ARIS
Stellantriebe

Original declaration of incorporation with manual for

ARIS Actuator
ExTensor

Actuator for potentially explosive atmospheres of zone 1

Note: Picture shows actuator with options

EX2411EN01

Table of content

1. Identification

This manual is valid for:

Description:	Electrical actuator for potentially explosive atmospheres ATEX / IECEx
Type:	ExTensor (and add-ons/options) Further details see chapter 1.2 nameplate / labeling

1.1 Approvals / Labeling

ATEX (Gas)

II 2 G Ex db IIC T6 Gb

ATEX (Dust)

II 2 D Ex tb IIIC T80°C Db

IECEx

IECEx IBE 22.0020X

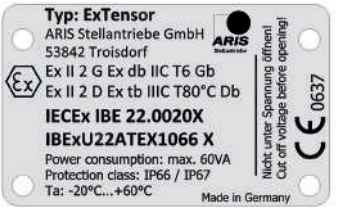
(Download at www.iecex-certs.com)

EU type examination certificate no. IBExU22ATEX1066 X. Type of construction: Flameproof enclosure

1.2 Nameplate / Labeling

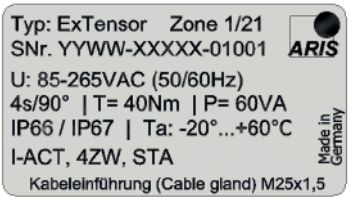
The actuators hold two nameplates. They are located on the outside of the actuator.
Plate 1: Metal nameplate with all details for ATEX / IECEx; plate 2: Label with actuator specific data

Metal nameplate ATEX / IECEx details



Description:
Actuator type
Manufacturer information
Ignition protection type
IECEx number
Number of licensing office
Power rating
IP protection class
Ambient temperature

Label with actuator specific data



Description:
Actuator type
Serial number (YYWW=Construction year+week)
Power rating
IP protection class / Ambient temperature
Equipment features / Options

(Plate and label examplary)

1.3 Guidelines and standards

Aris actuators of the ExTensor series are partly completed machinery in the sense of the European Directive 2006/42/EC. The Decla ration of Incorporation for the devices can be found at the end of this operating manual. During the development, production and operation of the devices, compliance with the essential health and safety requirements is e nsured through conformity with the following standards
EN IEC 60079-0:2018
EN 60079-1:2014
EN 60079-31:2014
This compliance is confirmed by the EU type examination certificate IBExU22ATEX1066X. The complete explosion protection marking reads:

II 2G Ex db IIC T6 Gb
II 2D Ex tb IIIC T80°C Db
Ta -20°C...+60°C

The suitability of the quality assurance system of the company "Aris Stellantriebe GmbH" required for the production of the actuators according to Directive 2014/34/EU is proven by notification number

IBExU23ATEXQ013.

The suitability of the quality assurance system of the company "Aris Stellantriebe GmbH" required for the production of the actuators within the scope of the "IEC CERTIFICATION SCHEME FOR EXPLOSIVE ATMOSPHERES" is proven by by Report-no.

EN/IBE/QAR23.0002/00
IB-23-6-0037

2. Safety information

2.1 Warnings

Installation and initial operation only by certified experts according to this manual. Observe the significance of the following symbol and note explanations. They are subdevided in security levels and classified according to ISO 3864-2.

DANGER	DANGER indicates a hazard with a high risk degree, which, if not avoided, causes death or heavy injuries.
WARNING	WARNING indicates a hazard with a medium risk degree, which, if not avoided, can cause death or heavy injuries.
CAUTION	CAUTION indicates a hazard with a low risk degree, which, if not avoided, can cause slight or moderate injuries.
ADVICE	Indicates general advice, useful hints and work recommendations, which don´t have influence on the safety and health of the staff.

2.2 General safety advice

⚠ WARNING	• This manual has to be kept at the operating site at any time. • Read the manual carefully prior to installation and initial operation.
ⓘ ADVICE	While operating electronic devices certain parts are obligatory under hazardous voltage.

The manufacturer reserves the right to make technical changes and improvements at any time.

3. Technical specification

3.1 Functions and application areas (Intended use)

ARIS actuators of the ExTensor series are designed exclusively for industrial use in potentially explosive areas according to their labeling. They are used to actuate control and shut-off devices (flaps, valves, taps, sliders, dosing pumps, etc.).

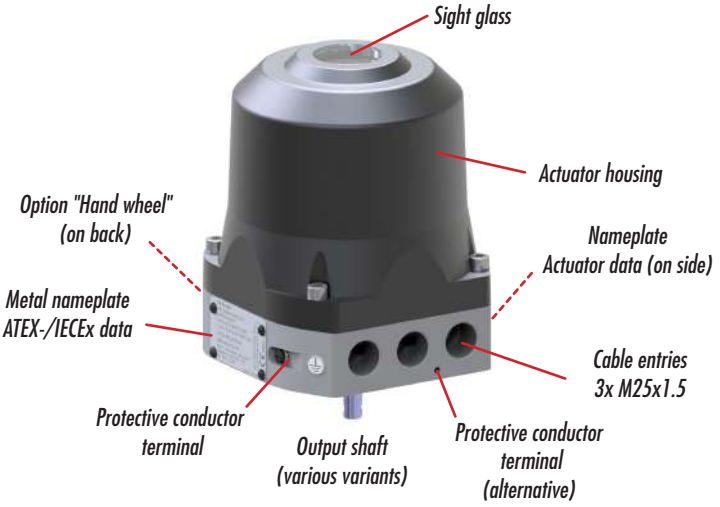
ARIS actuators may not be used for
- in continuous underwater use (observe protection class)
- in hazardous areas of zones 0 and 20
- in Group I hazardous areas (mining)
- in radiation-exposed areas in nuclear plants
- at temperatures below -20 °C or above +60 °C
- underground
- near open fires

ARIS Stellantriebe GmbH assumes no liability for any production errors and the resulting damage or consequential damage after the drive has been checked, installed and declared functional.
In particular, ARIS Stellantriebe GmbH assumes no liability for any production errors and the resulting damage or consequential damage in the event of improper use of the drive, if the drive has not been adequately tested within an overall system, or if errors are found during an initial or further test and the drive is not was immediately taken out of service.

3.1.1 Special conditions for safe use of the actuator in hazardous areas
(Acc. point 17, EC type examination certificate)

- The actuator can be used in an extended ambient temperature range from -20 °C to +60 °C.
- Repairs to the flameproof gaps may only be carried out in accordance with the manufacturer's design specifications. Repairs according to the values in Tables 2 and 3 of EN 60079-1 are not permitted.
- Only the screw plugs specified by the manufacturer (strength class at least A2-70 according to ISO 4762) may be used.
- The cable and line entries used must be suitable for a maximum operating temperature of at least 80 °C. All openings that are not required for the introduction of cables and lines must be permanently closed with suitable sealing elements that have been confirmed for explosion protection according to EN 60079-1 for group IIC or according to EN 60079-31 for group IIIC.

3.1.2 Overview



3.2 Housing entries (tapped holes)

3.2.1 Cable and wire entries

Features **ARIS ExTensor**
3x M25x1.5 tapped holes

When delivered, the actuators are provided with a transport protection (protective sticker), which covers the threaded holes of the cable and line entries. This must be removed and replaced with suitable, approved entries or plugs. The entries/blind plugs used must correspond to the ignition protection types of the drive. In addition, these must meet the IP protection class - at least IP65 and IP67.

⚠ WARNING

DANGER! Operation with the sticker or parts thereof is not permitted.
Non-compliance can lead to serious accidents and property damage - The ATEX/IECEx approval of the device becomes void in the event of non-compliance or misuse.

Only suitable cable and line entries and blind plugs certified according to the ATEX/IECEx protection class may be used for the introduction of cables (lines) - the diameters must correspond to the cables used.
Unused housing entries (threaded holes) which are intended for the use of cable and line entries must be sealed with suitable blind plugs certified according to the ATEX/IECEx protection class. When selecting the correct cable and line entry, EN IEC 60079-14 must also be observed. The cable and line entries as well as blind plugs must be suitable for an operating temperature of at least +80°C.

⚠ WARNING	DANGER! On the back of the drive, there is a blind plug to close the handwheel option for equipment variants without a handwheel. This may not be removed or altered. See also Chapter 6 - Handwheel section.
	Another transport protection sticker is located on top of the drive hood to protect the sight glass during transport / storage. This must also be removed prior to commissioning. Operation with the sticker or parts thereof is not permitted. Non-compliance can lead to serious accidents and damage to property - The ATEX/IECEx approval of the device becomes void in the event of non-compliance or misuse.

