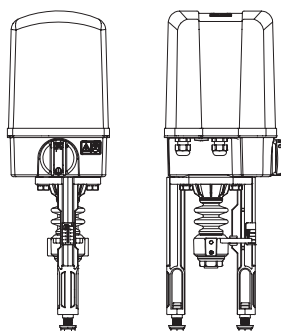


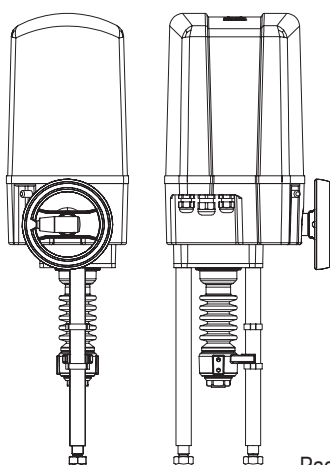
Electric thrust actuator ARI-PREMIO

ARI-PREMIO® 2,2 - 5 kN (495 - 1124 lbf)
Electric thrust actuator

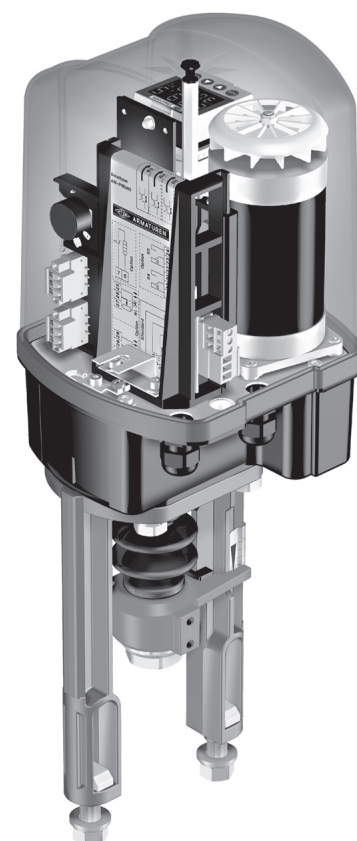


Page 2

ARI-PREMIO® 12 - 15 kN (2698 - 3372 lbf)
Electric thrust actuator



Page 4



Features

- 2 torque switches
- Handwheel
- Operative ambient temperatures
-20°C up to +70°C (-4 °F up to +158 °F)
- Enclosure IP 65
- Additional devices available, e.g. potentiometer
- Travel indicator

