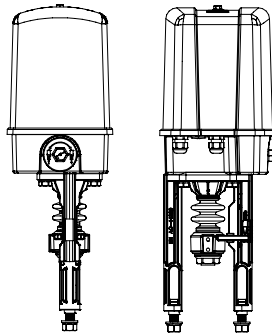


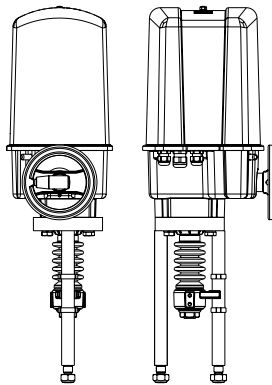
## Electric thrust actuator ARI-PREMIO®-Plus 2G

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



Page 2

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



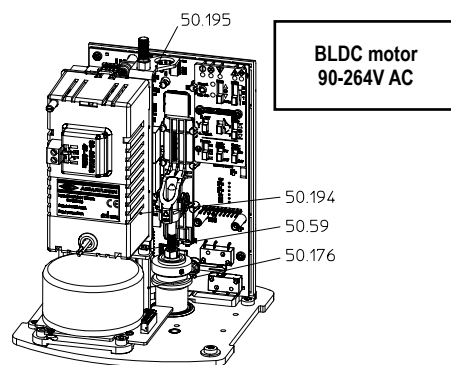
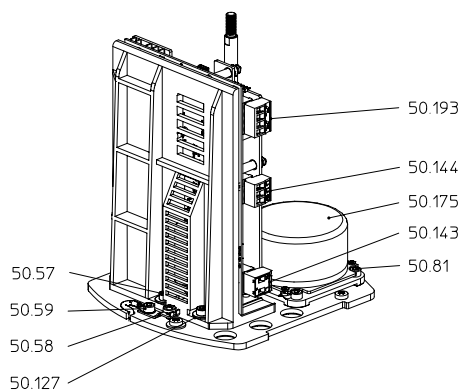
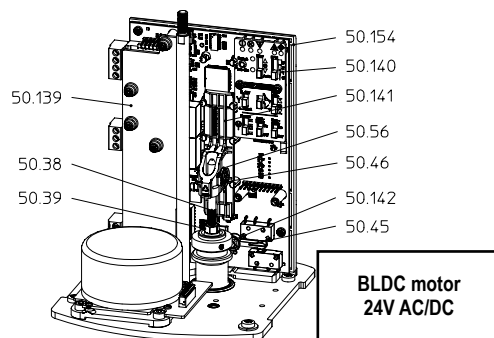
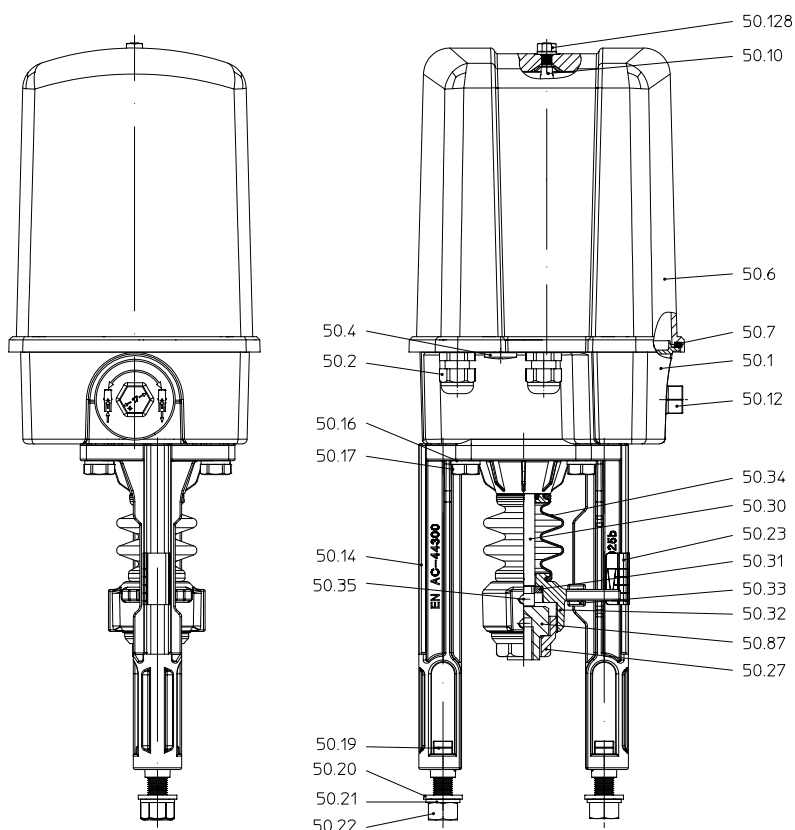
Page 4



