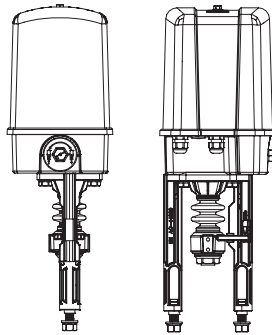


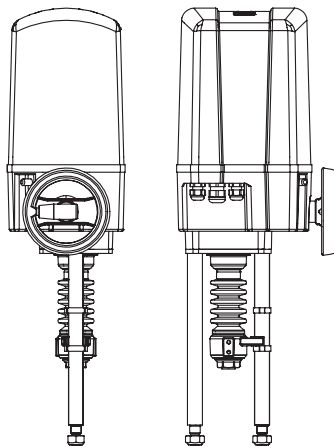
Electric actuator ARI-PREMIO®-Plus

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

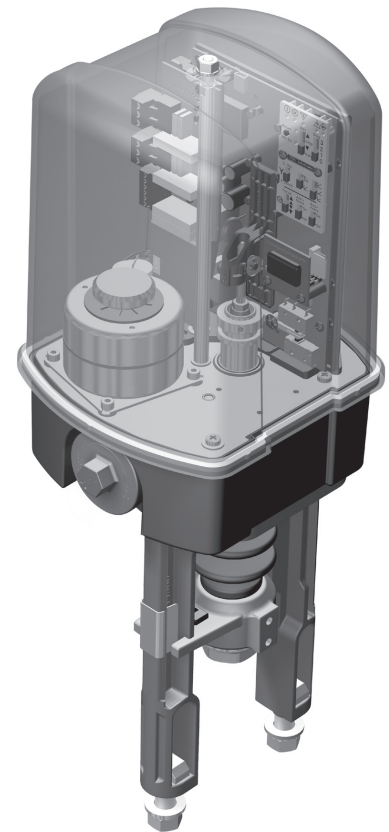


Page 2

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



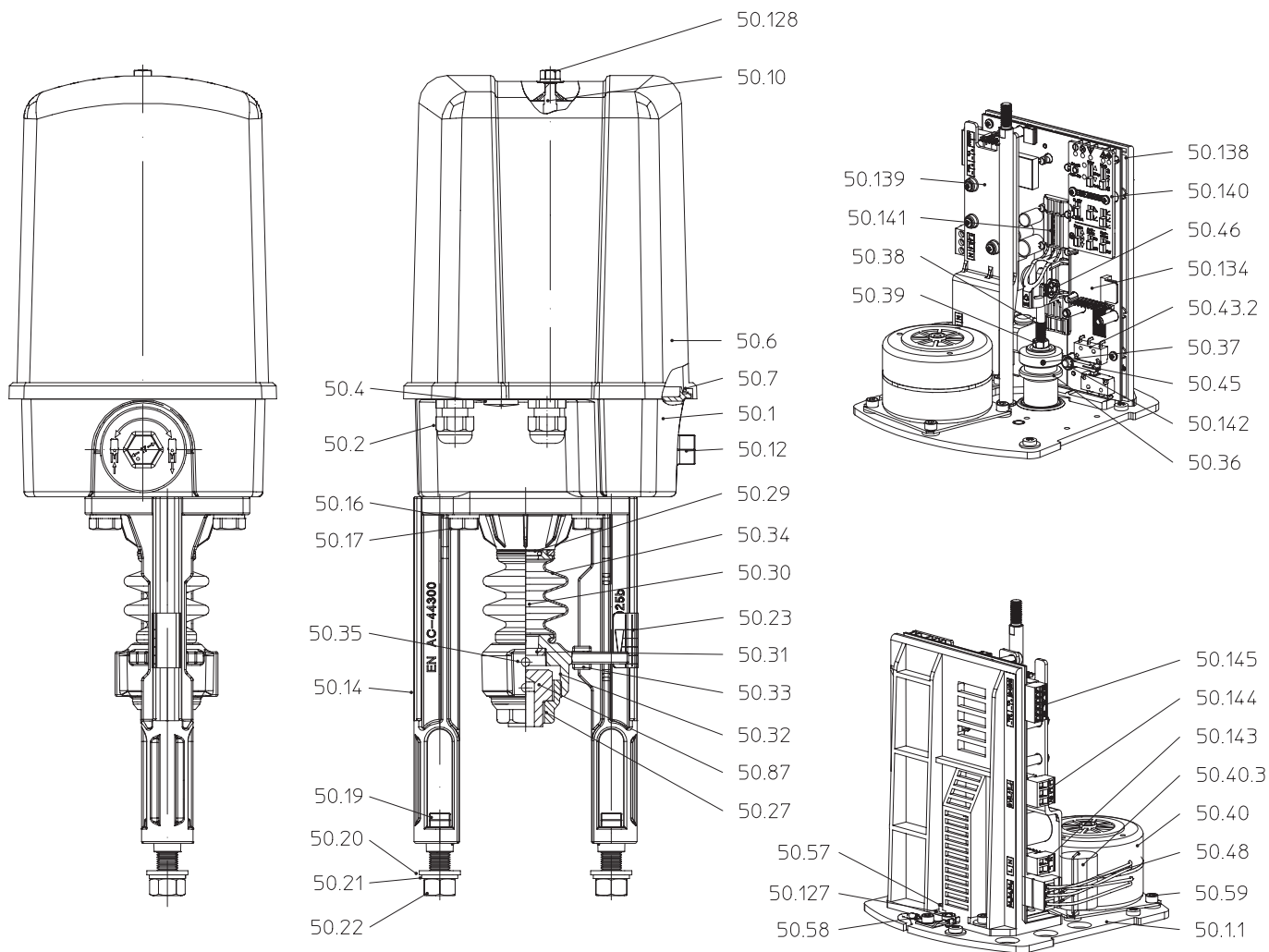
Page 4



**Features**

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

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



Pos.	Description
50.1	Gear box
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
50.19	T-head bolt DIN 261-M12x40
50.23	Lift dial
50.27	Coupling