Suitable products (cable entries, blind plugs) are available as accessories from ARIS, tailored to the ATEX/IECEx products. If required, these are loosely enclosed with the drive. The delivery is always unassembled.
Please note the correct assembly. The cable entries used must always be designed for the connecting cables and correspond to the cable diameters.

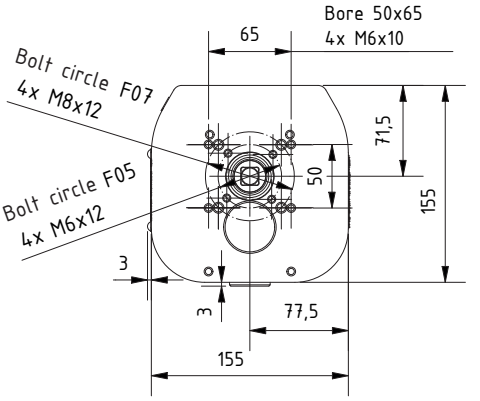
3.3 Performance data

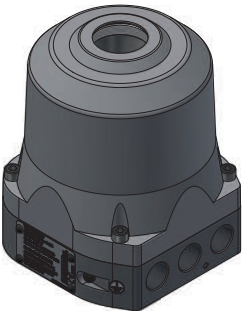
Voltage supply **AC**	85…265 V AC (50/60 Hz)	*End position cutoff*	Digital
Voltage supply **DC**	24 V DC (±10%)	*Position feedback*	Digital, contactless
Max. power consumption	60 VA	*Connection*	Cable/wire entry: 3x M25x1.5
Torque	5 Nm…500 Nm	*Ambient temperature*	-20° C…+60° C
Actuating time	1s/90°…150s/90°	*IP protection class*	IP66/IP67
Motor type	BLDC		

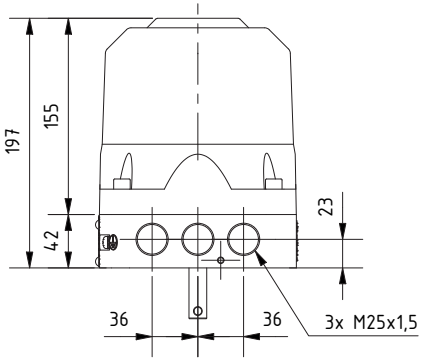
ⓘ ADVICE	ARIS actuators type ExTensor correspond in their basic form (primary version) up to 40Nm torque - without gear extensions, the EU type examination certificate number IBExU22A-TEX1066 X. - see appendix of these operating instructions. Variants with torques of 50 ... 500Nm (secondary versions) correspond to the primary version, but are supplemented by an externally mounted gear extension.

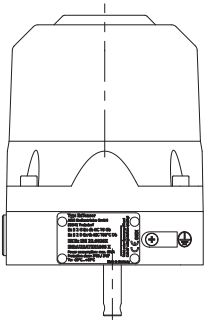
3.4 Intended use

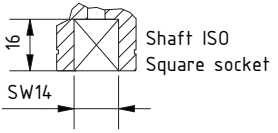
ARIS gearbox extension stages (substructure gearbox sizes M / L / XL (50-500Nm)) are only delivered in combination with ARIS actuators from the ExTensor series and may only be operated by the customer in this combination.
They are used to increase the torque of the primary drives. Conversion or other use of the products is not permitted. A documented ignition hazard assessment was carried out for the gearboxes in accordance with DIN EN ISO 80079-36/-37 in accordance with the current standard. The information in this operating manual also applies..



