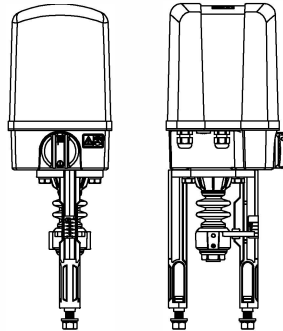


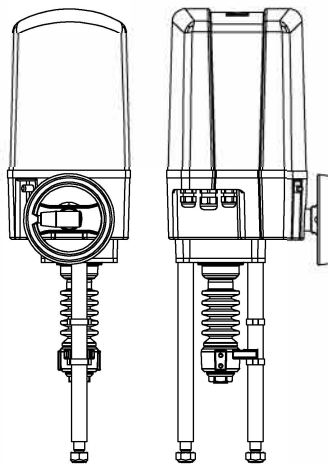
Electric actuator ARI-PREMIO

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

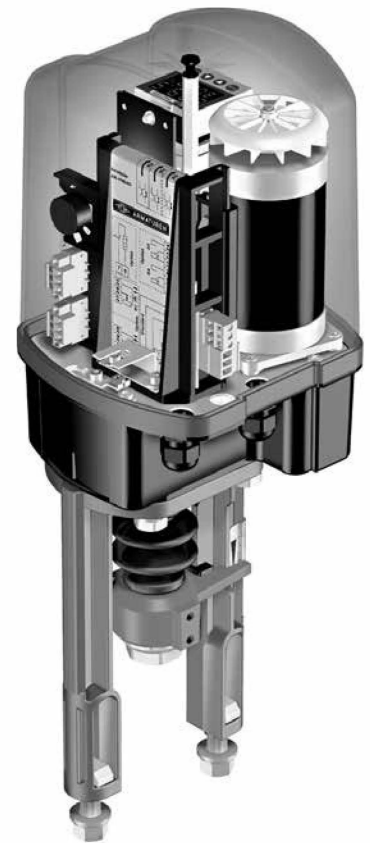


Page 2

Electric thrust actuator
ARI-PREMIO®
12 - 15 kN



Page 4

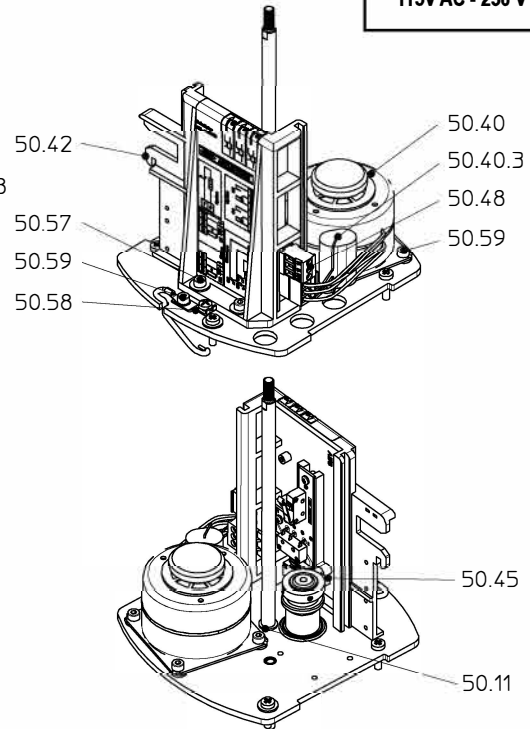
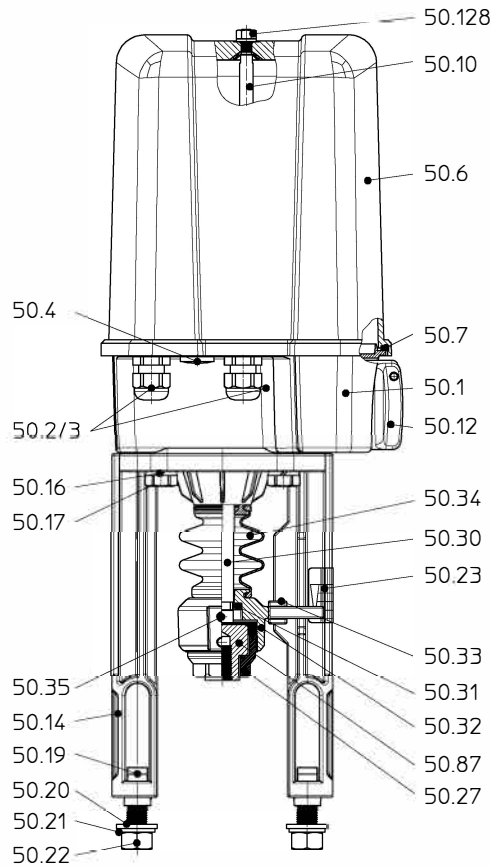
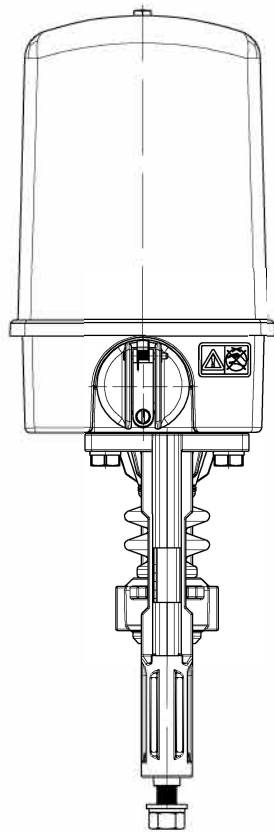


Features

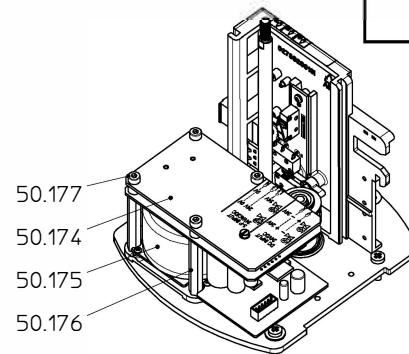
- 2 torque switches
- Handwheel
- Operative ambient temperatures -20°C up to +70°C
- Enclosure IP 65
- Additional devices available, e.g. potentiometer
- Travel indicator

Electric actuator ARI-PREMIO 2,2 - 5 kN

Synchronous motor
115V AC - 230 V AC



BLDC motor
24 V AC/DC



Pos.	Description
50.1	Gearbox
50.2/3	Cable gland 2 x M16x1,5
50.4	Sealing plug 1 x M16x1,5
50.6	Hood
50.7	Hood seal
50.10	Column
50.11	Spring washer
50.12	Handwheel
50.14	Yoke
50.16	Washer DIN 128-A10
50.17	Hexagon screw DIN EN ISO 4017 - M10x40
50.19	T-head bolt DIN 261-M12x40
50.20	Washer DIN EN ISO 7089
50.21	Washer DIN 128 - A12
50.22	Hexagon nut DIN EN ISO 4032 - M12
50.23	Lift dial
50.27	Coupling
50.30	Driving spindle

Pos.	Description
50.31	Spindle safety feature
50.32	Torsion safety feature
50.33	Slide
50.34	Bellow
50.40	Synchronous motor, complete
50.40.3	Capacitor
50.42	Board support, cpl. (incl. circuit board)
50.45	Shift lever
50.48	Connector, 3-pole (standard)
50.57	Cylinder screw DIN EN ISO 4762 - M4x10
50.58	Protective conductor terminal
50.59	Cylinder screw DIN EN ISO 4762 - M4x6
50.87	Threaded bush
50.128	Flange nut Seal lock M6
50.174	Board AC/DC
50.175	BLDC motor
50.176	Distance bolt M4x45
50.177	Cylinder screw M4x18

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	0,38 mm/s	1,0 mm/s
Travel distance max.	mm	50 mm		
Duty classification in accordance with EN 60034-1		S3 80% ED / max. 1200 c/h		S3 50% ED / max. 1200 c/h
Supply voltage	V - Hz	230 V - 50 Hz / 60 Hz ¹⁾		230 V - 50/60 Hz ¹⁾
Motor type		Synchronous motor		
Power consumption	VA	21	33	75
Torque switch		2 pcs., fixed wiring switching capacity 10 A, 250 V~		
Travel switch		1 pcs., 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 outdoor use and sub-zero temperatures, a heating is recommended!)		
Hand operating device		Yes (always running)		
Operation		3-step		
Max. cable cross section	mm ²	3-step input: 2,5 mm ²		
Mounting position		Any, except: motor not hanging downwards		
Gear lubricant		Klüber / Isoflex Topas NB152		
Weight	kg	5,4 kg	6,0 kg	6,5 kg
Accessories		refer to page		

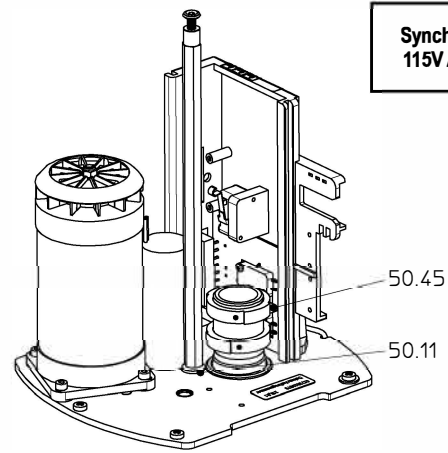
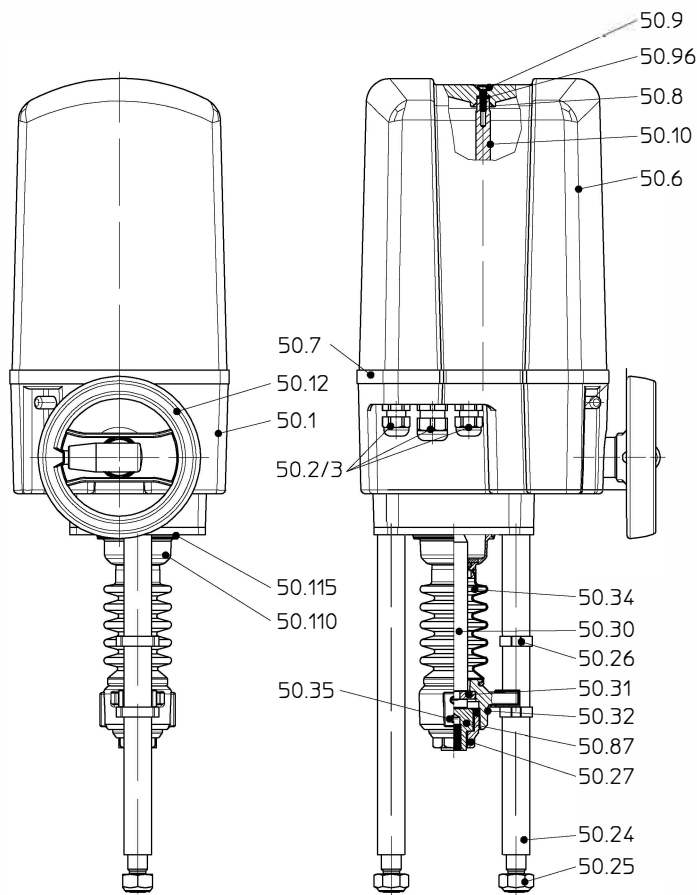
Additional voltage / frequencies