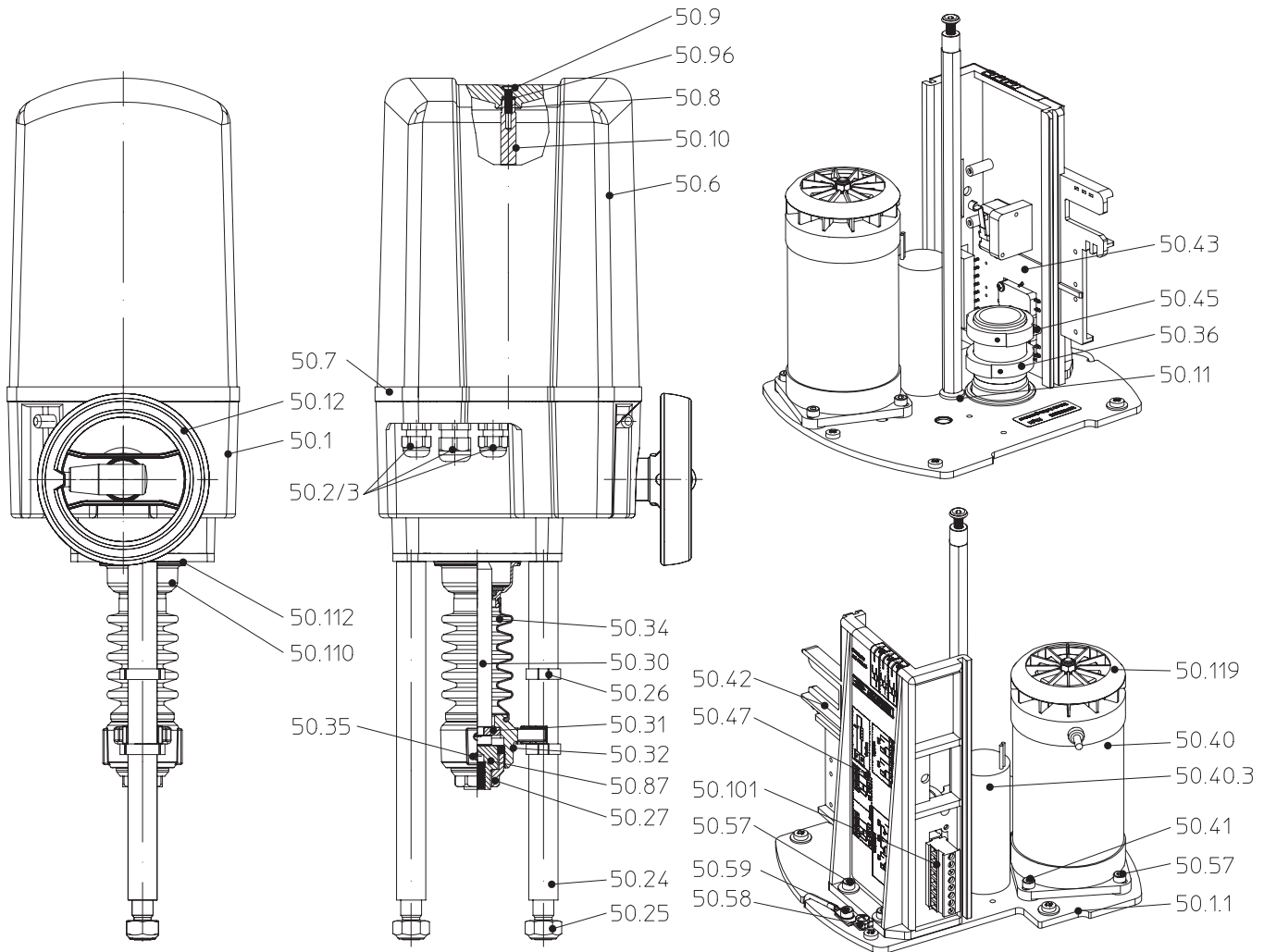
Type	ARI-PREMIO 2,2 kN (495 lbf)	ARI-PREMIO 5 kN (1124 lbf)	
Thrust force	2,2 kN (495 lbf)	5,0 kN (1124 lbf)	
Travel distance max.	50 mm (1,97 inch)		
Duty classification in accordance with EN 60034-1/A11	S3 80% DC / max. 1200 c/h		S3 50% 1200 c/h
Control speed	0,38 mm/s (0,01 inch/s)	0,38 mm/s (0,01 inch/s)	1,0 mm/s (0,04 inch/s)
Motor voltage	230V - 50Hz / 60Hz ¹⁾		
Power consumption VA	21	33	75
	For power consumption of other voltages and frequencies refer to type plate or on request.		
Torque switch	2 pcs., fixed wiring, switching capacity 10A, 250V~		
Travel switch ²⁾	1 pcs., fixed wiring switching capacity 10A, 250V~		
Enclosure EN 60529	IP 65		
Max. storage temperature	-40 °C ... +85 °C (-40 °F ... +185 °F)		
Max. permissible ambient temperature	-20 °C ... +70 °C (-4 °F ... +158 °F)		
	For operation outside or at freezing temperature a heating is recommended.		
Top mounted handwheel	Yes (always running)		
Mounting position	Horizontally to vertical above valve body (any position 90° from vertical).		
Gear lubricant	Klüber / Isoflex Topas NB152		
Weight	5,4 kg (11,9 lb)	6,0 kg (13,2 lb)	6,5 kg (14,3 lb)

Accessories	ARI-PREMIO 2,2 kN (495 lbf)	ARI-PREMIO 5 kN (1124 lbf)
Thrust force	2,2 kN (495 lbf)	5,0 kN (1124 lbf)
Trip slide for travel switch S3	for actuating travel switch S3 / retracting spindle (the travel switch S3 exists in the standard version)	
Additional intermediate position switches S4, S5 ²⁾	2 additional intermediate position switches S4 and S5, zero potential, switching capacity 10A, 250V~	
Additional intermediate switches for Low-voltage / electronic system S4, S5 ²⁾	2 additional intermediate position switches S4 and S5, zero potential, with gold contacts, for low switching capacities and at aggressive atmosphere, switching capacity max. 0,1A, 4-30V	
Potentiometer ²⁾	Maximum 2 possible. Different resistance-values: 100 Ohm, 200 Ohm, 500 Ohm, 1000 Ohm 1,5 watt	
TÜV-approved potentiometer ²⁾	max. 2 only Ohmage 5000 or optional: 100, 200, 500, 1000 Ohm; 1,5 Watt; Not compatible for use with the heating resistor or RI21! No retrofitting possible!	
Electronic position controller ES 11 ²⁾	0 (2) ... 10V; 0 (4) ... 20 mA - Only one potentiometer possible. Not compatible for use with the temperature controller.	
Electronic position indicator RI 21 ²⁾	0 (2) ... 10V; 0 (4) ... 20 mA - Only one potentiometer possible. Using the temperature controller, installation is only possible in the control cabinet.	
Electronic position indicator RI 32 ²⁾	2 ... 10V; 4 ... 20 mA - Only one potentiometer possible.	
Heating resistor	(automatic switching circuit) 230 VAC, 115VAC, 24VAC, 15 Watt	
Additional voltage / frequencies	24V - 50/60Hz ¹⁾ 115V - 50/60Hz ¹⁾	24V - 50Hz 24V - 60Hz ¹⁾ 24V - DC (Option DC-Modul necessary) 115V - 50/60Hz ¹⁾
Standard-voltage connection board PA	2 torque switches and 1 travel switch, zero potential, switching capacity 10A, 250V~	
Low-voltage connection board (electronic) NA	2 torque switches and 1 travel switch, zero potential, for free wiring, with gold contacts, for low switching capacities and at aggressive atmosphere, switching capacity max. 0,1A, 4-30V	
Integrated temperature controller dTRON 316	Temperature controller (3-state stepper controller) in microprocessor technology. Control range: -200°C to 850°C (-328°F bis 1562°F) (resistance thermometer) Voltage: 24V, 115V or 230V 50/60Hz Compatible with resistance thermometers and thermocouples (provided by customer), standardized active current or voltage signals. Not compatible for use with the ES 11!	
DC-Module 3-step converter	To control ARI-PREMIO 230V-50Hz with 24VDC. Not compatible for use with the temperature controller!	

