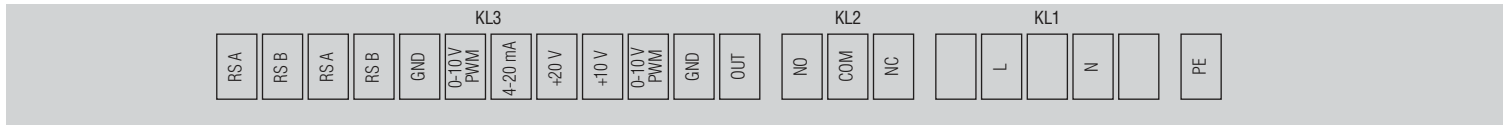


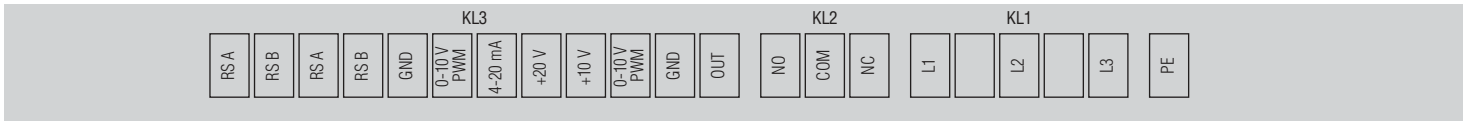
L1) EC motors(size 112, single-phase mains-powered)



| Connector | Connection | Assignment / function                  |
|-----------|------------|--|
| PE        | PE         | Protective earth                       |
| KL1       | N          | Mains 50/60 Hz, neutral                |
|           | L          | Mains 50/60 Hz, phase                  |
| KL2       | NC         | Alarm relay, break for failure         |
|           | COM        | Alarm relay, COMMON (2A, 250 VAC, AC1) |
|           | NO         | Alarm relay, make for failure          |

| Connector | Connection   | Assignment / function                                     |
|-----------|--------------|---|
| KL3       | OUT          | Master output 0-10 V max. 3 mA                            |
|           | GND          | GND   |
|           | 0-10 V / PWM | Control / Actual value input (Impedance 100 k Ω)          |
|           | +10 V        | Supply for external potentiometer, 10 VDC (+10 %) @ 10 mA |
|           | +20 V        | Supply for external sensor, 20 VDC (±20 %) @ 50 mA        |
|           | 4-20 mA      | Control / Actual value input                              |
|           | 0-10 V / PWM | Control / Actual value input                              |
|           | GND          | GND   |
|           | RSB          | RS485 interface for ebmBUS; RS B                          |
|           | RSA          | RS485 interface for ebmBUS; RS A                          |
| KL1       | RSB          | RS485 interface for ebmBUS; RS B                          |
|           | RSA          | RS485 interface for ebmBUS; RS A                          |

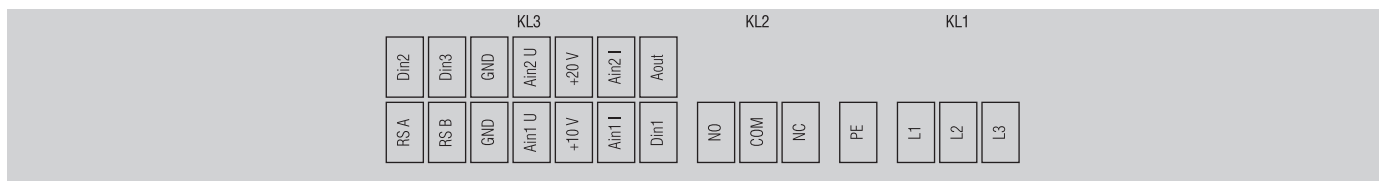
L2) EC motors (size 112, three-phase mains-powered)