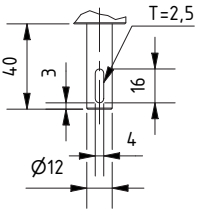


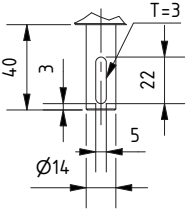




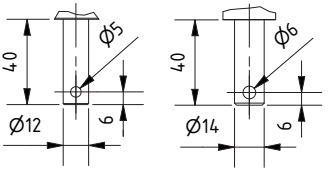


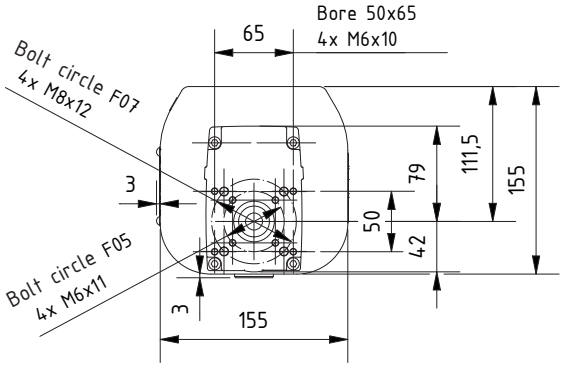
Shafts feather key

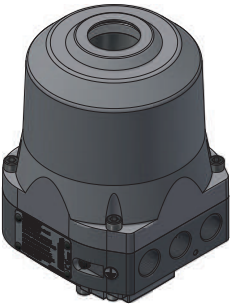


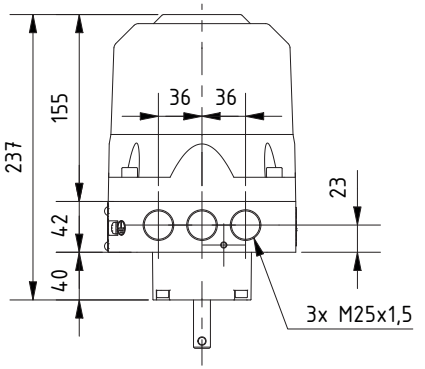


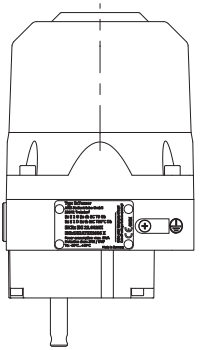
Shafts cross hole



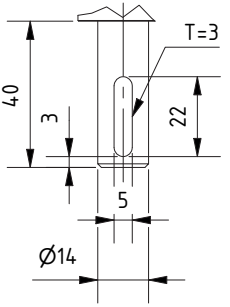




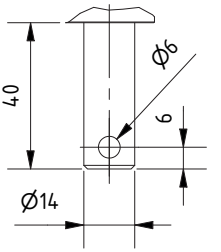




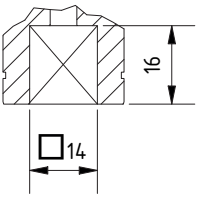
Shaft
Feather key

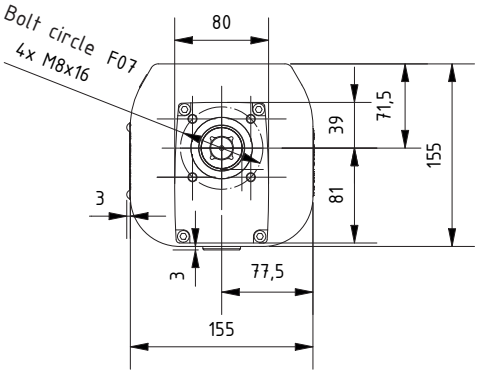


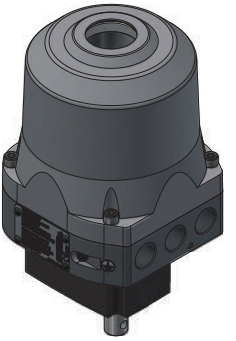
Shaft
Cross hole

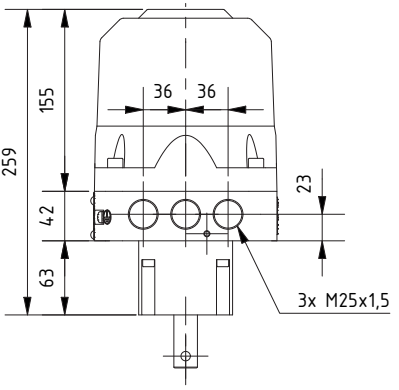


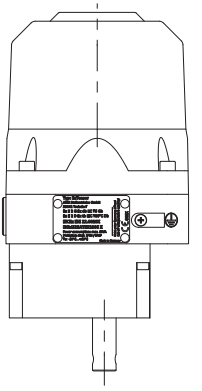
Shaft ISO (5211)
Square socket



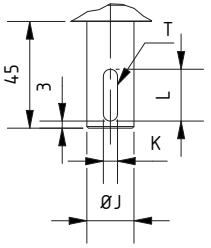




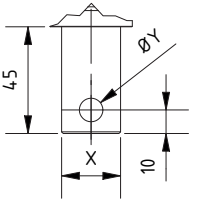




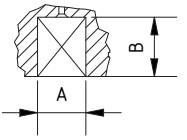
Shaft feather key



Shaft cross hole



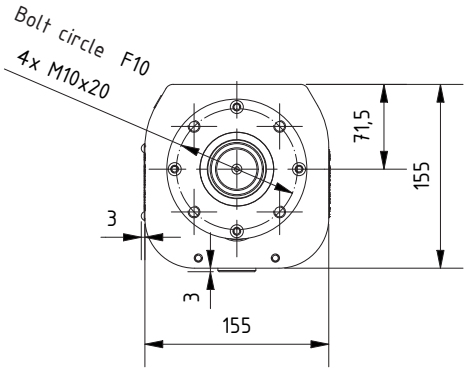
Shaft ISO (5211)
Square socket

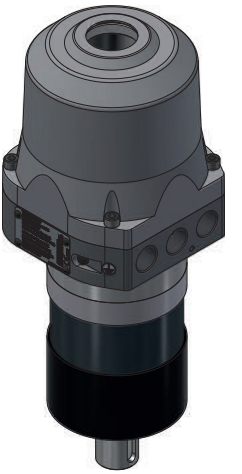


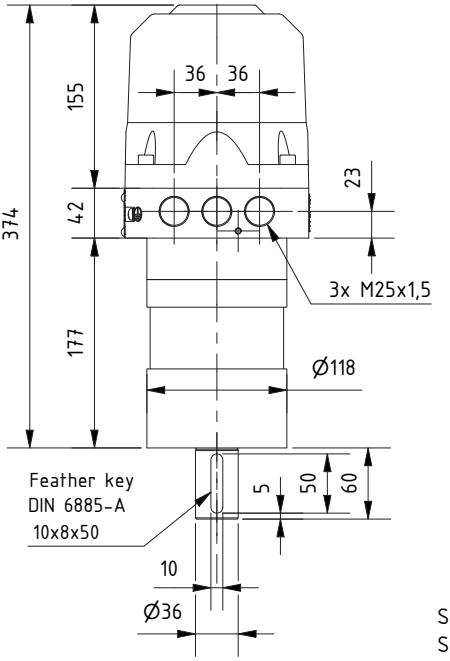
ISO shaft square dim.		
Torque	Maß A	Maß B
80–150	17	21
150–180	22	24

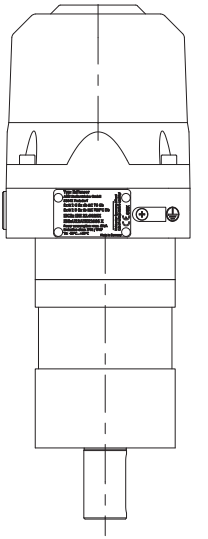
Shaft cross hole		
Torque	Maß ØX	Maß ØY
80–150	20	8
150–180	25	10

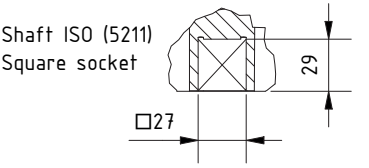
Shafts feather key				
Torque	Maß ØJ	Maß K	Maß L	Maß T
80–150	20	6 P9	22	3,5
150–180	25	8 P9	32	4


Bolt circle F10
4x M10x20
71,5
155
3
3
155




374
155
42
177
36
36
23
3x M25x1,5
Ø118
Feather key
DIN 6885-A
10x8x50
5
50
60
10
Ø36




Shaft ISO (5211)
Square socket
29
□27

3.5.1 Weights

ExTensor "S"	**6.5 kg**
ExTensor "M"	**7.5 kg**
ExTensor "L"	**8.5 kg**
ExTensor "XL"	**15.5 kg**

Weights are approximate and may vary slightly depending on the equipment variant.

4. Actuator setup for utilization

4.1 Transport, (temporary) storage and downtimes

Use the factory packaging for transport to the installation point.
Replace a damaged original packaging by a new solid packaging.

- Actuator with attached valve: only attach lifting gear to the valve and NOT to the actuator
- ARIS actuators must not be used as a climbing or supporting aid
- ARIS actuators must not be operated in unsecured lifting mode without additional applications
- Storage in well-ventilated and dry rooms
- Protection against possible soil moisture (shelf storage)
- For longer storage times, moisture-absorbing agents should be placed in the drive
- The drives must be protected from dust and dirt
- Actions must be taken to avoid the formation of condensation (e.g. in the event of temperature fluctuations)

4.2 Packaging

ARIS drives are protected by special cardboard packaging for transport from the factory. Unpacking in the Ex area is not permitted as the materials could become electrostatically charged.

4.3 Safe disposal of packaging

Additionally necessary packaging is made by easily separable packaging materials and can be recycled individually:
- Wood
- Cardboard
- Paper
- Plastics

4.4 Installation and mounting

Installation, electrical connection, commissioning, operation and maintenance may only be carried out by trained specialist personnel who have been authorized by the system operator or system manufacturer.
Personnel requirements: National requirements, EN IEC 60079-14, EN IEC 60079-17, EN IEC 60079-19.
Before commissioning or working on this actuator, the personnel must have read and understood these instructions and also know and observe the applicable rules for occupational safety. Work in hazardous areas is subject to special conditions that must be observed. The plant manufacturer/operator is responsible for compliance and monitoring.

Assembly / drive mounting

When mounting the actuator on fittings, consoles or other application interfaces, care must be taken to ensure that no transverse or axial forces are introduced into the drive's output shaft during assembly.
Attachments such as couplings or levers must not be pressed on or "hammered in". Failure to do so can lead to defects and failure of the drive.

Prior to initial operation

- inspect drive for damage prior to installation
- the screw-in depth of the mounting screws must not be exceeded according to the information in the drawings
- before commissioning, check the tightness of the cable entries and blind plugs
- tighten the hood screws evenly (torque 12 Nm, also note the notes under point 5.1.1)
- protect the drive from the effects of the weather (e.g. with a protective roof)
- do not expose the drive to hard shocks (e.g. by dropping it);no ropes, hooks, etc. attach directly to the drive
- permanent overloading and blocking of the drive leads to damage to the drive
- only use original ARIS spare parts

Consider prior to attachment of couplings:

- Do not turn actuator shafts by force;
- actuator and valve shafts must run centric.

⚠ WARNING	No additional holes may be drilled into the drive housing and the hood.
	Any modifications to the actuator are strictly prohibited and will result in the loss of the ATEX/IECEx protection approval.

4.5 Information about coatings

ARIS ExTensor actuators are supplied with a powder-coated drive cover as standard.
On request, delivery with an unpainted / bare cover is also possible - the coating / painting can then be carried out by the customer. The following requirements must be strictly observed.

⚠ WARNING	Deviations from the requirements of EN IEC 60079-0:2018 Section 7.4 are strictly prohibited and will result in loss of ATEX/IECEx protection approval.

⚠ WARNING	The actuator cover or the anodized lower part of the housing that have already been painted must NOT be additionally coated!

⚠ WARNING	Only the outer surfaces of the drive cover may be coated. All interior areas as well as the underside, which rests on the drive base, must be completely free of coatings, paint and paint spray.

5. Initial operation

⚠ WARNING	Work on open live drives, e.g. setting the end positions, may only be carried out if the occurrence of an explosive atmosphere can be ruled out for the period of work.
	The actuator without the drive cover may only be operated for a short period of time for essential adjustment and commissioning processes.
	Dangerous voltage: Electric shock possible! • The drive may only be commissioned by qualified personnel! • De-energize before opening the actuator. • For electrical installation and commissioning, the applicable regulations have to be observed.

5.1 Opening the actuator

⚠ CAUTION	Do not disconnect under voltage!

⚠ WARNING	Before removing the drive cover, the drive must be switched off from the power supply.
	Installation and commissioning only by qualified specialists in accordance with the operating instructions.
	After loosening and removing the cover screws, carefully lift the drive cover off the lower part of the housing. Do not tilt or wobble. This can lead to irreparable damage to the flameproof gap.

Only the screws installed on the drive may be used to mount the cover. If lost, screws of the same standard, dimensions and strength must be used.

Screw type: ISO4762 - M8x40 - A2-70

The drive cover is screwed to the lower part of the housing with 4 screws (M8x40). The drive cover and housing base are assembled with each other via a narrow, cylindrical fit to form the "flash-proof gap".

Care must therefore be taken when lifting the drive cover so that the components do not tilt.

