                                                       | 65 VA / 65 W                                                           |
|                                                         | Average holding coil consumption value                                                                                                                       | 4.2 VA / 4.2 W                                                         |
| <b>Connecting capacity</b>                              | Main pole terminals                                                                                                                                          | Rigid 1 x 1.5 ... 25 mm <sup>2</sup>                                   |
|                                                         |                                                                                                                                                              | 2 x 1.5 ... 10 mm <sup>2</sup>                                         |
|                                                         | Coil terminals                                                                                                                                               | Rigid 1 x 1 ... 4 mm <sup>2</sup>                                      |
|                                                         |                                                                                                                                                              | 2 x 0.75 ... 2.5 mm <sup>2</sup>                                       |



Dimensions: mm, inches

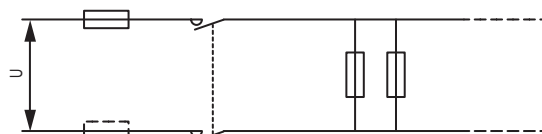
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# ESB Installation Contactors

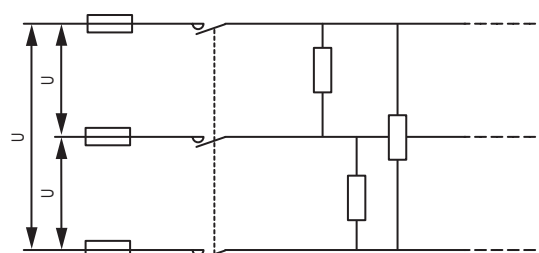
## Technical Data

### Main Pole - Utilization Characteristics according to IEC

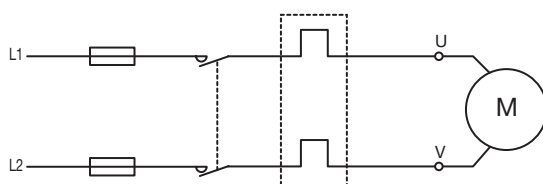
| Contactor types:                                                    |          | AC operated<br>AC / DC operated | ESB20            | ESB24            | ESB40  | ESB63  |
|---------------------------------------------------------------------|----------|---------------------------------|------------------|------------------|--------|--------|
| Rated operational voltage $U_e$ max.                                | V        |                                 | AC: 250, DC: 220 | AC: 400, DC: 220 |        |        |
| Rated frequency limits                                              | Hz       |                                 | 50/60, DC        |                  |        |        |
| <b>Utilization category AC-1 / AC-7a</b>                            |          |                                 |                  |                  |        |        |
| for air temperature close to contactor $< 55^\circ\text{C}$         |          |                                 |                  |                  |        |        |
| Max. rated operational current $I_e$ AC-1 / AC-7a                   |          |                                 |                  |                  |        |        |
|                                                                     | N.O.     | A                               | 20               | 24               | 40     | 63     |
|                                                                     | N.C.     | A                               | 20               | 24               | 30     | 30     |
| <b>Utilization category AC-3 / AC-7b</b>                            |          |                                 |                  |                  |        |        |
| for air temperature close to contactor $\leq 55^\circ\text{C}$      |          |                                 |                  |                  |        |        |
| Max. rated operational current $I_e$ AC-3/AC-7b                     |          |                                 |                  |                  |        |        |
| 230 V - 1 phase N.O.                                                |          | A                               | 9                | 9                | 22     | 30     |
| 400 V - 3 phases N.O.                                               |          | A                               | -                | 9                | 22     | 30     |
| <b>Rated operational power AC-3</b>                                 |          |                                 |                  |                  |        |        |
| 230 V - 1 phase                                                     | kW       |                                 | 1.1              | 1.3              | 3.7    | 5      |
| 400 V - 3 phases                                                    | kW       |                                 | -                | 4                | 11     | 15     |
| <b>Rated making capacity AC-3</b>                                   |          |                                 |                  |                  |        |        |
| <b>Rated breaking capacity AC-3</b>                                 |          |                                 |                  |                  |        |        |
| Short-circuit protection for contactors                             |          |                                 |                  |                  |        |        |
| gG type fuse                                                        | A        |                                 | 20               | 35               | 63     | 80     |
| <b>Rated short-time withstand current <math>I_{cw}</math></b>       |          |                                 |                  |                  |        |        |
| at $40^\circ\text{C}$ ambient temp., in free air, from a cold state |          |                                 |                  |                  |        |        |
| 10 s                                                                | A        |                                 | 72               |                  | 176    | 240    |
| <b>Heat dissipation per pole <math>I_e</math>/AC-1/AC-7a</b>        |          |                                 |                  |                  |        |        |
|                                                                     | W        |                                 | 1                | 3                | 4      | 6      |
| <b>Max. electrical switching frequency</b>                          |          |                                 |                  |                  |        |        |
| - for AC-1 / AC-7a                                                  | cycles/h |                                 | 300              |                  |        |        |
| - for AC-3 / AC-7b                                                  | cycles/h |                                 | 600              |                  |        |        |
| <b>Electrical durability</b>                                        |          |                                 |                  |                  |        |        |
| - for AC-1 / AC-7a                                                  | cycles   |                                 | 150000           | 150000           | 150000 | 150000 |
| - for AC-3 / AC-7b                                                  | cycles   |                                 | 150000           | 500000           | 170000 | 240000 |
| <b>Mechanical durability</b>                                        |          |                                 |                  |                  |        |        |
| - millions of operating cycles                                      |          |                                 | 1                |                  |        |        |



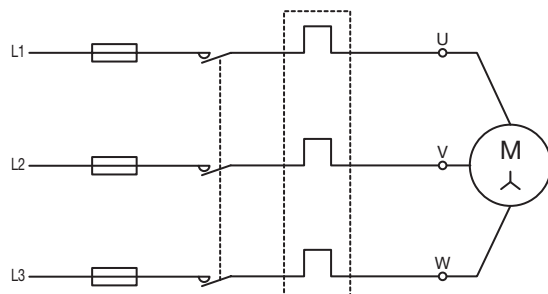
Single-phase (AC-1, AC-7a)



Three-phase (AC-1, AC-7a)



Single-phase (AC-7b)



Three-phase (AC-7b, AC-3)

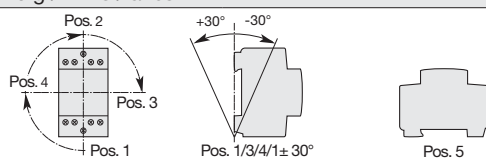
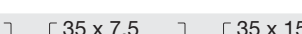
# ESB Installation Contactors

## Technical Data

### Main Pole - Utilization Characteristics according to UL/CSA

| Contactor types:                                                                                     |                             | AC operated      | ESB20 | ESB24   | ESB40   | ESB63   |
|------------------------------------------------------------------------------------------------------|-----------------------------|------------------|-------|---------|---------|---------|
|                                                                                                      |                             | AC / DC operated |       |         |         |         |
| <b>General use rating</b>                                                                            |                             |                  |       |         |         |         |
| <b>Amp rating</b>                                                                                    | 240 V                       | <b>A</b>         | 20    | -       | -       | -       |
|                                                                                                      | 480 V                       | <b>A</b>         | -     | 24      | 40      | 63      |
| <b>Motor rating</b>                                                                                  |                             |                  |       |         |         |         |
| <b>Amp rating</b>                                                                                    | 120 V - 1 phase             | <b>A</b>         | 9.8   | -       | -       | -       |
|                                                                                                      | 240 V - 1 phase N.O.        | <b>A</b>         | 9.8   | 9.6     | 22      | 28      |
|                                                                                                      | N.C.                        | <b>A</b>         | 8     | 9.6     | 22      | 30      |
|                                                                                                      | 440 - 480 V - 3 phases N.O. | <b>A</b>         | -     | 7.6     | 21      | 21      |
|                                                                                                      | N.C.                        | <b>A</b>         |       | 3.4     | -       | -       |
| <b>Motor power</b>                                                                                   |                             |                  |       |         |         |         |
|                                                                                                      | 120 V - 1 phase             | <b>hp</b>        | 1/2   | -       | -       | -       |
|                                                                                                      | 240 V - 1 phase             | <b>hp</b>        | 1     | 3       | 7.5     | 10      |
|                                                                                                      | 440 - 480 V - 3 phases      | <b>hp</b>        | -     | 5       | 15      | 15      |
| <b>Short-circuit protection</b> for contactors without thermal O/L relay - Motor protection excluded |                             |                  |       |         |         |         |
| Fuse rating, 480 V                                                                                   |                             | <b>A</b>         | 25    | 25 / K5 | 40 / K5 | 75 / K5 |
| Fuse type, 600 V                                                                                     |                             |                  | -     | -       | -       | -       |
| <b>Max. electrical switching frequency</b>                                                           |                             |                  |       |         |         |         |
| - for general use                                                                                    |                             | <b>cycles/h</b>  | 300   |         |         |         |
| - for motor use                                                                                      |                             | <b>cycles/h</b>  | 600   |         |         |         |

