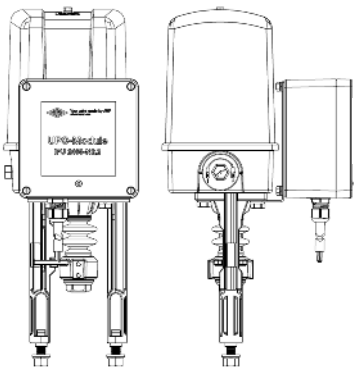
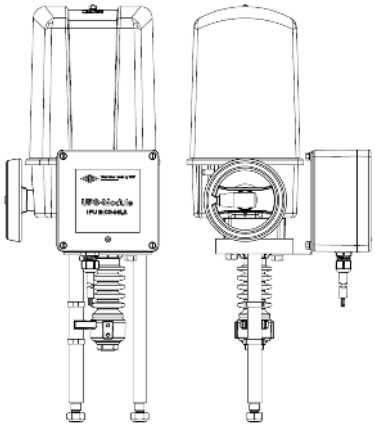
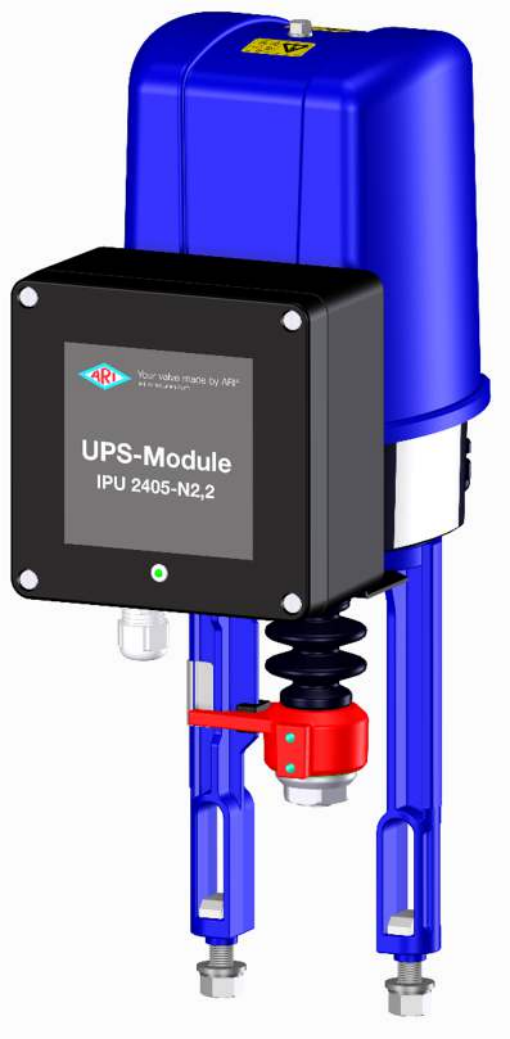
Electric thrust actuator ARI-PREMIO®-Plus 2G mit UPS-Module IPU 2405 N2,2



2,2 - 5 kN

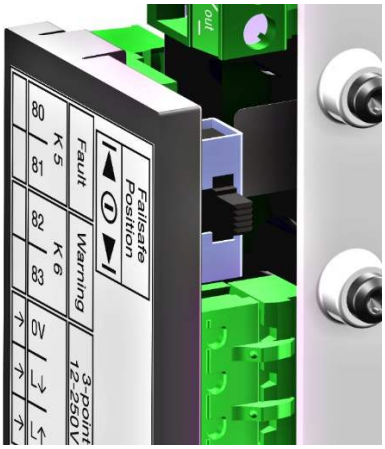


12 - 25 kN



Features

- Power supply for 30 min after power failure
- Failsafe position adjustable in the event of power failure (selectable: retracting, extending, none)
- Potential-free relay message in the event of power failure
- Potential-free relay signal in the event of low charge status / battery operation ended (> 30 min)
- High energy reserves (several emergency stops possible, depending on actuator size)
- Possible for all actuator sizes of the PREMIO®-Plus 2G
- Easy to retrofit
- Permissible ambient temperature -20...+70°C
- Protection class IP66



Function description

The actuator is supplied with power via an uninterruptible power supply (UPS).
(Uninterruptible Power Supply, UPS). The UPS is attached to the flange/yoke of the actuator from the outside using a mounting bracket. The current UPS status can be queried via two potential-free contacts. There is also an LED on the outside of the UPS module to indicate the status.