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

²⁾ Option trip slide necessary

Electric actuator ARI-PREMIO 12 - 15kN (2698 - 3372 lbf)



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	Sealing washer DIN EN ISO 7089 - 5,3
50.10	Column
50.12	Handwheel (engageable)
50.24	Distance column
50.25	Hexagon nut DIN EN ISO 4032 - M12
50.26	2-ear clamp
50.27	Coupling
50.30	Driving spindle
50.31	Spindle safety feature
50.32	Torsion safety feature

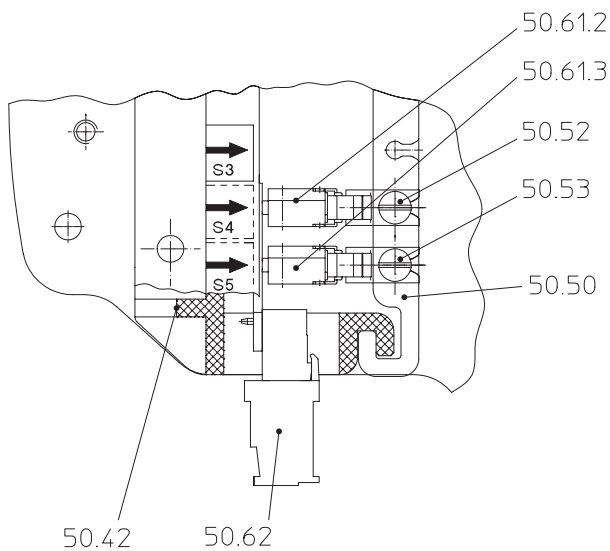
Pos.	Description
50.34	Bellow
50.36	Set collar
50.37	Grub screw DIN 913 - M3x5
50.40	Synchronous motor, complete
50.40.3	Capacitor
50.42	Board support
50.43	Standard board
50.43.1	Travel switch (valve - open) S3
50.43.2	Torque switch
50.45	Shift lever
50.47	Circuit diagram sticker
50.58	Protective conductor terminal
50.87	Threaded bush
50.101	Connector, 8-pole
50.119	Fan wheel

Type	ARI-PREMIO 12 kN (2698 lbf)		ARI-PREMIO 15 kN (3372 lbf)
Thrust forc	12,0 kN (2698 lbf)		15,0 kN (3372 lbf)
Travel distance max.	80 mm (3,15 inch)		
Duty classification in accordance with EN 60034-1/A11	S3 50% DC / max. 1200 c/h		
Control speed	0,38 mm/s (0,01 inch/s)	0,79 mm/s (0,03 inch/s)	0,38 mm/s (0,01 inch/s)
Motor voltage	230V - 50Hz		
Power consumption VA	69	85	69
	For power consumption of other voltages and frequencies refer to type plate or on request.		
Torque switch	2 pcs., fixed wiring, switching capacity 16A, 250V~		
Travel switch ²⁾	1 pcs., fixed wiring switching capacity 16A, 250V~		
Enclosure EN 60529	IP 65		
Max. storage temperature	-40 °C ... +85 °C		
Max. permissible ambient temperature	-20 °C ... +70 °C		
	For operation outside or at freezing temperature a heating is recommended.		
Top mounted handwheel	Yes (engageable)		
Mounting position	Horizontally to vertical above valve body (any position 90° from vertical).		
Gear lubricant	Molyduval Valenzia H2		
Weight	10,5 kg (22,1 lb)		