### General Technical Data

|                                                             |    |                                                                                                                    |     |
|-------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------|-----|
| <b>Rated insulation voltage <math>U_i</math></b>            |    |                                                                                                                    |     |
| according to IEC 60947-4-1                                  | V  | 400                                                                                                                | 500 |
| according to UL/CSA                                         | V  | 240                                                                                                                | 600 |
| <b>Rated impulse withstand voltage <math>U_{imp}</math></b> | kV | 6                                                                                                                  |     |
| <b>Standards</b>                                            |    | IEC 60947-4-1 / EN 60947-4-1 and IEC 61095 / EN 61095, UL 508, CSA C22.2 N°14-05                                   |     |
| <b>Air temperature</b> close to contactor                   |    |                                                                                                                    |     |
| – for operation at 0.85 ... 1.1 $U_c$                       | °C | -25 ... +55 (Type ESB24...63: for ambient temperature > 40 °C, add ESB-DIS (1/2 module) at every second contactor) |     |
| – for storage                                               | °C | -40 ... +80                                                                                                        |     |
| <b>Climatic withstand</b>                                   |    | IEC 60068-2-30, UTE 63-100 execution 1*                                                                            |     |
| <b>Operating altitude</b>                                   | m  | ≤ 2000                                                                                                             |     |
| <b>Shock withstand</b>                                      |    | 10 g / 4 ms / axes X Y Z                                                                                           |     |
| <b>Mounting positions</b>                                   |    |                                |     |
| Pos 1, 3, 4, 1±30 °                                         |    |                                                                                                                    |     |
| Pos 5 : not allowed for ESB20                               |    |                                                                                                                    |     |
| <b>Fixing</b>                                               |    |                                 |     |
| on rail acc. to IEC 60715 and EN 60715                      |    |                                                                                                                    |     |

\* ESB20 only

# ESB Installation Contactors

## Technical Data

### Magnet System Characteristics

| Contactor types:                              |             | AC operated      | ESB20                                        | ESB24      | ESB40               | ESB63     |
|-----------------------------------------------|-------------|------------------|----------------------------------------------|------------|---------------------|-----------|
|                                               |             | AC / DC operated |                                              |            |                     |           |
| Rated operational voltage U <sub>e</sub> max. |             |                  |                                              |            |                     |           |
|                                               | - at 50 Hz  | V                | 12 ... 400                                   | 12 ... 415 | 24 ... 415          |           |
|                                               | - at 60 Hz  | V                | 14 ... 380                                   | 12 ... 415 | 24 ... 415          |           |
|                                               | - at 400 Hz | V                | -                                            | 12 ... 415 | 24 ... 415          |           |
|                                               | DC          | V                | -                                            | 12 ... 415 | 24 ... 415          |           |
| Coil operating limits acc. to IEC 60947-4-1   |             |                  | 0.85 ... 1.1 x U <sub>c</sub> (at θ ≤ 55 °C) |            |                     |           |
| Drop-out voltage in % of U <sub>c</sub>       |             |                  | approx. 20 ... 75 %                          |            | approx. 10 ... 75 % |           |
| Frequency range                               |             | Hz               | 50/60                                        |            | DC, 50 ... 400      |           |
| Coil consumption                              |             |                  |                                              |            |                     |           |
| Average pull-in value                         |             | VA/W             | 8 / 5                                        | 4 / 4      | 5 / 5               | 65 / 65   |
| Average holding value                         |             | VA/W             | 3.2 / 1.2                                    | 4 / 4      | 5 / 5               | 4.2 / 4.2 |
| Operating time                                |             |                  |                                              |            |                     |           |
| between coil energization and:                |             |                  |                                              |            |                     |           |
| - N.O. contact closing                        |             | ms               | 12                                           | 40         |                     |           |
| between coil de-energization and:             |             |                  |                                              |            |                     |           |
| - N.O. contact opening                        |             | ms               | 12                                           | 40         |                     |           |

### Connecting Characteristics

| Contactor types:                                          |                                                                                     |                     | AC operated           |   |                         |  |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|-----------------------|---|-------------------------|--|
|                                                           |                                                                                     |                     | AC / DC operated      |   |                         |  |
| Connecting capacity (min. ... max.)                       |                                                                                     |                     |                       |   |                         |  |
| Main pole terminals                                       |                                                                                     |                     |                       |   |                         |  |
| Rigid                                                     |  | 1 x mm <sup>2</sup> | 1.5 ... 10            |   | 1.5 ... 25              |  |
|                                                           |  | 2 x mm <sup>2</sup> | 1.5 ... 4             |   | 1.5 ... 10              |  |
| Capacity acc. to <b>UL/CSA</b>                            |                                                                                     | <b>AWG</b>          | 14-8                  |   | 16-8                    |  |
|                                                           |                                                                                     |                     | 16-8                  |   | 16-4                    |  |
| Coil terminals                                            |                                                                                     |                     |                       |   |                         |  |
| Rigid                                                     |  | 1 x mm <sup>2</sup> | 0.5 ... 4             |   | 1 ... 4                 |  |
|                                                           |  | 2 x mm <sup>2</sup> | 0.75 ... 2.5          |   |                         |  |
| Capacity acc. to <b>UL/CSA</b>                            |                                                                                     | <b>AWG</b>          | 18-14                 |   | 16-10                   |  |
|                                                           |                                                                                     |                     |                       |   |                         |  |
| Degree of protection                                      |                                                                                     |                     |                       |   |                         |  |
| acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529 |                                                                                     |                     |                       |   |                         |  |
| Protection against direct contact in acc. with EN 50274   |                                                                                     |                     |                       |   |                         |  |
| All terminals                                             |                                                                                     |                     | IP20                  |   |                         |  |
| Screwdriver type                                          |                                                                                     |                     |                       |   |                         |  |
| Main poles                                                |                                                                                     |                     | Flat Ø 5 / Pozidriv 1 |   | Flat Ø 7.5 / Pozidriv 2 |  |
| Coil terminals                                            |                                                                                     |                     | Flat Ø 5 / Pozidriv 1 |   | Flat Ø 5 / Pozidriv 1   |  |
| Stripping length                                          |                                                                                     |                     |                       |   |                         |  |
| Main poles                                                |                                                                                     | mm                  | 10                    |   | 13                      |  |
| Coil terminals                                            |                                                                                     | mm                  | 7                     |   |                         |  |
| Tightening torque                                         |                                                                                     |                     |                       |   |                         |  |
| Main poles                                                |                                                                                     | Nm                  | 1.2                   | 1 | 2.5                     |  |
| Coil terminals                                            |                                                                                     | Nm                  | 0.9                   |   |                         |  |

