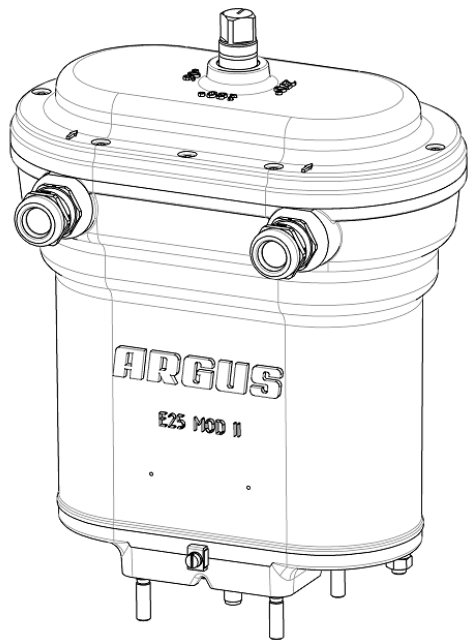


Installation and Operating Instructions,
Safety Advice

Electric
Valve Actuator
E25 MOD II



EN

English

Translation from German original

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Introduction

These Operating Instructions provide the operating personnel with information and instructions relevant for the safe installation, commissioning and operation of the ARGUS-E25 MOD II electric valve actuator.

In the text below, rotary actuators will be abbreviated to “units”.

The Operating Instructions are intended for all persons who install, commission, operate, maintain, clean or dispose of this unit. The Operating Instructions are intended in particular for customer-service fitters, trained specialist personnel and qualified and authorised operating personnel.

Each of these persons must have familiarised himself with and understood these operating instructions.

Following the instructions contained in these Operating Instructions helps recognise and avoid potential hazards, and to increase the reliability and useful life of the units. Apart from the instructions in these operating instructions, it is essential that the legal regulations, standards and rules relating to accident-prevention that apply in the country and at the place where the unit is used are observed, together with all relevant technical regulations and rules for safe and appropriate work practices.

Availability of the instructions

Always keep these Operating Instructions with the plant documentation. Make sure that these Operating Instructions are available to the operator.

The Operating Instructions are considered to be a part of the unit. If you sell the unit or pass it on in some other way, these Operating Instructions must be handed over to the new owner.

Types of valve actuator illustrated and described

The units described in these Operating Instructions are variants of type

E25 MOD II

The standard units are described in these operating instructions. Please contact the manufacturer for information about additional components not described here.

It is possible that some additional equipment for the unit is not described and illustrated in detail in these Operating Instructions. You will find information about such equipment in the documentation supplied with the actuator.

- If you have any queries, please contact the manufacturer.


Design features in the text

Various elements in these Operating Instructions are furnished with predetermined design features. They make it easy to differentiate between the following elements:

Normal text

Cross-references

- ▶ Listings
 - ▶ Sub-sections in listings
- Activity steps

	These tips contain additional information, such as special data about economical use of the unit.
--	---

Safety

Proper use

The ARGUS E25 MOD II actuator is intended for operating industrial controls, such as, e.g. valves, gate valves, butterfly valves and ball valves.

For other applications, please consult the manufacturer.

In the event of improper use and any resultant damage the manufacturer accepts no liability. Such risks are borne by the user alone.

Observing these Operating Instructions is considered to be a part of proper use. The units shall only be used within the permissible electrical voltage and temperature limits, taking chemical and corrosive influences into account.

Observing and complying with all instructions in these Operating Instructions, in particular the safety instructions, is implicit in proper use.

Instructions and data in the documentation supplied with the unit are con-

sidered to be an integral part of these Operating Instructions.

Safety instructions on the unit or on the valve to which it is fitted must be observed.

The operating authority must ensure that only the following activities are carried out:

- ▶ The maintenance operations described in these Operating Instructions
- ▶ Installing the unit
- ▶ Connecting the unit according to the wiring diagram
- ▶ Automatic operation of the unit
- ▶ Manual operation of the unit
- ▶ Adjusting the end positions using switching cams
- ▶ Changing the timing belt
- ▶ Removing the actuator

Any other activities shall only be carried out by personnel who have been specially trained and authorised by the manufacturer.

Any other use of the unit is considered to be improper use.

In particular the use of ball valves to regulate the rate of flow is improper use.

Use of the actuator on a valve for which it is not suitable is also improper use.

Basic safety instructions

Explosion hazards

The unit has been designed and manufactured taking the harmonised standards EN1127-1, EN60079-0 and EN60079-1 into account. Thus, the unit is protected against potentially-explosive atmospheres by a pressure-resistant flameproof enclosure “d”. In spite of this, the following points must be observed:

- ▶ An explosion hazard arises from using equipment that is unsuitable for the environmental conditions. Before use in an environment in which there is an explosion hazard, observe the following points:
 - ▶ The surface temperature of the equipment must not exceed that permissible at the location where it is installed.
 - ▶ If the unit is installed so that it is electrically isolated, suitable measures must be adopted to discharge static electricity between valve connections.
- ▶ Moving parts that are extremely resistant to movement, may give rise to frictional heating. Ensure that moving parts move freely.
- ▶ During welding operations, there is a risk of explosion or fire being caused by open flames, electric arcs and flying sparks. Observe the valid legal regulations concerning protection against fire and explosions that apply where the unit is installed. The unit and its components shall only be assembled or dismantled by specialist personnel.

Danger of serious injury

- ▶ The unit can become hot during operation. Only take the unit into service when contact with hot sur-

faces is prevented by insulation or guards.

- ▶ During operation the unit is under the influence of higher ambient temperatures and may be hot. Do not carry out work on the unit until the following conditions apply:
 - ▶ The unit has been disconnected from sources of electrical energy.
 - ▶ The unit has cooled down (to about 20 °C).
 - ▶ During any work on the unit, the higher-level plant must be switched off and secured against unauthorised switching back on.
- ▶ For units installed in contaminated areas, there is a danger of severe or lethal injury from hazardous substances on the unit. Do not work on the unit until it has been completely decontaminated. Wear the specified protective clothing during all work in the contaminated area.
- ▶ The unit and its components shall only be assembled or dismantled by specialist personnel. Specialist personnel must have knowledge and experience in the following sectors:
 - ▶ Electrical engineering
 - ▶ The selection of lifting gear suitable for the unit, and the safe use of such lifting gear
 - ▶ Working with hazardous media (contaminated, hot, or under pressure)
- ▶ The selection of unsuitable lifting gear, or its incorrect use, can result in the unit or parts of it falling.
 - ▶ Allow only specialist personnel to lift the unit or its parts.
 - ▶ Make sure that there are never persons under suspended loads.
 - ▶ Make sure that lifting gear has adequate load capacity for the

load it has to lift, and that such loads are properly attached.