Behaviour when voltage returns

When the supply voltage is applied, the actuator is supplied and the energy storage of the UPS is charged at the same time.
The relay signals K5 and K6 indicate the current status of the power supply and the UPS.
The actuator responds to the control signals again immediately after voltage recovery. An initialization run is not necessary.

Behaviour in the event of power failure / mains interruption of the PREMIO®-Plus 2G

If the mains supply is interrupted, the UPS takes over the power supply to the actuator for approx. 30 minutes. Any 3-point control signals still present are interrupted.

- The three-stage slide switch on the adapter board (see illustration on the left) can be used to select a failsafe position (retracting/extending actuator spindle). In the middle position of the slide switch, no failsafe position is approached.
- If no failsafe position is selected on the adapter board (middle switch position), the actuator can still be controlled via an analog control signal or a fieldbus.
- In addition, local control of the actuator is possible via the internal slide switches of the PREMIO®-Plus 2G.

Operating LED of the UPS module

The operating LED of the UPS module is located on the cover of the UPS housing. This indicates the current status of the UPS module by means of the following signals:

Operating status	Display
Module de-energized	
Mains operation	
Buffer operation	
Warning: Energy storage error or low state of charge / enable open or 0 V on wire 8	

Handling the UPS

Safety instructions

Attention!
Failure to observe the safety instructions, such as touching live parts when the appliance is open, or improper handling of the appliance, can be life-threatening.
If the values specified in the technical data are exceeded, there is a risk of the appliance overheating, which can result in the power supply being destroyed or electrical safety being impaired.
Ensure that the AC and DC supply circuits are safely separated on site!

The specifications from the manufacturer's data sheet apply !

- The devices may only be installed by qualified specialists.
- The supply voltage must be connected in accordance with the relevant national regulations (e.g. VDE, DIN).
- The appliance must be disconnected before starting installation and service work.
- A protective and isolating device must be provided to disconnect the power supply. The appliance must be disconnected before starting installation and service work.

Commissioning

Attention!
The device may only be connected when it is de-energized!

The UPS is connected to the adapter board according to the following table and plugged into the main board of the PREMIO®-Plus 2G as shown in the table:

Connections		
- Cable connection sheathed cable 8 x 1.5 mm², length 500 mm, 170 mm stepped, wire end ferrules		
Wire 1	Terminal 91	Input voltage (-), GND
Wire 2	Terminal 90	Input voltage (+) 24 VDC
Wire 3	Terminal 89	Output voltage (-), GND
Wire 4	Terminal 88	Output voltage (+) 24VDC
Wire 5	Terminal 87	Relay fault contact K5
Wire 6	Terminal 86	Relay fault contact K5
Wire 7	Terminal 85	Enable switching contact -X
Wire 8	Terminal 84	Enable switching contact -Y

It is recommended to connect an input fuse upstream. Ensure correct polarity. Connected devices can be damaged if the polarity is incorrect.

The actuator is connected and adjusted in accordance with the PREMIO®-Plus2G instructions.
Once the protective conductor, control signals and supply voltage have been connected to the actuator, the supply voltage can be switched on.
The green LED on the UPS then indicates the current status in accordance with the section "LED display of the UPS".

Attention!
When commissioning at temperatures below freezing, the UPS module must first warm up! After the input voltage is applied, the UPS module is heated up. At -20°C, approx. 15-30 minutes are required until it is ready for operation.

Decommissioning the UPS

To decommission the UPS module, simply disconnect the X94 "UPS connector" plug from the adapter board.

Maintenance

It is recommended that the actuator is subjected to a system check every three years during operation to ensure reliability. The system check includes the following points:

- Check general condition:
  - Check all electrical cables for damage.
  - Check the IPU 2405-N2,2 for external damage.
  - If there is superficial soiling, remove it or clean the outside of the appliance dry using a suitable tool so as not to impair the heat dissipation of the appliance.
- Check basic electrical functions:
  - Simulate input voltage failure under load. The device must switch to buffer mode and, if set, the actuator must move the plug to the set end position.
  - Switch the input voltage back on and the device switches back to mains operation.
  -

Determination of the current status by the signaling contacts K5 and K6

K5	K6	Meaning
high	**high**	The power supply is present and the energy storage unit is charged, i.e. the UPS is in mains operation and is ready to switch to buffer mode in an emergency.
low	**high**	The power supply is not present and the energy storage unit is charged, i.e. the UPS is in buffer mode for 30 minutes.
low	low	The power supply is not present and the charge level is low, i.e. buffer operation has ended and the actuator can no longer be moved.
high	low	The power supply is not present and the charge level is low, i.e. buffer operation has ended and the drive can no longer be moved If K6 does not close again after 60 minutes, the energy storage unit must be replaced promptly.