Synchronous motor				
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	0,38 mm/s	1,0 mm/s
Supply voltage	V - Hz	115 V - 50/60 Hz ¹⁾ 3~400 V - 50/60 Hz ¹⁾		115 V - 50/60 Hz ¹⁾ 3~400 V - 50/60 Hz ¹⁾
Duty classification in accordance with EN 60034-1		24 V - 230 V: S3 80% ED / max. 1200 c/h 400 V : S3 50% ED / max. 1200 c/h		S3 50% ED / max. 1200 c/h
Power consumption		refer to nameplate or on request		

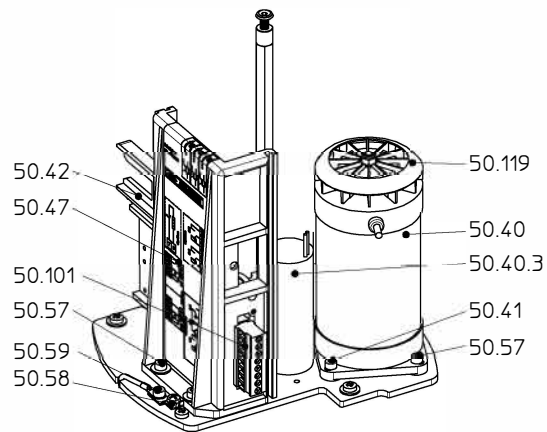
BLDC motor (Brushless DC motor)				
Type		ARI-PREMIO 2,2 kN	ARI-PREMIO 5 kN	
Thrust force	kN	2,2 kN	5,0 kN	
Operating speed	mm/s	0,38 mm/s	0,38 mm/s	1,0 mm/s
Supply voltage	V - Hz	24V - AC/DC		
Duty classification in accordance with EN 60034-1		S3 80% ED / max. 1200 c/h		
Power consumption	VA	53	53	72

¹⁾ Control speed and power consumption are 20% higher at frequency of 60 Hz.

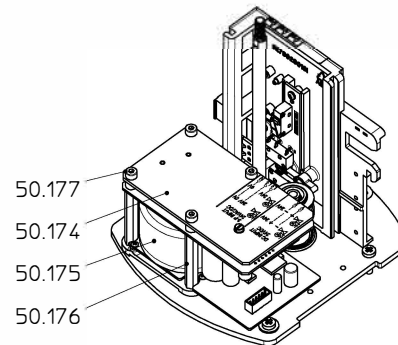
Electric actuator ARI-PREMIO 12 - 15 kN



Synchronous motor
115V AC - 230 V AC



BLDC motor
24 V AC/DC



Pos.	Description
50.1	Gearbox
50.2	Cable gland 2 x M16 x 1,5 / 1 x M20 x 1,5
50.6	Hood
50.7	Hood seal
50.8	Counter-sunk screw DIN EN ISO 10642 - M5x20
50.9	Gasket DIN EN ISO 7089 - 5,3
50.10	Column
50.11	Spring washer
50.12	Handwheel (engageable)
50.24	Distance column
50.25	Hexagon nut DIN EN ISO 7042 -V-M16
50.26	2-ear clamp
50.27	Coupling
50.30	Driving spindle
50.31	Spindle safety feature
50.32	Torsion safety feature
50.34	Bellow
50.35	Grub screw DIN ISO 4766 - M6

Pos.	Description
50.40	Synchronous motor, complete
50.40.3	Capacitor
50.41	Cylinder screw DIN EN ISO 4762-M4 - 18
50.42	Board support, cpl. (incl. circuit board)
50.45	Shift lever
50.57	Cylinder screw DIN EN ISO 4762 - M4x10
50.58	Protective conductor terminal
50.59	Cylinder screw DIN EN ISO 4762 - M4x6
50.87	Threaded bush
50.96	O-ring DIN 3771 - 4x1,8
50.101	Connector, 8-pole
50.110	Gear cap
50.115	O-ring
50.119	Fan wheel
50.174	Board AC/DC
50.175	BLDC motor
50.176	Distance bolt M4x45
50.177	Cylinder screw M4x18

Technical data

Type		ARI-PREMIO 12 kN		ARI-PREMIO 15 kN
Thrust force	kN	12,0 kN		15,0 kN
Operating speed	mm/s	0,38 mm/s	0,79 mm/s	0,38 mm/s
Travel distance max.	mm	80 mm		
Duty classification in accordance with EN 60034-1		S3 50% ED / max. 1200 c/h		
Supply voltage	V - Hz	230 V - 50 Hz		
Motor type		Synchronous motor		
Power consumption	VA	69	85	69
Torque switch		2 pcs., fixed wiring, switching capacity 16A, 250V~		
Travel switch		1 pcs., fixed wiring switching capacity 16A, 250V~ (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 outdoor use and sub-zero temperatures, a heating is recommended.)		
Hand operating device		Yes (engageable)		
Operation		3-step		
Max. cable cross section	mm ²	3-step input: 2,5 mm ²		
Mounting position		Any, except: motor not hanging downwards		
Gear lubricant		Molyduval Valenzia H2		
Weight	kg	10,5 kg		
Accessories		refer to page		

Additional voltage / frequencies

Synchronous motor				
Type		ARI-PREMIO 12 kN		ARI-PREMIO 15 kN
Thrust force	kN	12,0 kN		15,0 kN
Operating speed	mm/s	0,38 mm/s	0,79 mm/s	0,38 mm/s
Supply voltage	V - Hz	24 V - 50 Hz / 24 V - 60 Hz ¹⁾ 115 V - 50 Hz / 115 V - 60 Hz ¹⁾ 230 V - 60 Hz ¹⁾ 3~400 V - 50 Hz / 3~400 V - 60 Hz ¹⁾		
Duty classification in accordance with EN 60034-1		S3 50% ED / max. 1200 c/h		
Power consumption		refer to nameplate or on request		

BLDC motor (Brushless DC motor)				
Type		ARI-PREMIO 12 kN		ARI-PREMIO 15 kN
Thrust force	kN	12,0 kN		15,0 kN
Operating speed	mm/s	0,38 mm/s	0,79 mm/s	0,38 mm/s
Supply voltage	V - Hz	24V - AC/DC		
Duty classification in accordance with EN 60034-1		S3 80% ED / max. 1200 c/h		
Power consumption	VA	60	72	60

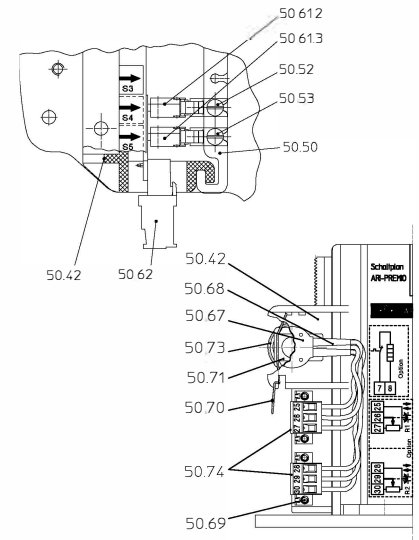
¹⁾ Control speed and power consumption are 20% higher at frequency of 60 Hz.

Accessories

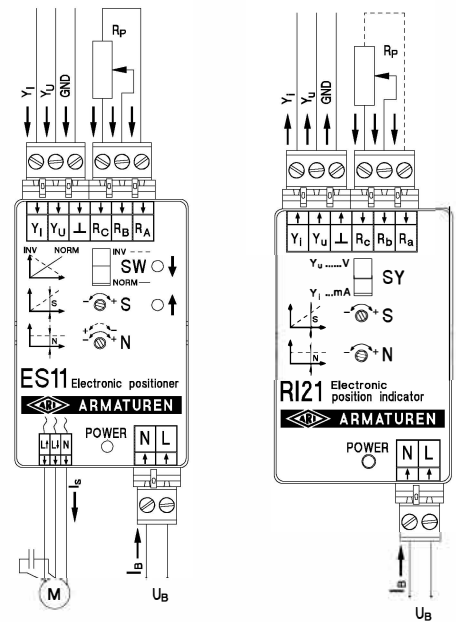
Type		ARI-PREMIO 2,2 kN - 15 kN
Trip slide		Required for actuating ... - the travel switch S3 / retracting spindle (the travel switch S3 is in the basic version of the actuator already available) - the potentiometer - the additional travel switches S4 / S5
Options trip slide necessary !	Additional intermediate position switches S4, S5 (for low switching capacities and at aggressive atmosphere gold contacts should be used)	Type Standard - 2 piece, zero potential, switching capacity 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 analog control signal)	Type ES11 - Input signals 0(2)...10V or 0 (4)...20mA; - galvanically separation between power supply and control signal - including potentiometers (note max. number of potentiometers)
		Type PREMIO-Plus 2G (refer to separate data sheet / operating instructions) - Input signals: 3-point, 0-10V or 4-20mA; - self-adaptation; - Optional position feedback; - galvanically separation between power supply and control signal
	Electronic position indicator (for position feedback with an analog control signal)	RI21 (only for AC) - analogue output for position-feedback 0(4)...20mA changeable to 0(2)-10V, invertable; galvanically separation between power supply and control signal - active - including potentiometers (note max. number of potentiometers)
		RI32 - analogue output for position-feedback 2... 10V; 4... 20 mA - compact design; 2 (passive) or 4 wire technology (active) - Power supply: 24V AC/DC - including potentiometers (note max. number of potentiometers)
	Heating	Heating resistor - (automatic switching circuit) 230 VAC, 115VAC, 24VAC/DC, 15 Watt
Connection board 2 Torque- and 1 Travel switch, all switch contacts are guided on terminals (for low switching capacities and at aggressive atmosphere gold contacts should be used)	Type Standard PA - zero potential, switching capacity 10A, 250V~ - (At 12/15kN 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 Processcontroller dTRON 316 (only for AC) - Mounted in the actuator - 3-point stepping controller with 2 solid state relay outputs outputs for direct control of the PREMIO actuators with a 3-point signal; - for resistance thermometers and thermocouples (provided by the customer) or standard signals, - Pre-configured for temperature control: control range from -200°C up to +850°C (resistance thermometer) - Not compatible for use with the ES11!	
Special voltage 24 V AC/DC		
Board support for pole-changing	- For the control of the BLDC motor with pole-changing (2-wire technology). - By reversing the polarity of the supply voltage, the motor rotation direction is changed (ON/ OFF)	
Special voltage 3~400 V		
Integrated reversing contactor	- Only 1 electronic module possible ! - At 2,2 kN - 5kN is no electronic in the actuator possible!	