⚠ CAUTION	When the cover hood is lifted, a vacuum can develop in the drive, which makes it difficult to lift the hood. This can be avoided by loosening a cable/line entry or blind plug so that air can flow through it. DANGER! The lead-in must be professionally closed again before commissioning or for further storage.
	Danger! Pressure proof encapsulation

To create the type of protection, flameproof gaps with narrow cylindrical fits are installed.
Gap surfaces must not be damaged. Damaged surfaces must not be machined or repaired in any other way - contact ARIS Service.
Cover and housing parts must be handled with care.
Avoid tilting the components during assembly.

5.1.1 Closing the actuator

After the adjustments have been made, the drive cover must be reassembled.
Note the following points:

- The cleavage surfaces must be clean and free from contamination or damage
- The sealing surfaces must be clean and free from contamination or damage
- Check the seat of the seal (O-ring) on the lower part of the housing and make sure that it is undamaged and free of dirt
- If necessary, apply an anti-corrosion agent (Vaseline (petrolatum) or soap-thickened mineral oil) to the cylinder surfaces of the gap
- Put the drive cover back on without tilting it

Note the mounting orientation based on the flange geometry. When the hood is put on, overpressure can occur inside the drive, which means that the hood can only be pushed open slowly. Proceed slowly and carefully so that the air can escape.
This can be avoided by loosening a cable/line entry or blind plug so that air can escape and the overpressure can be reduced.

⚠ CAUTION	The lead-in must be professionally closed again before commissioning or for further storage.

Tighten the screws step by step in a cross pattern, observe the tightening torque.
Tightening torque cover screws: M8x40 A2-70 = 12Nm

5.2 Electrical connection

The electrical connection may only be carried out by qualified electricians.

⚠ DANGER	Dangerous voltage: Electric shock possible! • The drive may only be commissioned by qualified personnel (electricians)! • De-energize before opening the actuator. • The applicable regulations must be observed during electrical installation and commissioning.

⚠ WARNING	Danger! Observe the regulations applicable to the hazardous area for handling electrical components in your operating environment.

To open the drive cover, proceed as described under 5.1.

The connection diagram in the drive is binding for the electrical connection. Note the voltage type!

Grounding
The drive must be provided with a protective conductor connection / grounding both inside and outside. The connection threads / positions are marked with the earth symbol ⏚

Outer PA connection at least 4 mm^2.

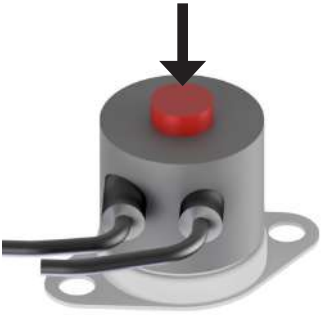
Before switching on for the first time, check:

- Is the drive externally undamaged?
- Is the mechanical attachment O.K.?
- Has the electrical connection been made correctly?
- Check whether the type of current, mains voltage and frequency match the motor data (see rating plates on the hood and in the drive).
- Use cable glands suitable for the connecting cable.
- Be sure to observe the wiring diagram glued to the hood.
- For extra-low voltages (e.g. potentiometers), separate, possibly shielded cables should be used.

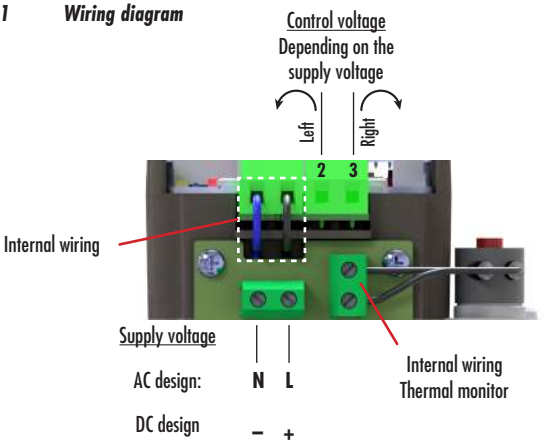
Temperature monitor
To protect against increased temperatures, the actuator is equipped with a manually resettable bimetallic temperature monitor on the inside. This is connected in front of the operating voltage supply.
At increased temperatures > +85°C in the drive, the temperature monitor switches off the supply voltage and thus the drive.
This serves to comply with the type of protection, the temperature class and the fulfillment of the ATEX/IECEx standards.

After a cooling phase of approx. 30 minutes and a temperature reduction of at least 10K, the temperature monitor can be reset manually by pressing the actuating button (red).
In doing so, observe the procedure and instructions for opening and connecting the drive in these operating instructions.
De-energize the drive before opening.
Make sure that there is no explosive atmosphere in the area when working on the drive.

Also, before performing a reset, make sure that the causes of the elevated temperature have been eliminated.



5.2.1 *Wiring diagram*



Connection 85…265 V AC

N	Neutral conductor
L	Phase / Supply 85 ... 265 V AC
2	Control connection > left-turning (CCW)
3	Control connection > right-turning (CW)

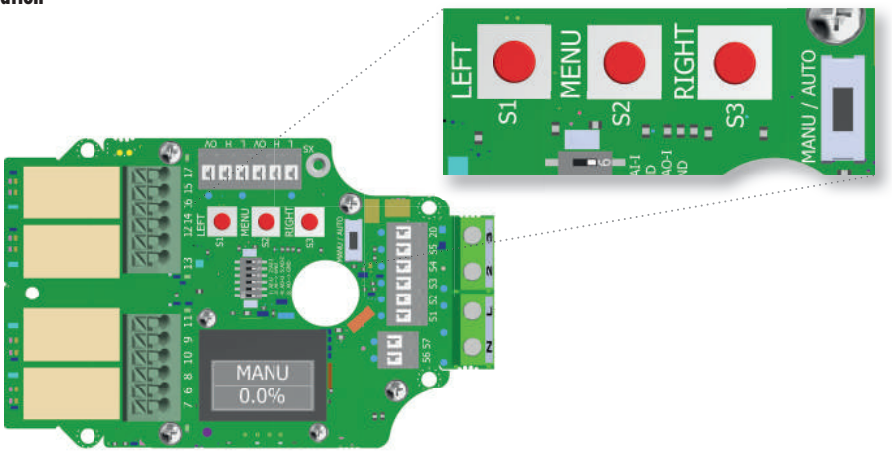
Ground wire inside of the housing.

Connection 24 V DC

–	GND
+	Connection 19.2…28.8 V DC
2	Control connection > left-turning (CCW)
3	Control connection > right-turning (CW)

6. Actuator operation without modules (Standard)

6.1 Operation



The Tensor² is operated via 3 buttons and a slide switch, located above the actuator´s display. The OLED display makes setting up the actuator easier by showing text such as letters, numbers and signs.

Navigate between different menu items by using the buttons LEFT [L] & RIGHT [R].

6.1.1 Buttons and switches

The buttons (1) are indicated with
LEFT [L]
MENU [M]
RIGHT [R]

The functionality of the buttons is explained in section "Operating modes".

6.1.2 Operating modes

The different operating modes of the actuator can be selected via the slide switch resp. the MENU button. The actual operating mode is shown on the display.

Automatic operation (AUTO mode, switch position "AUTO"):
The actuator runs with an external signal, which is present depending on the setting on the terminal clamps, the signal clamps or CAN clamps. The onboard buttons are without function.

Manual mode (MANU mode, switch position "MANU"):
The actuator can run left and right by using the buttons "L" & "R", if the actuator is not in setup mode. Change to setup mode by pressing the MENU button longer than >1s.

Setup mode (Switch position "MANU"):
Different actuator parameters can be set up and adjusted.

Start setup mode:

1. Slide switch to position"MANU"
2. Press button MENU longer than >1s

Setup mode is turned on and the first menu item "MAIN MENU" is displayed.
Within the setup menu navigate between different menu items and adjustments by pressing the buttons "L" & "R".
Confirm any entry by pressing the MENU button (press <0.5s).
Exit any menu item by pressing the MENU button longer than >1s.

Exit setup mode:
Exit the setup mode by moving the slide switch to position "AUTO" and confirming the notification message.
Alternatively press the MENU button in the top menu layer longer than >1s and confirm the notification message. The actuator then changes to manual mode (MANU mode).

ADVICE	A warning message is displayed when switching between different operating modes, because the actuator can run under certain conditions. Confirm the message with the MENU button.
WARNING	The actuator may run and move the connected valve when switching from MANU to AUTO and you confirm the warning message. After switching from MANU to AUTO and confirming the warning message the actuator can be operated by using the buttons "L" & "R".