- ▶ Make sure that all valid, local safety and accident-prevention regulations are observed.
- ▶ If the permissible application limits for the unit are exceeded, the unit may be destroyed, and hot or pressurised media may be released. Make sure that the unit is always operated within the permissible application limits. Details of the application limits are given on the unit's typeplate and in the chapter "*Technical data*".
- ▶ If it is used without supports with adequate load capacity and sufficiently stable connections to the valve, the unit may be damaged. Allow only specialist personnel to assemble and connect the unit.
- ▶ If the unit is inadequately supported during installation, substantial injuries (e.g. crushing) are possible if the unit falls or tips. During installation secure the unit to prevent it falling or tipping. Wear the protective clothing specified at the location.
- ▶ The unit can be installed on several different types of valve, e.g. a ball valve or a butterfly valve. Depending on the energy source for the drive, there is a danger of severe or lethal injuries from a variety of causes. Before starting any work on the unit, make sure that it is disconnected from the power supply, and that the valve and its pipework are pressure-free. Observe and follow all hazard notes in the operating instructions for the valve. If you have any queries, please contact the valve manufacturer.
- ▶ There is a danger of severe or lethal crushing by moving parts of the unit. During operation, make sure that no one can be in the vicinity of the mov-

ing parts or reach into them. Before any work on the unit, make sure the actuator is switched off and secured against unauthorised switching back on.

Danger of less serious injury

- ▶ Cut injuries are possible on the sharp edges of parts inside the unit. During any work on the unit, wear protective gloves.
- ▶ If the unit is inadequately supported during installation, crushing injuries are possible if the unit falls or tips. During installation secure the unit to prevent it falling or tipping. Wear adequate personal protective equipment.

Potential causes of damage and malfunction

- ▶ Failure to follow the wiring diagram or making incorrect connections at the terminals can result in destruction of the PCB or individual electrical components.
- ▶ The unit may only be installed on valves whose torque requirement does not exceed the unit's maximum permissible output torque. Failure to follow this rule can result in breakage of the operating shaft or other components of the unit.
- ▶ Connection to a power supply of the wrong voltage can cause damage to the unit's electrical components. Make sure the unit is always connected to the correct voltage.

Qualification of personnel

The operating authority shall only authorise qualified specialist personnel to carry out work on the unit. This work is limited to:

- ▶ Changing the limit switch plate
- ▶ Setting the end-position limit switches
- ▶ Changing the timing belt

Persons who work on the unit must, as a result of their training and experience, have sufficient knowledge of the relevant regulations, that apply at the location where the unit is installed, to ensure safe operation/maintenance of the unit.

These include, in particular, the following regulations:

- ▶ Legal requirements
- ▶ Standards
- ▶ Accident-prevention regulations
- ▶ Recognised rules for safety and correct working
- ▶ Special instructions issued by the operating authority

These persons must be able to recognise, assess and avoid potential hazards.

Specialist personnel must have knowledge and experience in the following sectors:

- ▶ Valid legal regulations concerning protection against fire and explosions, and work safety that apply where the unit is installed
- ▶ Working on pressurised equipment
- ▶ Work on electrical equipment
- ▶ Working with hazardous media (hot, or under pressure)
- ▶ Lifting and transporting loads
- ▶ All Instructions in these Operating Instructions and other co-valid documents

All other types of work are only to be carried out by the manufacturer or by personnel authorised to do so by the manufacturer.

Protective clothing

The protective clothing required depends on the legal requirements where the unit operates and on the media being handled. For more information about suitable protective clothing and protective equipment, see the safety data sheet for the medium being handled.


Basic protective clothing has the following components:


- ▶ Hard hat to EN 397
- ▶ Safety shoes to EN ISO 20345
- ▶ Robust leather gloves to EN 388


Persons within one metre of the unit while it is in operation must wear ear defenders to EN 352

Depending on the media being handled and valid local regulations, eye protection to EN 166 must also be worn.

Design features of warning instructions in the text

	DANGER
Instructions with the word DANGER warn of a hazardous situation that will result in death or serious injury.	

	WARNING
Instructions with the word WARNING indicate a hazardous situation that could possibly result in death or serious injury.	

	CAUTION
Instructions with the word CAUTION indicate a situation that could result in slight or moderately severe injuries.	

Design features of instructions about damage to property

<i>ATTENTION!</i>
These instructions warn of a situation that will result in damage to property.

Description

Scope of supply, technical data and description of the unit

Scope of supply

The following parts are included in the basic scope of supply:

- ▶ Actuator E25 MOD II
- ▶ These Operating Instructions

The scope of supply may also include contract-specific, additional documents, for example:

- ▶ Operating instructions of the valve manufacturer

For precise details of the scope of supply for your unit, please see the delivery note.

All units can be supplied with a hand lever as an option.

The unit can be supplied in one of several different states.

- ▶ Unit supplied mounted on a valve
- ▶ Unit without a valve

When the valve is part of the scope of supply, it will have been set up already by the manufacturer.

At the customer's request the unit can be supplied packed individually, or several units can be packed together in any of the following transport packages:

- ▶ Transport box
- ▶ Wire-mesh crate
- ▶ Pallet

- On reception of the delivery, compare the order number on the delivery note with the details on the typeplate.
- Check that all parts are complete and in good condition.

- Contact the manufacturer without delay if there are deviations or there is anything you are not clear about. Later complaints cannot be accepted.

Technical data

You will find all technical data on the type plate of the unit and in the data sheet.

As standard the E25 MOD II is offered with one of three standard motor voltages:

Motor:

U=110-125 V DC/AC, I=2.1 A, P=130 W
or

U=220 V DC/AC, I=0.95 A, P=130 W

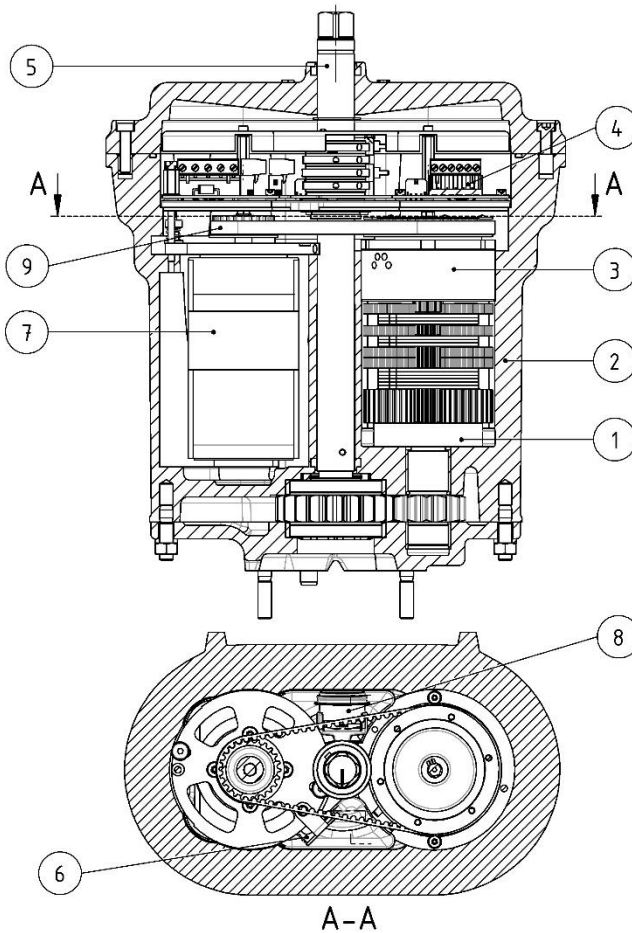
or

three-phase

U=380-440 V 50 Hz / 460-480 V 60 Hz

The motors have internal thermal switches which break the circuit at 184 °C.