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 </td
50.73	Pinion
50.74	Connector, 3-pole

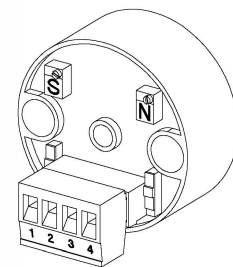


Electronic position controller ES11						
Motor type		BLDC motor		Synchronous motor		
Operating voltage	U_B	24V - DC	24V - AC	24V - AC	115 V - AC	230 V - AC
		—	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Operating current without load	I_B	150 mA		40 mA	20 mA	
Input control signal	Y_U	0 (2) 10 V DC - (RI = 30 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	
Three-step switching current	I_S	4 A max.				

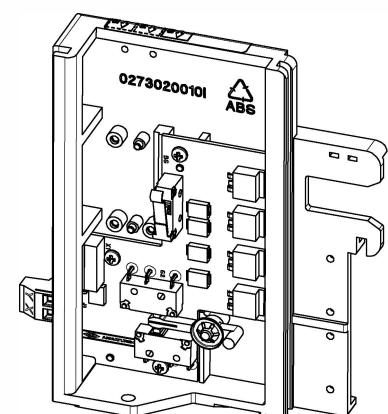


Electronic position indicator RI21				
Operating voltage	U_B	24 V - AC 50/60 Hz	115 V - AC 50/60 Hz	230 V - AC 50/60 Hz
Operating current without load	I_B	150 mA	40 mA	20 mA
Output control signal	Y_U	0 (2) 10 V DC - (load resistance > 1 kOhm) active		
Output control signal	Y_I	0 (4) 20 mA DC - (load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

Electronic position indicator RI32		
Operating voltage	U_B	24V - 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



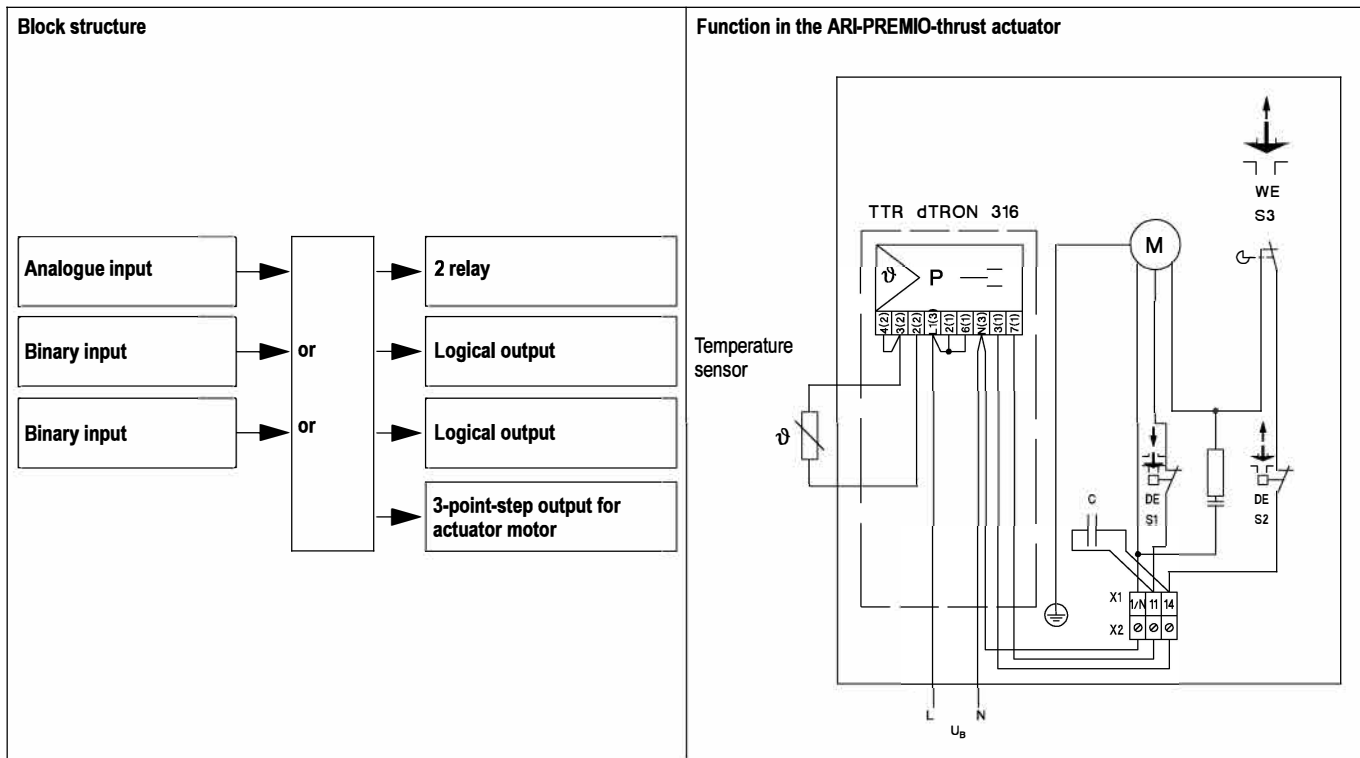
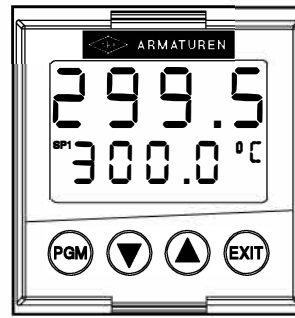
Board support for pole-changing for 24 V DC																																		
To control the 24V-AC/DC PREMIO-actuators with a 3-point 24V-DC signal or by pole-changing																																		
Comparison:	DC 3-point (standard)	DC pole-changing																																
Opening retracting stem 	<table border="1"> <tr> <td>0V</td> <td>DC</td> <td>DC</td> <td>X37</td> </tr> <tr> <td>○</td> <td>○</td> <td>○</td> <td>X38</td> </tr> <tr> <td>↑</td> <td></td> <td>↑</td> <td></td> </tr> <tr> <td>-</td> <td></td> <td>+</td> <td></td> </tr> </table>	0V	DC	DC	X37	○	○	○	X38	↑		↑		-		+		<table border="1"> <tr> <td></td> <td>X</td> <td>Y</td> <td>X37</td> </tr> <tr> <td>○</td> <td>○</td> <td>○</td> <td>X38</td> </tr> <tr> <td>↑</td> <td></td> <td>↑</td> <td></td> </tr> <tr> <td>-</td> <td></td> <td>+</td> <td></td> </tr> </table>		X	Y	X37	○	○	○	X38	↑		↑		-		+	
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Closing extending stem 	<table border="1"> <tr> <td>0V</td> <td>DC</td> <td>DC</td> <td>X37</td> </tr> <tr> <td>○</td> <td>○</td> <td>○</td> <td>X38</td> </tr> <tr> <td>↑</td> <td></td> <td>↑</td> <td></td> </tr> <tr> <td>-</td> <td></td> <td>+</td> <td></td> </tr> </table>	0V	DC	DC	X37	○	○	○	X38	↑		↑		-		+		<table border="1"> <tr> <td></td> <td>X</td> <td>Y</td> <td>X37</td> </tr> <tr> <td>○</td> <td>○</td> <td>○</td> <td>X38</td> </tr> <tr> <td>↑</td> <td></td> <td>↑</td> <td></td> </tr> <tr> <td>+</td> <td></td> <td>-</td> <td></td> </tr> </table>		X	Y	X37	○	○	○	X38	↑		↑		+		-	
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Integrated temperature controller dTRON 316

Features

- programmable analogue input
- 2 auto-tune methods
- Program function with 8 program sections or slope-function
- 2 Timer functions
- 4 limit-comparators
- Interlock for keyboard and level
- 4 programmable setpoints, two parameter sets
- 4 digit resolution (max. 2 decimal places)
- Controller characteristic P, PD, PI or PID
- Actual value input by usual temperature sensors (see in table)
- 2 relay outputs 230V/3A (shutter)
- 1 three-step output for actuator motor (by solid state relay 4A)
- 2 combinable binary inputs / binary outputs

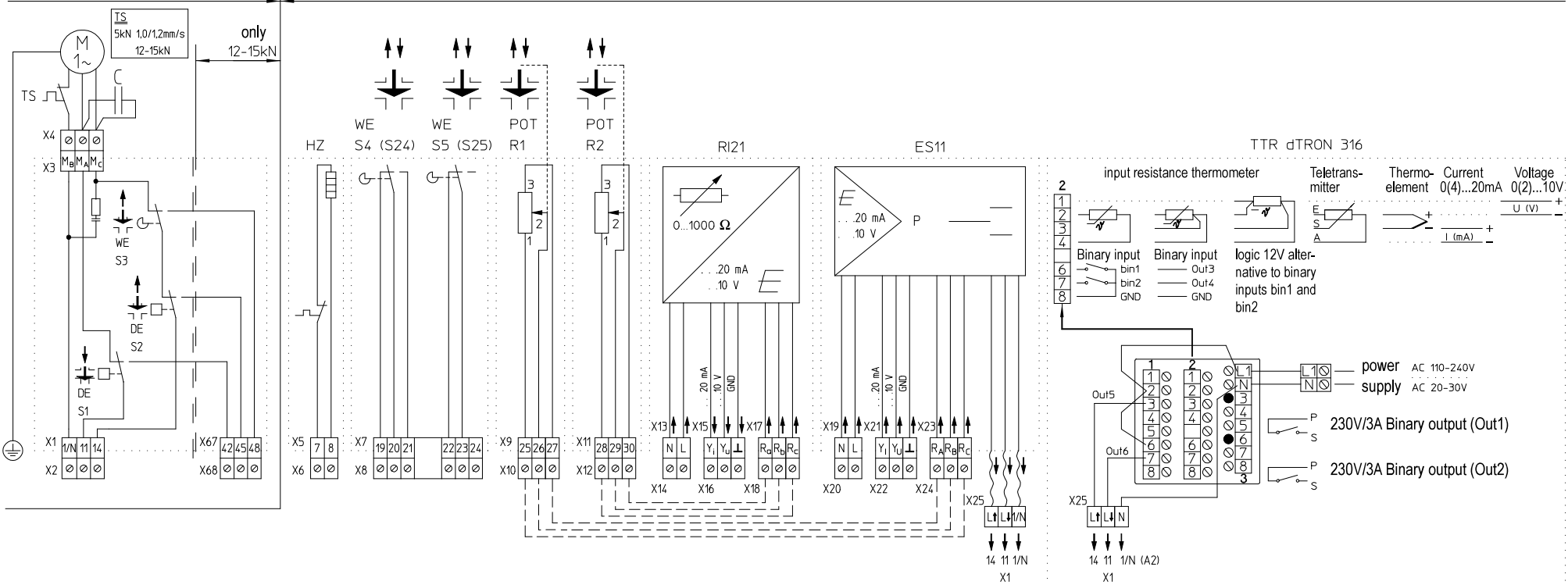


Input thermocouples	
Description	Measuring range
Fe-CuNi „L“	-200 ...+900°C
Fe-CuNi „J“ DIN EN 60584	-200 ...+1200°C
Cu-CuNi „U“	-200 ...+600°C
Cu-CuNi „T“ DIN EN 60584	-200 ...+400°C
NiCr-Ni „K“ DIN EN 60584	-200 ...+1372°C
NiCr-CuNi „E“ DIN EN 60584	-200 ...+1000°C
NiCrSi-NiSi „N“ DIN EN 60584	-100 ...+1300°C
Pt10Rh-Pt „S“ DIN EN 60584	0+1768°C
Pt13Rh-Pt „R“ DIN EN 60584	0+1768°C
Pt30Rh-Pt6Rh „B“ DIN EN 60584	0+1820°C
W5Re-W26Re „C“	0+2320°C
W3Re-W25Re „D“	0+2495°C
W3Re-W26Re	0+2400°C