Technical data of the UPS module

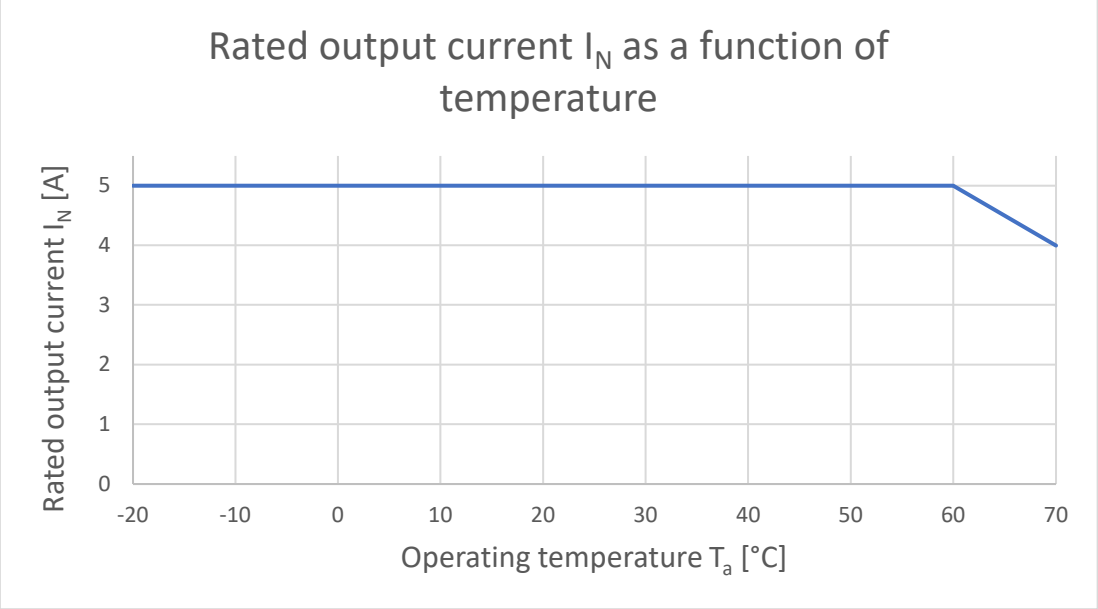
Type	UPS IPU 2405-N2,2
Input voltage U_{IN}	23V-30V DC **Attention! Only DC!**
Input current	typ. 5,5 A
Output in mains operation	
Nominal output voltage U_A	typ. U_{IN} – 0,5 V DC
Rated output current I_N	5,0 A
Continuous short-circuit proof	yes
Output in buffer mode	
Nominal output voltage	23 V DC +/- 3%
Rated output current I_N	max. 5 A, (see "Output voltage as a function of temperature“)
General	
Rated output power	120 W
Efficiency	Typ. 96%
Overload protection	typ. 10 A in buffer mode
Short-circuit protection	shutdown with automatic restart
Energy storage charging voltage	15,2 V DC
Charging current	typ. 0,6 A
Energy storage technologies	NiMH
Energy storage capacity	2,2 Ah
Low battery warning threshold	30 % (SOC*)
Deep discharge protection	yes
Switching capacity signal contacts	30 V / 1 A / 30 VA
Signal contact K5 (power supply)	opens if the supply voltage fails
Indicator contact K6 (state of charge)	opens when the charge level is low (battery may need to be replaced) or battery operation has ended (> 30 min)
Protection class	IP 66
Operating temperature Ta	-20°C … +70°C
EMC	DIN EN 61000-6-2/3
Conformity	CE
Housing - Material	industrial enclosures - aluminum
Weight	2,9 kg
Dimensions	160 x 160 x 91 mm (B x H x T)
Assembly	angle plate
Separating device	external
Power connection	sheathed cable 8 x 1.5 mm², wire end ferrules, 500 mm

*SOC „State of Charge in %”

Charging time until ready for operation

If the supply voltage fails, the UPS module is discharged for 30 minutes. Normally, the energy storage unit is then still ready for use so that the UPS module can supply the actuator again immediately after the power returns. Depending on the load, power can be supplied several times in succession.
If the battery is completely discharged, a full charge takes approx. four hours.