Description of the unit



Pos. Nr. / Item-No.	Beschreibung / Designation (Hauptkomponente / Main components)	Menge/ Quantity
1	Getriebe / Gear transmission	1
2	Gehäuse / Body	1
3	Bremse / Brake	1
4	Endschalterplatte / Limit switch plate	1
5	Schaltwelle / Shaft	1
6	Heizung / Heater	1
7	Motor	1
8	Thermostat	1
9	Zahnriemen / Tooth belt	1

Optional components

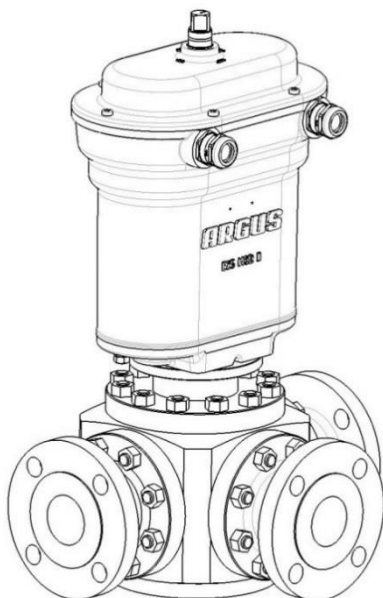
In normal operation, the actuator operates with electric power.

It is possible to manually open and close a valve with the actuator mounted using a hand lever.

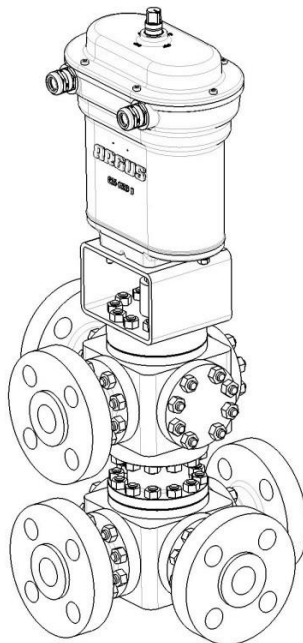
The unit can be installed on the following types of valve:

- ▶ Ball valve
 - ▶ One-way ball valve
 - ▶ Multi-way ball valve
 - ▶ Ball valve combinations
- ▶ Non-return valve
- ▶ Butterfly valve

Example: E25 MOD II with multi-way ball valve:



Example: E25 MOD II with ball valve combination:



Units with this type of combination can have several different end positions (max. 3 or 4) by using the setting cams. Cam setting is described in detail in the appropriate chapter.

Type plate

The type plate has the following data:

- ▶ Manufacturer
- ▶ Type designation
- ▶ Unit number
- ▶ Serial number
- ▶ Nominal voltage
- ▶ Type of supply
- ▶ Nominal power data
- ▶ Current draw
- ▶ Year of manufacturer
- ▶ Ambient temperature
- ▶ CE marking
- ▶ ATEX marking for flameproof versions

Depending on the design code, there may be further data on the type plate.

	DANGER
	<p>Connection type</p> <p>The unit has two 3/4" NPT female threads for cable connections.</p> <p>Only Ex "d" certified cable glands may be used.</p>

ATEX

According to EN-1127, the unit has potential sources of ignition and so falls under the European Directive "Equipment for potentially explosive atmospheres" 2014/34/EU (formerly 94/9/EC).

The unit has a pressure-resistant enclosure, i.e. a flameproof enclosure "d" according to EN 60079-1.

The unit is classified as Group II, Zone 1, and so falls into Category 2 for gas areas.

The unit is marked as follows:

CE 2004 II 2G Ex d IIB+H2 T3 Gb

The type approval procedure to directive 94/9/EC or 2014/34/EU was carried out by Bureau Veritas (No. 2004) as the notified body. The design concept, manufacture, quality assurance and the unit itself were subjected to the specified examinations. There is a copy of the "EU Type approval examination certificate"

EPS 15 ATEX 1 05 X

in the appendix to these instructions.

After 8000 switching cycles, the unit must be checked by the manufacturer. Failure to do so invalidates the explosion proof approval.

ATEX Directive

Units that comply with the requirements of ATEX Directive 2014/34/EU or 94/9/EC may be used in areas in which there is an explosion hazard if they have been tested and approved as specified therein.

	<p>There is a copy of the EU Declaration of Conformity to ATEX Directive 2014/34/EU in the appendix to these instructions.</p>
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IECEX

The IECEX approval is an international standard for equipment that may be used in a potentially-explosive atmosphere.

Bureau Veritas has subjected the design concept, construction, quality assurance and the finished product to the specified examinations.

By issuing the **IECEX EPS 15.0046X**

certificate, Bureau Veritas confirms conformity with the requirements.

You will also find a copy of this certificate in the appendix.

	<p>For voltage and temperature limits, please see the type plate.</p>
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Uses and function

Uses

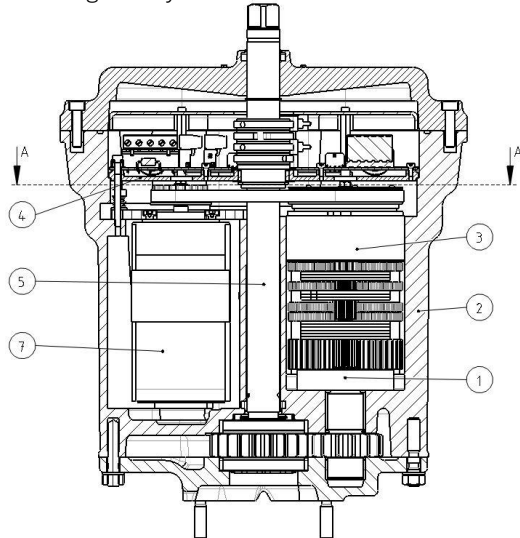
The unit is intended for operating ball valves, butterfly valves or other valves with an operating angle between 0° and 360°.