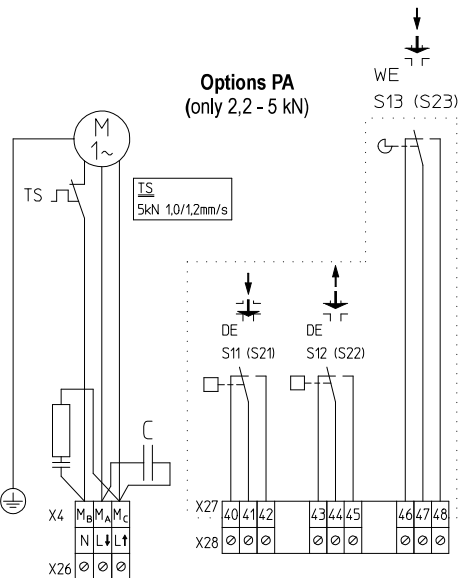
Input resistance thermometer		
Description	Type of connection	Measuring range
Pt 100 (standard)	2-wire / 3-wire / 4-wire	-200...+850°C
Pt 500	2-wire / 3-wire / 4-wire	-200...+850°C
Pt 1000	2-wire / 3-wire / 4-wire	-200...+850°C
KTY11-6	2-wire	-50...+150°C
Sensor output resistance: max. 300Ohm each circuit at 3- and 4-wire connection		
Measurement current: approx. 250µA		
Circuit adjustment: - at 3- and 4-wire connection not necessary. - at 2-wire connection a circuit adjustment can be done with software by correcting the actual value.		

Input standardized active current or voltage signals	
Description	Measuring range
Voltage	0 (2) ... 10V, input resistance Re > 100kOhm
Current	0 (4) ... 20mA, voltage drop ≤ 1,5 V

ARI-PREMIO 2,2-15kN, 1Ph~ standard



Options PA (only 2,2 - 5 kN)



Wire connections of the different valve types

Straight through valve

1/N	N (MP)
11	closed
14	open

3-way valve with mixing plug

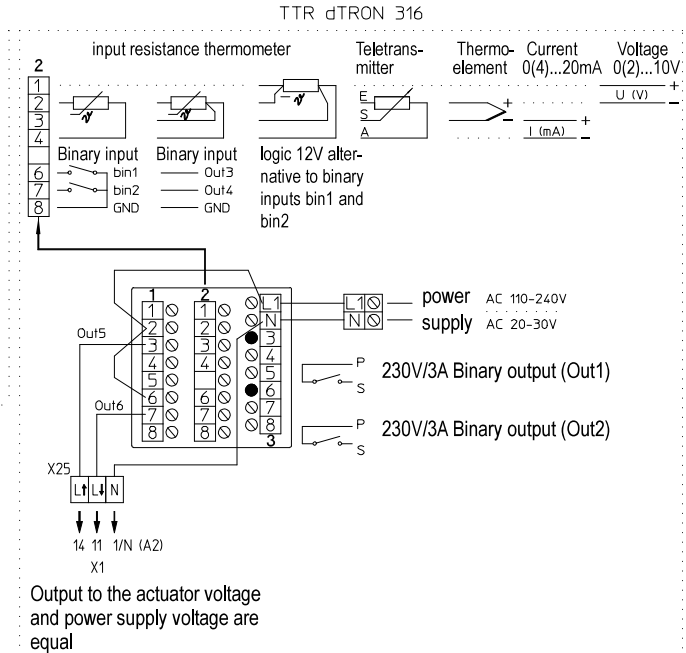
1/N	N (MP)
11	A - AB open
14	B - AB open

3-way valve with diverting plug

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

Option NA:

same design but no RC circuit and switches with gold contacts (Switching capacity 0.1A, 4-30VDC)



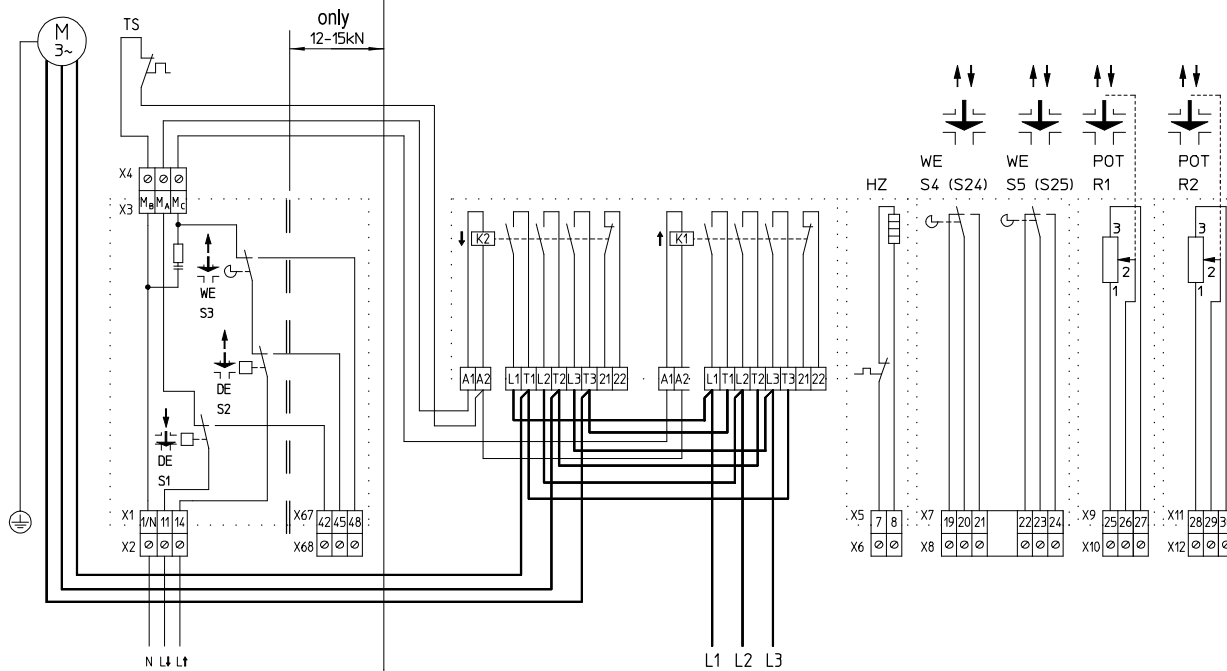
Output to the actuator voltage and power supply voltage are equal

- HZ** Heating resistor
- DE** Torque switch
- WE (S3)** Travel switch for limiting the travel distance in opening direction
- RI21** Electronic position indicator
- ES11** Electronic position controller
- NA** Low-voltage connection board, zero potential
- PA** Standard-voltage connection board, zero potential
- POT** Potentiometer
- WE** Travel switch, zero potential
- TTR** Electronic temperature controller dTRON316

ARI-PREMIO 2,2-15kN, 3Ph~

standard

Accessories



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

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.

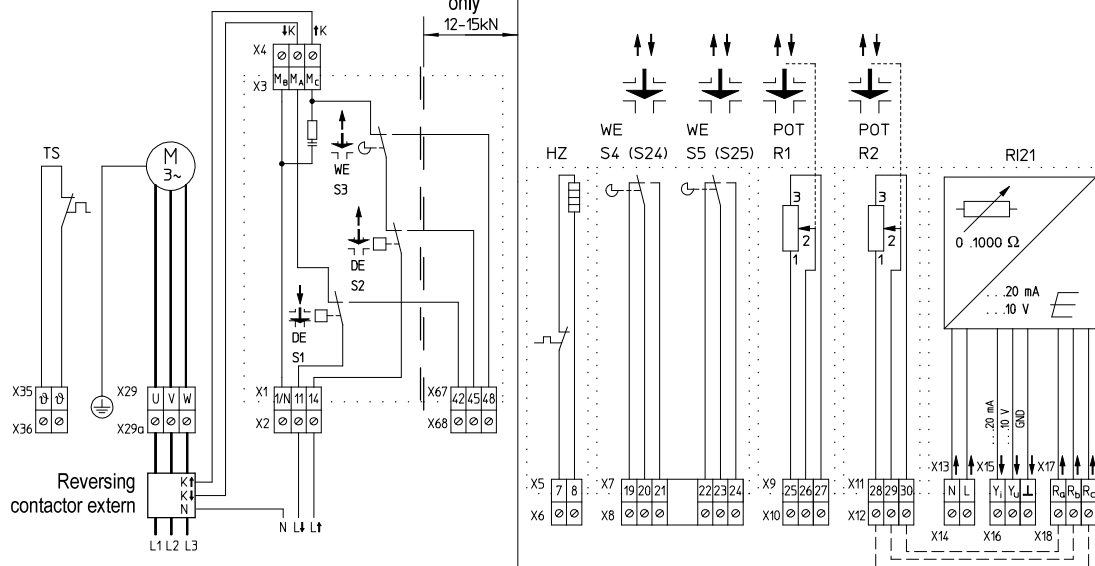


Attention:
Please check the operating direction of the actuator !