6.1.3 Menu system overview

Menu items

Depending on the selected user, stored access authorisation, set parameters and the model type of the actuator, single menu items may be invisible/hidden differing from the following overview.

x = menu item visible

Menu	Sub item	Function	Standard	POTI (Potentiometer)	A-OUT (Analog output, Current/Voltage output	CONTROL (Controller, i-Act)
MAIN MENU		**Main Menu**				
	LOGIN	Login (Select user)		X		
	End positions	Set up end positions (Left & right)				
	Poti input	Settings for operating the actuator via external potentiometer				X
	Poti output	Settings for potentiometer output values (Feedback)		X		X
	Set value	Settings for set value defaults (Drive via set value)				X
	Actual value	Settings for actual value output (Feedback current/voltage)			X	X
	Relay switch	Programming relays behaviour (Option board)	visible only with attached relays module (Option board)			
EXPT. MENU		**Expert Menu**				
	Signal IN	Selection of input signal for driving the actuator		X		
	Signal OUT	Selection of output signal for position feedback				
	Wire monitor	Setting of actuator behaviour in case of cable breakage (formerly wire break monitoring)				X
	Status info	Activate/Deactivate message output		X	X	X
	Offset	Settings for allowed control deviation in controller mode				X

	Hyst. Start	Define start hysteresis	X
	Hyst. Stop	Define stop hysteresis	
	Stall-det.	Settings for block detection	
	Block-det.	Settings for block detection near the end positions	
	RPM acc.	Define acceleration ramp of actuator	
	RPM red.	Define break ramp of actuator	
	Add feature	Entry of activation code for function extensions	
POWR. MENU		**Power Menu**	X
	Torque/Speed	Selection of a torque/time combination for CCW resp. CW rotation	
INFO MENU		**Information Menu**	X
	Firmware	Indicates firmware revision	
	Hardware	Indicates hardware revision	
	Serial-No.	Indicates serial number of the electronics	
	Features	Indicates unlocked actuator functions	
	On-time	Indicates operating hours of the actuator	
	Cycl. Count	Indicates number of starts of the actuator	
	Modules	Indicates connected modules/option boards	

Menu items in detail

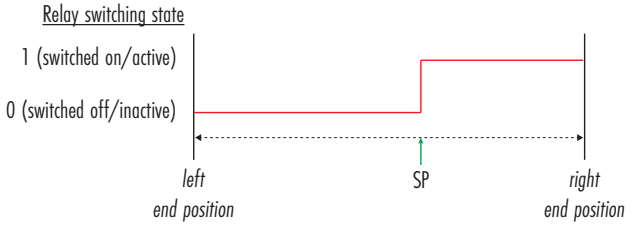
MAIN MENU

Login	Enables selection of an access level. If a password has been stored, enter it here to proceed to further menu items. Depending on the selected access level, single menu items may not be visible or adjustable. If the login is missing, only the INFO MENU and the menu item LOGIN (in MAIN MENU) are visible.
	The following users are selectable: • User • Service • Manufacturer (ARIS only) A logged in user can be logged out via the menu item "Logout".

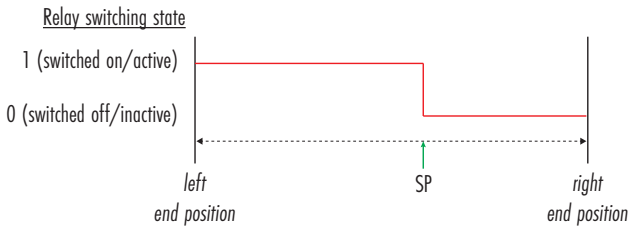
Login (Contd.)	**ADVICE** A user has to be selected/logged in on initial switch on or after a voltage loss, even if no password was given for the selected user. If no password was stored for the user, the password entry is skipped and the first menu item will be displayed.
	Password entry: • Select the appropriate figure via buttons L & R (actual figure is flashing) • To edit the figure press the MENU button –> An underscore is shown below the figure. • Set selected figure by using buttons L & R. • Confirm the set figure with the MENU button. • Navigate to the confirmation arrow after password entry and confirm with the MENU button. No error message is shown when entering a wrong password. A correct password or the active user is marked with an asterisk (*) behind the selected user. Example with user "User": Password correct/User active: > User* Password wrong/User inactive: > User
End positions	*End positions*
	Selection and setting of the left (EL) and right (ER) end position.
	Approach end positions using buttons L and R and then store them.
	Procedure: • Select the end position to be set • Within the display "<EL>" or "<ER>" approach left resp. right end position via buttons L & R and confirm with MENU button • Accept (Y) or cancel (N) storing the end positions. Change between (Y)/(N) via buttons L & R, confirm selection with MENU button.
	CAUTION Motor or parts can be damaged when driving against obstacles. The motor does not stop at the prior set end positions during an end position is re-programmed. Drive the actuator slowly and carefully when setting new end positions.
	ADVICE Left and right end positions can be interchanged. The assignment of the turning direction of the inputs 2/3 and the buttons LI/RE do not change. The end positions must be 28° apart due to technical reasons. If the difference range is too small, the actuator will prompt "Error Code 51".

Poti Input	*Actuator control via external potentiometer, only visible and adjustable with "Signal IN" = "Poti"*
	Matching of the set value signal for the left and right end positions for controlling the actuator via a potentiometer. This menu item can only be set, when "Poti" is selected under "Signal IN". The DIP switch must be set correctly on the board (see menu item "Signal IN"). The connected potentiometer is supplied with 5 V DC via the electronics of the actuator. The set value signal of both end positions can be set as a percentage of the total voltage applied to the potentiometer. The following settings are possible for the left and right end positions: Set value signal = 0% | 10% | 90% | 100% | free (free values, selectable via display)
Poti Output	*Position feedback via potentiometer, only visible and adjustable with "Signal OUT" = "Poti"*
	Setting of the actual value signal at the output of the electrical potentiometers relating to the left and right end position. This menu item can only be set, when "Poti" is selected under "Signal OUT". The DIP switch must be set correctly on the board (see menu item "Signal OUT"). The actual value signal of both end positions can be set as a percentage of the total voltage applied to the potentiometer. The following settings are possible for the left and right end positions: Actual value signal = 0% | 10% | 90% | 100% | free (free values, selectable via display)
	ADVICE The terminal designation for the potentiometer output is differently to prior Tensor electronics. The original terminals 18 and 19 are replaced with terminals 54 and 55. Wiring diagram see description for "Signal OUT".
	Performance data for potentiometer Resolution: 12 bit Output impedance: 1 kΩ Supply voltage: 4.75…28.8 V DC
Set Value	*Settings for set value input when controlling with i-Act controller, only adjustable with "Signal IN" = "Ctrl. [mA]" or "Ctrl. [V]"*
	Matching the set value signal for the left and right end position. This menu item can only be set, when "Ctrl. [mA]" or "Ctrl. [V]" is selected under "Signal IN". The set value signal of both end positions can be set as follows: Set value signal current = 0 mA | 4 mA | 20 mA | free (free values, selectable via display) Set value signal voltage = 0 V | 2 V | 10 V | free (free values, selectable via display)
	ADVICE For a proper function, the DIP switch near the buttons must be set equivalent to the settings in the menu! Setting the DIP switch see description for "Signal IN". NOTICE: Defaults for the set value of the end positions must cover min. 20% of the total range, otherwise "Error Code 80" will be displayed. Example: Signal range 4 mA => Coverage 4 mA x 20% = 0.8 mA Lower end position 0.1 mA => Upper end position min. 0.9 mA (= 0.1mA + 0.8 mA)

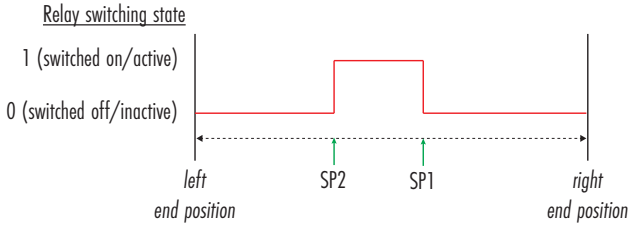
Set Value (Contd.)	Performance data for set value input Resolution: 12 bit Set value input: Current input 0…20 mA, Burden 50 Ω Voltage input 0…10 V DC, input impedance >200 kΩ
Actual Value	***Settings for actual value output as position feedback, only adjustable with "Signal OUT" = "Ctrl. [mA]" or "Ctrl. [V]"***
	Matching the actual value signal for the left and right end position. This menu item can only be set, when "Ctrl. [mA]" or "Ctrl. [V]" is selected under "Signal OUT". The actual value signal of both end positions can be set as follows: Set value signal current = 0mA | 4 mA | 20 mA | free (free values, selectable via display) Set value signal voltage = 0 V | 2 V | 10 V | free (free values, selectable via display)
	ADVICE For a proper function, the DIP switch near the buttons must be set equivalent to the settings in the menu! Setting the DIP switch see description for "Signal OUT". NOTICE: Defaults for the set value of the end positions must cover min. 20% of the total range, otherwise "Error Code 70" will be displayed.
	Performance data for actual value output Resolution: 12 bit Actual value encoder: Magnetic position sensor Actual value output: Current output 0…20 mA, Burden 50 Ω Voltage output 0…10 V DC
Relay Switch	***Relay settings for options board with additional switches for position feedback, only adjustable in combination with mounted relay board***
	Behaviour setup for the bi-stable relays on the relay board. Up to 4 relays are available, depending on the chosen relay board. The switching state of the relays is retained even in currentless condition, so that the auxiliary switches can be used.
	Performance data of relay (Add-on board) Amount of relays: 2 (optional 4) Relays type: Bi-stable relay Switching voltage: max. 250 V AC / 125 V DC Allowed continuous current/channel: max. 2 A (at 230 V AC / 30 V DC); max. 0.2 A (at 125 V DC)