Function

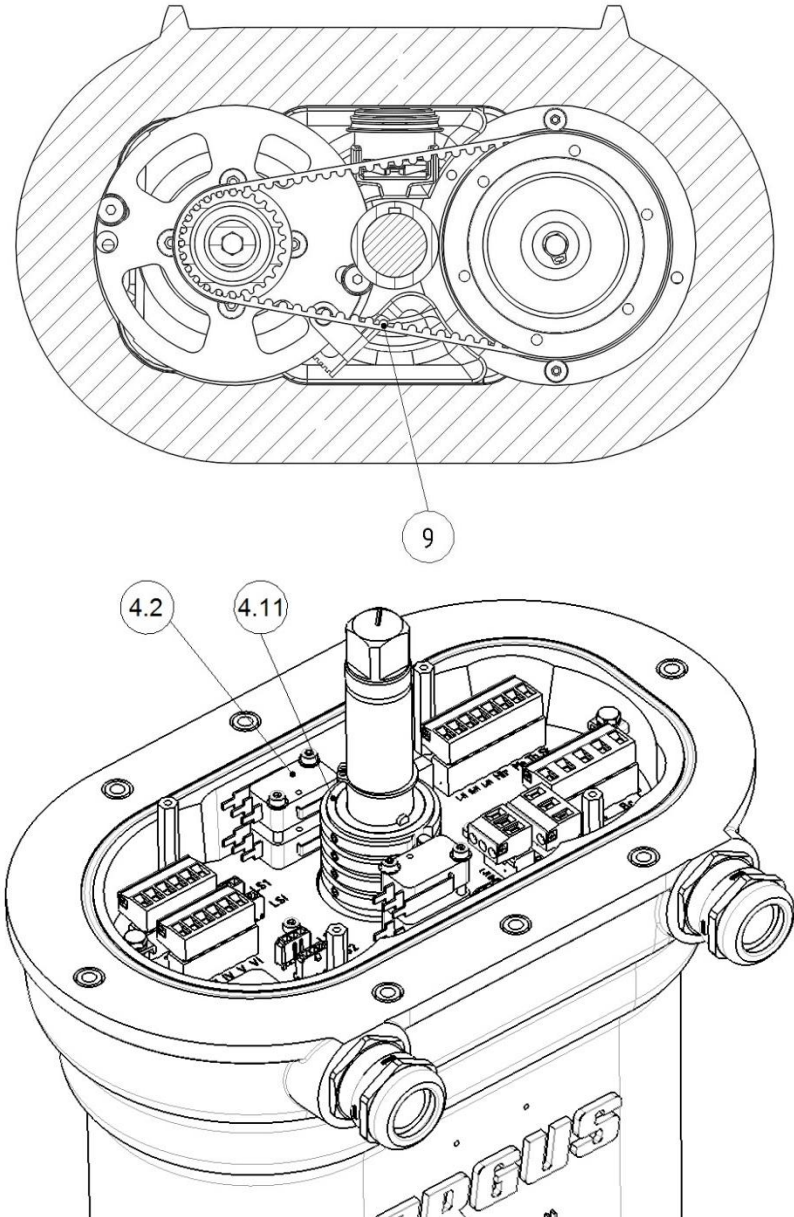
In the body of the unit (2), there are sub-assemblies which impart a rotary motion to the operating shaft (5).

By switching on the electric motor (7), the gear wheel on the released electric brake (3) is rotated by timing belt (9). This motion is transmitted by the planetary gear (1) and gears in the lower part of the unit to the operating shaft (5).

According to the actuator model, various types of power supply and different voltages may be used.



The end positions are determined by switching cams (4.11) and signalled by mechanical limit switches (4.2).



Storing and transporting the unit

ATTENTION!

Incorrect storage or transport can damage the unit.

- Close all openings with the covers supplied or similar covers.
- Make sure the unit is dry and protected from corrosive atmospheres where it is stored.
- Contact the manufacturer for advice if you need to store or transport the unit under other conditions.

Storing the Actuator

- Store the unit only under the following conditions:
 - ▶ Do not store it for more than 24 months.
 - ▶ Close all connection openings with the covers supplied or similar covers.
 - ▶ The connection surfaces and sealing surfaces must be protected against mechanical damage.
 - ▶ The unit and all its components must be protected from blows and shocks.
 - ▶ Secure the unit to prevent it falling or tipping.
 - ▶ The unit shall only be installed indoors under the following environmental conditions:
 - ▶ Relative humidity below 50 %, non-condensing
 - ▶ The room air must be clean and not contain salt or other corrosive substance
 - ▶ Temperature 5–40 °C.
- When storing, make sure these conditions apply at all times.
- Contact the manufacturer for advice if you need to store the unit for longer or under other conditions.

Transporting the unit

- For transport maintain the same conditions as specified for storage.
- Before transport, fit plugs to the connections.

	If the plugs originally supplied are not available, use comparable plugs and covers to close the connections.
--	---

	<h3 style="margin: 0;">DANGER</h3>
	<p>Danger of crushing injury if the unit or its components fall or tip.</p> <ul style="list-style-type: none"> ➤ During any work on the unit, wear suitable protective clothing. ➤ Whenever lifting or moving the unit or its components to work on them, use suitable lifting gear. ➤ Make sure the unit cannot tip over. ➤ When lifting the unit, sling it only on its body. ➤ Make sure that there are never persons under suspended loads.

Protective clothing must comprise at least the following items:

- ▶ Hard hat to EN 397
- ▶ Safety shoes to EN ISO 20345
- ▶ Robust leather gloves to EN 388

For more information about suitable safety clothing and protective equipment, see the safety data sheet for the substances being handled.

The lifting gear must have adequate load capacity for the unit including the

valve on which it is mounted.

For more information about the weight of the actuator, please see the documentation supplied with it. In the event of it being supplied with a ball valve or ball valve combination, you will find information about the weight of the components in the manufacturer's documentation for the ball valve or the combination.


The lighter units can be carried by one person alone or with the aid of an assistant.

For heavier units you will need suitable lifting gear to transport them.

- You can transport the unit over distances of a few metres without packaging.
- Use the original packing when transporting the unit over greater distances.
- If the original packing is not available, pack the unit so that it is protected against corrosion and mechanical damage.
- In the event of delivery with a ball valve/combination, make sure that the optional components contain no liquids and have been rinsed clean.
- Attach lifting gear with adequate load capacity.
- Secure the unit (without ball valve/combination) using suitable slings on the body.
- Secure the unit (with ball valve/combination) using suitable slings on the valve body. Please read the separate operating instructions for the valve for how to do this.
- Make sure the included angle between the legs of slings is not more than 60°.
- Contact the manufacturer if space is so restricted where the valve is lo-

cated that this type of transport is not possible.

Installing and connecting the unit


	<p><i>ATTENTION!</i></p> <p>The unit may only be installed, removed, maintained and connected by authorised persons. Please contact the manufacturer if it is not possible to comply with these conditions.</p>
	<p>Contact the manufacturer if you need help with the installation, connections or commissioning of the unit.</p>

Preparing for installation

- Take the unit out of its transport packing.
- Check the unit for transport damage.
- If you find transport damage, contact the manufacturer.

As delivered, the connections may be closed with plugs.

- Remove the plugs before installation.
- Keep the plugs and packing materials in a safe place for subsequent use.

	<h3>DANGER</h3>
	<p>When working on equipment and components carrying electric voltage, or on pipework, very serious injuries or death can be caused by electric shock, burns, high pressure in the system, or poisoning.</p> <ul style="list-style-type: none"> ➤ Make sure there are no hot or hazardous media in the pipelines. ➤ Make sure that all electric power supplies to the unit and connecting leads are voltage-free. ➤ Make sure the plant is switched off and secured against unauthorised switching back on. ➤ Make sure the unit and pipelines have cooled so that they are no more than hand warm. ➤ Make sure that all electrical connecting leads have adequate insulation. ➤ Wear suitable protective clothing and, when necessary, use suitable protective equipment.