### 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



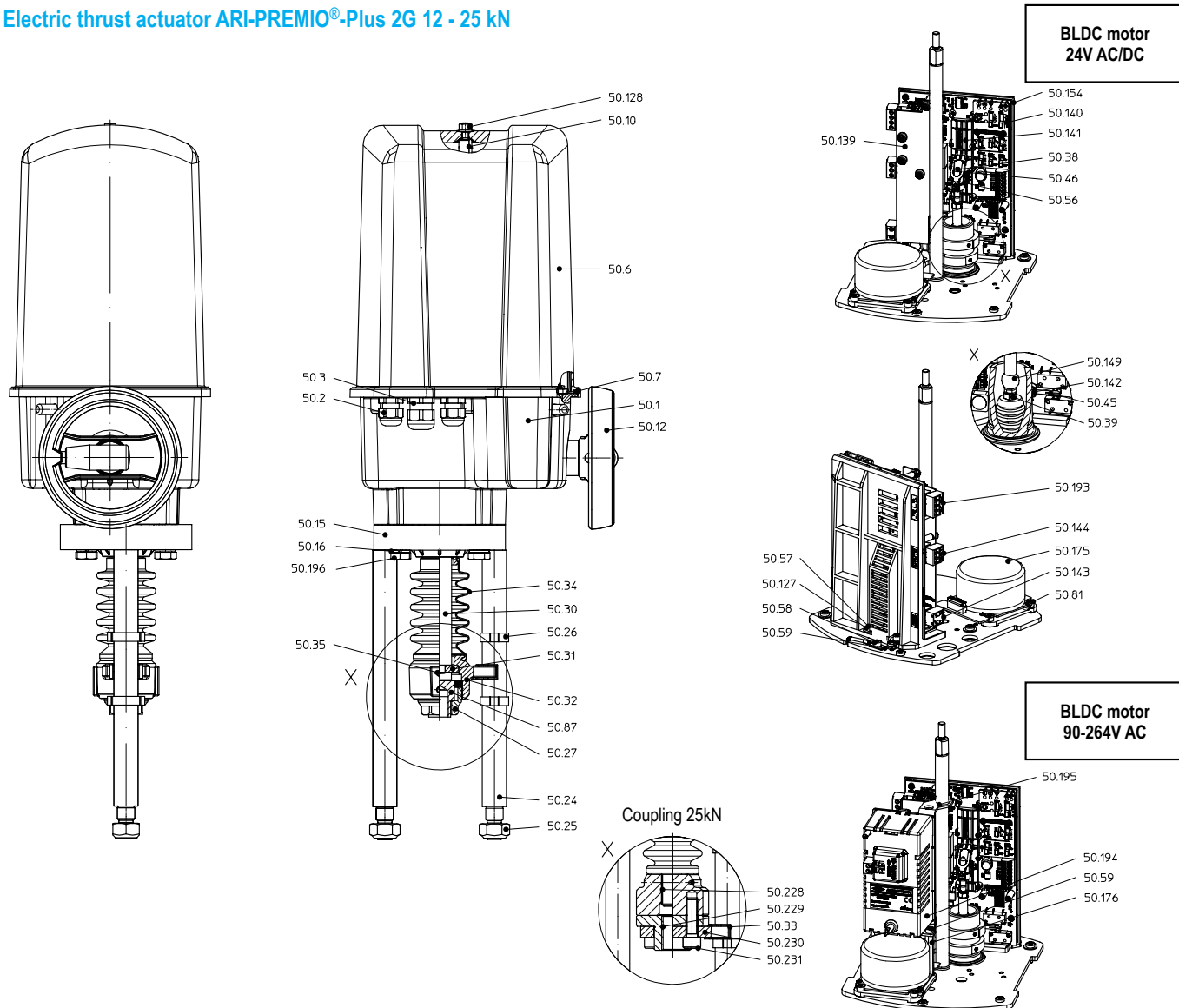
Pos.	Description
50.1	Gearbox
50.2	Cable gland 2 x M16x1,5
50.4	Sealing plug 1 x M16x1,5
50.6	Hood
50.7	Hood seal
50.10	Column
50.12	Handwheel
50.14	Yoke
50.16	Washer DIN 128-A10
50.17	Hexagon bolt DIN EN ISO 4017 - M10x40
50.19	T-head bolt DIN 261-M12x40
50.20	Washer DIN EN ISO 7089
50.21	Washer DIN 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 <sup>2</sup> 3-step input: 2,5 mm <sup>2</sup> Input signals: 2,5 mm <sup>2</sup>	
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	
<b>Aditonal voltage</b>		refer to page 6	
<b>Accessories</b>		refer to page 6 - 8	