Accessories für Type	ARI-PREMIO 12 kN (2698 lbf)		ARI-PREMIO 15 kN (3372 lbf)
Thrust force	12,0 kN (2698 lbf)		15,0 kN (3372 lbf)
Trip slide for travel switch S3	for actuating travel switch S3 / retracting spindle (the travel switch S3 exists in the standard version)		
Additional intermediate position switches S4, S5 ²⁾	2 additional intermediate position switches S4 and S5, zero potential, switching capacity 10A, 250V~		
Additional intermediate position switches for Low-voltage / electronic system S4, S5 ²⁾	2 additional intermediate position switches S4 and S5, zero potential, with gold contacts, for low switching capacities and at aggressive atmosphere, switching capacity max. 0,1A, 4-30V		
Potentiometer ²⁾	Maximum 2 possible. Different resistance-values: 100 Ohm, 200 Ohm, 500 Ohm, 1000 Ohm 1,5 Watt		
TÜV-approved potentiometer ²⁾	max. 2 only Ohmage 5000 or optional: 100, 200, 500, 1000 Ohm; 1,5 Watt; Not compatible for use with the heating resistor or RI21! No retrofitting possible!		
Electronic position controller ES 11 ²⁾	0 (2) ... 10V; 0 (4) ... 20 mA - Only one potentiometer possible. Not compatible for use with the temperature controller.		
Electronic position indicator RI 21 ²⁾	0 (2) ... 10V; 0 (4) ... 20 mA - Only one potentiometer possible. Using the temperature controller, installation is only possible in the control cabinet.		
Electronic position indicator RI 32 ²⁾	2 ... 10V; 4 ... 20 mA - Only one potentiometer possible.		
Heating resistor	(automatic switching circuit) 230 VAC, 115VAC, 24VAC, 15 Watt		
Additional voltage / frequencies	24V - 50Hz / 24V - 60Hz ¹⁾ 115V - 50Hz / 115V - 60Hz ¹⁾ 230V - 60Hz ¹⁾ 3~400V - 50Hz / 3~400V - 60Hz ¹⁾		24V - 50Hz / 24V - 60Hz ¹⁾ 24V - DC (Option DC-Modul necessary) 115V - 50Hz / 115V - 60Hz ¹⁾ 230V - 60Hz ¹⁾ 3~400V - 50Hz / 3~400V - 60Hz ¹⁾
Standard-voltage connection board PA	Possible at standard design		
Low-voltage connection board (electronic) NA	2 torque switches and 1 travel switch, zero potential, for free wiring, with gold contacts, for low switching capacities and at aggressive atmosphere, switching capacity max. 0,1A, 4-30V		
Integrated temperature controller dTRON 316	Temperature controller (3-state stepper controller) in microprocessor technology. Control range: -200°C to 850°C (-328°F bis 1562°F) (resistance thermometer) Voltage: 24V, 115V or 230V 50/60Hz Compatible with resistance thermometers and thermocouples (provided by customer), standardized active current or voltage signals. Not compatible for use with the ES11!		
Integrated reversing contactor	Actuator with 400V-50Hz and 440V-60Hz Only 1 electronic module possible!		
Phase control relay	Only in addition with integrated reversing contactor!		
DC-Module 3-step converter	To control ARI-PREMIO 230V-50Hz with 24VDC. Not compatible for use with the temperature controller!		

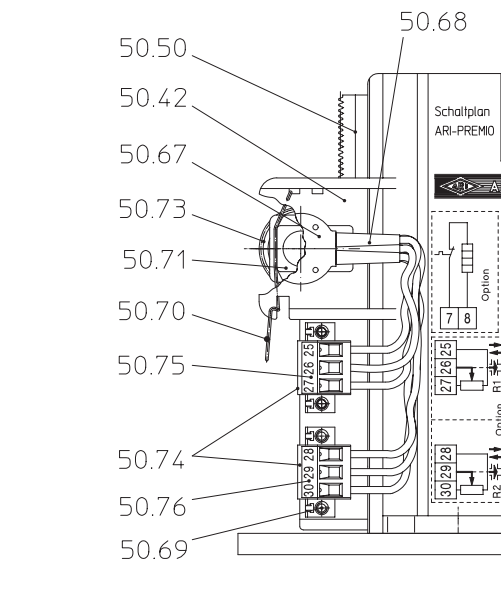
¹⁾ Control speed and power consumption are 20% higher at frequency of 60 Hz.