For more information about suitable protective clothing and protective equipment, see the safety data sheet for the medium being handled.

- Make sure that all electric connections are voltage-free.
- Empty the pipelines (when installing the unit with ball valves / ball valve combinations).

- Make sure that pipelines are clean and free of residual media (when installing the unit with ball valves / ball valve combinations).
- Switch the plant off and secure it against unauthorised switching back on.

Installing the unit

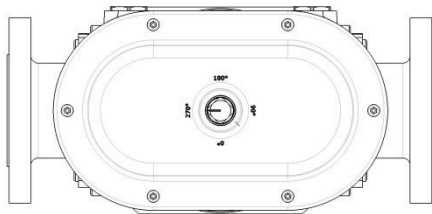
Mount the unit on a ball valve, butterfly valve or ball valve combination

Valves supplied by the manufacturer have a drive coupling that fits the actuator. For other valves, the connection must comply with the requirements of DIN EN ISO 5211, and the actuator must be equipped with a suitable adapter.

- For more information about available and possible valves, please contact the manufacturer.
- Valves must be correctly mounted.

When you install the actuator on a valve, ensure that the position of the ball / butterfly valve or similar device and the position of the actuator agree. When the valve is open, the notch in the actuator drive shaft must be in the 90° or 270° position (or 0° or 180° if mounted transversely) (there are degree markings on the cover of the actuator).

Regarding the position indicator of an actuator for installation on a multi-way valve or a valve combination, please contact the manufacturer.

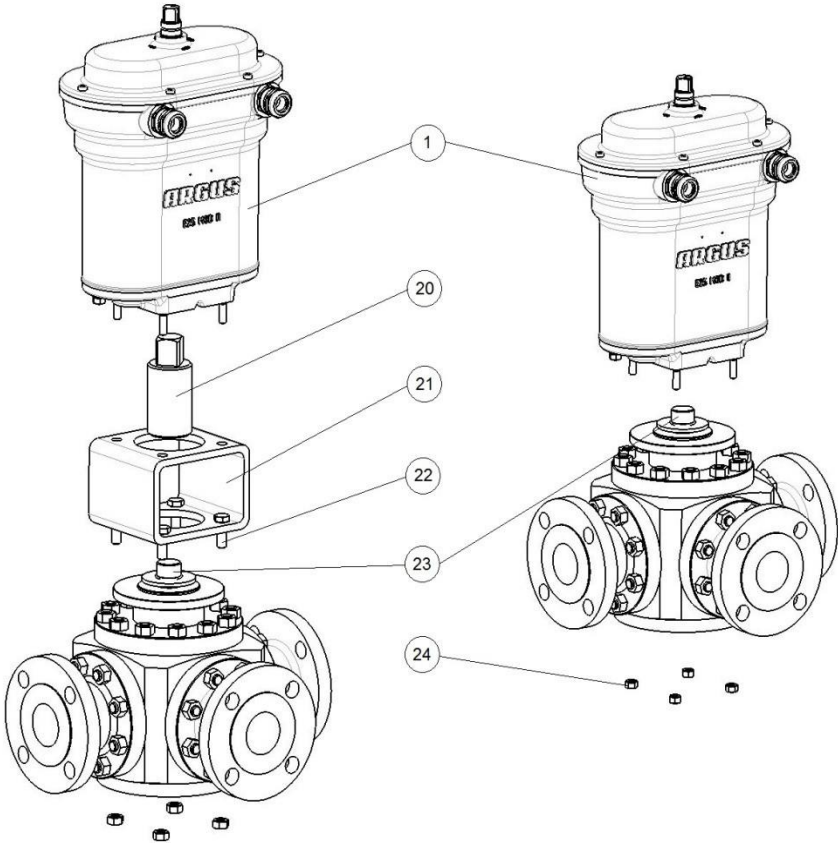


The connection between the actuator and the valve should be either direct or by means of a special actuator connection. There must always be a drive coupling on a valve. The mountings for an actuator and an actuator coupling on a valve are not always identical.

The number of mounting screws depends on the actuator type. This section shows the actuator mounted on a multi-way valve.

Please contact the manufacturer if you need more information about mounting the actuator.

The type of mounting on your unit is shown on the drawings supplied.



To mount the unit on a valve, proceed as follows:

- Make sure that the actuator connection (21) is securely attached to the actuator (1).
- Tighten the nuts (24) to the correct torque.
- Place the actuator (1) on the valve stem (23) or the extension (20).
- Tighten the screws (22 or nuts 24) on the valve.

The torque to tighten the screws or nuts depends on their size.

The tightening torques in the following table [Nm] should be considered as a guide, because in practice the coeffi-

cient of friction may vary substantially. The following data are based on a coefficient of friction of 0.1-0.14.

- Tighten the screws or nuts to the specified torque.

Nominal size	Friction coefficient	Tightening torque in Newton meters for screw strength grade				
	μ	5.6	6.9	8.8	10.9	12.9
M3	0.1	0.5	0.8	1	1.5	1.8
	0.14	0.6	1	1	1.9	2.2
M4	0.1	1.2	1.9	2	3.3	4
	0.14	1.4	2.3	3	4.1	4.9
M5	0.1	2.3	3.6	5	7	8
	0.14	2.8	4.5	6	8.5	10
M6	0.1	3.9	6.3	8	12	14
	0.14	4.8	7.7	10	14	17
M8	0.1	9.5	15	20	28	34
	0.14	12	19	25	35	41
M10	0.1	19	30	40	56	67
	0.14	23	37	49	69	83
M12	0.1	33	52	69	98	115
	0.14	40	65	86	120	145

Connecting and Grounding

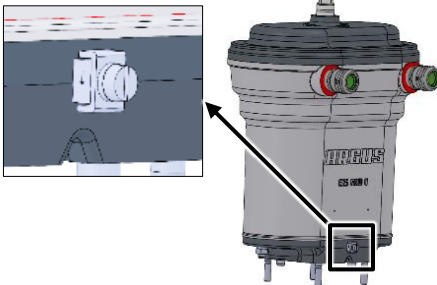
	<h3>DANGER</h3>
<p>An incorrectly connected unit can cause an accident that results in very serious injuries or death.</p>	
<ul style="list-style-type: none"> ➤ Make sure the unit is only connected to the power supply/pipeline by suitable specialist personnel. ➤ Make sure that the direction of flow in the pipeline agrees with the flow direction arrow on the unit (for deliveries that include a valve). 	

The specialist personnel must have knowledge and experience in electrical installation and in making pipe connections with the types of joint employed on the valve.

External Grounding on Body

For external grounding, the actuator housing is equipped with a clamp grounding terminal. The clamp is designed for

- 4 mm² finely stranded cable or
- 6 mm² one-wire cable.