Output current as a function of temperature

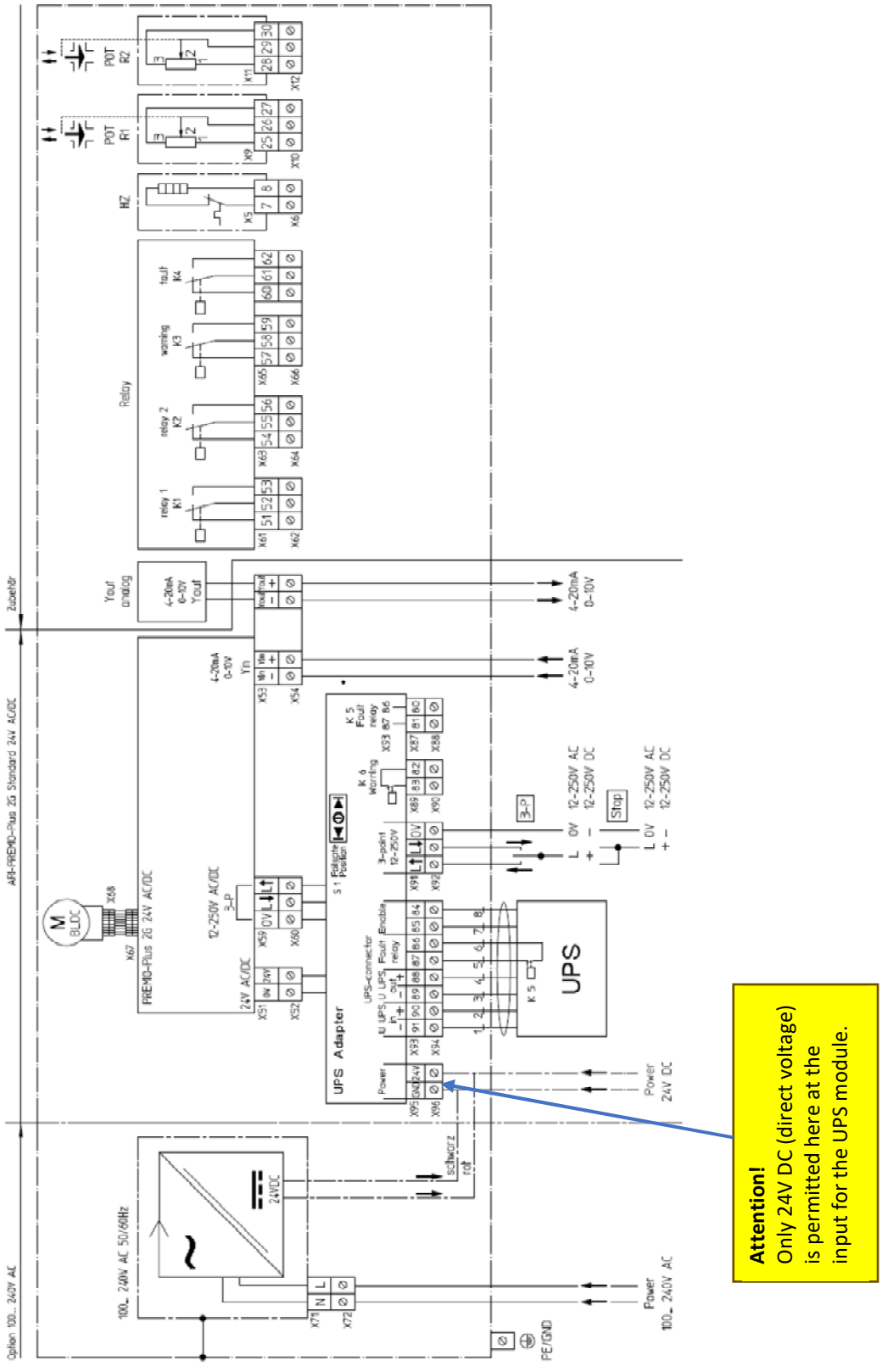


PREMIO®-Plus 2G accessories

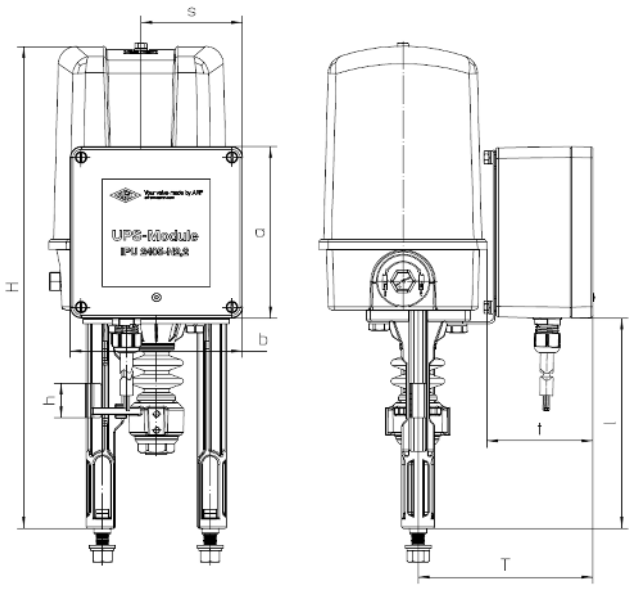
Accessories		
Electronic position indicator	***Type analog output card***	• analog output for position feedback • 4-20mA switchable to 0-10V • invertible • galvanic isolation between mains voltage and reset signal • active
Communication package	***BT-Modul***: (Without LED status indication)	Range of functions: • bluetooth interface for communication with the PREMIO®-Plus app • electronic position indicator 4-20mA switchable to 0-10V
Heating	***Heating resistor***	• 230V 50/60Hz, 115V 50/60Hz, 24V 50/60Hz; 15W with automatic switching
Potentiometer	***Conductive plastic (max. 1 piece)***	• 1000, 2000, 5000 Ohm; 1 Watt (@ +70 °C) • wiper current max. 0.01 mA/recommended 0.002 mA
	Wire (max. 1 piece)	• 100, 200 Ohm; 0,5 Watt (@ +70 °C) • wiper current max. 35 mA/recommended 0.02 mA
