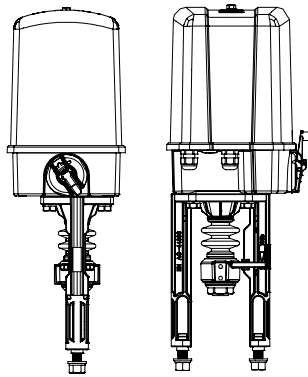




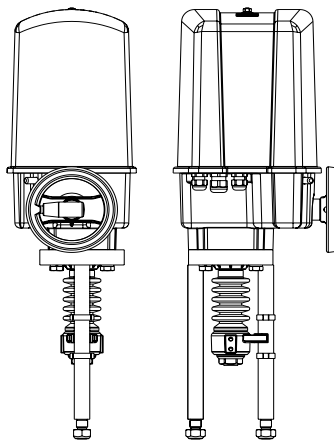
Electric actuator ARI-PREMIO®

Electric thrust actuator
ARI-PREMIO®
2,2 - 5 kN



Page 2

Electric thrust actuator
ARI-PREMIO®
12 - 25 kN



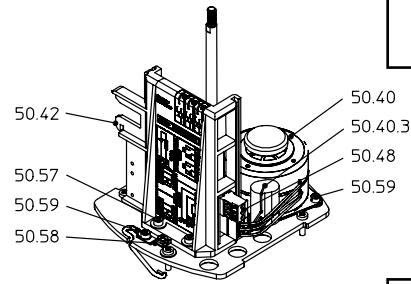
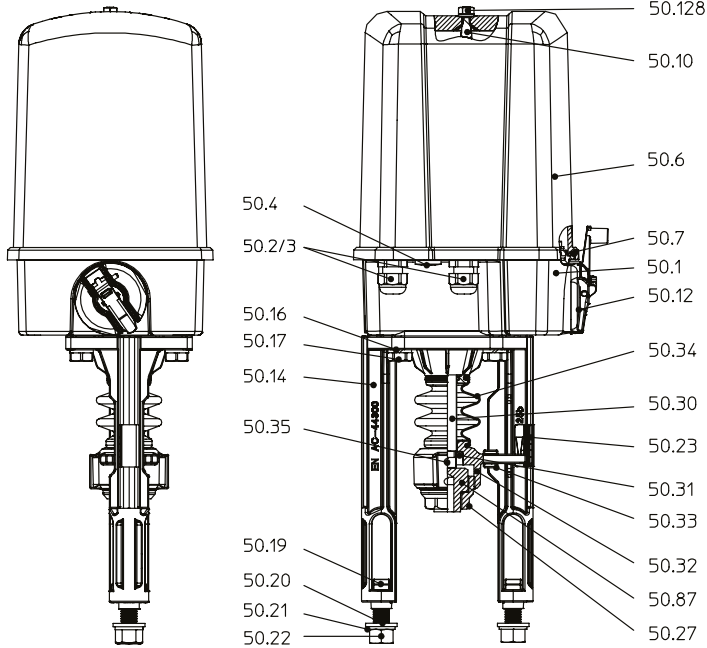
Page 4



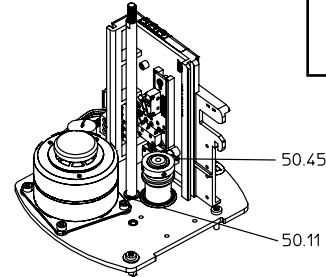
Features

- 2 torque switches
- Handwheel
- Operative ambient temperatures -20 °C up to +70 °C
- Enclosure IP 65
- Additional devices available, e.g. potentiometer
- Travel indicator

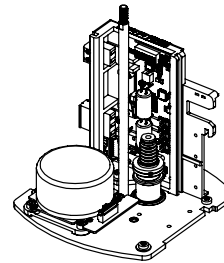
Electric thrust actuator ARI-PREMIO® 2,2 - 5 kN



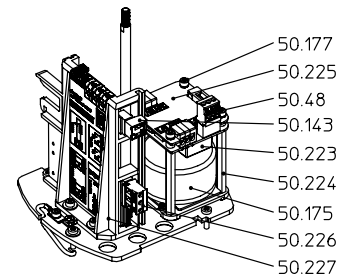
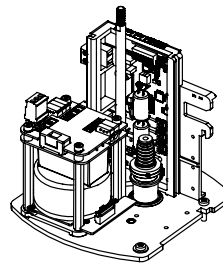
**Synchronous motor
230 V AC**



**BLDC motor
24 V AC/DC**



**BLDC motor
100 - 240 V AC**



| Pos. | Description |
|--------|--|
| 50.1 | Gearbox |
| 50.2/3 | Cable gland 2 x M16 x 1,5 |
| 50.4 | Sealing plug 1 x M16 x 1,5 |
| 50.6 | Hood |
| 50.7 | Hood seal |
| 50.10 | Column |
| 50.11 | Conical spring washer |
| 50.12 | Handwheel |
| 50.14 | Yoke |
| 50.16 | Spring washer DIN 128 - A10 |
| 50.17 | Hexagon screw DIN EN ISO 4017 - M10 x 40 |
| 50.19 | T-head bolt DIN 261 - M12 x 40 |
| 50.20 | Washer DIN EN ISO 7089 |
| 50.21 | Spring washer DIN 128 - A12 |
| 50.22 | Hexagon nut DIN EN ISO 4032 - M12 |
| 50.23 | Lift dial |
| 50.27 | Coupling |
| 50.30 | Driving spindle |
| 50.31 | Spindle safety feature |
| 50.32 | Torsion safety feature |
| 50.33 | Slide |