50.30	Driving spindle
50.31	Spindle safety feature
50.32	Torsion safety feature
50.34	Bellow
50.36	Bushing
50.37	Grub screw DIN 913 - M3x5

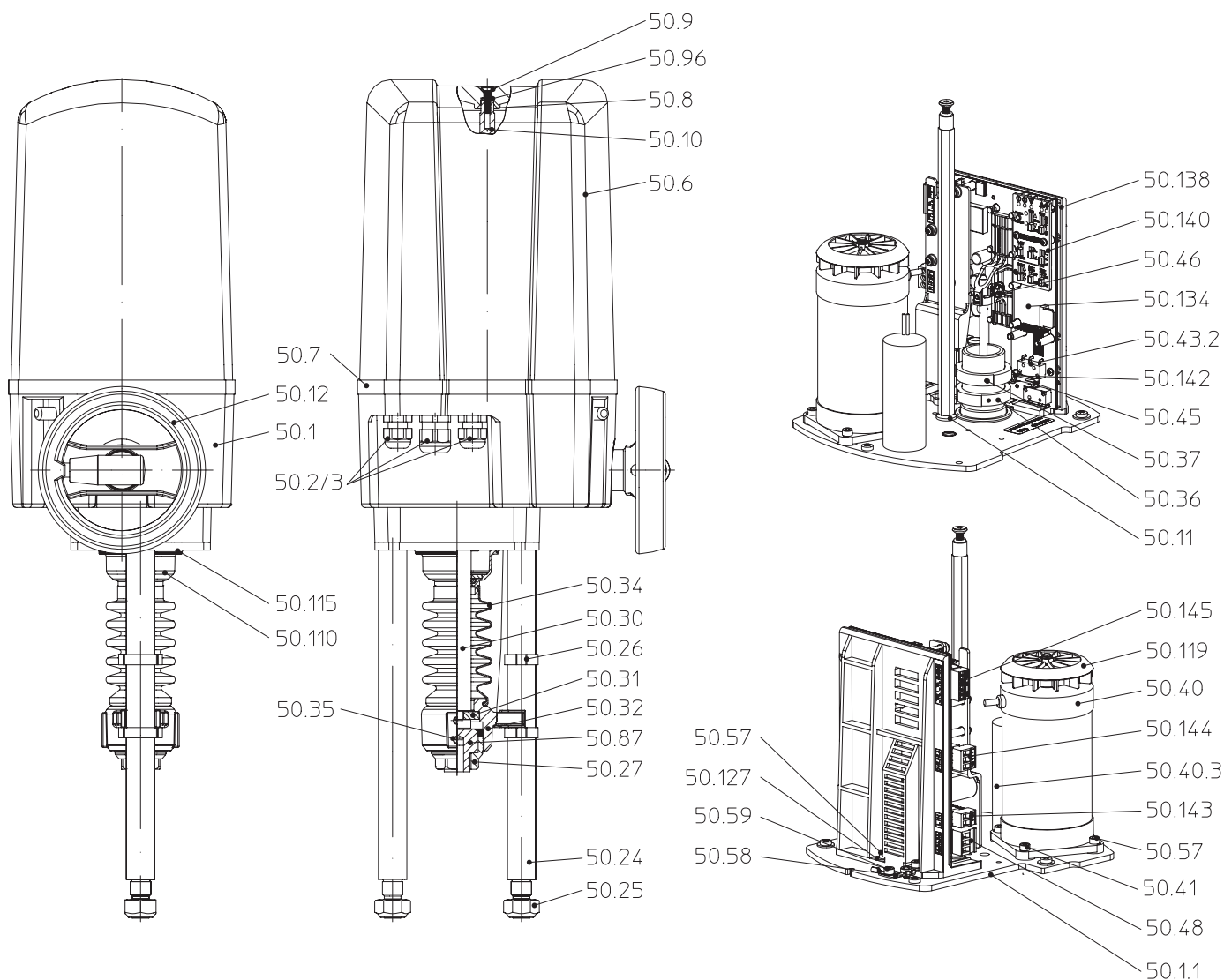
Pos.	Description
50.40	Synchronous motor, complete
50.40.3	Capacitor
50.43.2	Torque switch
50.45	Shift lever
50.58	Protective conductor terminal
50.87	Threaded bush
50.134	Actuator control
50.138	Board support
50.139	Protective cover
50.140	Switch cover
50.141	Trip slide
50.142	Shakeproof washer
50.143	Connector, 2-pole (N/L)
50.144	Connector, 3-pole (L↑/L↓/0V)
50.145	Connector, 6-pole (63/64/Y in/Y out)
50.128	Collar nut Seal lock M6