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



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 <sup>2</sup> 3-step input: 2,5 mm <sup>2</sup> Input signals: 2,5 mm <sup>2</sup>		
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
<b>Additional voltage</b>		refer to page 6		
<b>Accessories</b>		refer to page 6 - 8		

\*other strokes on request

**Additional voltage**

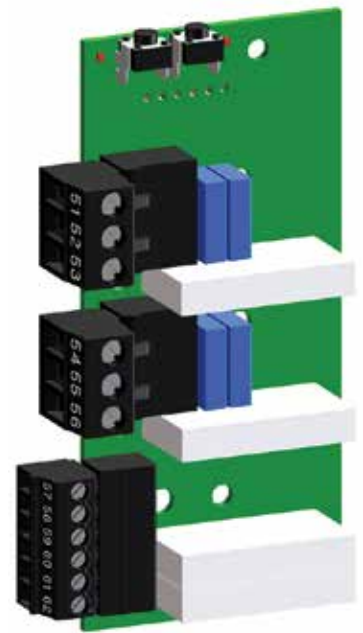
Switching power supply for ARI-PREMIO-Plus 2G		2,2 - 15 kN	25 kN
Voltage	V - Hz	90-264 V AC 47-63 Hz 127-370 V DC	
Power consumption	VA	max. 65	max. 130

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

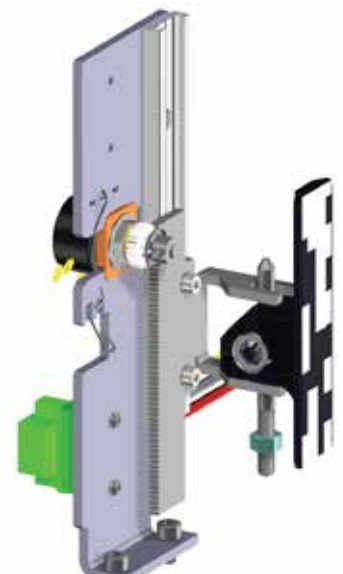
Relay board					
Relay (zero-potential changeover contacts)		1 (open)	1 (close)	3 warning	4 failure
switching capacity	$U_B$	250 V, 3 A ohm resistive load, 6 A inductive load		30 V AC/DC, 2A	
max. cable cross section		2,5 mm <sup>2</sup>		1,5 mm <sup>2</sup>	
Contact material		Gold			
Storage temperature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



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
<b>Features:</b>			
<ul style="list-style-type: none"> <li>for position transmitter</li> </ul>			