| Connector | Connection | Assignment / function                  |
|-----------|------------|--|
| PE        | PE         | Protective earth                       |
| KL1       | L3         | Mains; L3                              |
|           | L2         | Mains; L2                              |
|           | L1         | Mains; L1                              |
| KL2       | NC         | Alarm relay, break for failure         |
|           | COM        | Alarm relay, COMMON (2A, 250 VAC, AC1) |
|           | NO         | Alarm relay, make for failure          |

| Connector | Connection                       | Assignment / function                                     |
|-----------|----------------------------------|---|
| KL3       | OUT                              | Master output 0-10 V max. 3 mA                            |
|           | GND                              | GND   |
|           | 0-10 V / PWM                     | Control / Actual value input (Impedance 100 k Ω)          |
|           | +10 V                            | Supply for external potentiometer, 10 VDC (+10 %) @ 10 mA |
|           | +20 V                            | Supply for external sensor, 20 VDC (±20 %) @ 50 mA        |
|           | 4-20 mA                          | Control / Actual value input                              |
|           | 0-10 V / PWM                     | Control / Actual value input                              |
|           | GND                              | GND   |
|           | RSB                              | RS485 interface for ebmBUS; RS B                          |
|           | RSA                              | RS485 interface for ebmBUS; RS A                          |
|           | RSB                              | RS485 interface for ebmBUS; RS B                          |
| RSA       | RS485 interface for ebmBUS; RS A |   |

L5) EC motors(size 150, three-phase mains-powered)



| Connector | Connection | Assignment / function                  |
|-----------|------------|--|
| KL1       | L3         | Mains; L3                              |
|           | L2         | Mains; L2                              |
|           | L1         | Mains; L1                              |
| PE        | PE         | Protective earth                       |
| KL2       | NC         | Alarm relay, break for failure         |
|           | COM        | Alarm relay, COMMON (2A, 250 VAC, AC1) |
|           | NO         | Alarm relay, make for failure          |

| Connector | Connection | Assignment / function   |
|-----------|------------|---|
| KL3       | Din1       | Digital input 1 (enabling / disabling of electronics),<br>Enabling: Pin open or applied voltage 5...50 VDC<br>Disabling: Bridge to GND or applied voltage < 1 VDC   |
|           | Ain1 I     | Analogue set value input, 4-20 mA (impedance 100 Ω),<br>only to be used as alternative to terminal Ain1 U   |
|           | +10 V      | Supply for external potentiometer,<br>10 VDC (±3 %) max. 10 mA  |
|           | Ain1U      | Analogue set value input, 0-10 V (impedance 100 k Ω),<br>only to be used as alternative to terminal Ain1 I  |
|           | GND        | GND   |
|           | RSB        | RS485 interface for MODBUS RTU; RS B  |
|           | RSA        | RS485 interface for MODBUS RTU; RS A  |
|           | Aout       | Analogue output 0-10 V max. 5 mA, reading of current<br>motor speed / current motor control factor  |
|           | Ain2 I     | Analog. actual value input, 4-20mA (impedance 100 Ω),<br>only to be used as alternative to terminal Ain2 U  |
|           | +20 V      | Supply for external sensor,<br>20 VDC (+25 % / -10%) max. 40 mA   |
|           | Ain2 U     | Analog. actual value input, 0-10 V (impedance 100 k Ω),<br>only to be used as alternative to terminal Ain2 I  |
|           | GND        | GND   |
|           | Din3       | Digital input 3 (switch Normal / Inverse),<br>The preset effective direction of the integrated<br>controller can be selected via BUS or via digital input<br>Normal/Inverse.<br>Normal: Pin open or applied voltage 5...50 VDC<br>Inverse: Bridge to GND or applied voltage < 1 VDC |
|           | Din2       | Digital input 2 (switch Day / Night),<br>The preset set of parameters can be selected via BUS<br>or via digital input Day/Night.<br>Day: Pin open or applied voltage 5...50 VDC<br>Night: Bridge to GND or applied voltage < 1 VDC  |