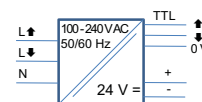
| Pos. | Description |
|---------|--|
| 50.34 | Bellow |
| 50.35 | Grub screw DIN ISO 4766 - M6 |
| 50.40 | Synchronous motor, complete |
| 50.40.3 | Capacitor |
| 50.42 | Board support, cpl. (incl. circuit board 2 x DE, 1 x WE) |
| 50.45 | Shift lever |
| 50.48 | Connector, 3-pole (standard) |
| 50.57 | Cylinder screw DIN EN ISO 4762 - M4 x 10 |
| 50.58 | Protective conductor terminal |
| 50.59 | Cylinder screw DIN EN ISO 4762 - M4 x 6 |
| 50.87 | Threaded bush |
| 50.128 | Collar nut with sealing ring M6 |
| 50.143 | Connector, 2-pole (N/L) |
| 50.175 | BLDC motor |
| 50.177 | Cylinder screw M4 x 18 |
| 50.223 | Input board ESP with power supply |
| 50.224 | Distance bolt M4 x 65 |
| 50.225 | Protective cover BLDC ESP |
| 50.226 | Connector, 3-pole (0 V/24 V up/down) |
| 50.227 | Board support PREMIO, cpl. BLDC |

Technical data

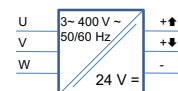
| Type | | ARI-PREMIO® 2,2 kN | | ARI-PREMIO® 5 kN |
|---|--------|---|--|------------------|
| Thrust force | kN | 2,2 kN | | 5,0 kN |
| Operating speed | mm/s | 0,38 mm/s | 0,25/0,38/0,47/1,0 mm/s adjustable | |
| Travel distance max. | mm | 50 mm | | |
| Duty cycle acc. to EN ISO 22153 | | Class C (modulation) @70°C | | |
| Supply voltage | V - Hz | 230 V - 50/60 Hz | 24 V AC/DC | |
| Motor type | | Synchronous motor | BLDC (Brushless DC motor) | |
| Power consumption | VA | 21 | max. 22 | max. 65 |
| Current consumption | A | approx. 0,1 A | approx. 1 A | approx. 2,5 A |
| Torque switch | | 2 pcs., fixed wiring switching capacity 10 A, 250 V~ | | |
| Travel switch | | 1 pc., fixed wiring switching capacity 10 A, 250 V~ (Options trip slide necessary!) | | |
| Enclosure EN 60529 | | IP 65 | | |
| Max. storage temperature | °C | -40 °C ... +85 °C | | |
| Max. permissible ambient temperature | °C | -20 °C ... +70 °C, for UL/CSA version up to max. +60 °C (For outdoor use and sub-zero temperatures, a heating is recommended!) | | |
| Hand operating device | | Yes (always running) | | |
| Operation | | 3-point - Response time up to 100 ms | 3-point - Response time approx. 80 ms | |
| Max. cable cross section | mm² | 3-point-input: 2,5 mm² | | |
| Cable diameter for cable glands | | 2 x M16 x 1,5: 5 - 9,5 mm | | |
| Electrical safety according to DIN EN 61010, part 1 | | Overvoltage category II Pollution degree 2 Altitude up to 2000 m Rel. humidity ≤ 90 % non-condensing | | |
| Mounting position | | Any, except: motor not hanging downwards | | |
| Gear lubricant | | Klüber Isoflex Topas NB152 | | |
| Weight | kg | 5,8 kg | | |
| Accessories | | refer to page 6 | | |

Additional voltage / frequencies

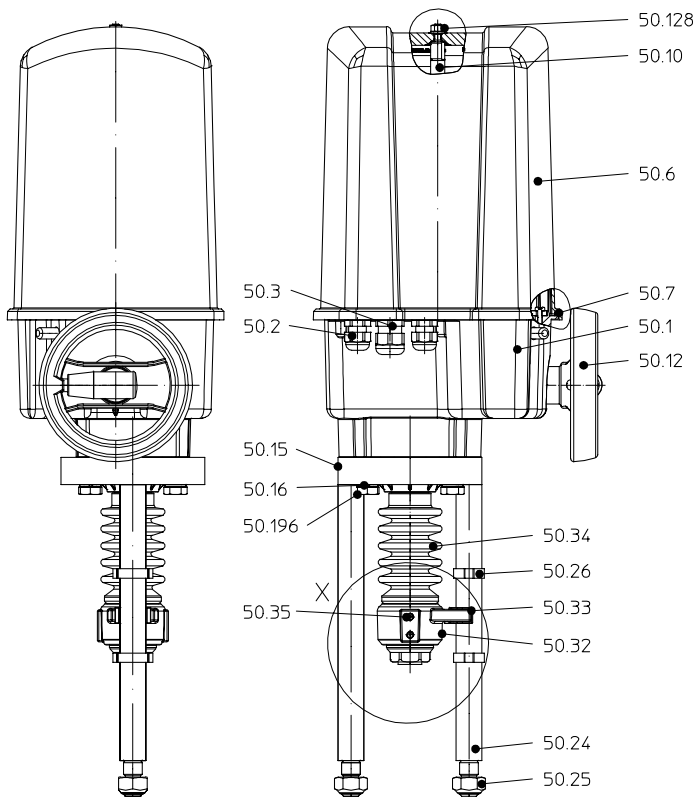
| Type | | 100 - 240 V AC switching power supply for BLDC version | |
|--------------------------|--------|--|--------|
| Thrust force | kN | 2,2 kN | 5,0 kN |
| Input voltage | V - Hz | 3-point signal: 100 - 240 V AC 50/60 Hz | |
| Output voltage | V | 24 V DC | |
| Output signal | | 3-point (TTL technology) | |
| Current consumption max. | A | max. 0,4 A at 230 V/0,6 A at 115 V | |
| Response time | ms | approx. 400 ms | |