Type	ARI-PREMIO®-Plus 2,2 kN (495 lbf)		ARI-PREMIO®-Plus 5 kN (1124 lbf)	
Thrust force	<b>2,2 kN (495 lbf)</b>		<b>5,0 kN (1124 lbf)</b>	
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%DC / max. 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 <sup>1)</sup>			
Power consumption	VA	24	36	78
		For power consumption of other voltages and frequencies refer to type plate or on request.		
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)			
Top mounted handwheel	Yes (always running)			
Operation	optional: · 3-point : 12V DC/AC to 250V DC/AC · 0 to 10V DC load resistance 470 kOhm resolution 10Bit · 4 to 20mA DC load resistance 125 Ohm resolution 10Bit			
Switching current	max. 4A Triac-Output			
Input for temperature sensor	Sensor: PT1000			
Max. cable cross section	Supply voltage:	2,5 mm <sup>2</sup> (0,0039 inch <sup>2</sup> )		
	3-point input:	2,5 mm <sup>2</sup> (0,0039 inch <sup>2</sup> )		
	Control signals:	1,5 mm <sup>2</sup> (0,0023 inch <sup>2</sup> )		
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®-Plus 2,2 kN (495 lbf)		ARI-PREMIO®-Plus 5 kN (1124 lbf)	
Thrust force	<b>kN</b>	<b>2,2 kN (495 lbf)</b>	<b>5,0 kN (1124 lbf)</b>	
Electronic position indicator	analog output 4-20 mA, switchable to 0-10V (invertable)			
Relay board	- 2 intermediate positions, to set by switch, change-over contact 230V AC 6A/3A, - 1 failure signal and 1 warning signal, changeover contacts 30V DC / 2A			
Heating resistor	230V 50/60Hz <sup>1)</sup> , 115V 50/60Hz <sup>1)</sup> , 24V 50/60Hz <sup>1)</sup> , 15W			
Additional voltage / frequencies	24V - 50/60Hz <sup>1)</sup>		24V - 50Hz	
	115V - 50/60Hz <sup>1)</sup>		24V - 60Hz <sup>1)</sup> 115V - 50/60Hz <sup>1)</sup>	
Integrated temperature controller dTRON 316	Integrated temperature controller dTRON 316 in the ARI-PREMIO, controlrange -200°C...+850°C (-328°F ...+1562°F), power supply 24, 115 or 230 50/60Hz internally wired, input resistance thermometer and thermocouples (to be provided by the customer), or standardized active current or voltage signals			
Integrated temperature controller dTRON 316 / PROFIBUS-DP	Controler incl. PROFIBUS-DP-interface and analogue input card, 24 V, 115 V or 230 V 50/60 Hz. Controlling via bus line (must be supplied by the customer).			