# ESB Installation Contactors

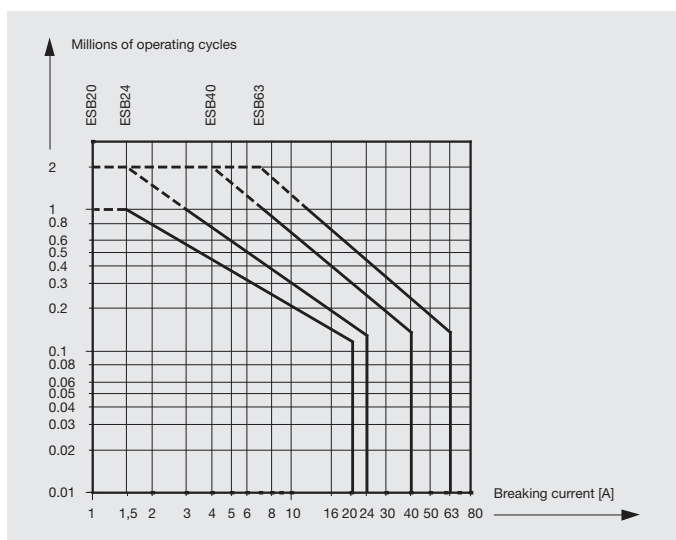
## Technical Data

### EH04... Auxiliary Contact Block - Utilization Characteristics according to IEC

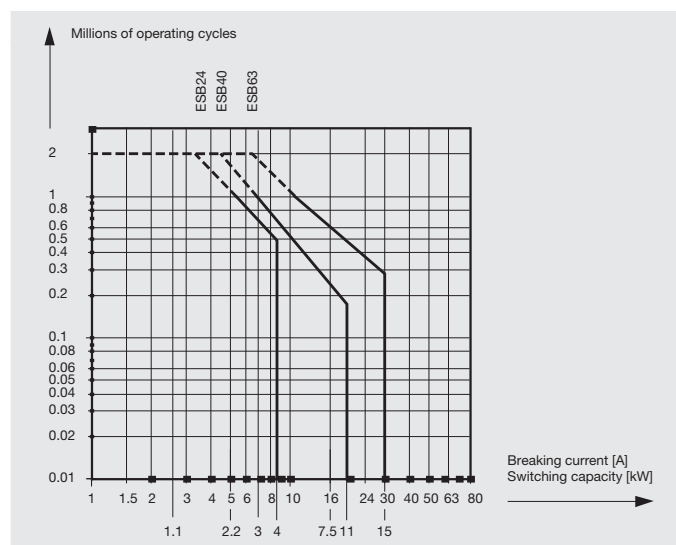
| Contactor types:                               |                | AC operated<br>AC / DC operated | ESB20 | ESB24            | ESB40 | ESB63 |
|------------------------------------------------|----------------|---------------------------------|-------|------------------|-------|-------|
| Rated operational voltage $U_e$ max.           |                | V                               | -     | 500              |       |       |
| Conventional free air thermal current $I_{th}$ |                |                                 |       |                  |       |       |
| $\theta \leq 40^\circ\text{C}$                 |                | A                               | -     | 6                |       |       |
| Rated frequency limits                         |                | Hz                              | -     | 50/60            |       |       |
| Rated operational current $I_e$ / AC-15        |                |                                 |       |                  |       |       |
| acc. to IEC 60947-5-1                          | 240 V 50/60 Hz | A                               | -     | 4                |       |       |
|                                                | 415 V 50/60 Hz | A                               | -     | 3                |       |       |
|                                                | 500 V 50/60 Hz | A                               | -     | 2                |       |       |
| Making capacity acc. to IEC 60947-5-1          |                |                                 | -     | 11 x $I_e$ AC-15 |       |       |
| Breaking capacity acc. to IEC 60947-5-1        |                |                                 | -     | 11 x $I_e$ AC-15 |       |       |
| Short-circuit protection gl type fuse          |                | A                               | -     | 10               |       |       |
| Minimum switching capacity                     |                |                                 |       |                  |       |       |
| with failure rate acc. to IEC 60947-5-4        |                | V/mA                            | -     | 17 / 5           |       |       |
| Heat dissipation per pole at 6 A               |                | W                               | -     | 0.1              |       |       |

### Electrical durability

#### AC-1 / 400 V / 3-phase for ESB20...63



#### AC-3 / 400 V / 3-phase for ESB24...63



# ESB Installation Contactors

## Technical Data

### DC-1/DC-3 switching DC with N.O. contacts (N.O.)

| Type     | Rated operating voltage $U_e$ | DC-1 ( $L/R \leq 1 \text{ ms}$ ) |                           |                           | DC-3 ( $L/R \leq 2 \text{ ms}$ ) |                           |                           |
|----------|-------------------------------|----------------------------------|---------------------------|---------------------------|----------------------------------|---------------------------|---------------------------|
|          |                               | 1 current path                   | 2 current paths in series | 3 current paths in series | 1 current path                   | 2 current paths in series | 3 current paths in series |
| ESB20-20 | 24 V DC                       | 20 A                             | 20 A                      | -                         | 15 A                             | 20 A                      | -                         |
|          | 48 V DC                       | 15 A                             | 20 A                      | -                         | 7 A                              | 15 A                      | -                         |
|          | 60 V DC                       | 15 A                             | 20 A                      | -                         | 5 A                              | 10 A                      | -                         |
|          | 110 V DC                      | 5 A                              | 15 A                      | -                         | 1.5 A                            | 5 A                       | -                         |
|          | 220 V DC                      | 0.5 A                            | 5 A                       | -                         | 0.2 A                            | 1.5 A                     | -                         |
| ESB24    | 24 V DC                       | 24.0 A                           | 24.0 A                    | 24.0 A                    | 16.0 A                           | 24.0 A                    | 24.0 A                    |
|          | 48 V DC                       | 21.0 A                           | 24.0 A                    | 24.0 A                    | 8.0 A                            | 18.0 A                    | 24.0 A                    |
|          | 60 V DC                       | 17.0 A                           | 24.0 A                    | 24.0 A                    | 4.0 A                            | 14.0 A                    | 24.0 A                    |
|          | 110 V DC                      | 7.0 A                            | 16.0 A                    | 24.0 A                    | 1.6 A                            | 6.5 A                     | 16.0 A                    |
|          | 220 V DC                      | 0.9 A                            | 4.5 A                     | 13.0 A                    | 0.2 A                            | 1.0 A                     | 4.0 A                     |
| ESB40    | 24 V DC                       | 40.0 A                           | 40.0 A                    | 40.0 A                    | 19.0 A                           | 40.0 A                    | 40.0 A                    |
|          | 48 V DC                       | 23.0 A                           | 40.0 A                    | 40.0 A                    | 10.0 A                           | 20.0 A                    | 40.0 A                    |
|          | 60 V DC                       | 18.0 A                           | 32.0 A                    | 40.0 A                    | 5.0 A                            | 16.0 A                    | 34.0 A                    |
|          | 110 V DC                      | 8.0 A                            | 17.0 A                    | 30.0 A                    | 1.8 A                            | 7.0 A                     | 18.0 A                    |
|          | 220 V DC                      | 1.0 A                            | 5.0 A                     | 15.0 A                    | 0.3 A                            | 1.1 A                     | 4.5 A                     |
| ESB63    | 24 V DC                       | 50.0 A                           | 63.0 A                    | 63.0 A                    | 21.0 A                           | 44.0 A                    | 63.0 A                    |
|          | 48 V DC                       | 25.0 A                           | 43.0 A                    | 63.0 A                    | 11.0 A                           | 22.0 A                    | 47.0 A                    |
|          | 60 V DC                       | 20.0 A                           | 35.0 A                    | 60.0 A                    | 5.5 A                            | 18.0 A                    | 38.0 A                    |
|          | 110 V DC                      | 9.0 A                            | 19.0 A                    | 33.0 A                    | 2.0 A                            | 8.0 A                     | 21.0 A                    |
|          | 220 V DC                      | 1.1 A                            | 5.5 A                     | 17.0 A                    | 0.3 A                            | 1.2 A                     | 5.0 A                     |

### DC-1/DC-3 switching DC with N.C. contacts (N.C.)

| Type     | Rated operating voltage $U_e$ | DC-1 ( $L/R \leq 1 \text{ ms}$ ) |                           |                           | DC-3 ( $L/R \leq 2 \text{ ms}$ ) |                           |                           |
|----------|-------------------------------|----------------------------------|---------------------------|---------------------------|----------------------------------|---------------------------|---------------------------|
|          |                               | 1 current path                   | 2 current paths in series | 3 current paths in series | 1 current path                   | 2 current paths in series | 3 current paths in series |
| ESB20-02 | 24 V DC                       | 14 A                             | 20 A                      | -                         | 6 A                              | 10 A                      | -                         |
|          | 48 V DC                       | 7 A                              | 14 A                      | -                         | 3 A                              | 6 A                       | -                         |
|          | 60 V DC                       | 4.5 A                            | 10 A                      | -                         | 2 A                              | 4 A                       | -                         |
|          | 110 V DC                      | 1.5 A                            | 4.4 A                     | -                         | 0.6 A                            | 1.8 A                     | -                         |
|          | 220 V DC                      | 0.2 A                            | 1.5 A                     | -                         | 0.1 A                            | 0.6 A                     | -                         |
| ESB24    | 24 V DC                       | 14.5 A                           | 24.0 A                    | 24.0 A                    | 6.3 A                            | 11.0 A                    | 19.0 A                    |
|          | 48 V DC                       | 7.5 A                            | 12.5 A                    | 22.0 A                    | 3.1 A                            | 5.4 A                     | 9.4 A                     |
|          | 60 V DC                       | 4.5 A                            | 10.0 A                    | 17.5 A                    | 2.0 A                            | 4.3 A                     | 7.5 A                     |
|          | 110 V DC                      | 1.6 A                            | 4.4 A                     | 9.5 A                     | 0.7 A                            | 1.9 A                     | 4.1 A                     |
|          | 220 V DC                      | 0.2 A                            | 1.4 A                     | 3.8 A                     | 0.1 A                            | 0.6 A                     | 1.6 A                     |

# ESB Installation Contactors - Lighting Application

## Technical Data

### Switching of lamp load

The following table shows the number of lamps which can be connected per phase at 230 V, 50 Hz. Air temperature, near the contactor, must be limited to 55 °C.