²⁾ Option trip slide necessary



Additional travel 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

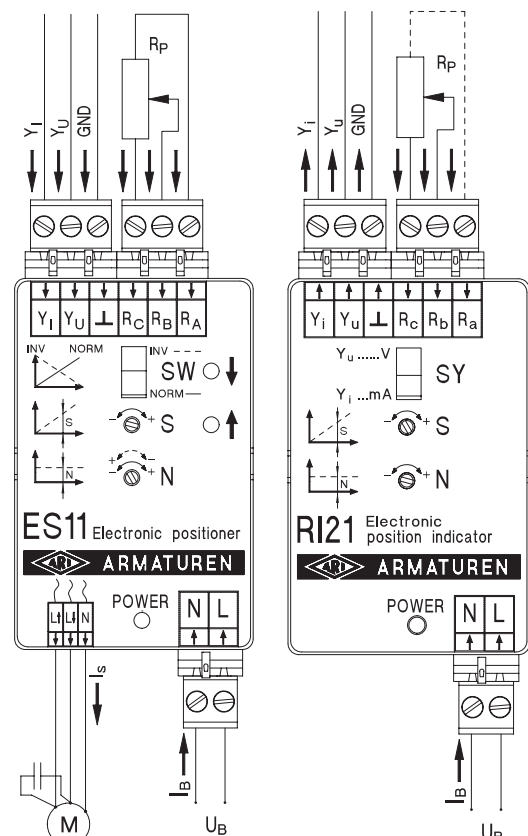
Pos.	Description
50.42	Board support
50.50	Trip slide
50.67	Potentiometer
50.68	Connecting cable
50.69	Self-tapping screw
50.70	Pinch spring
50.71	Slide block
50.73	Pinion
50.74	Connector, 3-pole

Electronic position controller ES11

Operating voltage	U_B	24V-50/60Hz	115V-50/60Hz	230V-50/60Hz
Operating current without load	I_B	150 mA	40 mA	20 mA
Input control signal	Y_U	0 (2) 10V DC - ($R_I = 30 \text{ kOhm}$)		
Input control signal	Y_I	0 (4) 20 mA DC - ($R_I = 125 \text{ Ohm}$)		
Potentiometer input	R_P	0 10 kOhm, recommended 0 1 kOhm (Potentiometer can be used only as a voltage divider)		
Three-step switching current	I_S	4A max.		

Electronic position indicator RI21

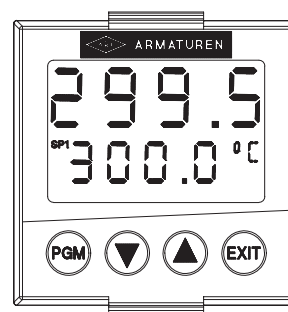
Operating voltage	U_B	24V-50/60Hz	115V-50/60Hz	230V-50/60Hz
Operating current without load	I_B	150 mA	40 mA	20 mA
Output control signal	Y_U	0 (2) 10V DC - (load resistance > 1000 Ohm)		
Output control signal	Y_I	0 (4) 20 mA DC - (load resistance max. 800 Ohm)		
Resistance	R_P	0 1000 Ohm		



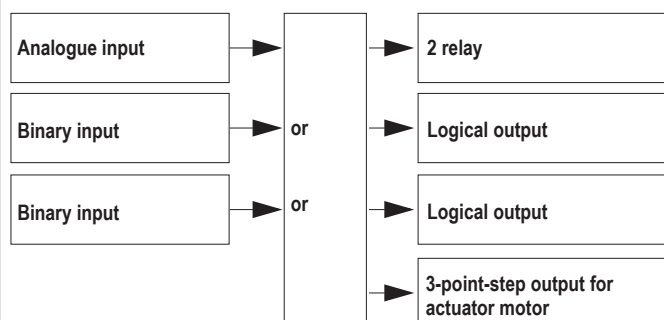
Integrated temperature controller dTRON 316

Features

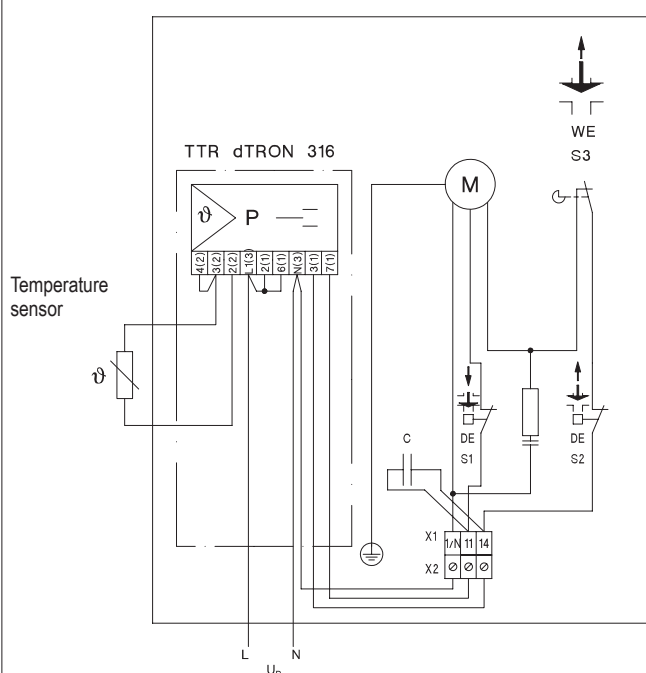
- programmable analogue input
- 2 auto-tune methods
- Program function with 8 program sections or slope-function
- 2 Timer functions
- 4 limit-comparators
- Interlock for keyboard and level
- 4 programmable setpoints, two parameter sets
- 4 digit resolution (max. 2 decimal places)
- Controller characteristic 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