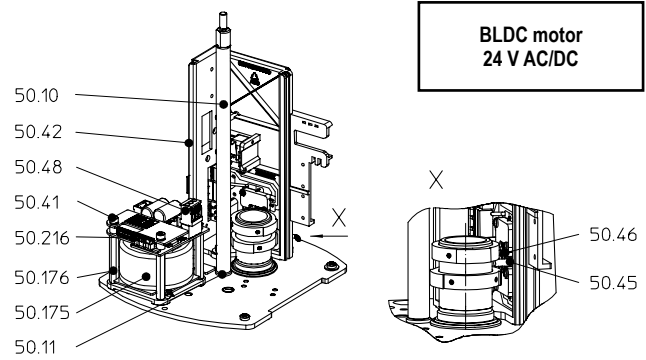
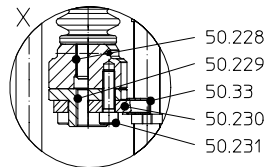
| Type | | 3~ 400 V transformer for BLDC version with direction detection and 3-point-output | |
|--------------------------|--------|---|--------|
| Thrust force | kN | 2,2 kN | 5,0 kN |
| Input voltage | V - Hz | UVW: 3~ 400 V - 50/60 Hz | |
| Output voltage | V | 3-point signal: 24 V DC | |
| Current consumption max. | A | max. 0,13 A | |
| Response time | ms | < 10 ms | |



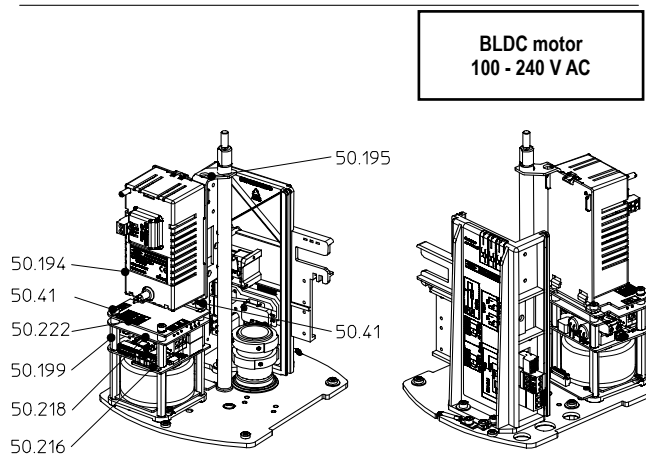
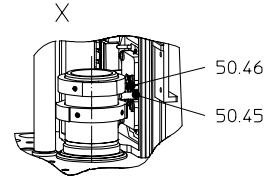
Electric thrust actuator ARI-PREMIO® 12 - 25 kN



Coupling 25 kN



BLDC motor
24 V AC/DC



BLDC motor
100 - 240 V AC

| Pos. | Description |
|--------|--|
| 50.1 | Gearbox |
| 50.2/3 | Cable gland 2 x M16 x 1,5/1 x M20 x 1,5 |
| 50.6 | Hood |
| 50.7 | Hood seal |
| 50.10 | Column |
| 50.11 | Conical spring washer |
| 50.12 | Handwheel (engageable) |
| 50.15 | Flange |
| 50.16 | Spring washer DIN 128 - A10 |
| 50.24 | Distance column |
| 50.25 | Hexagon nut DIN EN ISO 7042 - V - M16 |
| 50.26 | 2-ear clamp (Travel indicator) |
| 50.32 | Torsion safety feature |
| 50.33 | Slide |
| 50.34 | Bellow |
| 50.35 | Grub screw DIN ISO 4766 - M6 |
| 50.41 | Cylinder screw DIN EN ISO 4762-M4 - 18 |
| 50.42 | Board support, cpl. (incl. circuit board 2 x DE; 1 x WE) |