Please, note that the given capacitor load must not be exceeded, otherwise inadmissible high inrush current peaks could occur.

These are influenced by the length and cross section of the wire used, the type of power supply unit and specifications of the lamp brand.

For these reasons, values in the table are for information only.

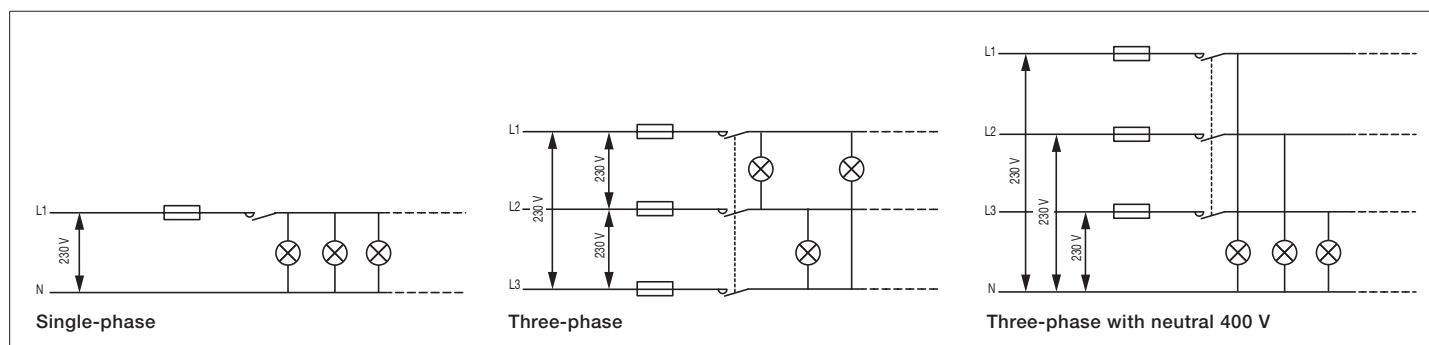
Numbers are given for a 230 V voltage distributed between phase and neutral: single phase (phase + neutral) or three-phases (3 phases + neutral), lamps are wired in star connection.

In the case of three-phase supply without neutral, 230 V phase-to-phase, the permissible number of lamps per phase will be that given in the table multiplied by 0.58.

| Lamp type                                                        | Lamp data      |                     | Permissible number of lamps per phase (230 V, 50 Hz) |        |        |         | Capacitor<br>µF |
|------------------------------------------------------------------|----------------|---------------------|------------------------------------------------------|--------|--------|---------|-----------------|
|                                                                  | Watt           | I <sub>n</sub><br>A | ESB20                                                | ESB24  | ESB40  | ESB63   |                 |
| Incandescent lamps                                               | 60             | 0.26                | 21                                                   | 25     | 54     | 83      |                 |
|                                                                  | 100            | 0.43                | 13                                                   | 15     | 32     | 50      |                 |
|                                                                  | 200            | 0.87                | 7                                                    | 7      | 16     | 25      |                 |
|                                                                  | 300            | 1.30                | 4                                                    | 5      | 11     | 16      |                 |
|                                                                  | 500            | 2.17                | 3                                                    | 3      | 6      | 10      |                 |
|                                                                  | 1000           | 4.35                | 1                                                    | 1      | 3      | 5       |                 |
| Fluorescent lamps<br>Uncompensated<br>and series<br>compensation | 15             | 0.33                | 40                                                   | 30     | 100    | 155     |                 |
|                                                                  | 20             | 0.37                | 37                                                   | 26     | 85     | 135     |                 |
|                                                                  | 40             | 0.43                | 32                                                   | 20     | 65     | 105     |                 |
|                                                                  | 42             | 0.54                | 26                                                   | 16     | 52     | 85      |                 |
|                                                                  | 58             | 0.64                | 21                                                   | 12     | 40     | 65      |                 |
|                                                                  | 65             | 0.67                | 21                                                   | 12     | 40     | 65      |                 |
|                                                                  | 115            | 1.3                 | 9                                                    | 5      | 18     | 28      |                 |
|                                                                  | 140            | 1.5                 | 9                                                    | 5      | 18     | 28      |                 |
| Two-lamp circuit                                                 | 2 x 20         | 2 x 0.13            | 2 x 22                                               | 2 x 26 | 2 x 85 | 2 x 140 |                 |
|                                                                  | 2 x 40         | 2 x 0.22            | 2 x 17                                               | 2 x 20 | 2 x 65 | 2 x 105 |                 |
|                                                                  | 2 x 42         | 2 x 0.24            | 2 x 13                                               | 2 x 16 | 2 x 52 | 2 x 65  |                 |
|                                                                  | 2 x 58         | 2 x 0.34            | 2 x 10                                               | 2 x 12 | 2 x 40 | 2 x 65  |                 |
|                                                                  | 2 x 65         | 2 x 0.34            | 2 x 10                                               | 2 x 12 | 2 x 40 | 2 x 65  |                 |
|                                                                  | 2 x 115        | 2 x 0.65            | 2 x 4                                                | 2 x 5  | 2 x 18 | 2 x 28  |                 |
|                                                                  | 2 x 140        | 2 x 0.75            | 2 x 4                                                | 2 x 5  | 2 x 18 | 2 x 28  |                 |
|                                                                  |                |                     |                                                      |        |        |         |                 |
| Parallel<br>compensation                                         | 15             | 0.11                | 16                                                   | 8      | 16     | 67      | 4.5             |
|                                                                  | 20             | 0.13                | 16                                                   | 8      | 16     | 67      | 4.5             |
|                                                                  | 40             | 0.22                | 16                                                   | 8      | 16     | 67      | 4.5             |
|                                                                  | 42             | 0.24                | 13                                                   | 6      | 12     | 50      | 6               |
|                                                                  | 58             | 0.34                | 11                                                   | 5      | 10     | 43      | 7               |
|                                                                  | 65             | 0.34                | 11                                                   | 5      | 10     | 43      | 7               |
|                                                                  | 115            | 0.65                | 4                                                    | 2      | 4      | 17      | 18              |
|                                                                  | 140            | 0.75                | 4                                                    | 2      | 4      | 17      | 18              |
| High pressure<br>mercury-vapor<br>lamps<br>Uncompensated         | 50             | 0.61                | 30                                                   | 14     | 36     | 50      |                 |
|                                                                  | 80             | 0.8                 | 15                                                   | 10     | 27     | 38      |                 |
|                                                                  | 125            | 1.15                | 10                                                   | 7      | 19     | 26      |                 |
|                                                                  | 250            | 2.15                | 6                                                    | 4      | 10     | 14      |                 |
|                                                                  | 400            | 3.25                | 2                                                    | 2      | 7      | 10      |                 |
|                                                                  | 700            | 5.40                | 2                                                    | 1      | 4      | 6       |                 |
|                                                                  | 1000           | 7.5                 | 1                                                    | 1      | 3      | 4       |                 |
|                                                                  | 2000/<br>400 V | 8                   | -                                                    | 1      | 3      | 4       |                 |
| Parallel<br>compensation                                         | 50             | 0.28                | 4                                                    | 5      | 10     | 43      | 7               |
|                                                                  | 80             | 0.41                | 3                                                    | 4      | 8      | 37      | 8               |
|                                                                  | 125            | 0.65                | 2                                                    | 3      | 6      | 26      | 10              |
|                                                                  | 250            | 1.22                | 1                                                    | 2      | 3      | 15      | 18              |
|                                                                  | 400            | 1.95                | -                                                    | 1      | 3      | 10      | 25              |
|                                                                  | 700            | 3.45                | -                                                    | -      | 1      | 5       | 45              |
|                                                                  | 1000           | 4.8                 | -                                                    | -      | 1      | 4       | 60              |
|                                                                  | 2000/<br>400 V | 5.45                | -                                                    | 1      | 2      | 3       | 35              |
| Lamps with<br>electronic power<br>supply units                   | 1 x 18         | -                   | 15                                                   | 24     | 55     | 76      |                 |
|                                                                  | 2 x 18         | -                   | 8                                                    | 18     | 34     | 48      |                 |
|                                                                  | 1 x 36         | -                   | 12                                                   | 16     | 34     | 47      |                 |
|                                                                  | 2 x 36         | -                   | 7                                                    | 11     | 20     | 29      |                 |
|                                                                  | 1 x 58         | -                   | 11                                                   | 14     | 32     | 46      |                 |
|                                                                  | 2 x 58         | -                   | 6                                                    | 8      | 17     | 24      |                 |