	<h3>CAUTION</h3>
<p>Max. tightening torque: 2,0 Nm</p>	

<h3>ATTENTION!</h3>	
<p>Damage to the unit if the power supply or flange connections are too weak (for deliveries that include a valve).</p>	
<ul style="list-style-type: none"> ➤ Make sure that the electrical power supply is sufficiently stable to provide the power the unit requires and to tolerate the voltage and current deviations to be expected in operation. 	
<p>For a valve supplied with the unit:</p>	
<ul style="list-style-type: none"> ➤ Make sure the connections are strong enough to withstand the weight of the unit and the forces to be expected in operation. 	

- Make sure that the plant is switched off and electric cables are voltage-free.
- For a valve supplied with the unit:
- Make sure the pipeline system in the plant is clean.
 - Make sure there are no foreign materials in the valve.
 - Install the valve so that the direction of flow corresponds to the marking on the operating shaft.

	<h3>CAUTION</h3>
<p>Danger of burns from hot surfaces or thermal radiation.</p>	
<ul style="list-style-type: none"> ➤ Wear protective clothing suitable for the temperatures that occur in the plant. 	

Connect the terminals to the power supply correctly and exactly as shown in the wiring diagram and marked on the PCB.

ATTENTION!

Wrong connections at the terminals on the PCB can cause the destruction of individual components or of the PCB.

- Make sure all terminal connections are assigned as shown in the wiring diagram supplied.

The standard 3/4"NPT cable glands (Hummel type HSK-INOX-PVDF-Ex-D) are designed for a cable with an outer diameter of 9 to 16 mm. If you use other cable glands, they must comply with the explosion protection requirements as well as temperature requirements for the equipment.

For tightening torque and further information on the cable gland, please refer to its operating instructions.



DANGER

- Use only explosion protection compliant cable glands.
- Consider marking and technical documentation

When connecting the motor to alternating or three-phase current, the diode (D2) must be bridged: **“AC Bridge – BR1”**:



When connecting the motor to direct current, the jumper **“AC Bridge – BR1”** must be removed:



Depending on your available voltage for the brake (**AC** or **DC**) the brake connector must be connected accordingly:

- **AC**: Insert the **“BRAKE”** plug in the **AC socket**.



- **DC**: Plug the **“BRAKE”** connector into the **“DC”** connector:



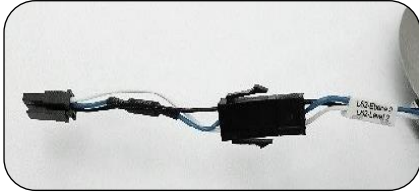
ATTENTION!

A wrong control of the brake can lead to the motor or/and brake destruction.

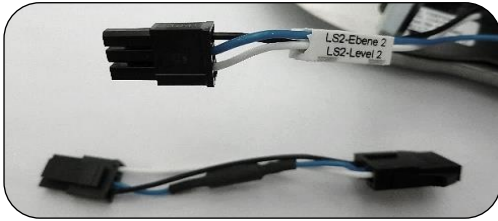
- Make sure that the control system is designed so that the spring-applied brake is under tension at the same time as the motor otherwise the motor would run against closed brake.

Use of the limit switch in overload operation (please see data sheet for an explanation):

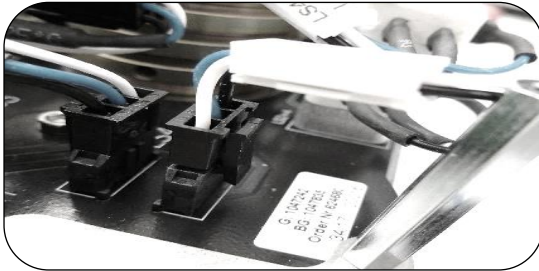
- Pull the plug for the appropriate limit switch out of its socket



- Remove the extension cable with resistor



- Connect the limit switch cable directly at the appropriate location on the PCB



Setting the limit switches:

The travel limit switch (changeover) is not activated in the end position (round notch in the switching cam).

Standard works settings:

LS1 and LS3: for 90° position
LS2 and LS4: for 0° position

There may be different, order-specific settings.
Check the setting necessary for the application before commissioning.

The end-position setting can be adjusted by moving the individual switching cams (they are secured with socket set screws) (*see the Chapter "Maintenance and replacement parts"*).

- Make sure the unit is securely mounted and that all connections have been correctly executed.

After connecting the cable at the terminals:

- Fit the cover plate (cable cover) in its original position so that neither the cable nor individual leads are damaged or crushed. Tighten the screws (4.22) with suitable torque.
- Fit the cover (2.6) in its original position (the arrow on the cover must point towards the cable glands): the 180°-marking must point towards the cable-gland side.

	CAUTION
	<p>Danger of crushing and damaging the sealing element (O-ring) between the body and the cover and their sealing surfaces.</p> <ul style="list-style-type: none"> ➤ During assembly, take care that neither the sealing elements nor the ATEX sealing surfaces on the body, cover or shaft are damaged. Damage to these surfaces results in the loss of flame-proof protection!

- Tighten the screws (2.19) with suitable torque.
See table on page 20.


	ATTENTION!
	<ul style="list-style-type: none"> ➤ Ensure that the cover screws 2.19 are of property class 10.9. ➤ If these cover screws are to be replaced, replace only with cover screws of the same quality. Otherwise, flameproof protection is no longer effective!

Operation

ATTENTION!
<p>Make sure the power supply agrees with the type and level of electric power the unit requires.</p> <p>Make sure the direction of rotation of the actuator agrees with the direction of rotation of the valve. To make sure the directions of rotation agree, check them in manual operation.</p> <ul style="list-style-type: none"> ➤ Details of the type and level of voltage are given on the unit's typeplate.

The unit has been designed for automatic operation and for emergency manual operation.

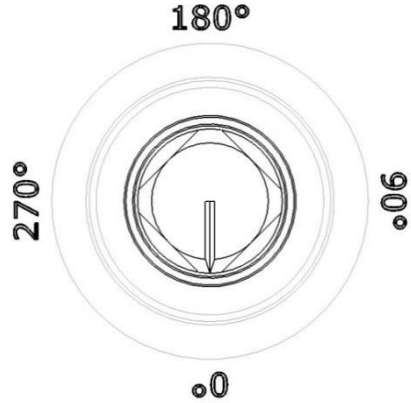
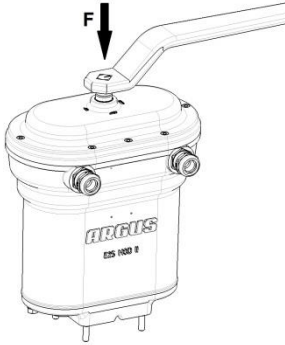
Emergency manual operation

DANGER
 <p>When working on pipelines, very serious injuries or death can be caused by burns, high pressure in the system, or poisoning.</p> <ul style="list-style-type: none"> ➤ Make sure there are no hot or hazardous media on the unit or in the pipelines. ➤ Make sure the unit is disconnected from all electrical power supplies. ➤ Make sure the plant is switched off and secured against unauthorised switching back on. ➤ Make sure the unit and valve, including pipelines, have cooled so that they are no more than hand warm. ➤ Wear suitable protective clothing and, when necessary use suitable protective equipment.