Other voltages and frequencies	110-240V	

Further PREMIO®-Plus 2G options on request.

Circuit diagram

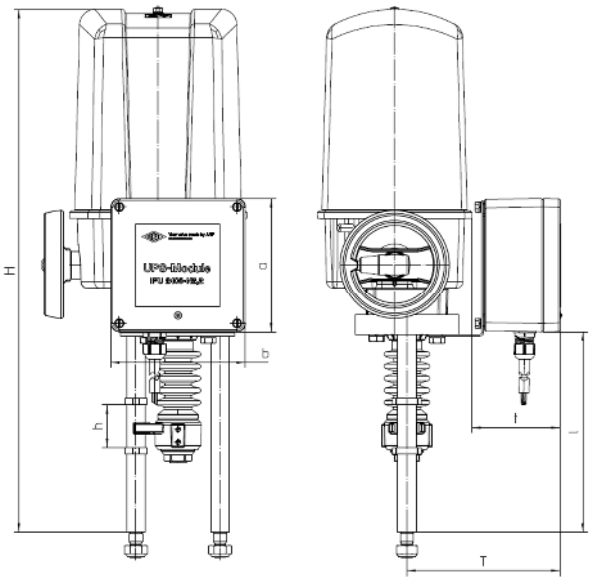


Dimensions



2,2-5kN			
A x B	(mm)	171 x 156	
C		--	
SW		17	
⌀D1		--	
X		150	
T		162	
A x B		160	
b		160	
SW		95	
t		99	
l		195	
H		448	482
L (column)		199	
h (nominal stroke)		max. 30	max. 50

2,2 – 5 kN nominal stroke max. 30 mm



12-25kN				
A x B	(mm)	210 x 184		
C		90		
SW		--		
⌀D1		130		
X		200		
T		182		
A x B		160		
b		160		
SW		--		
t		105		
l		237		
H		622	637	652
L (column)		234	249	X=83 / 249 X=98 / 264
h (nominal stroke)		max. 50	max. 65	max. 80

12-25 kN nominal stroke max. 80 mm

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ARI-Armaturen Albert Richter GmbH & Co.KG.,
Mergelheide 56-60, 33756 Schloß Holte-Stukenbrock
Telefon: (05297) 994-0 Telefax: (05297) 994-297 oder –298
Internet: //www.ari-armturen.com Email: info.vertrieb@ ari-armturen.com