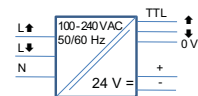
| Pos. | Description |
|--------|--|
| 50.45 | Shift lever |
| 50.46 | Spring washer |
| 50.48 | Connector, 3-pole (standard) |
| 50.128 | Collar nut with sealing ring M6 |
| 50.175 | BLDC motor |
| 50.176 | Distance bolt M4 x 45 |
| 50.194 | Power supply, cpl. |
| 50.195 | Fastening angle power supply |
| 50.196 | Hexagon screw DIN EN 24017 M10 x 100 |
| 50.199 | Distance bolt M4 x 23 |
| 50.216 | Motor control board BLDC |
| 50.218 | Input board 3-point without power supply |
| 50.222 | Protective cover BLDC without power supply |
| 50.228 | Spindle unit |
| 50.229 | Threaded bush |
| 50.230 | Non-rotation lock |
| 50.231 | Cylinder screw M10 x 35 |

Technical data

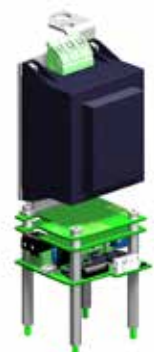
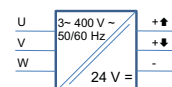
| Type | | ARI-PREMIO® 12 kN | ARI-PREMIO® 15 kN | ARI-PREMIO® 25 kN |
|---|--------|---|-------------------|---|
| Thrust force | kN | 12,0 kN | 15,0 kN | 25,0 kN |
| Operating speed | mm/s | 0,20/0,31/0,38/0,79 mm/s adjustable | | |
| Travel distance max. | mm | 80 mm | | |
| Duty cycle acc. to EN ISO 22153 | | Class C (modulation) @70°C | | |
| Supply voltage | V - Hz | 24 V AC/DC | | |
| Motor type | | BLDC (Brushless DC motor) | | |
| Power consumption | VA | max. 65 (depending on the operating speed and operating force) | | max. 130 (depending on the operating speed and operating force) |
| Current consumption | A | approx. 2,5 A | | approx. 5 A |
| Torque switch | | 2 pcs., fixed wiring switching capacity 16 A, 250 V ~ | | |
| Travel switch | | 1 pc., fixed wiring switching capacity 16 A, 250 V ~ (Options trip slide necessary!) | | |
| Enclosure EN 60529 | | IP 65 | | |
| Max. storage temperature | °C | -40 °C ... +85 °C | | |
| Max. permissible ambient temperature | °C | -20 °C ... +70 °C, for UL/CSA version up to max. +60 °C (For outdoor use and sub-zero temperatures, a heating is recommended!) | | |
| Hand operating device | | Yes (engageable) | | |
| Operation | | 3-point - Response time approx. 80 ms | | |
| Max. cable cross section | mm² | 3-point-input: 2,5 mm² | | |
| Cable diameter for cable glands | | 2 x M16: 5 - 9,5 mm 1 x M20: 8 - 13 mm | | |
| Electrical safety according to DIN EN 61010, part 1 | | Overvoltage category II Pollution degree 2 Altitude up to 2000 m Rel. humidity ≤ 90 % non-condensing | | |
| Mounting position | | Any, except: motor not hanging downwards | | |
| Gear lubricant | | Klübersynth G34 - 130 | | |
| Weight | kg | 10,0 kg | | 11,0 kg |
| Zubehör | | refer to page 6 | | |

Additional voltage / frequencies

| Type | | 100 - 240 V AC switching power supply | | |
|--------------------------|--------|---|---------|--|
| Thrust force | kN | 12,0 kN | 15,0 kN | 25,0 kN |
| Input voltage | V - Hz | 3-point signal: 100 - 240 V AC 50/60 Hz | | |
| Output voltage | V | 24 V DC | | |
| Output signal | | 3-point (TTL technology) | | |
| Current consumption max. | VA | max. 1 A at 230 V/ 1,8 A at 115 V | | max. 1,1 A at 230 V/ 1,9 A at 115 V |
| Response time | ms | approx. 240 ms | | approx. 350 ms |



| Type | | 3~ 400 V transformer with direction detection and 3-point-output | | |
|--------------------------|--------|--|---------|-------------|
| Thrust force | kN | 12,0 kN | 15,0 kN | 25,0 kN |
| Input voltage | V - Hz | UVW: 3~ 400 V - 50/60 Hz | | |
| Output voltage | V | 3-point signal: 24 V DC | | |
| Current consumption max. | A | max. 0,13 A | | max. 0,35 A |
| Response time | ms | < 10 ms | | |