Relay Switch (Contd.)	The following relay settings are available: 1. "Off": Relays switched off/inactive 2. "Sw.pt.high" (Switch point high): Relay is switched on/active from right end position to the set switching point SP. Relay is switched off/inactive from left end position to the set switching point SP. 3. "Sw.pt.low" (Switch point low): Relay is switched off/inactive from right end position to the set switching point SP. Relay is switched on/active from left end position to the set switching point SP. 4. "Cam high" (Switch cam high): Relay is switched off/inactive from right end position to the set switching point SP1, switched on/active between switching points SP1 and SP2 and switched off/inactive again after switching point SP2. Relay is switched off/inactive from left end position to the set switching point SP2, switched on/active between switching points SP2 and SP1 and switched off/inactive again after switching point SP1. 5. "Cam low" (Switch cam low): Relay is switched on/active from right end position to the set switching point SP1, switched off/inactive between switching points SP1 and SP2 and switched on/active again after switching point SP2. Relay is switched on/active from left end position to the set switching point SP2, switched off/inactive between switching points SP2 and SP1 and switched on/active again after switching point SP1. 6. "Bl.det.le" (Block detection left): Relay switches off when detecting a blockage in range of the left end position. Settable only on relays no. 3 & 4! 7. "Bl.det.ri" (Block detection right): Relay switches off when detecting a blockage in range of the right end position. Settable only on relays no. 3 & 4!
	[1] Off 
	[2] Sw.pt.high 

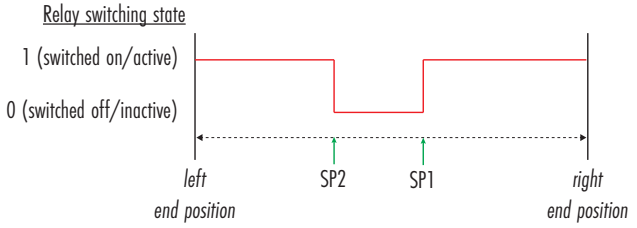
[3] Sw.pt.low



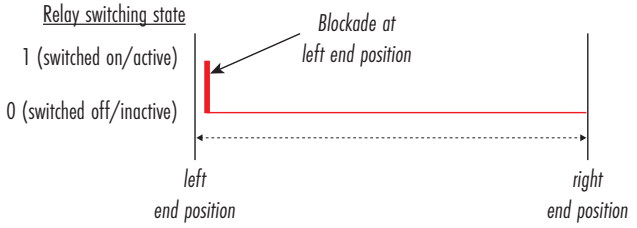
[4] Cam high

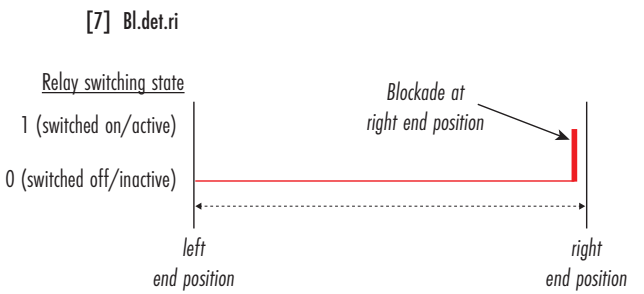


[5] Cam low



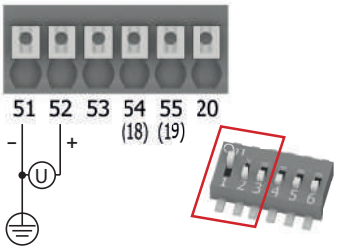
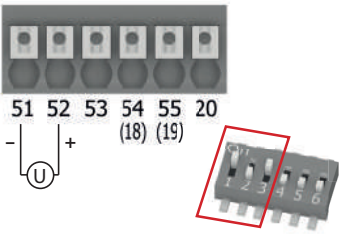
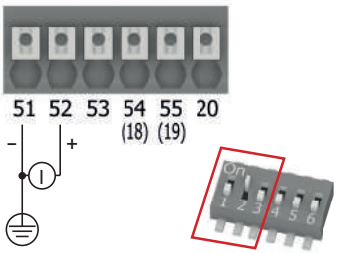
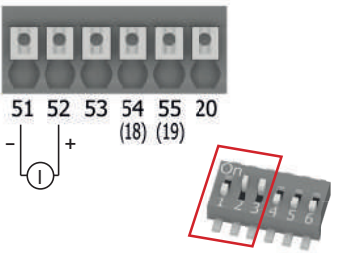
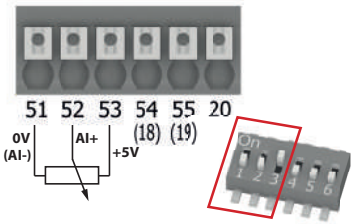
[6] Bl.det.le



	
	Feedback of block detection via relay (Setting 6 & 7) The condition of the block detection can be put out via relay 3 and 4. Therefore, the settings for block detection are matched to the preferred relay in the relay settings menu. The block detection feedback can differ between block detection in left end position and block detection in right end position. On a block detection within the set range, the relay will switch.

EXPT. MENU (Expert menu)

Signal IN	*Input signal*
	Selection of input signal type for controlling the actuator. The following control features are available (depending on the activated features): • Term. 2/3 (Terminal 2/3): Driving the actuator via terminal 2/3. • Ctrl. [mA] (Control [mA], i-Act): Driving the actuator by feeding a set value signal in range 0...20 mA. • Ctrl. [V] (Control [V], i-Act): Driving the actuator by feeding a set value signal in range 0...10 V. • Poti (Potentiometer, i-Act): Driving the actuator via a connected external potentiometer.
	ADVICE The input signal type must additionally be set up with the onboard DIP switch, according to the desired signal type. DIP switch 1 and DIP switch 2 must not be active (On) simultaneous! DIP switch 4 and DIP switch 5 must not be active (On) simultaneous!

Signal IN (Contd.)	Settings of the DIP switch for input signals (DIP switches 1-3) For the settings of the input signals use DIP switches1-3. The position of DIP switches 4-6 is irrelevant to the input signal setting.
i-Act	Voltage input [V] Voltage source grounded  Voltage source potential-free 
i-Act	Current input [mA] Current source grounded  Current source potential-free 
i-Act	Potentiometer input When driving the actuator via a connected potentiometer, an auxiliary voltage of 5 V DC is generated over terminal 53 for poti supply. An additional external voltage supply for the potentiometer is not necessary. Potentiometer input 

Signal OUT	*Output signal*
	Selection of the output signal type, used as position feedback. The following position feedbacks are available (depending on activated features): Feedback signal: • Off: No feedback of actuator position. • Ctrl. [mA] (Control [mA], i-Act or current/voltage output): Output of an actual value signal [mA]. • Ctrl. [V] (Control [V], i-Act or current/voltage output): Output of an actual value signal [V]. • Poti (Potentiometer): Output of a voltage value of the internal electrical potentiometer, assigned to the actual actuator position.
	ADVICE The input signal type must additionally be set up with the onboard DIP switch, according to the desired signal type. DIP switch 1 and DIP switch 2 must not be active (On) simultaneous! DIP switch 4 and DIP switch 5 must not be active (On) simultaneous!
	Settings of the DIP switch for output signals (DIP switches 4-6) For the settings of the output signals use DIP switches 4-6. The position of DIP switches 1-3 is irrelevant to the output signal setting.
i-Act Current/Voltage output	Voltage output [V] Voltage output 51 52 53 54 (18) 55 (19) 20 – + U Current output [mA] Current output 51 52 53 54 (18) 55 (19) 20 – + I
Potentiometer electronical	Potentiometer output Potentiometer output Voltage source grounded 51 52 53 54 (18) 55 (19) 20 U- + U+ U U 5-24V Potentiometer output Voltage source potential-free 51 52 53 54 (18) 55 (19) 20 U- + U+ U U 5-24V

Signal OUT (Contd.)