It is possible to operate manually the shaft of the actuator, to open or close the attached valve with the aid of a hand lever (which can be ordered optionally). To do this, carry out the following steps:

- Place the correct lever on the operating shaft.
- Press the operating shaft into the unit, i.e. in the direction of the arrow in the figure.

The operating shaft must remain pressed down during the entire manual operation.



Pressing it down uncouples the operating shaft from the reduction gear, which allows it to be turned.

- To open the valve (anti-clockwise rotation), turn the operating shaft a quarter turn anti-clockwise, until the position marking on the square head is in the 90° position (or 0° for transverse installation) or at the required angle setting.
- To close the valve (clockwise rotation), turn the operating shaft a quarter turn clockwise, until the position marking on the square head is in the 0° position (or 90° for transverse installation) or at the required angle setting

To operate the unit in automatic mode again, the operating shaft must be released (no longer pressed down).

Built-in springs return the operating shaft to the engaged position, at the latest when the engine is started.

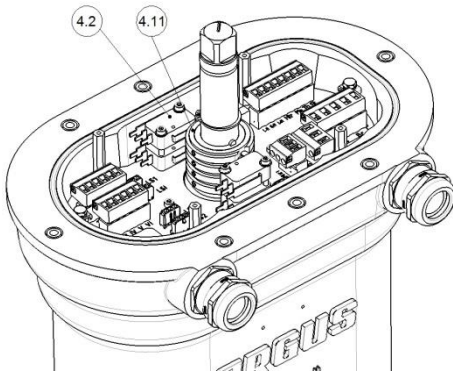
Automatic operation

Switching the electric motor in the unit on generates a rotary motion. This is transmitted to the reduction gear by a timing belt. This causes the valve stem in the unit to turn (see “Uses and function”).

In automatic operation, the end positions of the unit are recorded by end-position limit switches (4.2).

These limit switch signals must then be integrated in the control system (area of responsibility of the plant designer) to switch on/off the motor and brake (see electrical wiring diagram page 23).

The end-position limit switches are inside the unit.



The required end positions are individually adjustable via the switching cams (4.11).

ATTENTION!

Setting the switching cams, even after repairs, shall only be carried out by authorised personnel.

During operation do not carry out any other activities on the actuator or valve.


Correcting faults and disturbances

	<h3>DANGER</h3>
<p>A damaged unit can cause an accident that results in very serious injuries or possibly death.</p> <p>➤ Replace defective units immediately.</p>	


Symptom	Cause	Countermeasure
Unit does not switch on	Electric motor not functioning	Check the connection to the motor for damage; make sure it is correctly connected. Check the PCB for signs of damage; if you find damage, contact the manufacturer. Replace the limit switch plate. Have the motor replaced by an authorised person.
	End-position limit switches are incorrectly set or connected.	Reset the end-position limit switches correctly. See the chapter “Repairs”.
The unit has excessive resistance to movement. Current draw too high.	Magnetic brake not functioning correctly.	Check the connection to the brake for damage; make sure it is correctly connected.
	Magnetic brake defective.	Have the brake replaced by an authorised person.
	Damage to the valve,	If the valve is damaged, contact the manufacturer.
The actuator does not open/close fully.	End-position limit switches are incorrectly set.	Reset the end-position limit switches correctly. See the chapter “Repairs”.
	The valve is blocked	Please read the separate operating instructions for the valve.
The unit switches on, but the operating shaft does not turn.	The operating shaft is not correctly coupled.	Engage the operating shaft by gently pulling and turning the shaft with the engine off.
	The timing belt has failed.	Replace the timing belt. See the chapter “Repairs”.
	The unit’s reduction gear has failed.	Replace the unit and contact the manufacturer.

- If you cannot correct the fault by following these instructions, please contact the manufacturer.

After operation


	DANGER
	<p>For units installed in contaminated areas, there is a danger of severe or lethal injury from hazardous substances on the unit.</p> <ul style="list-style-type: none"> ➤ Work on contaminated units shall only be carried out by specialist personnel. ➤ Wear the specified protective clothing during all work in the contaminated area. ➤ Make sure the unit has been fully decontaminated before working on it. ➤ During such work follow the instructions for handling the hazardous media concerned.

Cleaning to remove external dirt

	CAUTION
	<p>Danger of burns from hot surfaces or thermal radiation</p> <ul style="list-style-type: none"> ➤ Wear protective clothing suitable for the temperatures that occur in the plant.

- Remove external dirt from the unit with clean water and a lint-free cloth.
- To remove stubborn dirt, use a cleaning agent suitable for the deposits and a lint-free cloth.

Maintenance of the unit

	CAUTION
	<p>Danger of burns from hot surfaces or thermal radiation.</p> <ul style="list-style-type: none"> ➤ Wear protective clothing suitable for the temperatures that occur in the plant.

The unit requires little maintenance.

For work on the unit, you need the following tools:

- ▶ Torque wrench to DIN EN ISO 6789
- ▶ Hexagon keys to EN ISO 4762 / ISO 272
- ▶ Open-ended spanners to EN ISO 4762 / ISO 272

The properties of the tools, such as the size or measurement range, depend on the type and size of unit.

- Select tools suitable for the work to be carried out.

For work on the actuator, it is necessary to have sufficient working clearance. This depends on the type of unit and the local options fitted.

It must be possible to work safely on the device and to remove it if necessary.

When necessary, you must carry out the following maintenance work:

- Check that the unit operates correctly if it is not in regular use.
- Make a visual inspection of the cable connection to the unit for porosity.
- Check all adapter connections between the unit and the valve.
- Check the unit's end positions.
- Clean the unit.
- After 8000 switching cycles, the unit must be checked by the manufacturer. Failure to do so invalidates the flameproof approval.

Maintenance and part replacement

	DANGER
	<p>During any maintenance or replacement activity, pay special attention to all regulations relevant for Explosion Protection.</p> <p>Only appropriately qualified personnel may be entrusted with the works. Only appropriately classified components may be installed.</p> <p>Consult the manufacturer for any repair on explosion protection relevant surfaces.</p>

You can replace the following parts of the unit if they are worn or damaged:

- limit switch plate as a sub-assembly
- timing belt
- brake
- motor

These components are available from the manufacturer as spare parts. The spare parts sets contain all parts necessary for replacing that sub-assembly.

- Please contact the manufacturer for detailed information about spare part sets.

To ensure that your enquiry is dealt with as quickly as possible, please provide the manufacturer with the following information:


- ▶ Unit type
- ▶ Actuator part number
- ▶ Serial number

ATTENTION!
When setting the end-position limit switches, it is necessary to dismantle the unit, including the valve. To dismantle the valve, please see the separate operating instructions.

Changing the limit switch plate

When a limit switch plate, or one of its elements is defective, the entire sub-assembly must be replaced.

The same procedure for replacing the limit switch plate applies for all operating voltages and all types of power supply.