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

### Electric thrust actuator ARI-PREMIO®-Plus 12 - 15 kN (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
50.34	Bellow
50.36	Set collar

Pos.	Description
50.37	Grub screw DIN 913 - M3x5
50.40	Synchronous motor, complete
50.40.3	Capacitor
50.43.2	Torque switch
50.45	Shift lever
50.58	Protective conductor terminal
50.87	Threaded bush
50.119	Fan wheel
50.134	Actuator control
50.138	Board support
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)
50.145	Connector, 6-pole (63/64/Y in/Y out)

Type	ARI-PREMIO®-Plus 12 kN (2698 lbf)		ARI-PREMIO®-Plus 15 kN (3372 lbf)
Thrust force	<b>12,0 kN (2698 lbf)</b>		<b>15,0 kN (2698 lbf)</b>
Travel distance	max. 65 mm (2,56 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 72	88	72
	For power consumption of other voltages and frequencies refer to type plate or on request.		
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)		
Top mounted handwheel	Yes (engageable)		
Operation	optional: · 3-point : 12V DC/AC to 250V DC/AC · 0 to 10V DC load resistance 470 kOhm resolution 10Bit · 4 to 20mA DC load resistance 125 Ohm resolution 10Bit		
Switching current	max. 4A Triac-Output		
Input for temperature sensor	Sensor: PT1000		
Max. cable cross section	Supply voltage: 2,5 mm <sup>2</sup> (0,0039 inch <sup>2</sup> ) 3-point input: 2,5 mm <sup>2</sup> (0,0039 inch <sup>2</sup> ) Control signals: 1,5 mm <sup>2</sup> (0,0023 inch <sup>2</sup> )		
Mounting position	Horizontally to vertical above valve body (any position 90° from vertical).		
Gear lubricant	Molyduval Valenzia H2		
Weight	10,5 kg (23,2 lb)		

Accessories	ARI-PREMIO®-Plus 12 kN (2698 lbf)		ARI-PREMIO®-Plus 15 kN (3372 lbf)
Thrust force	<b>kN</b>	<b>12,0 kN (2698 lbf)</b>	<b>15,0 kN (2698 lbf)</b>
Electronic position indicator	analog output 4-20 mA, switchable to 0-10V (invertable)		
Relay board	- 2 intermediate positions, to set by switch, change-over contact 230V AC 6A/3A, - 1 failure signal and 1 warning signal, changeover contacts 30V DC / 2A		
Heating resistor	230V 50/60Hz <sup>1)</sup> , 115V 50/60Hz <sup>1)</sup> , 24V 50/60Hz <sup>1)</sup> , 15W		
Additional voltage / frequencies	24V - 50Hz / 24V - 60Hz <sup>1)</sup> 115V - 50Hz / 115V - 60Hz <sup>1)</sup> 230V - 60Hz <sup>1)</sup> 3~400V - 50Hz / 3~400V - 60Hz <sup>1)</sup> (Only in addition with integrated reversing contactor!)		
Integrated temperature controller dTRON 316	Integrated temperature controller dTRON 316 in the ARI-PREMIO, controlrange -200°C...+850°C (-328°F bis 1562°F), power supply 24, 115 or 230 50/60Hz internally wired, input resistance thermometer and thermocouples (to be provided by the customer), or standardized active current or voltage signals		
Integrated temperature controller dTRON 316 / PROFIBUS-DP	Controler incl. PROFIBUS-DP-interface and analogue input card, 24 V, 115 V or 230 V 50/60 Hz. Controlling via bus line (must be supplied by the customer).		

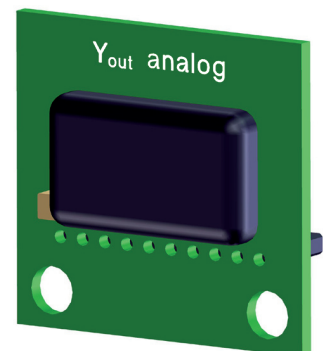
<sup>1)</sup> Control speed and power consumption are 20% higher at frequency of 60 Hz.