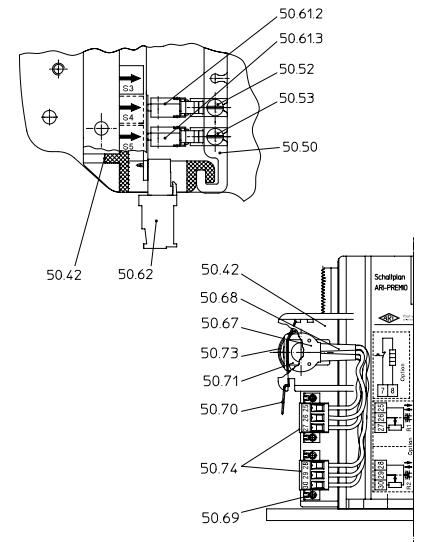


Accessories

| Type | | ARI-PREMIO® 2,2 kN - 25 kN | |
|--|---|---|---|
| Trip slide | | Required for actuating ... - the travel switch S3/retracting spindle (the travel switch S3 is in the basic version of the actuator already available) - the potentiometer - the additional travel switches S4/S5 | |
| Options trip slide necessary ! | Additional intermediate position switches S4, S5 (for low switching capacities and at aggressive atmosphere gold contacts should be used) | Type Standard | - 2 pieces, zero potential, switching capacity max. 10 A, 250 V ~ |
| | | Type Low voltage | - 2 pieces, zero potential, with gold contacts, switching capacity max. 0,1 A, 4 - 30 V |
| | Potentiometer | Conductive (max. 2 pcs.) | - 1000, 2000, 5000 Ohm; 1 Watt (at +70 °C) - Wiper current max. 0,01 mA/recommended 0,002 mA |
| | | Wire (max. 2 pcs.) | - 100, 200 Ohm; 0,5 Watt (at +70 °C) - Wiper current max. 35 mA/recommended 0,02 mA |
| | | TÜV-approved potentiometer (max. 2 pcs.) | - TÜV tested „conductive plastic for use as a sensor for position feedback of control devices in electronic systems for controlling and monitoring of fuel, air and gas streams in combustion plants“ - 5000 Ohm (standard) - or optional: 100, 200, 1000 Ohm; 1 Watt (at +70 °C) - Wiper current max. 0,01 mA/recommended 0,002 mA - No retrofitting possible! |
| | Electronic position controller (for controlling the actuator with an analogue control signal) | Type PREMIO-Plus 2G (according to separate data sheet / operating instructions) | - Input signals: 3-point, 0 - 10 V or 4 - 20 mA - Self-adaptation - Optional position feedback - Galvanical separation between power supply and control signal |
| | | Type ES11 | - Input signals 0(2)...10 V or 0(4)...20 mA - Galvanical separation between power supply and control signal - Including potentiometers (note max. number of potentiometers) |
| | Electronic position indicator (for position feedback with an analogue control signal) | RI21 | - Analogue output for position-feedback 0(4)...20 mA changeable to 0(2) - 10 V, invertable; galvanical separation between power supply and control signal - Active - Incl. potentiometers (note max. number of potentiometers) |
| | | RI32 | - Analogue output for position-feedback 2... 10 V; 4... 20 mA - Compact design; 2 (passive) or 4-wire technology (active) - Power supply: 24 V AC/DC - Incl. potentiometers (note max. number of potentiometers) |
| | Heating | Heating resistor | - (Automatic switching circuit) 230 V AC, 115 V AC, 24 V AC/DC, 15 Watt |
| Connection board 2 Torque- and 1 Travel switch, all switch contacts are wired on terminals (for low switching capacities and at aggressive atmosphere gold contacts should be used) | Type Standard PA | - Zero potential, switching capacity 10 A, 250 V ~ - (At 12-25kN already possible with the standard version) | |
| | Type Low voltage NA | - Zero potential, with gold contacts, switching capacity max. 0,1 A, 4 - 30 V | |
| (Process-) controller | Type process controller dTRON 316 (according to data sheet / operating instructions PREMIO®-Plus 2G) | - Mounted in the actuator PREMIO®-Plus 2G - 4-20 mA output for operating the PREMIO-Plus 2G - For resistance thermometers and thermocouples (provided by the customer) or standard signals - Pre-configured for temperature control: control range von -200 °C up to +850 °C (resistance thermometer) | |
| Special voltage 3~ 400 V | | | |
| Built-in reversal feature | Electronic reversing contactor (according to data sheet / operating instructions PREMIO®-Plus 2G) | - PREMIO®-Plus 2G with 3~ 400 V transformer - 3-point, 4-20 mA or 0-10 V operation - Electronically commutated, variable speed BLDC motor | |

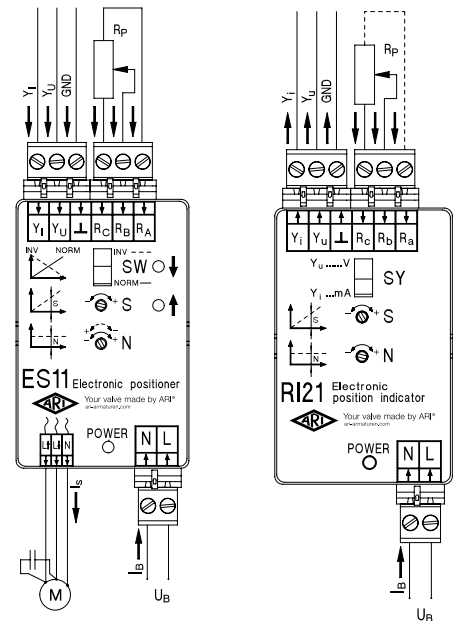
| Intermediate position switch | |
|------------------------------|-------------------------------|
| Pos. | Description |
| 50.42 | Board support |
| 50.50 | Trip slide |
| 50.52 | Setting spindle for switch S4 |
| 50.53 | Setting spindle for switch S5 |
| 50.61.2 | Travel switch S4 |
| 50.61.3 | Travel switch S5 |
| 50.62 | Connector, 6-pole |

| Potentiometer | |
|---------------|--------------------|
| Pos. | Description |
| 50.42 | Board support |
| 50.67 | Potentiometer |
| 50.68 | Connecting cable |
| 50.69 | Self-tapping screw |
| 50.70 | Pinch spring |
| 50.71 | Slide block |
| 50.73 | Pinion |
| 50.74 | Connector, 3-pole |