ARI-PREMIO 2,2-15kN, 3Ph~

standard

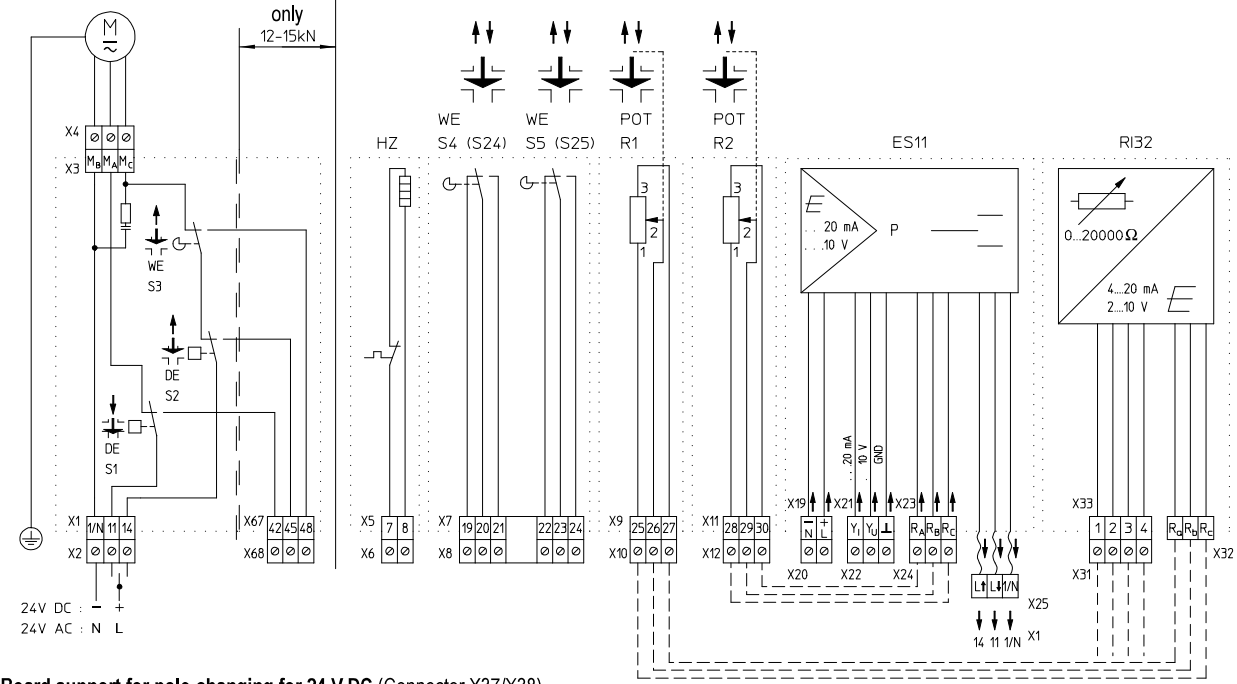
Accessories



- HZ Heating resistor
- DE Torque switch
- WE (S3) Travel switch for limiting the travel distance in opening direction
- RI21 Electronic position indicator
- ES11 Electronic position controller
- NA Low-voltage connection board, zero potential
- POT Potentiometer
- WE Travel switch, zero potential
- TTR Electronic temperature controller dTRON316
- WS Reversing contactor
- TS Temperature switch (motor)

Accessories

ARI-PREMIO 2.2-15kN, 24VAC/DC **standard**



Wire connections of the different valve types

Straight through valve

1/N	N (MP)
11	↓ closed
14	↑ open

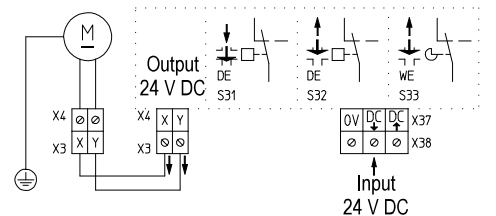
3-way valve with mixing plug

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

3-way valve with diverting plug

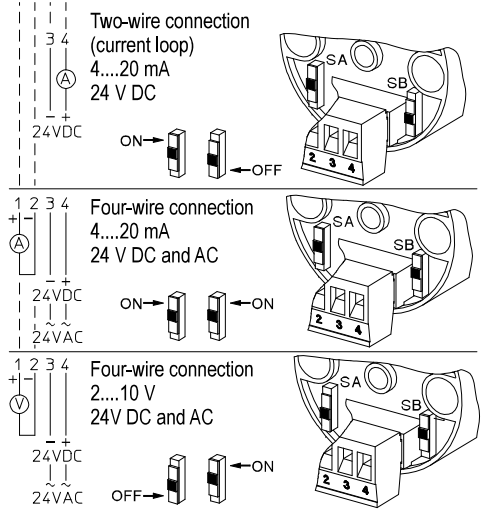
1/N	N (MP)
11	↓ AB - B open
14	↑ AB - A open

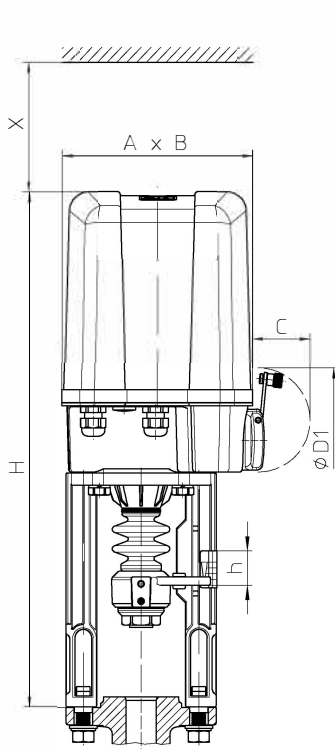
Board support for pole-changing for 24 V DC (Connector X37/X38)



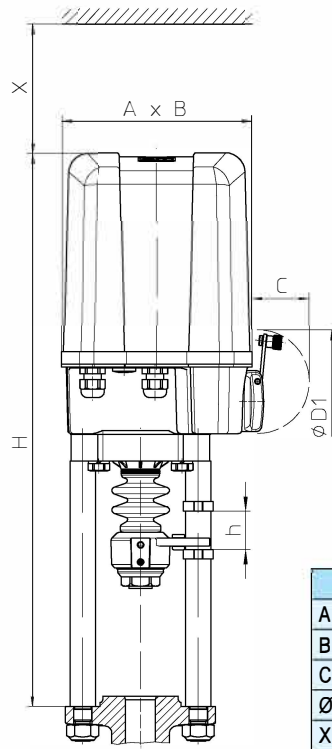
	DC 3-point (standard)	DC pole-changing
retracting spindle		
extending spindle		

Attention:
 Do not connect terminal 2 and 3.
 By a potential shift the position indicator RI32 could be destroyed.



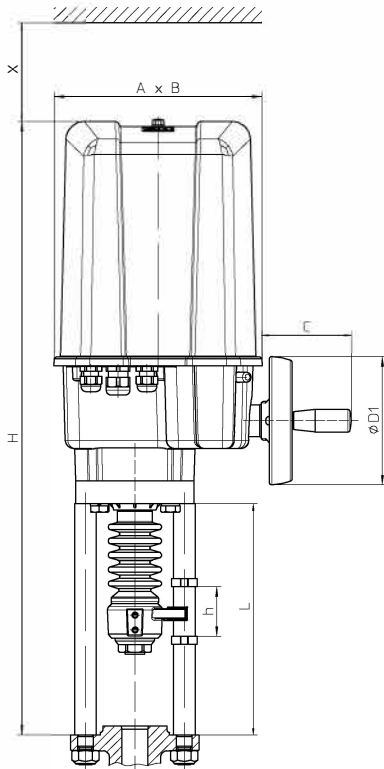


2,2 - 5 kN
Nominal travel max. 30 mm



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



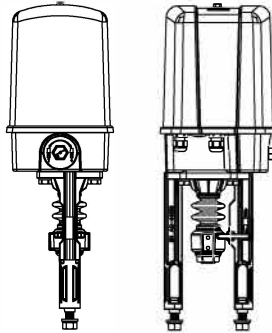
12 - 15 kN
Nominal travel max. 80 mm

		12 - 15 kN		
A	(mm)	210		
B	(mm)	184		
C	(mm)	97		
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	264



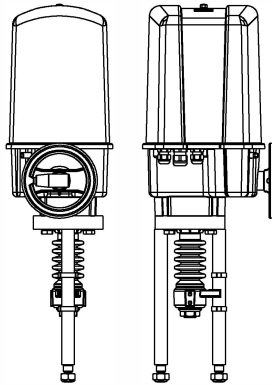
Electric thrust actuator ARI-PREMIO®-Plus 2G

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



Page 2

Electric thrust actuator
ARI-PREMIO®-Plus 2G
12 - 25 kN



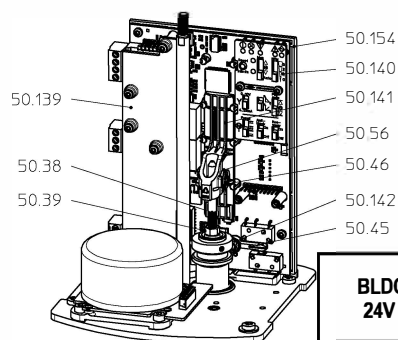
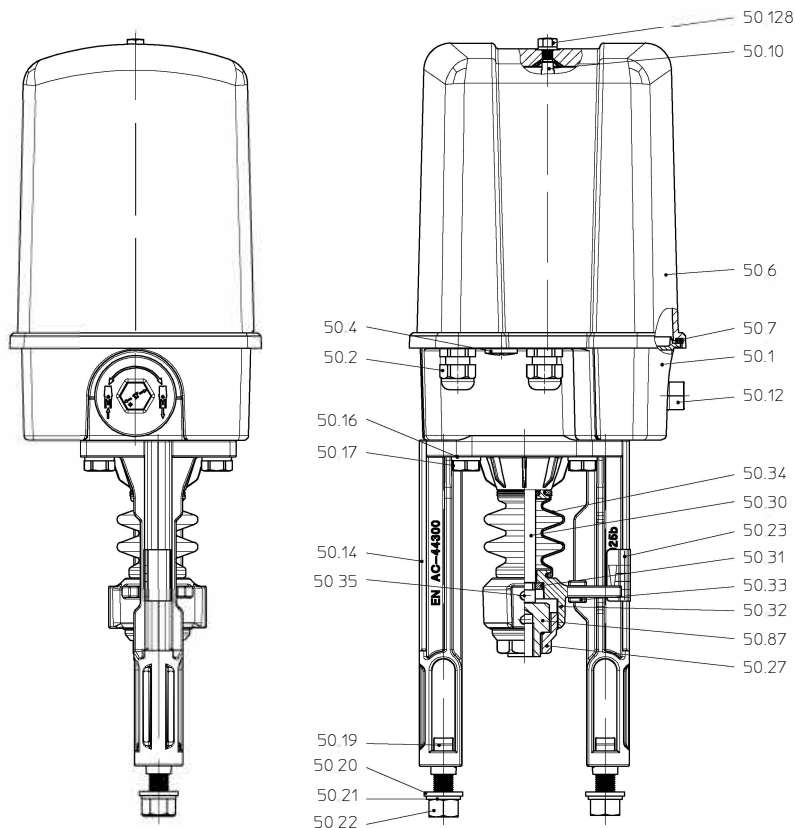
Page 4



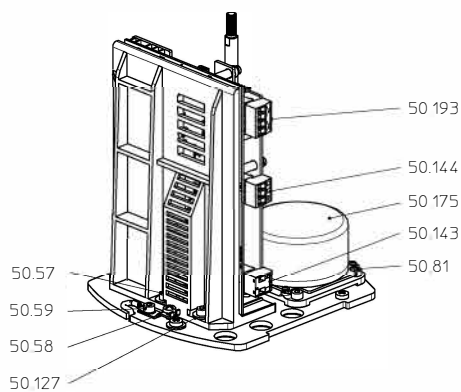
Features

- optional input signal:
 - 3-point from 12 to 250VAC/DC
 - 0-10V
 - 4-20mA
- automatic valve travel adaption
- economy function for extended lifetime
- emergency manual override handwheel standard
- contactless position determination
- optional thrust or travel switch