**Relay card**

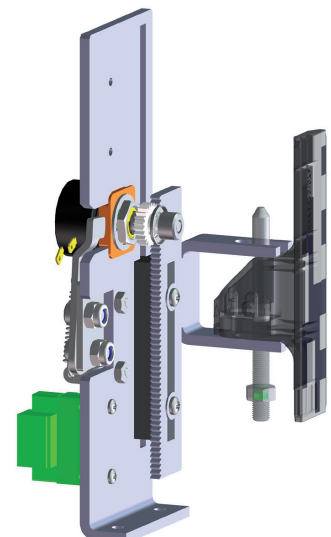
Relay		1 (open)	1 (close)	3 warning	4 failure
Operating voltage	U <sub>B</sub>	6A 250V		2A 30V AC/DC	
max. cable cross section		2,5 mm <sup>2</sup> (0,0039 inch <sup>2</sup> )		1,5 mm <sup>2</sup> (0,0023 inch <sup>2</sup> )	
Contact material		Gold			
Storage temperature		-40 °C ... +85 °C (-40 °F ... +185 °F)			
Operating temperature		-40 °C ... +85 °C (-40 °F ... +185 °F)			
<b>Features:</b>					
<ul style="list-style-type: none"> <li>• Setting of the switching points over push buttons</li> <li>• 2 intermediate positions or end positions</li> <li>• 1 failure signal</li> <li>• 1 warning signal</li> <li>• 1 collect failure signal at:                             <ul style="list-style-type: none"> <li>- Control signal failure</li> <li>- Position can not be achieved (motor / gear failure)</li> <li>- Blockage (actual)</li> <li>- Actuator not initialised</li> <li>- Power failure</li> </ul> </li> <li>• 1 collect warning signal at:                             <ul style="list-style-type: none"> <li>- Manual operating</li> <li>- Blockage (detected)</li> <li>- Position can not be achieved</li> <li>- Maintenance</li> <li>- Internal temperature exceeded</li> <li>- ED management active</li> <li>- Leveling</li> <li>- To small travel during initialisation</li> </ul> </li> </ul>					


**Analog output card**

Output control signal	Y <sub>U</sub>	0 -10V DC Measuring resistance (load resistance) Signal resolution	max. 2 kOhm load resistance · 8 Bit
Output control signal	Y <sub>I</sub>	4 -20mA DC Measuring resistance (load resistance) Signal resolution	max. 500 Ohm · 8 Bit
<b>Features:</b>			
• for position transmitter			


**Potentiometer**

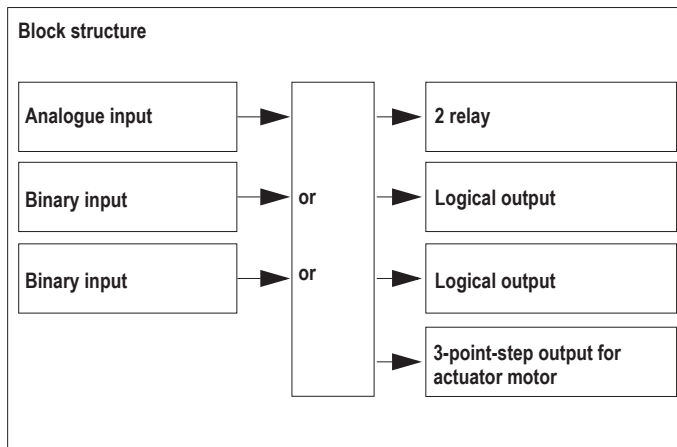
Type	MP21 (Standard)	RP19
Electric resistance values	500 Ohm, 1k Ohm, 2k Ohm, 5k Ohm	100 Ohm, 200 Ohm
Technology	Conductive plastic	Wire
Resistance tolerance	±15 %	±3 %
Independent linearity tolerance	±1 %	±0,5 %
Capacitance at +40°C / 104°F (0 W at 125°C / 257°F)	1 Watt	0,5 Watt
Max. / wiper current	10 / 2 µA	35 / 0,1 mA
Max. cable cross section	2,5 mm <sup>2</sup> (0.0039 inch <sup>2</sup> / AWG14)	
Durability	10 Mio. turns	1 Mio. turns



## 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
- 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 (-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

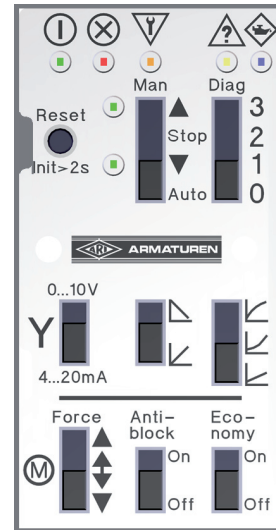
Circuit adjustment:

- 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.