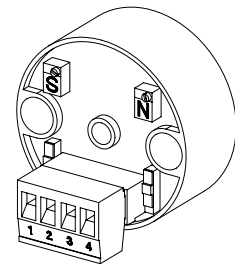


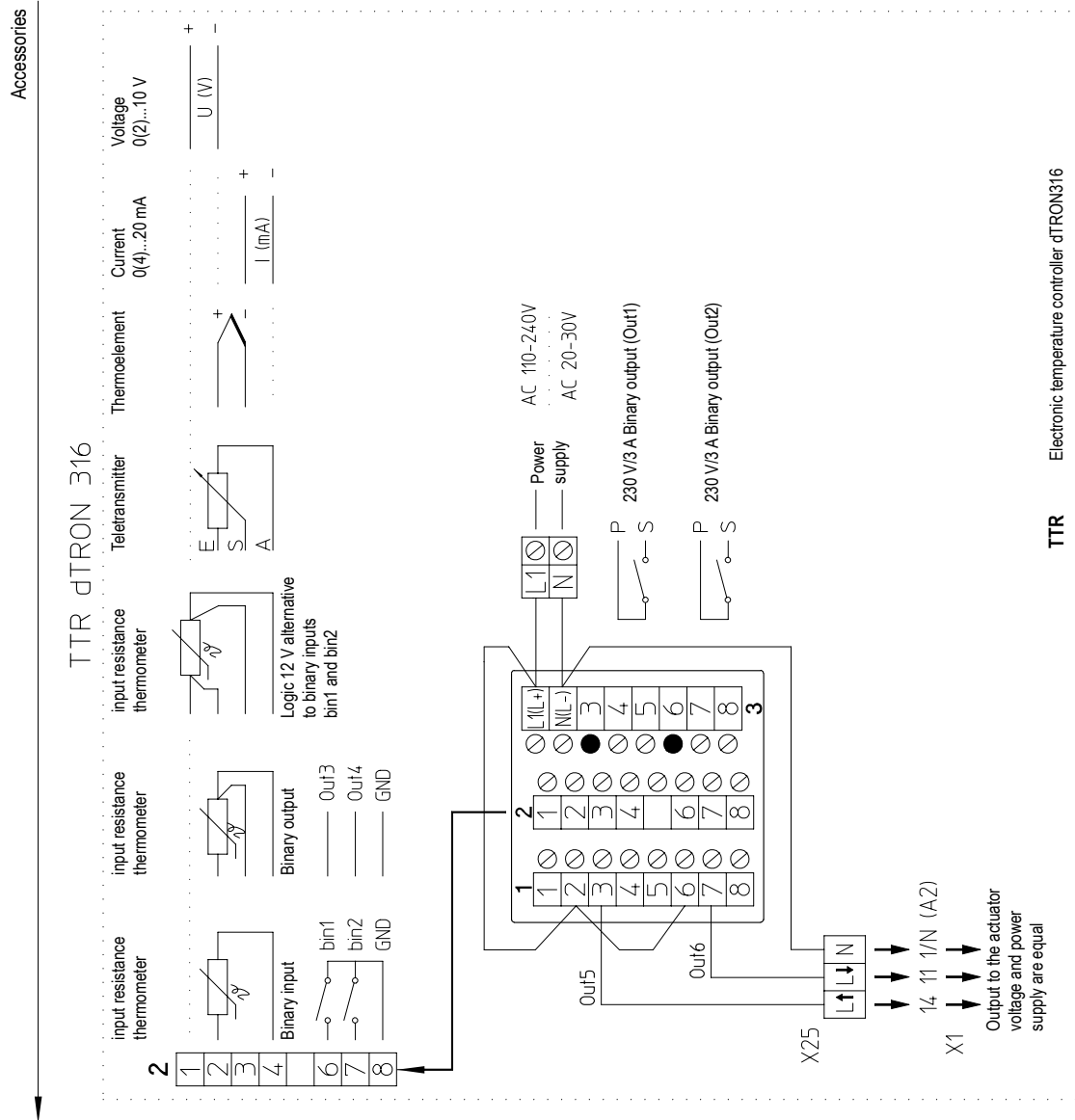
| Electronic position controller ES11 | | | | | | |
|-------------------------------------|-------|--|-----------|-------------------|------------|------------|
| Motor type | | BLDC motor | | Synchronous motor | | |
| Operating voltage | U_B | 24 V - DC | 24 V - AC | 24 V - AC | 115 V - AC | 230 V - AC |
| | | -- | 50/60 Hz | 50/60 Hz | 50/60 Hz | 50/60 Hz |
| Operating current without load | I_B | 150 mA | | 40 mA | 20 mA | |
| Input control signal | Y_U | 0(2) 10 V DC - (RI = 30 kOhm) | | | | |
| Input control signal | Y_I | 0(4) 20 mA DC - (RI = 125 Ohm) | | | | |
| Potentiometer input | R_P | 0 10 kOhm, recommended 0 1 kOhm (Potentiometer can be used only as a voltage divider) | | | | |
| 3-point-output | U_A | 24 V - DC | 24 V - AC | 115 V - AC | 230 V - AC | |
| 3-point-switching current | I_S | 4 A max. | | | | |