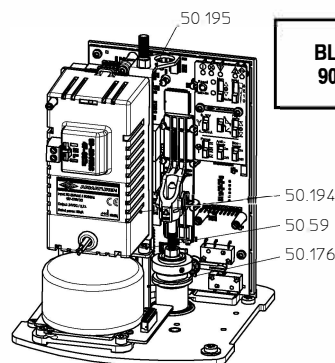
Electric thrust actuator ARI-PREMIO®-Plus 2G 2,2 - 5 kN



**BLDC motor
24V AC/DC**



**BLDC motor
90-264V AC**



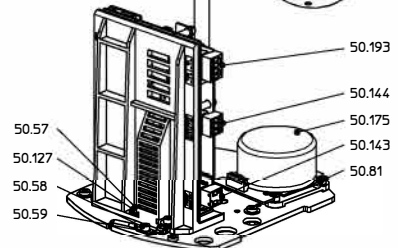
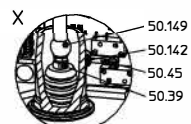
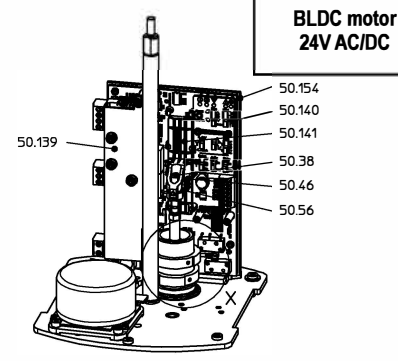
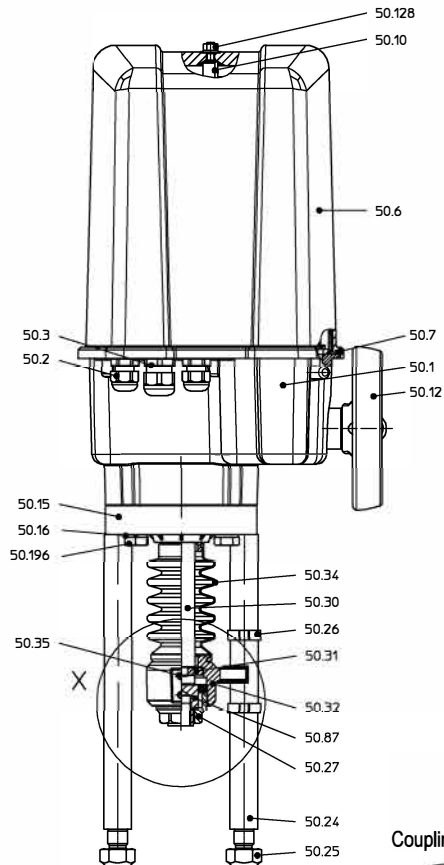
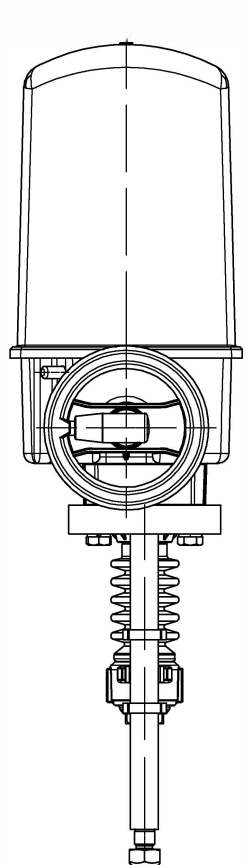
Pos.	Description
50.1	Gearbox
50.2	Cable gland 2 x M16x1,5
50.4	Sealing plug 1 x M16x1,5
50.6	Hood
50.7	Hood seal
50.10	Column
50.12	Handwheel
50.14	Yoke
50.16	Washer DIN 128-A10
50.17	Hexagon bolt DIN EN ISO 4017 - M10x40
50.19	T-head bolt DIN 261-M12x40
50.20	Washer DIN EN ISO 7089
50.21	Washer DIN 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
50.34	Bellow
50.35	Grub screw DIN ISO 4766 - M6
50.38	Guide spindle

Pos.	Description
50.39	Hexagon nut DIN EN 24034 - M5
50.45	Shift lever
50.46	Spring washer
50.56	Spring
50.57	Cylinder screw DIN EN ISO 4762 - M4x10
50.58	Protective conductor terminal
50.59	Cylinder screw DIN EN ISO 4762 - M4x6
50.81	Cylinder screw DIN EN ISO 4762 - M4x8
50.87	Threaded bush
50.127	Washer ISO 7093-1
50.128	Collar nut with sealing ring M6
50.139	Protective cover
50.140	Switch cover
50.141	Trip slide
50.142	Shakeproof washer
50.143	Connector, 2-pole (N/L)
50.144	Connector, 3-pole (L↑/L↓/0V)
50.154	Board support cpl. (incl. electronic)
50.175	BLDC motor
50.176	Distance bolt M4x45
50.193	Connector, 4-pole (Y in/Y out)
50.194	Power supply, cpl.
50.195	Fixing bracket for power supply

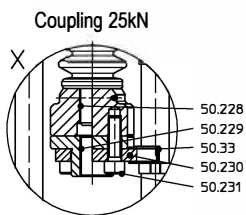
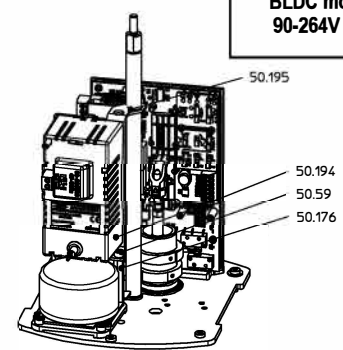
Technical data

Type		ARI-PREMIO-Plus 2G 2,2 kN	ARI-PREMIO-Plus 2G 5 kN
Thrust force	kN	2,2 kN	5,0 kN
Operating speed	mm/s	0,25 / 0,38 / 0,47 / 1,0 adjustable	
Travel distance max.	mm	50 mm	
Duty classification acc. to EN 60034-1		S3 - 80% ED / max. 1200 c/h (at +70°C)	
Supply voltage	V	24 V AC/DC	
Motor type		BLDC (Brushless DC motor)	
Power consumption	VA	max. 65 (depends on the operating speed)	
Torque switch		2 pcs. included internally	
Enclosure EN 60529		IP 65	
Max. storage temperature	°C	-40 °C ... +85 °C	
Max. permissible ambient temperature	°C	-20 °C ... +70 °C (For outdoor use and sub-zero temperatures, a heating is recommended!)	
Hand operating device		Yes (always running)	
Operation		optional:- 3-point: 12 V AC/DC to 250 V AC/DC 0 to 10 V DC load resistance 500 kOhm resolution 12 Bit 4 to 20 mA DC load resistance 125 Ohm resolution 12 Bit	
Max. cable cross section		Supply voltage: 2,5 mm ² 3-step input: 2,5 mm ² Input signals: 2,5 mm ²	
Mounting position		Any, except: motor not hanging downwards	
Characteristics at control signal failure		adjustable with slide switch: OPEN, STOP, CLOSE	
Gear lubricant		Klüber / Isoflex Topas NB152	
Weight	kg	5,4 kg	
Additional voltage		refer to page 6	
Accessories		refer to page 6 - 8	

Electric thrust actuator ARI-PREMIO®-Plus 2G 12 - 25 kN



**BLDC motor
90-264V AC**



Pos.	Description
50.1	Gearbox
50.2 / 50.3	Cable gland 2 x M16 x 1,5 / 1 x M20 x 1,5
50.6	Hood
50.7	Hood seal
50.10	Column
50.12	Handwheel (engageable)
50.15	Flange
50.16	Federring DIN 128 - A10
50.24	Distance column
50.25	Hexagon nut DIN EN ISO 4032 - M16
50.26	2-ear clamp
50.27	Coupling
50.30	Driving spindle
50.31	Spindle safety feature
50.32	Torsion safety feature
50.34	Bellow
50.35	Grub screw DIN ISO 4766 - M6
50.38	Guide spindle
50.39	Sechskantmutter DIN EN 24034 - M5
50.45	Shift lever
50.46	Spring washer
50.57	Cylinder screw DIN EN ISO 4762 - M4x10
50.58	Protective conductor terminal

Pos.	Description
50.59	Cylinder screw DIN EN ISO 4762 - M4x6
50.81	Cylinder screw DIN EN ISO 4762 - M4x8
50.87	Threaded bush
50.127	Washer ISO 7093-1
50.128	Collar nut with sealing ring M6
50.139	Protective cover
50.140	Switch cover
50.141	Trip slide
50.142	Shakeproof washer
50.143	Connector, 2-pole (N/L)
50.144	Connector, 3-pole (L↑/L↓/0V)
50.149	Axial joint
50.154	Board support cpl. (incl. electronic)
50.175	BLDC motor
50.176	Distance bolt M4x45
50.193	Connector, 4-pole (Y in/Y out)
50.194	Power supply, cpl.
50.195	Fixing bracket for power supply
50.196	Hexagon bolt DIN EN 24017 - M10x100
50.228	Spindle unit PPREMIO 25kN
50.229	Threaded bush PREMIO
50.230	Securing flange
50.231	Cylinder screw DIN EN ISO 4762 - M10x35

Technical data

Type		ARI-PREMIO-Plus 2G 12 kN	ARI-PREMIO-Plus 2G 15 kN	ARI-PREMIO-Plus 2G 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 adjustable		
Travel distance max.	mm	65 mm *		
Duty classification acc. to EN 60034-1		S3 - 80% ED / max. 1200 c/h (at +70°C)		
Supply voltage	V	24 V AC/DC		
Motor type		BLDC (Brushless DC motor)		
Power consumption	VA	max. 65 (depends on the operating speed)		max. 130
Torque switch		2 pcs. included internally		
Enclosure EN 60529		IP 65		
Max. storage temperature	°C	-40 °C ... +85 °C		
Max. permissible ambient temperature	°C	-20 °C ... +70 °C (For outdoor use and sub-zero temperatures, a heating is recommended!)		
Hand operating device		Yes (engageable)		
Operation		optional:- 3-point: 12 V AC/DC to 250 V AC/DC 0 to 10 V DC load resistance 500 kOhm resolution 12 Bit 4 to 20 mA DC load resistance 125 Ohm resolution 12 Bit		
Max. cable cross section		Supply voltage: 2,5 mm ² 3-step input: 2,5 mm ² Input signals: 2,5 mm ²		
Mounting position		Any, except: motor not hanging downwards		
Characteristics at control signal failure		adjustable with slide switch: OPEN, STOP, CLOSE		
Gear lubricant		Klübersynth G34-130		
Weight	kg	9,5 kg		11 kg
Additional voltage		refer to page 6		
Accessories		refer to page 6 - 8		