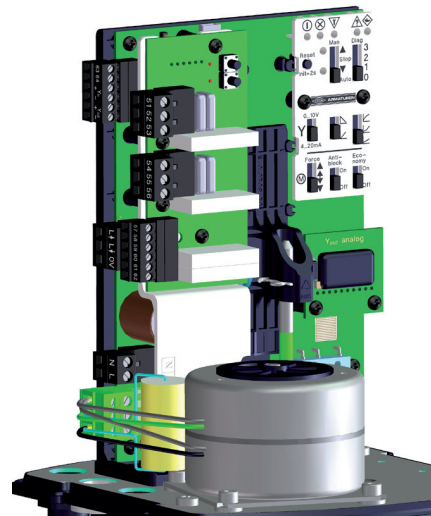
## Direct operator panel

- Setting with switches, without a PC or tools
- Failure signals acc. to Namur 107
- Switchable economy function for extended lifetime
- Local operation
- 3 switchable valve characteristics
- Anti-block function
- Control signal



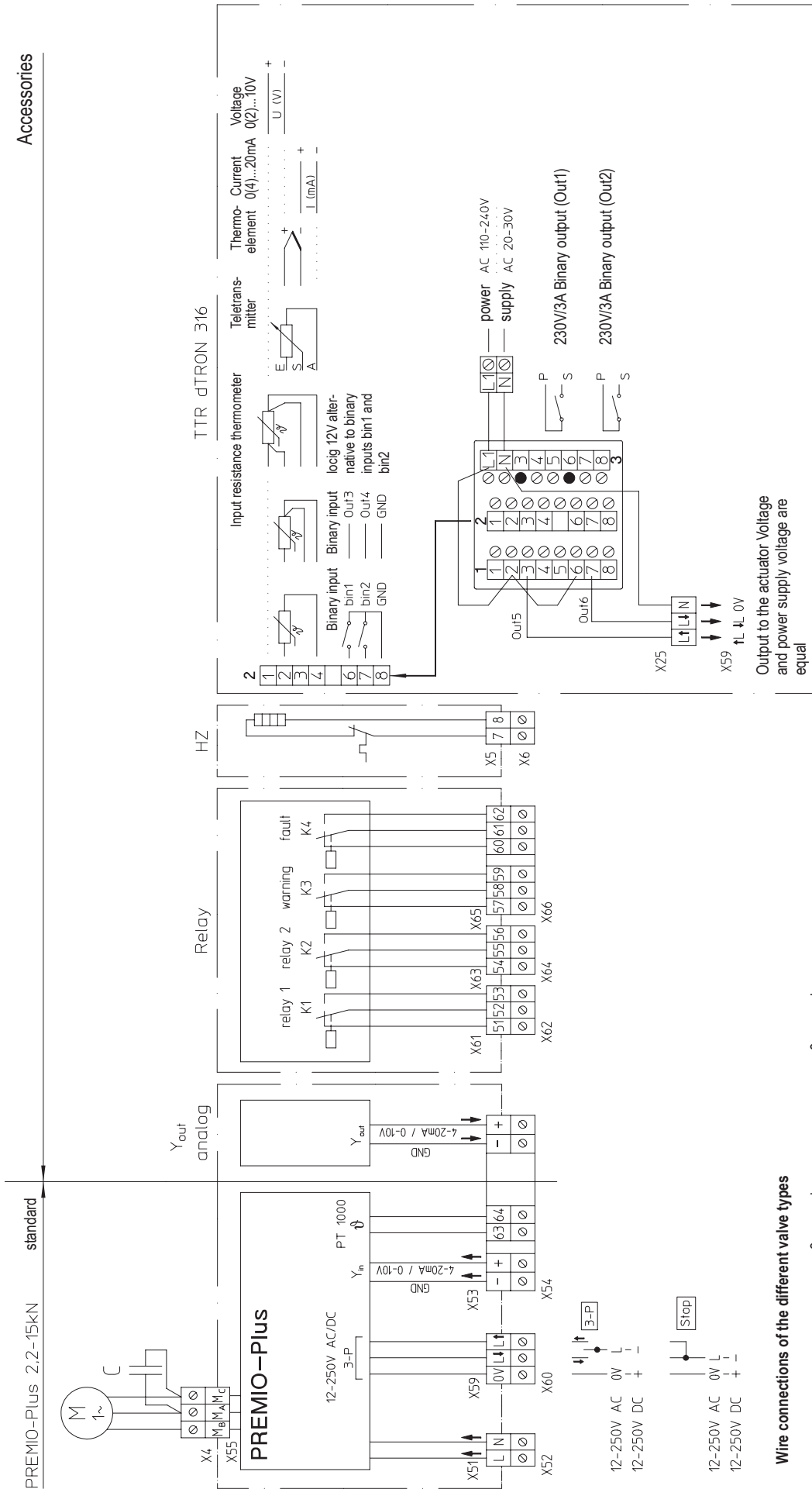
## Additional features:

- 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

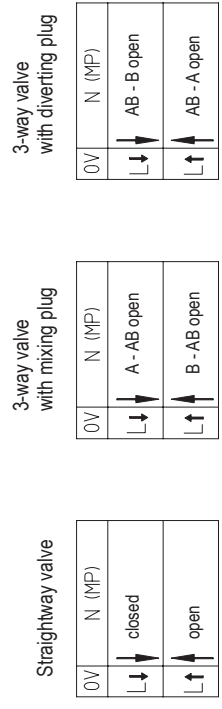




### Accessories



### Wire connections of the different valve types

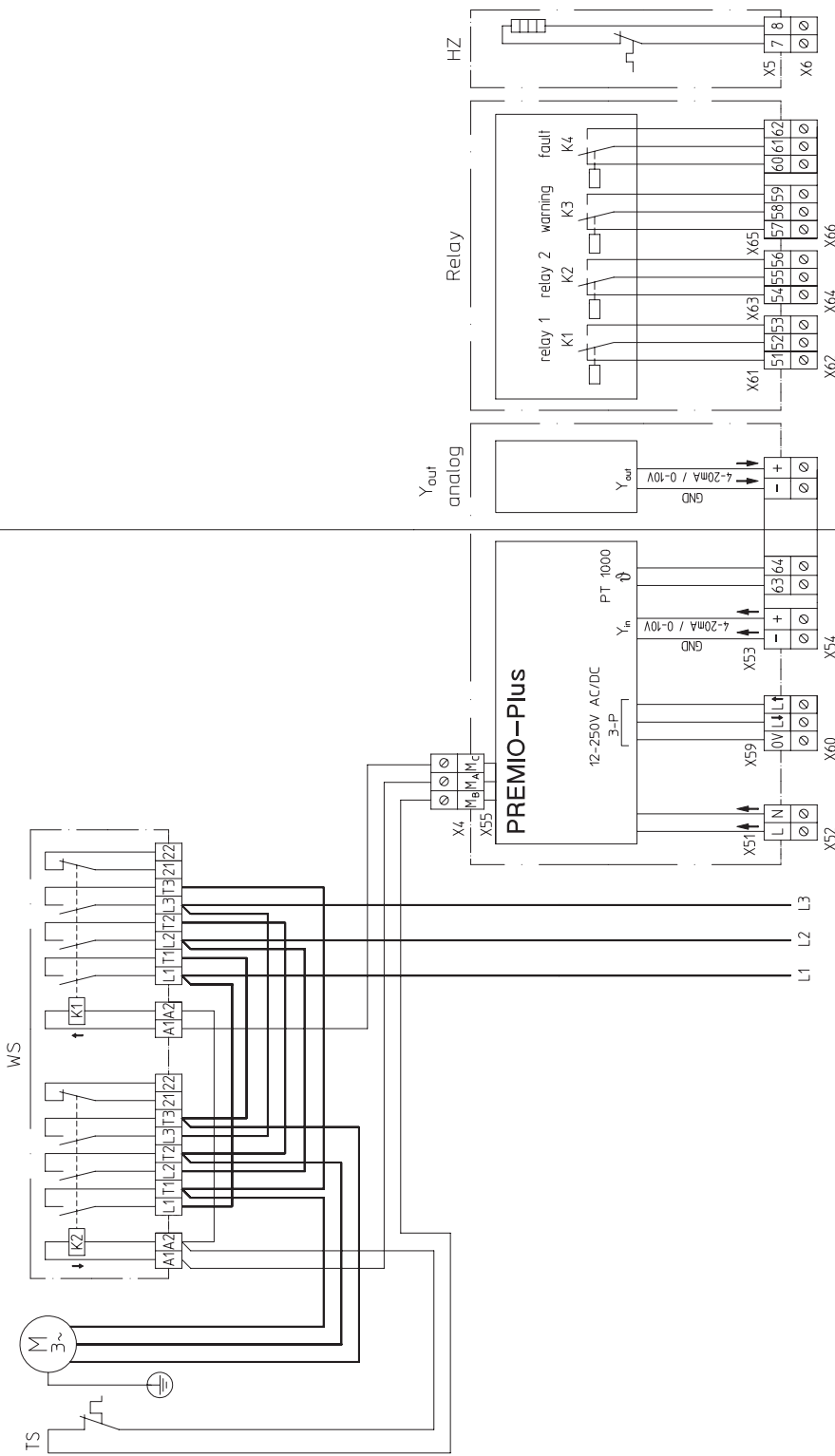


- HZ Heating resistor
- TTR Electronic temperature controller dTRON316
- Relay Relay card
- Y out Analog output card

Accessories

standard

PREMIO-Plus 12-15kN 3Ph~



**Wire connections of the different valve types**

Straightway valve

0V	N (MF)
L↓	closed
L↑	open

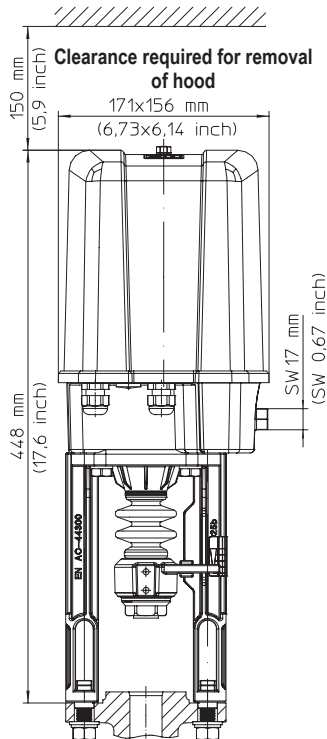
3-way valve with mixing plug

0V	N (MF)
L↓	A - AB open
L↑	B - AB open

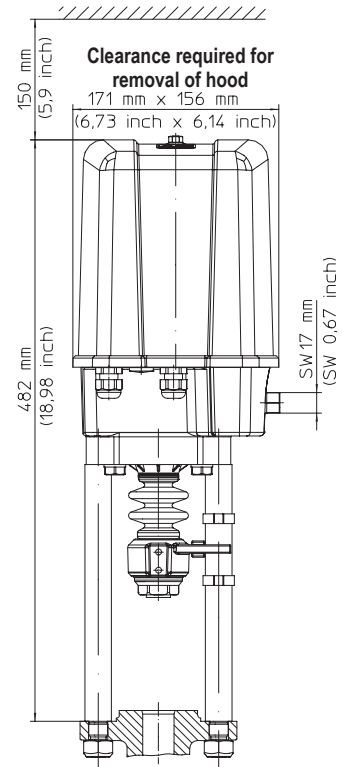