| Lamp type                                                           | Lamp data                |                     | Permissible number of lamps per phase (230 V, 50 Hz)             |       |       |       | Capacitor<br>µF |
|---------------------------------------------------------------------|--------------------------|---------------------|------------------------------------------------------------------|-------|-------|-------|-----------------|
|                                                                     | Watt                     | I <sub>n</sub><br>A | ESB20                                                            | ESB24 | ESB40 | ESB63 |                 |
| Halogen<br>metal-vapor lamps<br>Uncompensated                       | 35                       | 0.53                | 9                                                                | 10    | 28    | 38    |                 |
|                                                                     | 70                       | 1                   | 4                                                                | 5     | 14    | 20    |                 |
|                                                                     | 150                      | 1.8                 | 3                                                                | 3     | 8     | 11    |                 |
|                                                                     | 250                      | 3                   | 1                                                                | 2     | 5     | 7     |                 |
|                                                                     | 400                      | 3.5                 | 1                                                                | 1     | 4     | 6     |                 |
|                                                                     | 1000                     | 9.5                 | -                                                                | -     | 1     | 2     |                 |
|                                                                     | 2000                     | 16.5                | -                                                                | -     | 1     | 1     |                 |
|                                                                     | 2000/<br>3500/<br>400 V  | 10.5                | -                                                                | -     | 2     | 2     |                 |
| Parallel<br>compensation                                            | 35                       | 0.25                | -                                                                | 5     | 11    | 30    | 6               |
|                                                                     | 70                       | 0.45                | -                                                                | 3     | 5     | 18    | 12              |
|                                                                     | 150                      | 0.75                | -                                                                | 1     | 3     | 9     | 20              |
|                                                                     | 250                      | 1.5                 | -                                                                | 1     | 2     | 7     | 33              |
|                                                                     | 400                      | 2.5                 | -                                                                | -     | 2     | 6     | 35              |
|                                                                     | 1000                     | 5.8                 | -                                                                | -     | -     | 2     | 95              |
|                                                                     | 2000                     | 11.5                | -                                                                | -     | -     | 1     | 148             |
|                                                                     | 2000/<br>3500/<br>400 V  | 6.6                 | -                                                                | -     | 1     | 2     | 58              |
| Low pressure<br>sodium-vapor<br>lamps<br>Uncompensated              | 35                       | 1.5                 | 10                                                               | 8     | 22    | 30    |                 |
|                                                                     | 55                       | 1.5                 | 10                                                               | 8     | 22    | 30    |                 |
|                                                                     | 90                       | 2.4                 | 5                                                                | 5     | 13    | 19    |                 |
|                                                                     | 135                      | 3.5                 | 3                                                                | 3     | 10    | 13    |                 |
|                                                                     | 150                      | 3.3                 | 3                                                                | 3     | 10    | 14    |                 |
|                                                                     | 180                      | 3.3                 | 3                                                                | 3     | 10    | 14    |                 |
|                                                                     | 200                      | 2.3                 | 3                                                                | 5     | 14    | 20    |                 |
|                                                                     | 2000/<br>3500/<br>400 V  | 1.16                | -                                                                | -     | 2     | 8     | 40              |
| Parallel<br>compensation                                            | 35                       | 0.31                | -                                                                | 1     | 4     | 15    | 20              |
|                                                                     | 55                       | 0.42                | -                                                                | 1     | 4     | 15    | 20              |
|                                                                     | 90                       | 0.63                | -                                                                | 1     | 3     | 10    | 30              |
|                                                                     | 135                      | 0.94                | -                                                                | -     | 2     | 7     | 45              |
|                                                                     | 150                      | 1.0                 | -                                                                | -     | 2     | 8     | 40              |
|                                                                     | 180                      | 1.16                | -                                                                | -     | 2     | 8     | 40              |
|                                                                     | 200                      | 1.32                | -                                                                | 1     | 3     | 12    | 25              |
|                                                                     | 2000/<br>3500/<br>400 V  | 1.32                | -                                                                | 1     | 3     | 12    | 25              |
| High pressure<br>sodium-vapor<br>lamps<br>Uncompensated             | 150                      | 1.8                 | 3                                                                | 4     | 15    | 20    |                 |
|                                                                     | 250                      | 3.0                 | 2                                                                | 3     | 9     | 15    |                 |
|                                                                     | 330                      | 3.7                 | 1                                                                | 2     | 8     | 10    |                 |
|                                                                     | 400                      | 4.7                 | -                                                                | 1     | 6     | 8     |                 |
|                                                                     | 1000                     | 10.3                | -                                                                | -     | 3     | 4     |                 |
|                                                                     | 2000/<br>3500/<br>400 V  | 10.3                | -                                                                | -     | 3     | 4     |                 |
| Parallel<br>compensation                                            | 150                      | 0.83                | -                                                                | 1     | 3     | 15    | 20              |
|                                                                     | 250                      | 1.5                 | -                                                                | 1     | 2     | 9     | 33              |
|                                                                     | 330                      | 2.0                 | -                                                                | -     | 2     | 7     | 40              |
|                                                                     | 400                      | 2.4                 | -                                                                | -     | 1     | 6     | 48              |
|                                                                     | 1000                     | 6.3                 | -                                                                | -     | -     | 2     | 106             |
|                                                                     | 2000/<br>3500/<br>400 V  | 6.3                 | -                                                                | -     | -     | 2     | 106             |
| Transformers<br>for halogen<br>low voltage lamps<br>(12 or 24 V AC) | Transformers<br>for Watt |                     | Permissible number of transformers per circuit<br>(230 V, 50 Hz) |       |       |       |                 |
|                                                                     | 20                       |                     | 40                                                               | 50    | 110   | 174   |                 |
|                                                                     | 50                       |                     | 20                                                               | 24    | 50    | 80    |                 |
|                                                                     | 75                       |                     | 13                                                               | 16    | 35    | 54    |                 |
|                                                                     | 100                      |                     | 10                                                               | 12    | 27    | 43    |                 |
|                                                                     | 150                      |                     | 7                                                                | 9     | 19    | 29    |                 |
|                                                                     | 200                      |                     | 5                                                                | 6     | 14    | 23    |                 |
|                                                                     | 300                      |                     | 3                                                                | 4     | 9     | 14    |                 |





**20 A**  
**AC-1/AC-7a**

# EN20 Installation Contactors - Manually / Automatic Operated

## AC Operated



### Application

The EN contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

### Description

The **EN20** contactors are used for the control of single phase loads up to 20 A. They operate with an AC coil.

**EN contactors** have a built-in toggle switch to select between three function modes:

Off position, automatic run (normal contactor function), manual override with a return to Auto the next time the coil is energized.

This offers many advantages as:

You can make functional test before installation start-up. It can be used for maintenance operation, to change lamps and test it. It provides higher safety and drop out as you can switch the application manually.

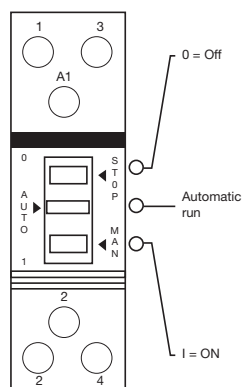
The toggle switch is also used for household application like water heating where double tariff of kWh is used.