| Electronic position indicator RI21 | | | | |
|------------------------------------|-------|--|---------------------|---------------------|
| Operating voltage | U_B | 24 V - AC/DC 50/60 Hz | 115 V - AC 50/60 Hz | 230 V - AC 50/60 Hz |
| Operating current without load | I_B | 150 mA | 40 mA | 20 mA |
| Output control signal | Y_U | 0(2) 10 V DC - (load resistance > 1 kOhm) active | | |
| Output control signal | Y_I | 0(4) 20 mA DC - (load resistance max. 800 Ohm) active | | |
| Potentiometer input | R_P | 0 1 kOhm | | |



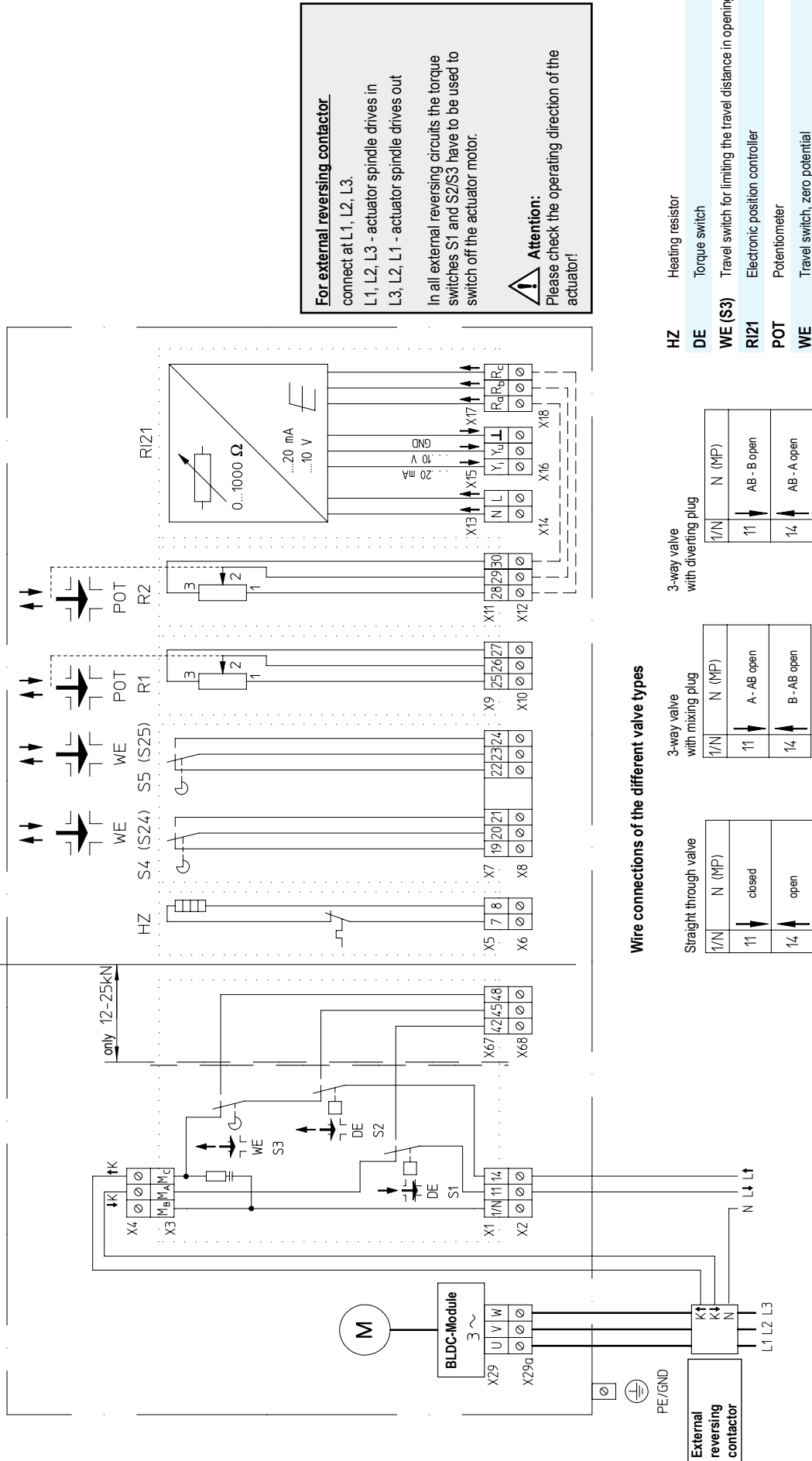
| Electronic position indicator RI32 | | |
|------------------------------------|-------|--|
| Operating voltage | U_B | 24 V - DC/AC 50/60 Hz |
| Output control signal | Y_U | 2 10 V DC active |
| Output control signal | Y_I | 4 20 mA DC - (load resistance max. 500 Ohm) passive or active |
| Potentiometer input | R_P | 100 Ohm 20 kOhm |





ARI-PREMIO 2,2-25kN, 3Ph~ / External reversing contactor

Accessories



For external reversing contactor
connect at L1, L2, L3.
L1, L2, L3 - actuator spindle drives in
L3, L2, L1 - actuator spindle drives out

In all external reversing circuits the torque switches S1 and S2/S3 have to be used to switch off the actuator motor.