Block structure



Function in the ARI-PREMIO-thrust actuator



Input thermocouples

Description	Measuring range
Fe-CuNi „L“	-200 ...+900°C (-328 ...+1652°F)
Fe-CuNi „J“ DIN EN 60584	-200 ...+1200°C (-328 ...+2192°F)
Cu-CuNi „U“	-200 ...+600°C (-328 ...+1112°F)
Cu-CuNi „T“ DIN EN 60584	-200 ...+400°C (-328 ...+752°F)
NiCr-Ni „K“ DIN EN 60584	-200 ...+1372°C (-328 ...+2501°F)
NiCr-CuNi „E“ DIN EN 60584	-200 ...+1000°C (-328 ...+1832°F)
NiCrSi-NiSi „N“ DIN EN 60584	-100 ...+1300°C (-148 ...+2372°F)
Pt10Rh-Pt „S“ DIN EN 60584	0+1768°C (32 ...+3214°F)
Pt13Rh-Pt „R“ DIN EN 60584	0+1768°C (32 ...+3214°F)
Pt30Rh-Pt6Rh „B“ DIN EN 60584	0+1820°C (32 ...+3308°F)
W5Re-W26Re „C“	0+2320°C (32 ...+4208°F)
W3Re-W25Re „D“	0+2495°C (32 ...+4523°F)
W3Re-W26Re	0+2400°C (32 ...+4352°F)

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 (328 ...+1562°F)
Pt 500	2-wire / 3-wire / 4-wire	-200...+850°C (328 ...+1562°F)
Pt 1000	2-wire / 3-wire / 4-wire	-200...+850°C (328 ...+1562°F)
KTY11-6	2-wire	-50...+150°C (-58 ...+302°F)