### Certifications and Approvals



### Ordering Details

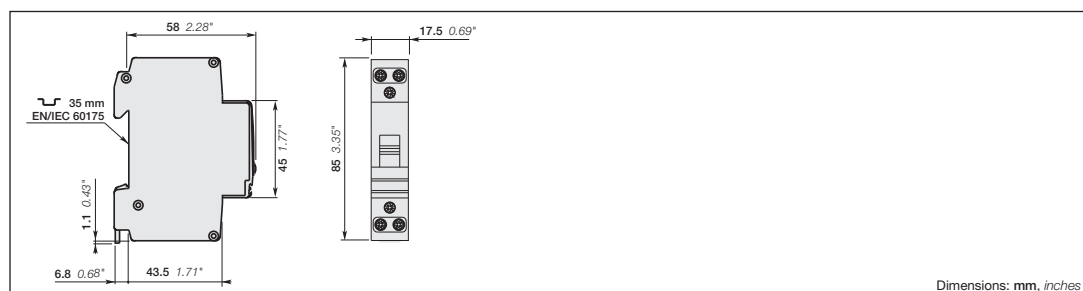
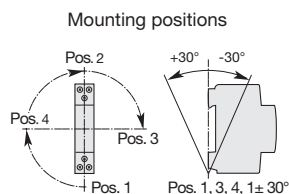
| Main poles                                                                        | Nb of modules | Control coil voltage |       | Type    | Order code             | Pack <sup>(n)</sup> pieces | Weight kg (1 pce) |
|-----------------------------------------------------------------------------------|---------------|----------------------|-------|---------|------------------------|----------------------------|-------------------|
|                                                                                   |               | 50 Hz                | 60 Hz |         |                        |                            |                   |
|  | 1             | 24 V                 | 28 V  | EN20-20 | <b>GHE3221101R0001</b> | 10                         | 0.14              |
|                                                                                   |               | 230 V                | 264 V |         | <b>GHE3221101R0006</b> | 10                         | 0.14              |



### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                             |                                                                                                                                      |                                                                                           |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Main poles</b><br>acc to. IEC 60947-4-1<br>and IEC 61095 | Rated operational voltage <b>U<sub>e</sub></b>                                                                                       | 250 V                                                                                     |
|                                                             | <b>I<sub>e</sub></b> AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) | 20 A                                                                                      |
| <b>Magnet system</b>                                        | <b>P<sub>e</sub></b> AC-1 Rated operational power                                                                                    | 230 V<br>4 kW                                                                             |
|                                                             | Coil operating limits (acc. to IEC 60947-4-1)                                                                                        | 0.85 ... 1.1 <b>U<sub>e</sub></b> (at $\theta \leq 55^\circ\text{C}$ )                    |
|                                                             | Average pull-in coil consumption value                                                                                               | 8 VA / 5 W                                                                                |
|                                                             | Average holding coil consumption value                                                                                               | 3.2 VA / 1.2 W                                                                            |
| <b>Connecting capacity</b>                                  | Main pole terminals                                                                                                                  |  Rigid |
|                                                             | Coil terminals                                                                                                                       |  Rigid |
|                                                             |                                                                                                                                      | 1 x 1.5 ... 10 mm <sup>2</sup>                                                            |
|                                                             |                                                                                                                                      | 2 x 1.5 ... 4 mm <sup>2</sup>                                                             |



Dimensions: mm, inches



**24 A**  
**AC-1/AC-7a**

# EN24 Installation Contactors - Manually / Automatic Operated

## AC / DC Operated



### Application

The EN contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

### Description

The **EN24** contactors are used for the control of single and three-phase loads up to 24 A. They operate with a DC coil.

**EN contactors** have a built-in toggle switch to select between three function modes:

Off position, automatic run (normal contactor function), manual Override with a return to Auto the next time the coil is energized.

This offers many advantages as:

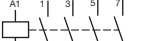
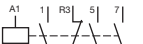
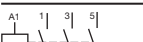
You can make functional test before installation start-up, it can be used for maintenance operation, to change lamps and test it, it provide higher safety and drop out as you can switch the application manually.

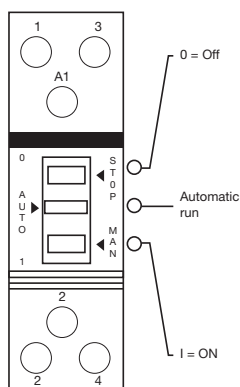
The toggle switch is also used for household application like water heating where double tariff of kWh is used.

### Certifications and Approvals



### Ordering Details

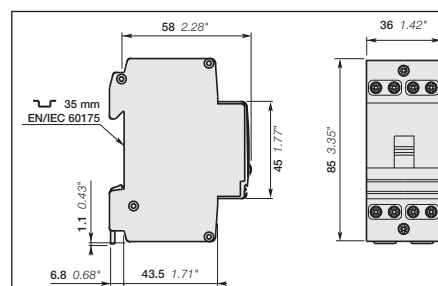
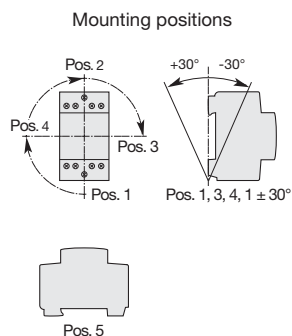
| Main poles                                                                         | Nb of modules | Control coil voltage |           | Type    | Order code             | Pack <sup>(n°)</sup> pieces | Weight kg (1 pce) |
|------------------------------------------------------------------------------------|---------------|----------------------|-----------|---------|------------------------|-----------------------------|-------------------|
|                                                                                    |               | 40...450 Hz          | DC        |         |                        |                             |                   |
|   | 2             | 24 V                 | 24 V      | EN24-40 | <b>GHE3261101R0001</b> | 5                           | 0.24              |
|                                                                                    |               | 230/240 V            | 230/240 V |         | <b>GHE3261101R0006</b> | 5                           | 0.24              |
| 4 N.O.                                                                             |               |                      |           |         |                        |                             |                   |
|   | 2             | 24 V                 | 24 V      | EN24-31 | <b>GHE3261601R0001</b> | 5                           | 0.24              |
|                                                                                    |               | 230/240 V            | 230/240 V |         | <b>GHE3261601R0006</b> | 5                           | 0.24              |
| 3 N.O.                                                                             |               |                      |           |         |                        |                             |                   |
| 1 N.C.                                                                             |               |                      |           |         |                        |                             |                   |
|  | 2             | 230/240 V            | 230/240 V | EN24-30 | <b>GHE3261501R0006</b> | 5                           | 0.23              |
|                                                                                    |               |                      |           |         |                        |                             |                   |
| 3 N.O.                                                                             |               |                      |           |         |                        |                             |                   |



### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                            |                                                                                                                                      |                                                                        |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Main poles</b><br>acc to IEC 60947-4-1<br>and IEC 61095 | Rated operational voltage <b>U<sub>e</sub></b>                                                                                       | 400 V                                                                  |
|                                                            | <b>I<sub>e</sub></b> AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) | 24 A                                                                   |
|                                                            | <b>P<sub>e</sub></b> AC-1 Rated operational power                                                                                    | 230 V 5.3 kW<br>400 V 16 kW                                            |
| <b>Magnet system</b>                                       | Coil operating limits (acc. to IEC 60947-4-1)                                                                                        | 0.85 ... 1.1 <b>U<sub>e</sub></b> (at $\theta \leq 55^\circ\text{C}$ ) |
|                                                            | Average pull-in coil consumption value                                                                                               | 4 VA / 4 W                                                             |
|                                                            | Average holding coil consumption value                                                                                               | 4 VA / 4 W                                                             |
| <b>Connecting capacity</b>                                 | Main pole terminals                                                                                                                  | 1 x 1.5 ... 10 mm <sup>2</sup><br>2 x 1.5 ... 4 mm <sup>2</sup>        |
|                                                            | Coil terminals                                                                                                                       | 1 x 1 ... 4 mm <sup>2</sup><br>2 x 0.75 ... 2.5 mm <sup>2</sup>        |



Dimensions: mm, inches



**40 A**  
**AC-1/AC-7a**

# EN40 Installation Contactors - Manually / Automatic Operated

## AC / DC Operated



### Application

The EN contactors are used mainly in buildings for switching and controlling lighting, heating, ventilation and pumps. They are part of the complete range of Din rail products and can be integrated easily in dedicated panels.

### Description

The **EN40** contactors are used for the control of single and three-phase loads up to 40 A. They operate with a DC coil.