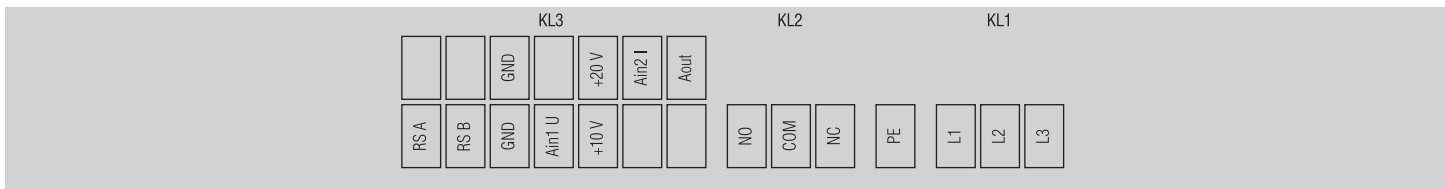
M) EC motors (size 150, three-phase mains-powered)



| Connector | Connection | Assignment / function                  |
|-----------|------------|--|
| PE        | PE         | Protective earth                       |
| KL1       | L3         | Mains; L3                              |
|           | L2         | Mains; L2                              |
|           | L1         | Mains; L1                              |
| KL2       | NC         | Alarm relay, break for failure         |
|           | COM        | Alarm relay, COMMON (2A, 250 VAC, AC1) |
|           | NO         | Alarm relay, make for failure          |

| Connector | Connection   | Assignment / function  |
|-----------|--------------|--|
| KL3       | OUT          | Master output 0-10 V max. 3 mA                               |
|           | GND          | GND  |
|           | 0-10 V / PWM | Control / Actual value input (Impedance 100 k $\Omega$ )     |
|           | +10 V        | Supply for external potentiometer, 10 VDC (+10 %) max. 10 mA |
|           | +20 V        | Supply for external sensor, 20 VDC ( $\pm$ 20 %) max. 50 mA  |
|           | 4-20 mA      | Control / Actual value input                                 |
|           | 0-10 V / PWM | Control / Actual value input                                 |
|           | GND          | GND  |
|           | RSB          | RS485 interface for ebmBUS; RS B                             |
|           | RSA          | RS485 interface for ebmBUS; RS A                             |
|           | RSB          | RS485 interface for ebmBUS; RS B                             |
|           | RSA          | RS485 interface for ebmBUS; RS A                             |

M2) EC motors (size 150, three-phase mains-powered)



| Connector | Connection | Assignment / function                  |
|-----------|------------|--|
| KL1       | L3         | Mains; L3                              |
|           | L2         | Mains; L2                              |
|           | L1         | Mains; L1                              |
| PE        | PE         | Protective earth                       |
| KL2       | NC         | Alarm relay, break for failure         |
|           | COM        | Alarm relay, COMMON (2A, 250 VAC, AC1) |
|           | NO         | Alarm relay, make for failure          |

| Connector | Connection | Assignment / function   |
|-----------|------------|---|
| KL3       | +10 V      | Supply for external potentiometer, 10 VDC ( $\pm 3\%$ ) max. 10 mA  |
|           | Ain1U      | Analogue set value input, 0-10 V (impedance 100 k $\Omega$ ), only to be used as alternative to terminal Ain2 I |
|           | GND        | GND   |
|           | RSB        | RS485 interface for ebmBUS; RS B  |
|           | RSA        | RS485 interface for ebmBUS; RS A  |
|           | Aout       | Analogue output 0-10 V max. 5 mA, reading of the current motor control factor                                   |
|           | Ain2 I     | Analog. actual value input, 4-20mA (impedance 100 $\Omega$ ), only to be used as alternative to terminal Ain1 U |
|           | +20 V      | Supply for external sensor, 20 VDC (+25 % / -10%) max. 40 mA  |
|           | GND        | GND   |