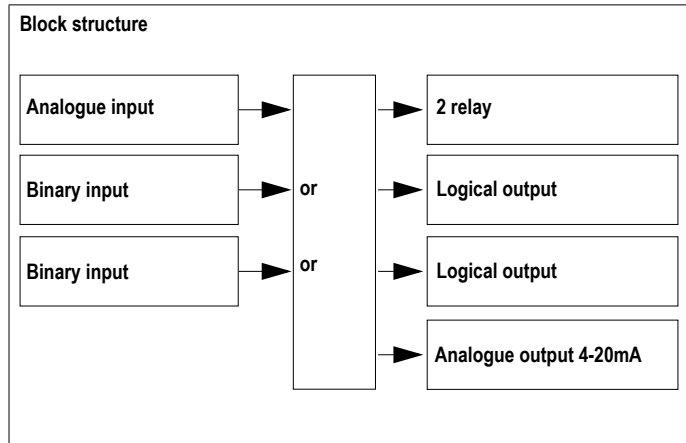
Potentiometer		
Type	MP21 (Standard)	RP19
Resistance values	1000, 2000, 5000 Ohm	100, 200 Ohm
Element technology	Conductive plastic	Wire
Resistance tolerance	±15 %	±3 %
Independent linearity tolerance	±1 %	±0,5 %
Loading capacity at +70°C (0 W at 105°C)	1 Watt	0,5 Watt
Max. / recommended contact current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

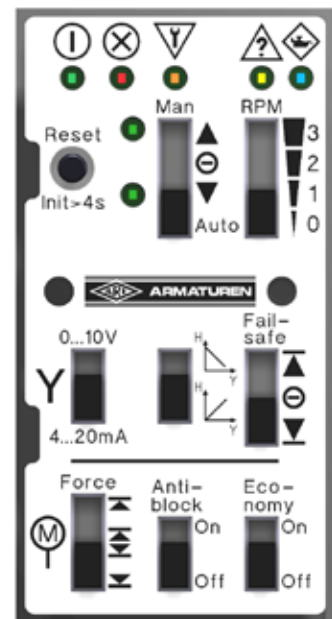
Input standardized active current or voltage signals	
Description	Measuring range
Voltage	0 (2) ... 10V, input resistance Re > 100kOhm
Current	0 (4) ... 20mA, voltage drop ≤ 1,5 V

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. 300hm 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.		