Sensor output resistance:
max. 30Ohm each circuit at 3- and 4-wire connection

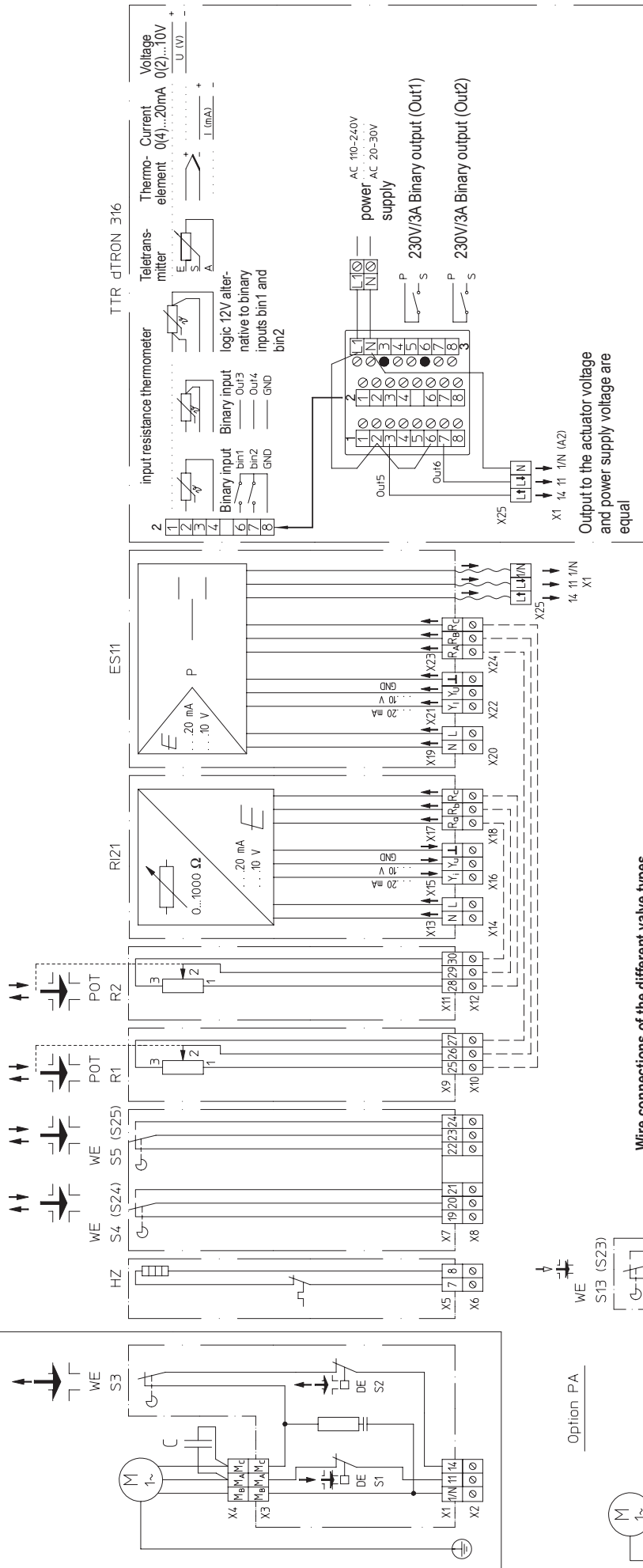
Measurement current: approx. 250µA

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.

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

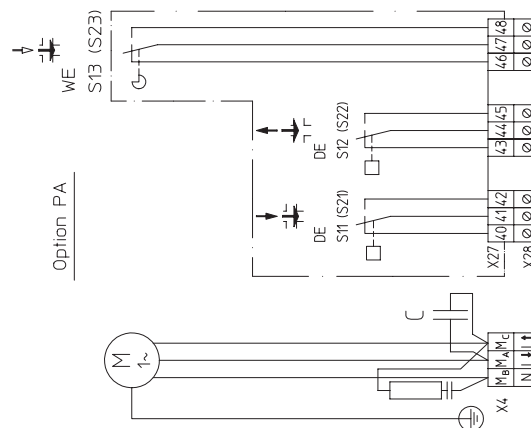
1/N	N (MP)
11	A - AB open
14	B - AB open