ADVICE

The terminal indication for the potentiometer output is different to prior Tensor electronics. The original terminal indications 18 and 19 were substituted by 54 and 55 (see wiring diagram).

Wire Monitor

Wire monitoring, formerly wire break monitoring

Monitoring of the set value signal at the terminals when driving the actuator with set value signals (mA resp. V).
The monitoring works only with preset values 4…20 mA resp. 2…10 V.
In this range a set value signal <2 mA resp. <1 V is detected as an error and the error code 90 is displayed.

The following actuator behaviour can be set:

Setting	Behaviour on missing/wrong set value signal
Off	Monitoring deactivated
Stop	Actuator stops
Open	Actuator moves to OPEN position (turning direction of shaft CCW)
Close	Actuator moves to CLOSE position (turning direction of shaft CW)
Position	Actuator moves to a preset position

Setting "Position"
Selecting the setting "Position" will show "<WP[actual position]%>" in the display.

- Pressing the buttons L & R, the actuator can be set to the desired position it should run to in case of a missing set value signal.
- Confirm desired position with the MENU button.
- Confirm (Y) or cancel (N) storing the position. Change between (Y)/(N) via buttons L & R, confirm selection with the MENU button.

Status Info

Message output

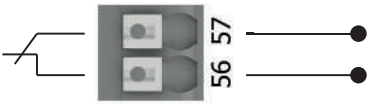
The message output delivers the actual status of the actuator via a potential-free contact.
The following settings are possible:

- Off: Message output not active (no feedback over terminal 56|57)
- On: Message output active

When set to "On", the contact on terminal 56|57 is closed, while the actuator is in AUTO mode.
The following events/conditions lead to an open contact:

- Actuator in MANU mode
- Detection of a control variance (when active)
- Occurrence of an error

Performance data of the message output
Switching voltage: 250 V AC / 30 V DC
Allowed continuous current: 3 A



Offset	*Control variance*
	Setting of the max. variance allowed between actual and set value of the controller (Standard variance). The allowed variance is stated in % depending on the set travel of the actuator. An override of the set max. variance will indicate an error at the message output (see "Status Info"). Possible settings: 0 = Standard variance check deactivated 1...9% = Allowed standard variance in % Example: Menu setting = 2% Right end position 0% [0°] / Left end position 100% [90°]. A 90° travel corresponds to a max. allowed variance of 90° x 2% = 1.8°. The message output opens on a variance of the actual position from the set position of >1.8°.
Hyst. stop	*Shut-off hysteresis*
	The shut-off hysteresis defines the shut-off accuracy of the actuator when reaching the default set value position. The actual position of the actuator is checked against the set position and the default hysteresis value. The actuator stops if the actual position lies within the (shut-off) hysteresis range around the set value. The shut-off hysteresis of the actuator in control mode can be set in steps of 0.01% in a range of 0…5.00%.
	ADVICE The shut-off hysteresis has to be set lower than the turn-on hysteresis! If the hysteresis is set too low, the actuator may operate in an unwanted behaviour depending on the actuator type. In this case, the hysteresis must be increased.
Hyst. start	*Turn-on hysteresis*
	The turn-on hysteresis defines at which variance from the actual position to the set position the actuator will readjust. The actual position of the actuator is checked against the set position and the default hysteresis value. If the actual position of the actuator lies outside the (tun-on) hysteresis range around the set position, the actuator moves to the deafult set position. The turn-on hysteresis of the actuator in control mode can be set in steps of 0.01% in a range of 0…5.00%.
	ADVICE The turn-on hysteresis has to be set higher than the shut-off hysteresis! If the hysteresis is set too low, the actuator may operate in an unwanted behaviour depending on the actuator type. In this case, the hysteresis must be increased.

Stall-Det.	*Stall detection*
	The stall detection recognizes an accidental halt of the actuator and the BLDC motor, caused by a blockade. Subsequently the actuator stops to avoid damages to the actuator or the connected valve and an error code (Error Code 3X) is displayed. The error can be reset by driving the actuator in the opposite direction.
Block-Det.	*Block detection in range of the end positions*
	The block detection recognizes the run of the actuator against an intended block (e.g. valve seal, valve stop bar, etc.) within a settable range around the end positions and suppresses a stall error in this range. The capture range of the block detection is set in % from the right resp. left end position and can be set differently for both end positions. The following settings are possible: 0 = Block detection deactivated 1...10% = Capture range of block detection at an end position The block detection condition can be put out via the relays 3 and/or 4 (if applicable). See further information in section "Relay switch". If a block was detected, it will be interpreted as an end position. The display of the actuator´s position (in %) stays uneffected from the block detection. On a block detection, reset the detection by driving the actuator in the opposite direction. The actuator turns off, if it reaches a default end position. Example: Menu setting: Block detection left/right = 2% When the actuator reaches the actual position <2% resp. >98% and detects a blockade in this range, the actuator stops on the blockade position. Relay 3 or 4 reacts depending on the equipment and setting of the actuator. No error will be displayed.
RPM acc.	*Acceleration ramp*
	Defines the time [ms] of the acceleration ramp of the actuator in AUTO mode.
RPM red.	*Brake ramp*
	Defines the time [ms] of the brake ramp of the actuator in AUTO mode.

Add feature	*Adding features*
	Enables the entry of an access code for activation of further actuator features. The following features can be activated by entering the access code: • Potentiometer: Activation of the electronical potentiometer for position feedback • Current/Voltage output: Activation of the current/voltage output for position feedback • i-Act: Activation of the electronical potentiometer, the current/voltage output for position feedback and activation of the potentiometer input and the current/voltage input for controlling the actuator via set value signals ([mA] & [V]).
	ADVICE If you are interested in any additional feature, please contact the ARIS sales department and have the serial number of the mounted electronics ready (check INFO MENU "Serial-No.").

POWR. MENU (Power menu)

Torque/Speed	*Torque/Actuating speed*
	Enables the setting of pre-defined torque/time combinations. The setting of the torque/time combination can be made separately and differently for both turning directions "CCW" and "CW".

INFO MENU (Information menu)

Firmware	Displays the firmware version of the electronics.
Hardware	Displays the version of the electronics hardware.
Serial-No.	*Serial number*
	Displays the serial number of the actuator´s electronics. The serial number of the electronics is used for the activation of additional actuator features and may be asked by the ARIS customer service.
Features	*Functions/Features*
	Shows active features/functions and further available features/functions of the actuator. The status of the different functions is marked as follows: Example for feature/function "POTI": Feature/Function activated: > POTI* Feature/Function not activated: > POTI

On-time	*Operating hours counter*
	Displays the overall operating hours of the actuator. The operating hours counter starts as soon as the actuator is supplied with power and stops when the power supply is cut off. The operating hours are stored even when a power failure occurs. A reset of the operating hours is not possible.
Cycl. count	Cycle count
	The cycle count counts the number of starts of the actuator in AUTO mode. The number of starts is stored even in case of a voltage cutoff. A reset of the counter is not possible.
Modules	*Modules*
	Displays (add-on) boards which are connected with the electronics. Connected and recognized boards are marked with an asterisk (*) after the board name. Example with relay board: Board connected/recognized: > Relay* Board not connected/not recognized: > Relay
	ADVICE Add-on boards must only be mounted/dismounted when the electronics is de-energized!

7. Parameter RESET

To restore the actuator's factory settings, a parameter reset can be carried out.

How to carry out the parameter reset:

- Slide the slide switch on the circuit board to MANU when the power is off
- Hold down the L & R buttons
- Switch on the actuator's power supply while continuing to hold down the L & R buttons
- While the L & R buttons are being held down, the LED in the area of the buttons flashes as follows:
    1. LED flashes slowly
    2. LED flashes quickly
    3. LED lights up continuously
- Release the L & R buttons. The error message "Error Code 51" appears. The actuator's end positions must then be reset. In addition, all of the actuator's settings should be checked and adjusted if necessary.

8. Information required by the user

ADVICE

If the fault cannot be resolved, please inform your ARIS contact. Information at: www.stellantriebe.de

9. Fehlersuche und Reparatur

⚠ WARNING	Dangerous voltage: risk of electric shock! • Troubleshooting and repairs may only be carried out by qualified personnel! • Disconnect the actuator from the power supply before opening it. • Risk of crushing from rotating parts!
ⓘ ADVICE	We recommend having repairs carried out at the ARIS factory. Information at: www.stellantriebe.de

Error messages

Error messages are displayed via an error code on the actuator display.
The following table describes the error codes and shows possible ways to correct the errors.