3-way valve with diverting plug

0V	N (MF)
L↓	AB - B open
L↑	AB - A open

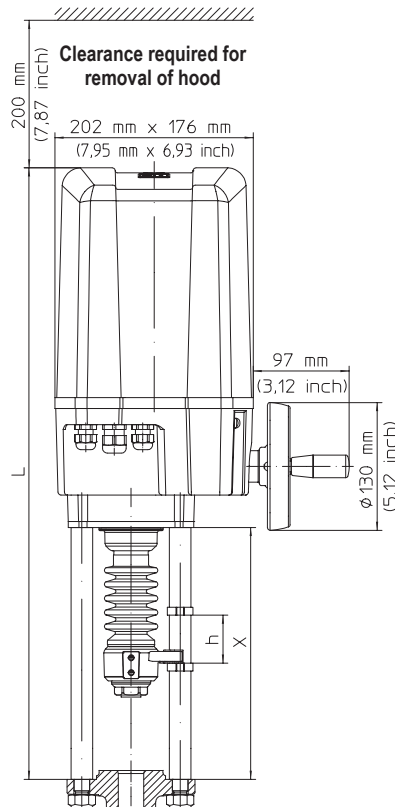
- WS** Reversing contactor
- TS** Temperature switch (motor)
- Relay** Relay card
- Y out** Analog output card



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



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



**ARI-PREMIO®-Plus**  
**12 - 15 kN (2698 - 3372 lbf)**  
Nominal travel max. 65 mm (2,56 inch)

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

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



**Technology for the Future.**  
GERMAN QUALITY VALVES

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