*other strokes on request

Additional voltage

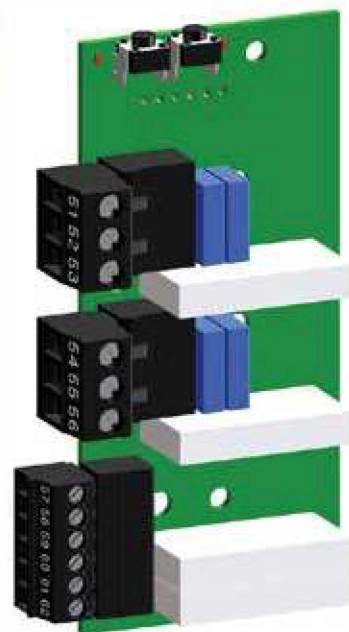
Switching power supply for ARI-PREMIO-Plus 2G		2,2 - 15 kN	25 kN
Voltage	V - Hz	90-264 V AC 47-63 Hz 127-370 V DC	
Power consumption	VA	max. 65	max. 130

Transformer for ARI-PREMIO-Plus 2G		2,2 - 15 kN	25 kN
Voltage	V - Hz	3~ 400 V 50/60 Hz	
Power consumption	VA	max. 65	max. 119


Accessories

Type	ARI-PREMIO-Plus 2G 2,2 - 25 kN	
Binary feedback	Type Relay board	<ul style="list-style-type: none"> • 2 intermediate positions, - to set by switch, - changeover contacts 250 V, 3 A ohm resistive load, 6 A inductive load • 1 failure signal and 1 warning signal, - changeover contacts 30 V AC/DC, 2A
Electronic position indicator	Type Analog output card	<ul style="list-style-type: none"> • analogue output for position feedback, • 4-20 mA switchable to 0-10V • invertable • galvanic isolation between the mains voltage and feedback signal • active
Heating	Heating resistor	<ul style="list-style-type: none"> • 230 V AC, 115 V AC, 24 V AC/DC; 15 W automatic switching circuit
Potentiometer	Conductive (max. 2 only)	<ul style="list-style-type: none"> • 1000, 2000, 5000 Ohm, 1 Watt (at +70 °C) • Wiper current max. 0,01 mA / recommended 0,002 mA
	Wire (max. 2 only)	<ul style="list-style-type: none"> • 100, 200 Ohm, 0,5 Watt (at +70 °C) • Wiper current max. 35 mA / recommended 0,02 mA
LED – Status Indicator	2,2 / 5kN	<ul style="list-style-type: none"> • From the outside on the visible display of the drive status; • green= OK.; red=error; yellow= warning; blue=maintenance; • Intermediate upgrade modules available starting with SW version 3.3.X
	12 / 15 / 25kN	
(Process-) controller	Type Processcontroller dTRON 316	<ul style="list-style-type: none"> • Mounted in the actuator • 4-20mA output for operation of PREMIO-Plus 2G • for resistance thermometers and thermocouples (provided by the customer) or standard signals, • Pre-configured for temperature control: control range from -200°C up to +850°C (resistance thermometer)
Bus systems	Profibus DP (via dTRON 316 as Gateway)	<ul style="list-style-type: none"> • Control command: - 3-point: OPEN, Stop, Close - Nominal position value 0-100% • Feedback signals - Actual position value (requires electronic position indicator in the PREMIO-Plus 2G - 2 binary signals (requires a relay card in the PREMIO-Plus 2G) optional: Limit switch (2x), failure signal, warning signal
	Modbus RTU (via dTRON 316 as Gateway)	

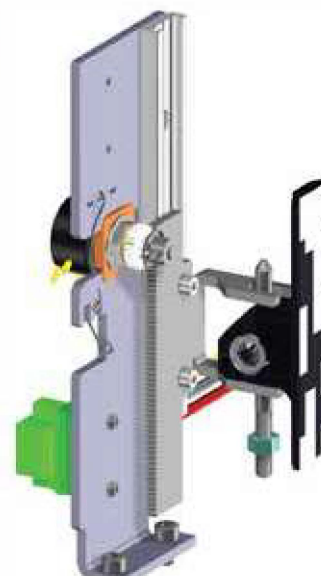
Relay board					
Relay (zero-potential changeover contacts)		1 (open)	1 (close)	3 warning	4 failure
switching capacity	U_B	250 V, 3 A ohm resistive load, 6 A inductive load		30 V AC/DC, 2A	
max. cable cross section		2,5 mm ²		1,5 mm ²	
Contact material		Gold			
Storage temperature		-40 °C ... +85 °C			
Operating temperature		-40 °C ... +85 °C (Note temperature range for the entire actuator!)			
Features:					
<ul style="list-style-type: none"> Setting of the switching points over push buttons zero-potential changeover contacts 2 intermediate positions or end positions 1 Collective failure message: <ul style="list-style-type: none"> - Control signal failure - Position can not be reached (Motor-/gear failure) - Blocking (actual) - Actuator is not initialised - Voltage failure 1 Collective warning message: <ul style="list-style-type: none"> - Hand operating device - Blockage (identified) - Position can not be reached - Maintenance - Internal temperature exceeded - ED management active - Silent running - too small travel during initialization 					



Analog output card			
Output control signal	Y_U	0 -10V DC Measuring resistance (load resistance) Signal resolution	max. 2 kOhm load resistance 12 Bit
Output control signal	Y_I	4 -20mA DC, active Measuring resistance (load resistance) Signal resolution	max. 500 Ohm 12 Bit
Features:			
<ul style="list-style-type: none"> for position transmitter 			



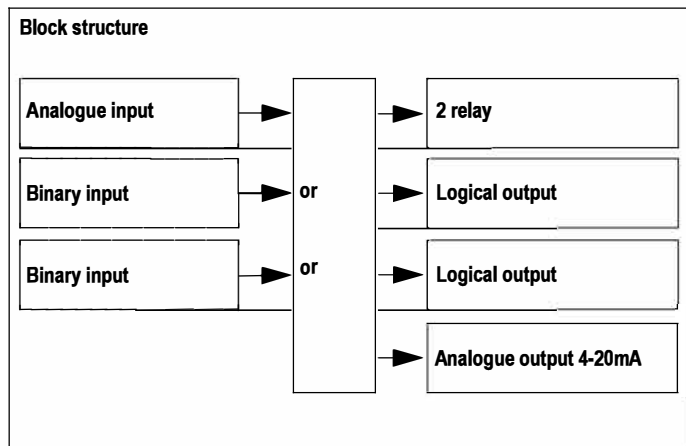
Potentiometer		
Type	MP21 (Standard)	RP19
Resistance values	1000, 2000, 5000 Ohm	100, 200 Ohm
Element technology	Conductive plastic	Wire
Resistance tolerance	±15 %	±3 %
Independent linearity tolerance	±1 %	±0,5 %
Loading capacity at +70°C (0 W at 105°C)	1 Watt	0,5 Watt
Max. / recommended contact current	0,01 mA / 0,002 mA	35 mA / 0,02 mA
Max. cable cross section	2,5 mm ²	
Durability	10 Mio. turns	1 Mio. turns



Integrated (Process-) controller dTRON 316

Features

- programmable analogue input
- 2 auto-tune methods
- Program function with 8 program sections or slope-function
- 2 Timer functions
- 4 limit-comparators
- Interlock for keyboard and level
- 4 programmable setpoints, two parameter sets
- 4 digit resolution (max. 2 decimal places)
- Controller characteristic P, PD, PI or PID
- Actual value input by usual temperature sensors (see in table)
- 2 relay outputs 230V/3A (shutter)
- 4-20mA output for operation of PREMIO-Plus 2G
- 2 combinable binary inputs / binary outputs



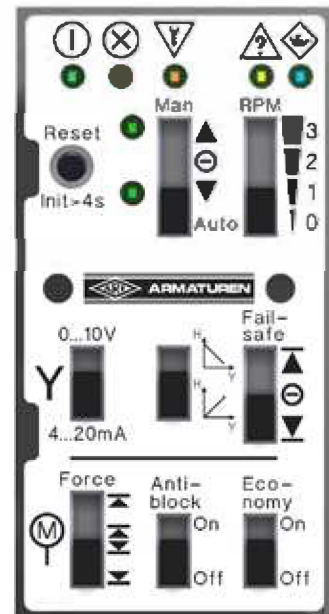
Input thermocouples	
Description	Measuring range
Fe-CuNi „L“	-200 ...+900°C
Fe-CuNi „J“ DIN EN 60584	-200 ...+1200°C
Cu-CuNi „U“	-200 ...+600°C
Cu-CuNi „T“ DIN EN 60584	-200 ...+400°C
NiCr-Ni „K“ DIN EN 60584	-200 ...+1372°C
NiCr-CuNi „E“ DIN EN 60584	-200 ...+1000°C
NiCrSi-NiSi „N“ DIN EN 60584	-100 ...+1300°C
Pt10Rh-Pt „S“ DIN EN 60584	0+1768°C
Pt13Rh-Pt „R“ DIN EN 60584	0+1768°C
Pt30Rh-Pt6Rh „B“ DIN EN 60584	0+1820°C
W5Re-W26Re „C“	0+2320°C
W3Re-W25Re „D“	0+2495°C
W3Re-W26Re	0+2400°C

Input standardized active current or voltage signals	
Description	Measuring range
Voltage	0 (2) ... 10V, input resistance Re > 100kOhm
Current	0 (4) ... 20mA, voltage drop ≤ 1,5 V

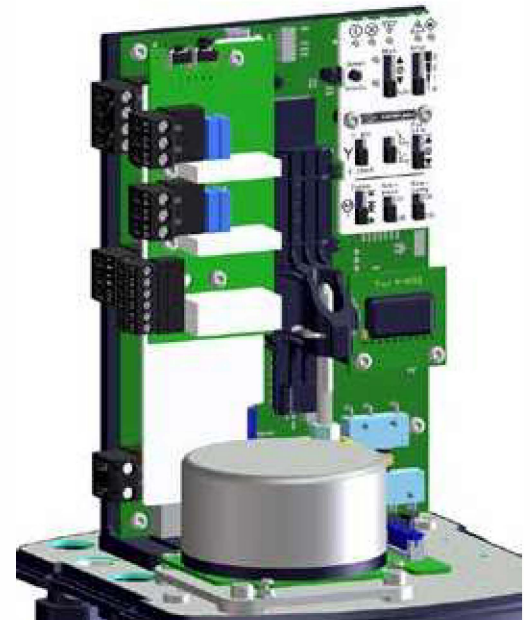
Input resistance thermometer		
Description	Type of connection	Measuring range
Pt 100 (standard)	2-wire / 3-wire / 4-wire	-200...+850°C
Pt 500	2-wire / 3-wire / 4-wire	-200...+850°C
Pt 1000	2-wire / 3-wire / 4-wire	-200...+850°C
KTY11-6	2-wire	-50...+150°C
Sensor output resistance: max. 30Ohm each circuit at 3- and 4-wire connection		
Measurement current: approx. 250µA		
Circuit adjustment: - at 3- and 4-wire connection not necessary. - at 2-wire connection a circuit adjustment can be done with software by correcting the actual value.		