Error Code	Error description (internal)	Description	Troubleshooting
		Stall error - Blockage detection	
30	STALL Blockage detection	Stall event occurred in automatic travel mode. Occurs when the motor is operated above the configured continuous current for longer than 500 ms.	Acknowledge the error: • by giving a travel command opposite to the stall direction (Auto and Manu mode) • When the Auto/Manu switch is switched. See chapter "Stall Detection" in the operating instructions
31	I2T Motor current monitoring	i2T monitoring error – load too high. The continuous current of the motor is exceeded for a longer period of time -> i2t load 100%	Motor is switched off. The error is automatically acknowledged when the i2t falls below 90%.
32	STALL_MANU Blockage detection	Stall event occurred in manual travel mode. Occurs when the motor is operated above the configured continuous current for more than 500 ms.	Acknowledge the error: • by giving a drive command opposite to the stall direction (Auto and Manu mode) • When the Auto/Manu switch is switched. • When you enter the menu in Manu mode and then exit the menu again. See the Stall Detection chapter in the operating instructions
33	I2T_LIMIT Motor current monitoring	i2t monitoring warning – load too high. The continuous current of the motor is exceeded for a longer period of time -> i2t load >= 95%	A warning is issued. The error is automatically acknowledged when the i2t falls below 90%.
		Position sensor error	
40 ... 47 60	Sensor	Position sensors deliver an invalid signal	Perform a parameter reset. Reset the end positions. If the error persists - contact ARIS Support.

Travel range error			
50 / 51	RANGE	Set travel interval is less than 28° (relative to the drive output shaft)	Configure the left / right end position so that the outer shaft can be moved by at least 28°.
Parameter error			
70	PA-RAM_DIFF_ACT	A value of < 20% of the maximum setting range was configured for the actual value output (depending on whether voltage or current input was used < 2 V or < 4 mA)	Set the actual values ("Actual value") again. Specifications for the actual values of the end positions must cover at least 20% of the total range (see section "Actual value" for explanation).
80	PA-RAM_DIFF_ACT	The setpoint specification was configured for a value of < 20% of the maximum setting range, depending on whether voltage or current input was used < 2 V or < 4 mA)	Set the setpoint values again ("Set value"). Specifications for the setpoint values of the end positions must cover at least 20% of the total range (see section "Set value" for explanation).
85	PA-RAM_DIFF_ POS	The configured travel range is larger than the maximum permitted speed.	Reduce the configured travel range. Reprogram the end positions.
Wire breakage			
90	CABLE-BREAK	Wire break detected (only active if the smaller value of the reference input >= 4 mA or >= 2 V is configured, or a CAN timeout occurs).	Correct the wire break or the CAN connection/communication. If the wire break is corrected, the error is automatically acknowledged. See the "Wire monitor" operating instructions.
Power supply and signals			
114	24V_UNDERVOL-TAGE	Internal undervoltage < 17 volts. The motor driver is switched off.	The error is automatically acknowledged when the voltage rises above 17.5 V. Check the supply voltage.
115	24V_OVERVOL-TAGE	Internal overvoltage > 48 volts. The motor driver is switched off.	The error is automatically acknowledged if there is a voltage peak and this falls below 47.5 V. If the overvoltage is present for a longer period of time, the error can be acknowledged manually as soon as the voltage has fallen below 47.5 V. Check the supply voltage.
116	AI_OVERCURRENT	A current > 22mA or < -1.5mA is measured at the analog input (terminal X4 51 & 52). To prevent damage to the measuring resistor, it is switched off for 1000ms. After the time has elapsed, the measuring resistor is switched on again.	The error is automatically acknowledged when the current measurement is below the threshold again. Possible sources of error: S5 DIP is incorrectly configured, polarity at terminal X4 51 / 52 is reversed Check analog signal.

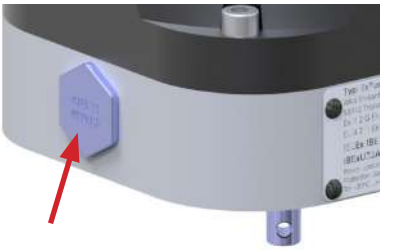
Other error messages		
10 … 20 86; 87 100; 101; 102 110 … 113	INTERNAL ERROR	If these error messages (numbers) occur that are not described above, there may be a technical, internal defect. In this case, please contact ARIS Support for further assistance.

10. Hand wheel

If the actuator is equipped with the "handwheel" option, it can be moved using the external handwheel when the power is off. To do this, push the handwheel in and then turn it by hand. Be particularly careful when turning the actuator in the end position areas, as the handwheel can transmit high torques.
After adjustment, the handwheel automatically disengages and returns to its original position. The handwheel does not rotate during normal operation of the actuator..

⚠WARNING	Turning is only permitted by hand.
	The handwheel may only be used when the drive is de-energized.

⚠WARNING	Attention! On the back of the drive, there is a blind plug for closing the handwheel option on versions without a handwheel. This must not be removed or modified.



11. Maintenance and repair

ARIS actuators of the "ExTensor" series with and without gear extensions are maintenance-free and have lifetime lubrication installed at the factory. Maintenance/inspections are required in accordance with the following instructions to monitor correct function:

Inspection interval
Initial inspection 6 months after commissioning and then annually.

Test
- Visual inspection of the gear motor. Check for damage
- Check for lubricant loss on the gear
- In particular the radial shaft seal on the output shaft of the gear
- Check for unusual operating noises, vibrations, increased temperatures
- Check for correct assembly and fastening
- In the event of defects or deviations from the normal state, the affected actuator with gear must be taken out of service immediately.
- A check/repair/replacement at the manufacturer's factory is required

Repairs
No repairs or mechanical processing may be carried out on the gap surfaces of the flameproof gaps. In particular, the cover/housing gap surfaces may not be changed.

⚠ WARNING	Failure to observe this may result in serious accidents and property damage - The ATEX/IECEx approval of the device will be voided if the instructions are not observed or used incorrectly.

Cleaning
Only clean the actuator with a damp cloth. Never clean with a high-pressure cleaner.

⚠ WARNING	• Flameproof enclosure • Before opening, ensure that there is no gas or voltage present • Gap surfaces must not show any damage or contamination • The hood must not be tilted during assembly

⚠ WARNING	Regular maintenance work: • The type and extent of the tests can be found in the relevant national regulations- (e.g. IEC/EN 60079-17). • The intervals should be set so that any defects that are to be expected can be identified in good time.

12. Declaration of incorporation

EC - Declaration of Conformity CE

Herewith we declare

Name:	ARIS Stellantriebe GmbH
Adress:	Rotter Viehtrift 9, D - 53842 Troisdorf

in sole responsibility that the product

Designation:	Electric actuator
Series:	ExTensor and identical

to which this declaration refers, complies with the essential requirements of the following European directives by being in accordance with the specified harmonized standards:

Dir 2014/34/EU (ATEX)

EN IEC 60079-0:2018 (IEC 60079-0:2017, Ed. 7.0)
EN 60079-1:2014 (IEC 60079-1:2014, Ed. 7.0)
EN 60079-31:2014 (IEC 60079-31:2013, Ed. 2.0)
EN ISO/IEC 80079-34:2020

The actuators mentioned are group II and III devices in the sense of EN IEC 60079-0 and comply with the therein specified device protection levels

Gb, Group II, Subgroup IIC as well as Db, Group III, Subgroup IIIC

In accordance with Directive 2014/34/EU, they meet the explosion protection requirements for Group II equipment and the following categories

2G in type of protection flameproof enclosure "db" for use in zone 1
2D in type of protection dust explosion protection by enclosure "tb" for use in zone 21

The explosion protection marking for the actuators of this series is as follows

Ⓔx II 2G Ex db IIC T6 Gb
Ⓔx II 2D Ex tb IIIC T80 °C Db
Ta -20 °C ... +60 °C

The conformity assessment with regard to Dir 2014/34/EU has been confirmed by the type examination report IBExU22ATEX1066X / 0.

Dir 2011/65/EU	EN IEC 63000:2018
Dir 2014/30/EU	EN 61000-6-5:2015/AC:2018-01

The technical documentation has been fully created.

This declaration becomes invalid if the actuator is modified in any way that has not been approved by us or if the actuator is not used for the intended purpose.

Troisdorf 19.09.2023

i.V. R. Schulte (Quality and product safety)

Subject to technical changes.

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