Attention:
Please check the operating direction of the actuator!

Wire connections of the different valve types

Straight through valve

| | |
|-----|--------|
| 1/N | N (MP) |
| 11 | closed |
| 14 | open |

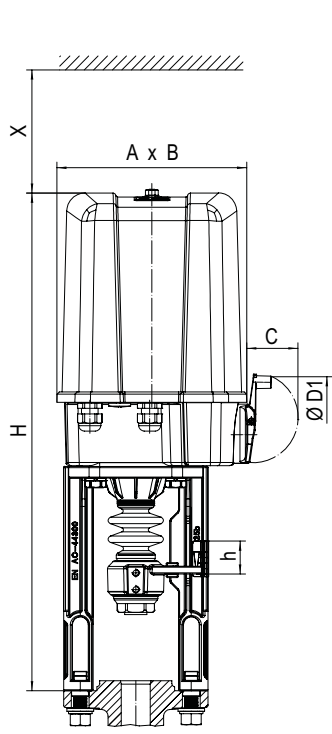
3-way valve with mixing plug

| | |
|-----|-----------|
| 1/N | N (MP) |
| 11 | A-AB open |
| 14 | B-AB open |

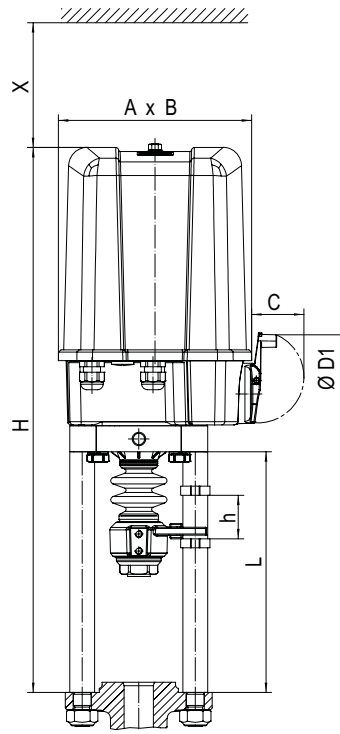
3-way valve with diverting plug

| | |
|-----|-----------|
| 1/N | N (MP) |
| 11 | AB-B open |
| 14 | AB-A open |

- HZ** Heating resistor
- DE** Torque switch
- WE (S3)** Travel switch for limiting the travel distance in opening direction
- RZ1** Electronic position controller
- POT** Potentiometer
- WE** Travel switch, zero potential

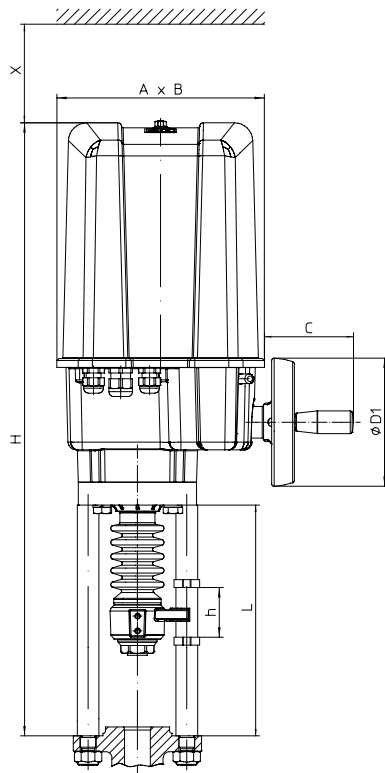


2,2 - 5 kN
Nominal travel max. 30 mm



2,2 - 5 kN
Nominal travel > 30 mm - 50 mm

| | | 2,2 - 5 kN | |
|--------------------|------|--------------|--------------|
| A | (mm) | 171 | |
| B | (mm) | 156 | |
| C | (mm) | 50 | |
| Ø D1 | (mm) | 90 | |
| X | (mm) | 150 | |
| H | (mm) | 448 | 482 |
| h (Nominal travel) | (mm) | max. 30 | max. 50 |
| L (Column) | (mm) | for x=83 199 | for x=98 213 |



12 - 25 kN
Nominal travel max. 80 mm

| | | 12 - 25 kN | | |
|--------------------|------|------------|---------|------------------------------|
| A | (mm) | 210 | | |
| B | (mm) | 184 | | |
| C | (mm) | 90 | | |
| Ø D1 | (mm) | 130 | | |
| X | (mm) | 200 | | |
| H | (mm) | 622 | 637 | 652 |
| h (Nominal travel) | (mm) | max. 50 | max. 65 | max. 80 |
| L (Column) | (mm) | 234 | 249 | for x=83 249 for x=98 264 |