3-way valve with diverting plug

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

Options NA

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



HZ Heating resistor

DE Torque switch

WE (S3) Travel switch for limiting the travel distance in opening direction

R121 Electronic position indicator

ES11 Electronic position controller

NA Low-voltage connection board, potentialfrei

PA Standard-voltage connection board, zero potential

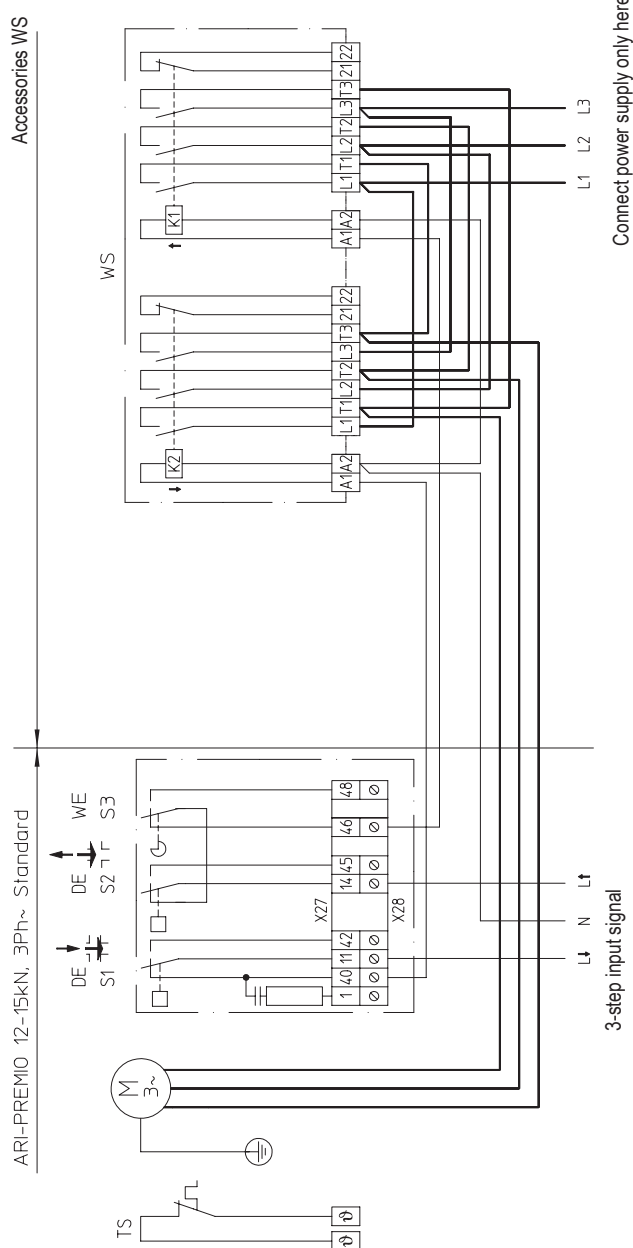
POT Potentiometer

WE Travel switch, zero potential

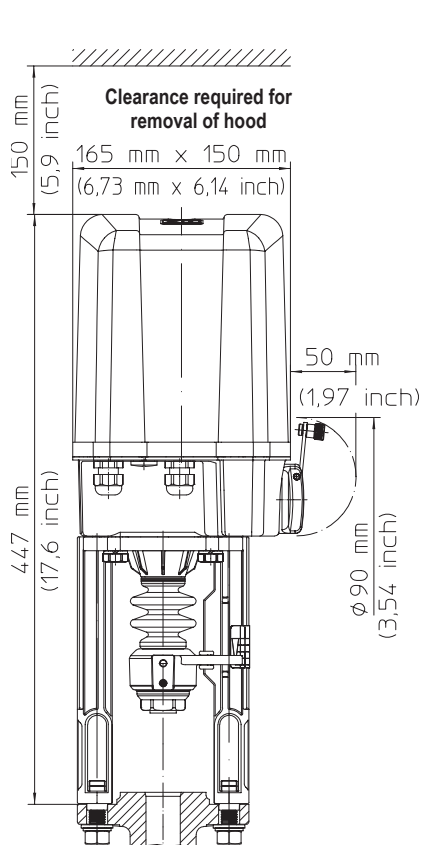
TTR Electronic temperature controller dTRON316

Output to the actuator voltage and power supply voltage are equal

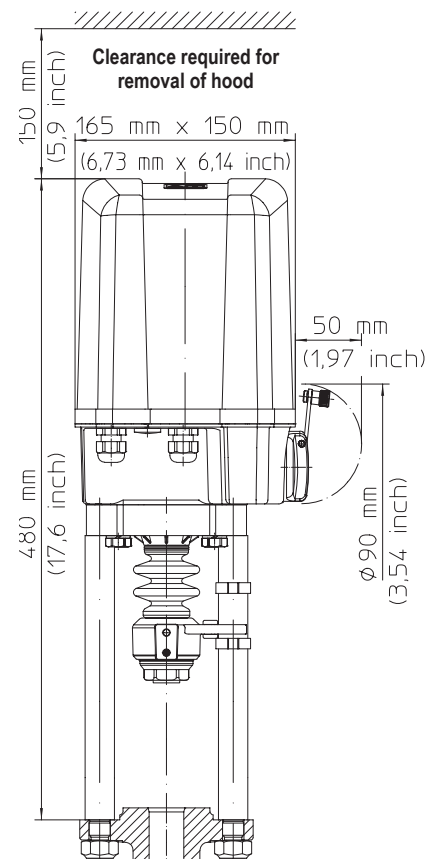




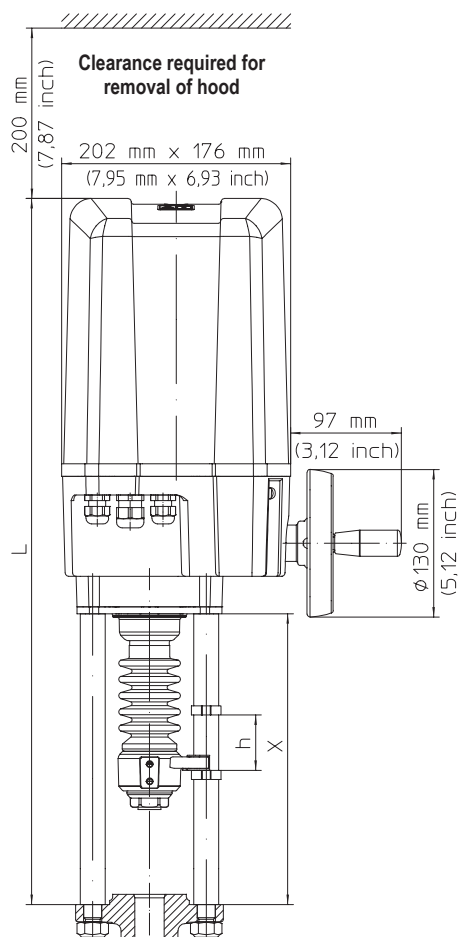
Please check the operating direction of the actuator !



ARI-PREMIO 2,2 - 5 kN (495 - 1124 lbf)
Nominal travel max. 30 mm (1,18 inch)



ARI-PREMIO 2,2 - 5 kN (495 - 1124 lbf)
Nominal travel > 30 mm - 50 mm (> 1,18 inch - 1,97 inch)



ARI-PREMIO 12 - 15 kN (2698 - 3372 lbf)
Nominal travel max. 80 mm (3,15 inch)

X	L	h
(mm)	(mm)	(mm)
236	602	max. 30
256	622	max. 50
271	637	max. 65
286	652	max. 80

X	L	h
(inch)	(inch)	(inch)
9,29	23,70	max. 1,18
10,08	24,49	max. 1,97
10,67	25,08	max. 2,56
11,26	25,67	max. 3,15



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