**EN contactors** have a built-in toggle switch to select between three function modes:

Off position, automatic run (normal contactor function), manual Override with a return to Auto the next time the coil is energized.

This offers many advantages as:

You can make functional test before installation start-up, it can be used for maintenance operation, to change lamps and test it, it provide higher safety and drop out as you can switch the application manually.

The toggle switch is also used for household application like water heating where double tariff of kWh is used.

### Certifications and Approvals



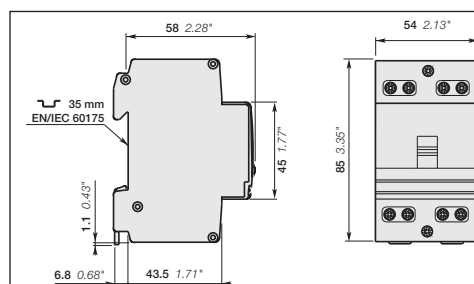
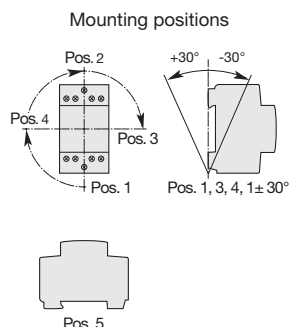
### Ordering Details

| Main poles | Nb of modules | Control coil voltage | Type    | Order code             | Pack <sup>(ing)</sup> pieces | Weight kg (1 pce) |
|------------|---------------|----------------------|---------|------------------------|------------------------------|-------------------|
|            |               | 40...450 Hz          |         |                        |                              |                   |
|            |               | DC                   |         |                        |                              |                   |
|            | 3             | 24 V                 | EN40-40 | <b>GHE3421101R0001</b> | 3                            | 0.41              |
|            |               | 110 V                |         | <b>GHE3421101R0004</b> | 3                            | 0.41              |
|            |               | 230/240 V            |         | <b>GHE3421101R0006</b> | 3                            | 0.41              |
|            | 3             | 24 V                 | EN40-31 | <b>GHE3421601R0001</b> | 3                            | 0.41              |
|            |               | 230/240 V            |         | <b>GHE3421601R0006</b> | 3                            | 0.41              |
|            | 3             | 230/240 V            | EN40-30 | <b>GHE3421501R0006</b> | 3                            | 0.40              |
|            | 3             | 230/240 V            | EN40-20 | <b>GHE3421401R0006</b> | 3                            | 0.30              |

### Main Technical Data

For complete technical data see 1SBC103005S0201.pdf

|                                                             |                                                                                                                                      |                                                                           |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Main poles</b><br>acc to. IEC 60947-4-1<br>and IEC 61095 | Rated operational voltage <b>U<sub>e</sub></b>                                                                                       | 400 V                                                                     |
|                                                             | <b>I<sub>e</sub></b> AC-1 / AC-7a Rated operational current (for air temperature close to contactor $\theta \leq 55^\circ\text{C}$ ) | 40 A                                                                      |
|                                                             | <b>P<sub>e</sub></b> AC-1 Rated operational power                                                                                    | 230 V 8.8 kW<br>400 V 26 kW                                               |
| <b>Magnet system</b>                                        | Coil operating limits (acc. to IEC 60947-4-1)                                                                                        | 0.85 ... 1.1 <b>U<sub>e</sub></b> (at $\theta \leq 55^\circ\text{C}$ )    |
|                                                             | Average pull-in coil consumption value                                                                                               | 5 VA / 5 W                                                                |
|                                                             | Average holding coil consumption value                                                                                               | 5 VA / 5 W                                                                |
| <b>Connecting capacity</b>                                  | Main pole terminals                                                                                                                  | Rigid<br>1 x 1.5 ... 25 mm <sup>2</sup><br>2 x 1.5 ... 10 mm <sup>2</sup> |
|                                                             | Coil terminals                                                                                                                       | Rigid<br>1 x 1 ... 4 mm <sup>2</sup><br>2 x 0.75 ... 2.5 mm <sup>2</sup>  |



Dimensions: mm, inches

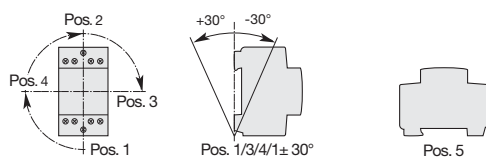
# EN Installation Contactors - Manually / Automatic Operated

## Technical Data

### Main Pole - Utilization Characteristics according to IEC

| Contactor types:                                              | AC operated<br>AC / DC operated | EN20   | EN24 | EN40 |
|---------------------------------------------------------------|---------------------------------|--------|------|------|
| <b>Rated operational voltage U<sub>e</sub> max.</b>           | <b>V</b>                        | 250    | 400  |      |
| <b>Rated frequency limits</b>                                 | <b>Hz</b>                       | 50/60  |      |      |
| <b>Utilization category AC-1 / AC-7a</b>                      |                                 |        |      |      |
| for air temperature close to contactor < 55 °C                |                                 |        |      |      |
| Max. rated operational current I <sub>e</sub> AC-1 / AC-7a    |                                 |        |      |      |
|                                                               | N.O. <b>A</b>                   | 20     | 24   | 40   |
|                                                               | N.C. <b>A</b>                   | -      | 24   | 30   |
| <b>Short-circuit protection</b>                               |                                 |        |      |      |
| for contactors gG type fuse                                   | <b>A</b>                        | 20     | 35   | 63   |
| <b>Rated short-time withstand current I<sub>cw</sub></b>      |                                 |        |      |      |
| at 40 °C ambient temp.,                                       |                                 |        |      |      |
| in free air, from a cold state                                | 10 s <b>A</b>                   | 72     |      | 176  |
| <b>Heat dissipation per pole I<sub>e</sub> / AC-1 / AC-7a</b> | <b>W</b>                        | 1      |      | 4    |
| <b>Max. electrical switching frequency</b>                    |                                 |        |      |      |
| – for AC-1 / AC-7a                                            | <b>cycles/h</b>                 | 300    |      |      |
| <b>Electrical Durability</b>                                  |                                 |        |      |      |
| – for AC-1 / AC-7a                                            | <b>cycles</b>                   | 150000 |      |      |
| <b>Mechanical durability</b>                                  |                                 |        |      |      |
| – millions of operating cycles                                |                                 | 1      |      |      |

### General Technical Data

|                                                              |                                 |                                                                                                                   |      |      |
|--------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------|------|------|
| Contactor types:                                             | AC operated<br>AC / DC operated | EN20                                                                                                              | EN24 | EN40 |
| Rated insulation voltage $U_i$<br>according to IEC 60947-4-1 | V                               | 400                                                                                                               | 500  |      |
| Rated impulse withstand voltage $U_{imp.}$                   | kV                              | 6                                                                                                                 |      |      |
| Standards                                                    |                                 | IEC 60947-4-1 / EN 60947-4-1 and IEC 61095 / EN 61095                                                             |      |      |
| Air temperature close to contactor                           |                                 |                                                                                                                   |      |      |
| – for operation at 0.85 ... 1.1 $U_c$                        | °C                              | -25 ... +55 (Type EN24...40: for ambient temperature > 40 °C, add ESB-DIS (1/2 module) at every second contactor) |      |      |
| – for storage                                                | °C                              | -40 ... +80                                                                                                       |      |      |
| Climatic withstand                                           |                                 | IEC 60068-2-30, UTE 63-100 execution 1*                                                                           |      |      |
| Operating altitude                                           | m                               | ≤ 2000                                                                                                            |      |      |
| Shock withstand                                              |                                 | 10 g / 4 ms / axes X Y Z                                                                                          |      |      |
| Mounting positions                                           |                                 |                               |      |      |
| Pos 1, 3, 4, 1±30 °                                          |                                 |                                                                                                                   |      |      |
| Pos 5 : not allowed for EN20                                 |                                 |                                                                                                                   |      |      |
| Fixing                                                       |                                 |                                                                                                                   |      |      |
| on rail acc. to IEC 60715 and EN 60715                       |                                 | 35 mm                                                                                                             |      |      |