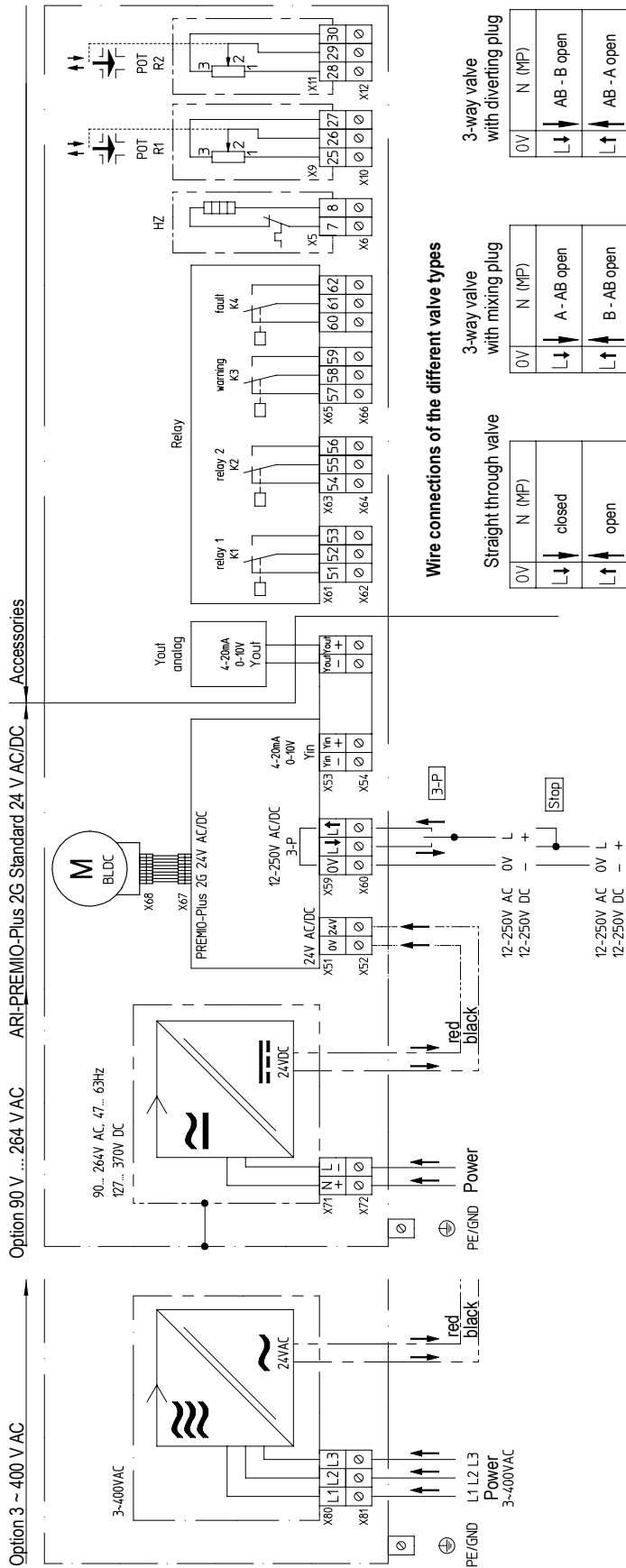
**Direct operator panel**

- 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

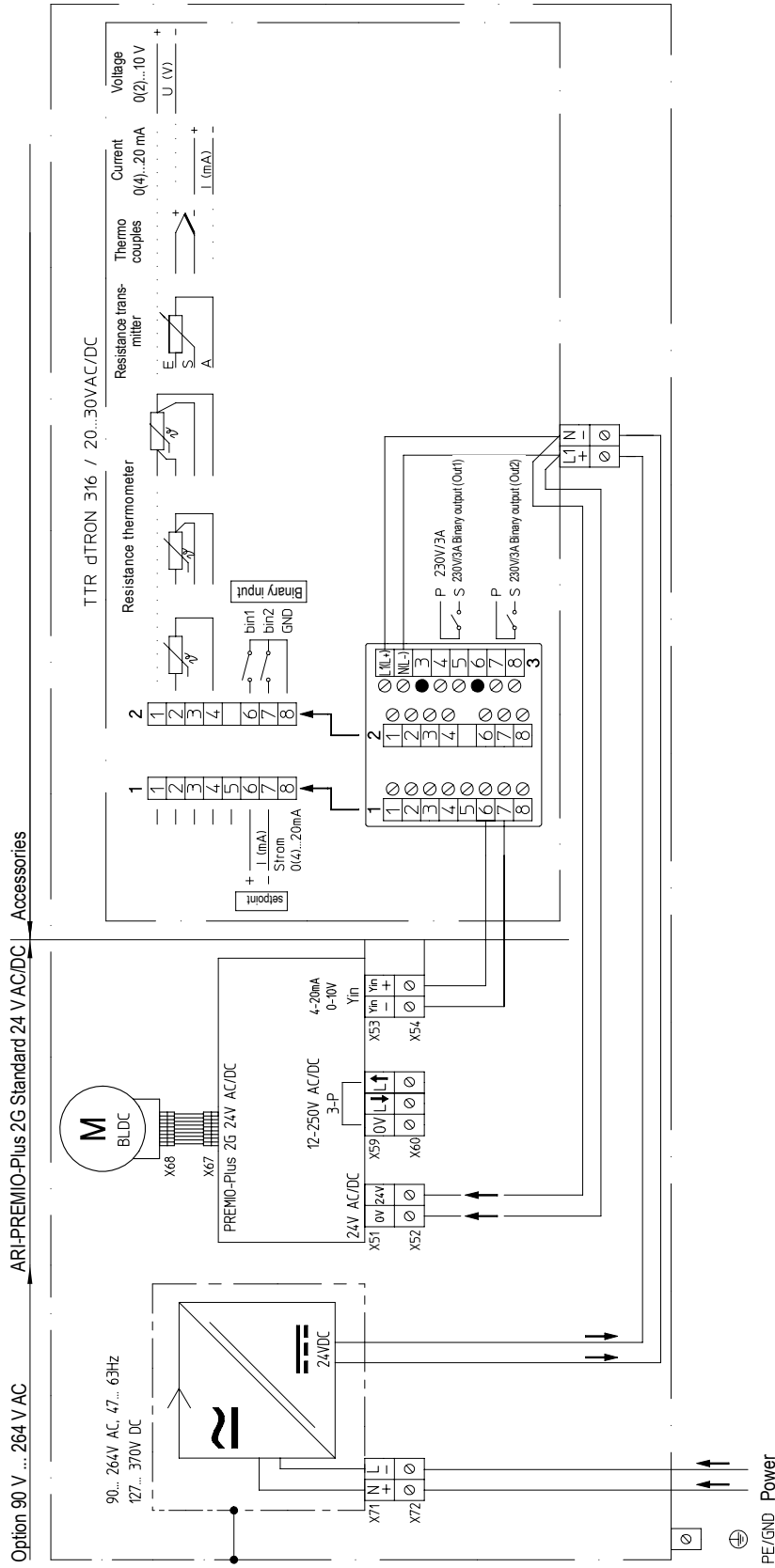


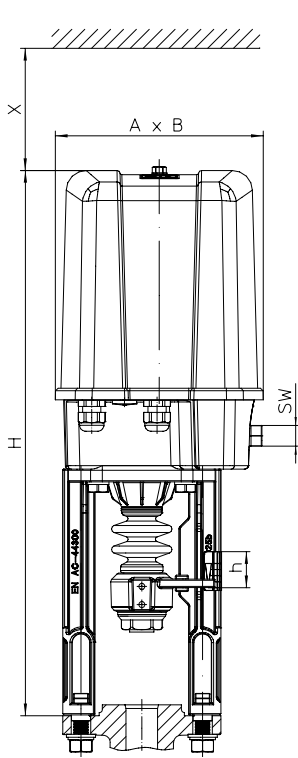


**Wire connections of the different valve types**

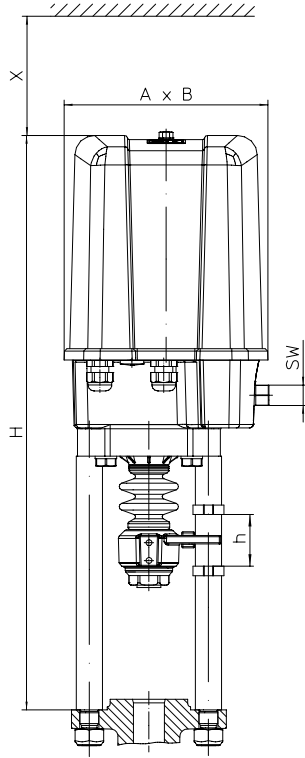
Valve Type	0V	N (MP)
Straight through valve	L ↓	closed
	L ↑	open
3-way valve with mixing plug	L ↓	A - AB open
	L ↑	B - AB open
3-way valve with diverting plug	L ↓	AB - B open
	L ↑	AB - A open

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



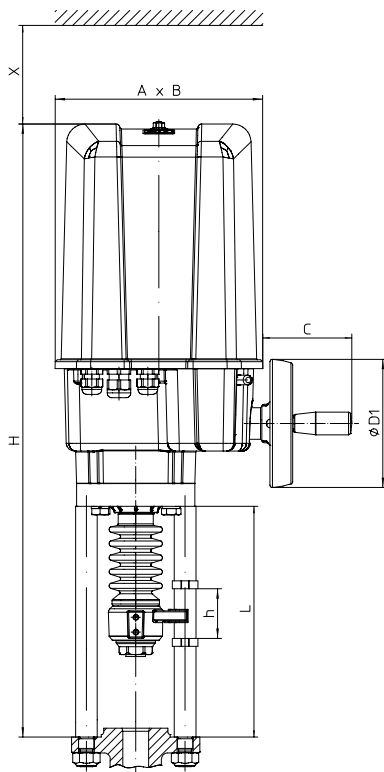


**2,2 - 5 kN**  
Nominal travel max. 30 mm



**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



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

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