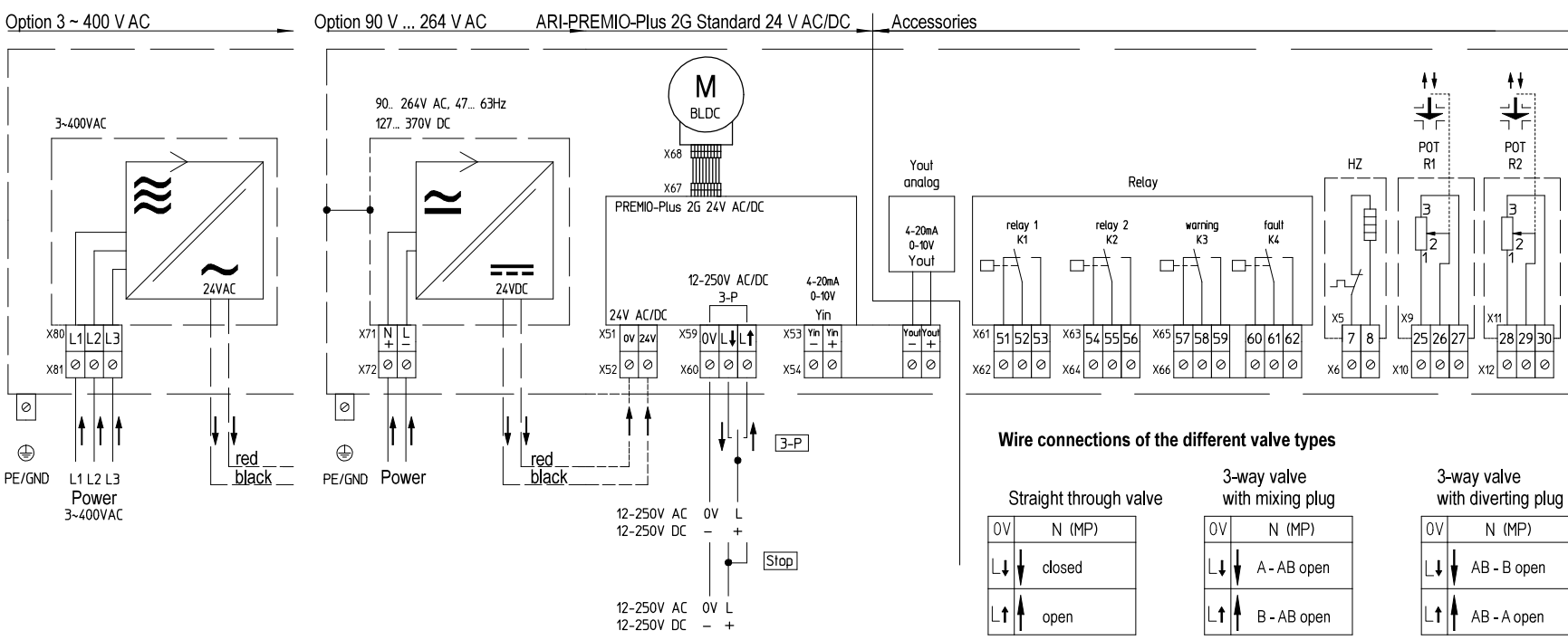
Direct operator panel

- Setting with switches, without a PC or tools
- Failure signals acc. to Namur 107
- Switchable economy function for extended lifetime
- Local operation
- Anti-block function
- Control signal switch 0-10 V / 4-20 mA
- Control signal invertible
- Adjustable failsafe characteristic at control signal failure
- Adjustable motor speed to adapt the operating speed


Additional features:

- Automatic valve travel adaption
- Priority control for 3-point signals - e.g. for anti-freeze function
- Economy function for extended lifetime
 - Prevents cycling of the valve, reducing wear
 - Control optimisation for 3-point operation
- Tight-closing function
- Detection and suppression of interferences on the signal line
- Automatic fault detection (incl. emergency functionality)
- Temperature duty cycle management and performance adjustment
- Avoid condensation by integrated humidity sensor with heating elements
- Contactless position determination
- Failure and warning signal via relay contact

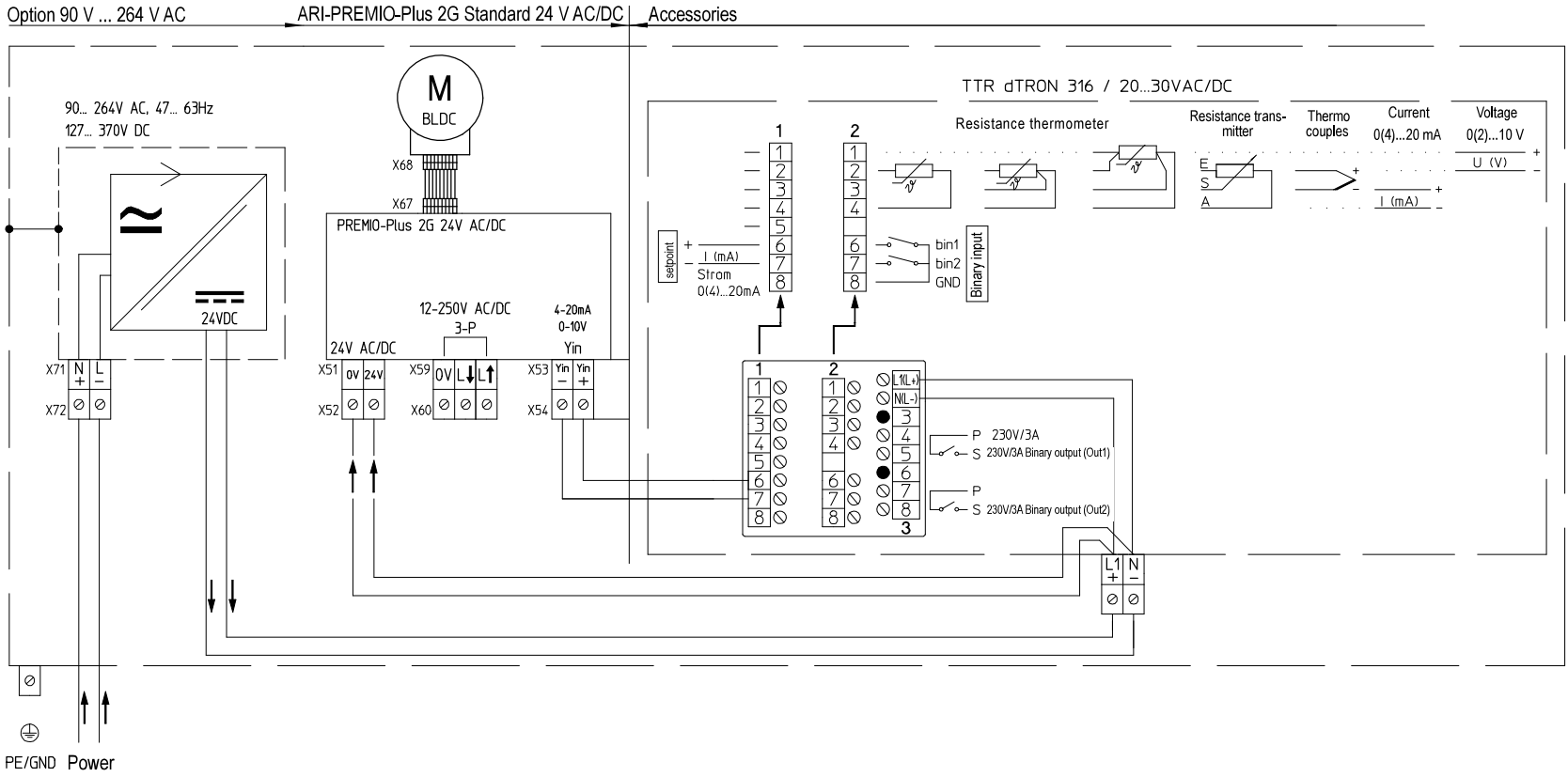


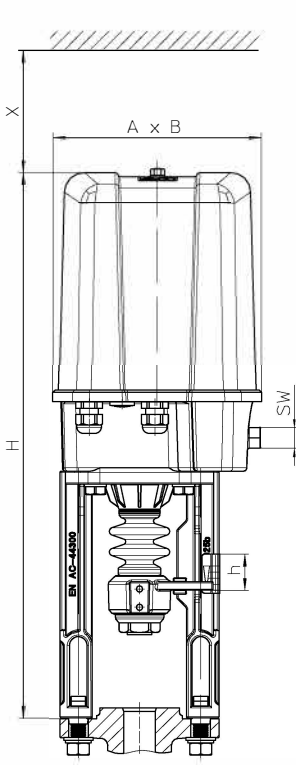


Wire connections of the different valve types

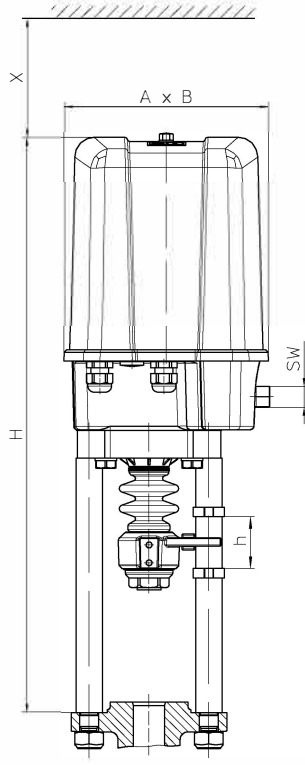
Straight through valve		3-way valve with mixing plug		3-way valve with diverting plug	
0V	N (MP)	0V	N (MP)	0V	N (MP)
L ↓	closed	L ↓	A - AB open	L ↓	AB - B open
L ↑	open	L ↑	B - AB open	L ↑	AB - A open

- HZ** Heating resistor
- TTR** Electronic temperature controller dTRON316
- Relay** Relay board
- Y out** Analog output card
- POT** Potentiometer



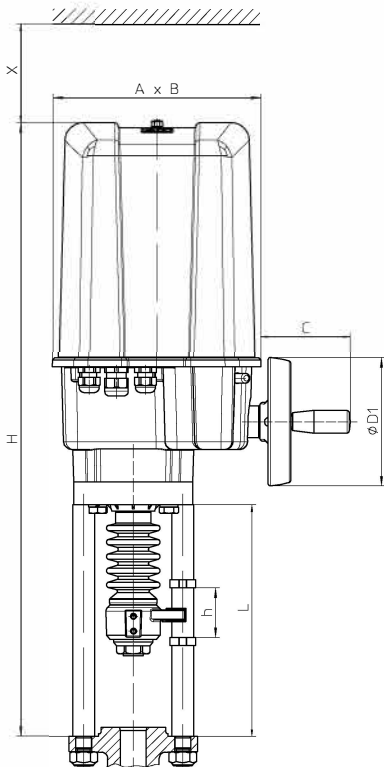


2,2 - 5 kN
Nominal travel max. 30 mm



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

		2,2 - 5 kN	
A	(mm)	171	
B	(mm)	156	
SW	(mm)	17	
X	(mm)	150	
H	(mm)	448	482
h (Nominal travel)	(mm)	max. 30	max. 50



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	264