\* EN20 only

# EN Installation Contactors - Manually / Automatic Operated

## Technical Data

### Magnet System Characteristics

| Contactor types:                            |            | AC operated      | EN20                                                      | EN24                | EN40       |
|---------------------------------------------|------------|------------------|-----------------------------------------------------------|---------------------|------------|
|                                             |            | AC / DC operated |                                                           |                     |            |
| Rated operational voltage $U_e$ max.        |            |                  |                                                           |                     |            |
|                                             | - at 50 Hz | V                | 12 ... 400                                                | 12 ... 415          | 24 ... 415 |
|                                             | - at 60 Hz | V                | 14 ... 380                                                | 12 ... 415          | 24 ... 415 |
|                                             |            | V DC             | -                                                         | 12 ... 415          | 24 ... 415 |
| Coil operating limits acc. to IEC 60947-4-1 |            |                  | 0.85 ... 1.1 x $U_e$ (at $\theta \leq 55^\circ\text{C}$ ) |                     |            |
| Drop-out voltage in % of $U_e$              |            |                  | approx. 20 ... 75 %                                       | approx. 10 ... 75 % |            |
| Frequency range                             |            |                  | 50/60                                                     | 40 ... 450          |            |
| Coil consumption                            |            |                  |                                                           |                     |            |
| Average pull-in value                       | VA/W       |                  | 8 / 5                                                     | 4 / 4               | 5 / 5      |
| Average holding value                       | VA/W       |                  | 3.2 / 1.2                                                 | 4 / 4               | 5 / 5      |
| Operating time                              |            |                  |                                                           |                     |            |
| between coil energization and:              |            |                  |                                                           |                     |            |
| - N.O. contact closing                      | ms         |                  | 12                                                        | 40                  |            |
| between coil de-energization and:           |            |                  |                                                           |                     |            |
| - N.O. contact opening                      | ms         |                  | 12                                                        | 40                  |            |

### Connecting Characteristics

| Contactor types:                                          |                     | EN20                  | EN24      | EN40                    |
|-----------------------------------------------------------|---------------------|-----------------------|-----------|-------------------------|
| Connecting capacity (min. ... max.)                       |                     |                       |           |                         |
| Main pole terminals                                       |                     |                       |           |                         |
| Rigid                                                     | 1 x mm <sup>2</sup> | 1.5 ... 10            |           | 1.5 ... 25              |
|                                                           | 2 x mm <sup>2</sup> | 1.5 ... 4             |           | 1.5 ... 10              |
| Capacity acc. to UL/CSA                                   |                     | 14 ... 8              | 16 ... 8  | 16 ... 4                |
| Coil terminals                                            |                     |                       |           |                         |
| Rigid                                                     | 1 x mm <sup>2</sup> | 0.5 ... 4             | 1 ... 4   |                         |
|                                                           | 2 x mm <sup>2</sup> | 0.75 ... 2.5          |           |                         |
| Capacity acc. to UL/CSA                                   |                     | 18 ... 14             | 16 ... 10 |                         |
| Degree of protection                                      |                     | IP20                  |           |                         |
| acc. to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529 |                     |                       |           |                         |
| Protection against direct contact in acc. with EN 50274   |                     |                       |           |                         |
| All terminals                                             |                     |                       |           |                         |
| Screwdriver type                                          |                     |                       |           |                         |
| Main poles                                                |                     | Flat Ø 5 / Pozidriv 1 |           | Flat Ø 7.5 / Pozidriv 2 |
| Coil terminals                                            |                     | Flat Ø 5 / Pozidriv 1 |           | Flat Ø 5 / Pozidriv 1   |
| Stripping length                                          |                     |                       |           |                         |
| Main poles                                                | mm                  | 10                    |           | 13                      |
| Coil terminals                                            | mm                  | 7                     |           |                         |
| Tightening torque                                         |                     |                       |           |                         |
| Main poles                                                | Nm                  | 1.2                   | 1         | 2.5                     |
| Coil terminals                                            | Nm                  | 0.9                   |           |                         |

# ESB, EN Installation Contactors

## Main Accessories

Sealing cover



ESB-PLK40/63



ESB-PLK24

Auxiliary Contact Blocks

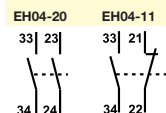


EH04-20



ESB24-40

Contact Blocks



Labelling material



SZ-KZS...

Distance piece



ESB-DIS

### Ordering Details

#### Auxiliary Contact Blocks

| Contactor type | Contact blocks | Type    | Order code      | Pack <sup>(n)</sup> pieces | Weight kg (1 pce) |
|----------------|----------------|---------|-----------------|----------------------------|-------------------|
| ESB24...63     | 2              | EH04-20 | GHE3401321R0001 | 10                         | 0.004             |
| EN24...40      | 1              | EH04-11 | GHE3401321R0002 | 10                         | 0.004             |

#### Sealing cover

| Contactor type   | Type         | Order code      | Pack <sup>(n)</sup> pieces | Weight kg (1 pce) |
|------------------|--------------|-----------------|----------------------------|-------------------|
| ESB24, EN24      | ESB-PLK24    | GHE3201903R0001 | 10                         | 0.002             |
| ESB40...63, EN40 | ESB-PLK40/63 | GHE3401903R0002 | 10                         | 0.009             |

#### Distance piece

| Contactor type        | Type    | Order code      | Pack <sup>(n)</sup> pieces | Weight kg (1 pce) |
|-----------------------|---------|-----------------|----------------------------|-------------------|
| ESB24...63, EN24...40 | ESB-DIS | GHE3201902R0001 | 10                         | 0.002             |

#### Labelling material

| Contactor type              | Type      | Order code      | Pack <sup>(n)</sup> pieces | Weight kg (1 pce) |
|-----------------------------|-----------|-----------------|----------------------------|-------------------|
| ESB20...63, EN20...40       |           |                 |                            |                   |
| Label - unlabelled*         | SZ-KZS    | GHS2101946R0004 | 30                         | 0.008             |
| Label - numbering 1-40      | SZ-KZS/1  | GHS2101946R0005 | 30                         | 0.008             |
| Label - numbering 2 * 1-20  | SZ-KZS/6  | GHS2101946R0010 | 30                         | 0.008             |
| Label - numbering 4 * 1-10  | SZ-KZS/9  | GHS2101946R0013 | 30                         | 0.008             |
| Label - numbering 4 * 11-20 | SZ-KZS/10 | GHS2101946R0014 | 30                         | 0.008             |
| Label - labelled L1         | SZ-KZS/11 | GHS2101946R0015 | 30                         | 0.008             |
| Label - labelled L2         | SZ-KZS/12 | GHS2101946R0016 | 30                         | 0.008             |
| Label - labelled L3         | SZ-KZS/13 | GHS2101946R0017 | 30                         | 0.008             |

**Note:** \* The unlabelled can be labelled by water-resistant and permanent marker or by means of computer-controlled labelling system (plotter).  
Special labels on request: minimum quantities 50

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|          | GHE3211102R0005 | 4    |          | GHE3491102R0006 | 6    |              |                 |      |
|          | GHE3211102R0006 | 4    |          | GHE3491102R0007 | 6    |              |                 |      |
|          | GHE3211102R0007 | 4    |          | GHE3491102R0008 | 6    |              |                 |      |
|          | GHE3211102R1004 | 4    |          | GHE3491102R1004 | 6    |              |                 |      |
|          | GHE3211102R1005 | 4    | ESB63-11 | GHE3691802R0006 | 7    |              |                 |      |
|          | GHE3291202R0001 | 5    | ESB63-20 | GHE3691402R0001 | 7    |              |                 |      |
|          | GHE3291202R0002 | 5    |          | GHE3691402R0006 | 7    |              |                 |      |
|          | GHE3291202R0003 | 5    | ESB63-22 | GHE3691302R0007 | 7    |              |                 |      |
|          | GHE3291202R0004 | 5    | ESB63-30 | GHE3691502R0006 | 7    |              |                 |      |
|          | GHE3291202R0006 | 5    |          | GHE3691502R0007 | 7    |              |                 |      |
|          | GHE3291202R0007 | 5    | ESB63-31 | GHE3691602R0004 | 7    |              |                 |      |
|          | GHE3291202R1004 | 5    |          | GHE3691602R0006 | 7    |              |                 |      |
| ESB24-13 | GHE3291702R0001 | 5    | ESB63-40 | GHE3691102R0001 | 7    |              |                 |      |
|          | GHE3291702R0002 | 5    |          | GHE3691102R0002 | 7    |              |                 |      |
|          | GHE3291702R0003 | 5    |          | GHE3691102R0003 | 7    |              |                 |      |

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