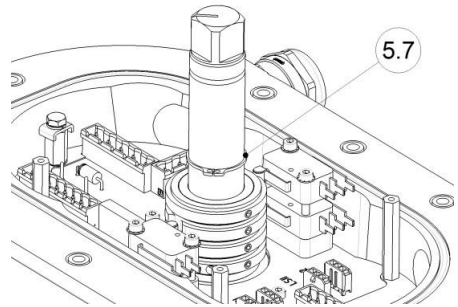
	DANGER
	<p>When working on pipelines, very serious injuries or death can be caused by burns, high pressure in the system, or poisoning.</p> <ul style="list-style-type: none"> ➤ Make sure there are no hot or hazardous media on the unit or in the pipelines. ➤ Make sure the unit is disconnected from all electric power supplies. ➤ Make sure the plant is switched off and secured against unauthorised switching back on. ➤ Make sure the unit and valve, including pipelines, have cooled so that they are no more than hand warm. ➤ Wear suitable protective clothing and, when necessary use suitable protective equipment.

For more information about suitable protective clothing and protective equipment, see the safety data sheet for the medium being handled.

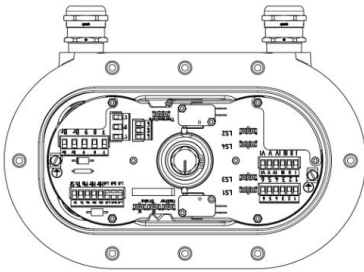
ATTENTION!

During any repair work, pay special attention to avoiding cable damage.

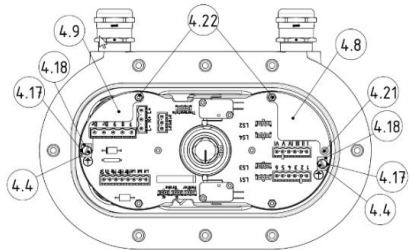
After every step in the work, check that no leads or cables have been damaged.



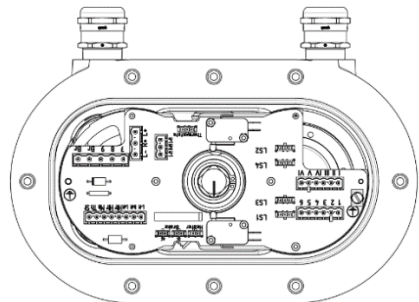
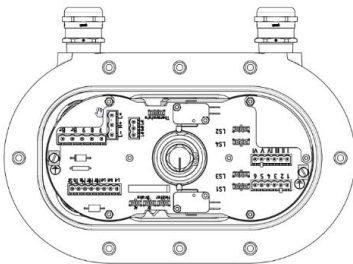
- Apply all safety measures as described under “Connecting the unit”. Open the unit’s cover and remove the cable cover.



- Remove all the parts that are numbered in the illustration:
 - screws (4.22), 2 x, and (4.21)
 - shoulder screws (4.17) with terminal clamps (4.18) on both sides
 - cheese-head screws (4.4)
 - cover plates (4.8) and (4.9)



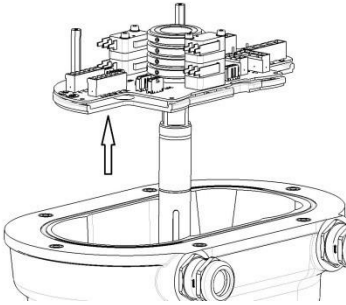
- With the exception of the limit switch connector, disconnect all connections to the PCB, including the power cable and earth wire.



- Remove the circlip (5.7) carefully without damaging the shaft surface (ATEX-surface)!

- Withdraw the PCB assembly carefully out of the body.

	CAUTION
	The surface of the operating shaft must not be damaged.



Replace the limit switch plate and reassemble in the reverse order to that described above.

	CAUTION
	After replacing the limit switch plate, the limit switches must be readjusted.

- Make sure there are no hot or hazardous media on the unit or in the pipeline.
- Make sure the unit is disconnected from all electrical power supplies.
- Make sure the plant is switched off and secured against unauthorised switching back on.
- Make sure the unit and valve, including pipelines, have cooled so that they are no more than hand warm.

- Wear suitable protective clothing and, when necessary use suitable protective equipment.

ATTENTION!	
Resetting the end-position limit switches shall only be carried out in manual operation.	
<ul style="list-style-type: none"> ➤ Therefore, use only a suitable tool, e.g. a hand lever, and follow the regarding "Emergency manual operation". ➤ Whenever the end-position limit switches are to be reset, the unit together with the valve must be removed from the pipeline. To dismantle the valve, observe the separate operating instructions. ➤ For setting the end-position limit switches on units with multi-way valves or valve combinations, please contact the manufacturer. 	

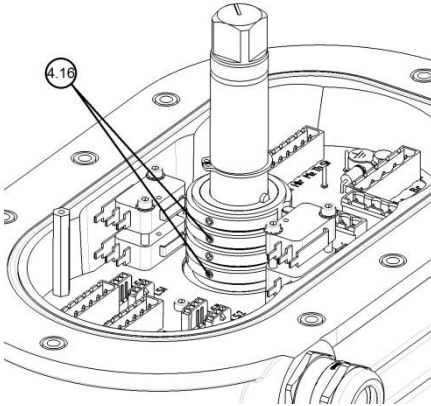
Setting the end-position limit switches

Caution! The following instruction is only for the "standard" adjustment. For special adjustment (e.g. for 3-Way valve) the procedure must be adapted.

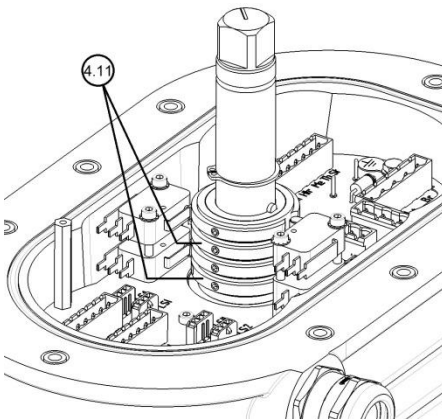
- ◆ Hexagon keys to EN ISO 4762 / ISO 272
- Apply all safety measures as described under "Connecting the unit". Open the unit's cover and remove the cover for the limit switch plate.
- Move the unit to its "Open" position at 90° or 270° (or 0° or 180° for transverse installation) with the aid of the hand lever (*see the section*

“Emergency manual operation”).
When setting with the valve, set the position so that the valve is fully open.

- Loosen the socket set screw (4.16) from the cams for LS1 and LS3.



- Turn the switching cams (4.11) until the limit switches LS1 and LS3 are unloaded.



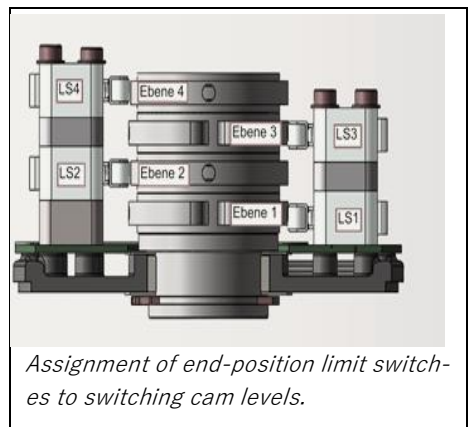
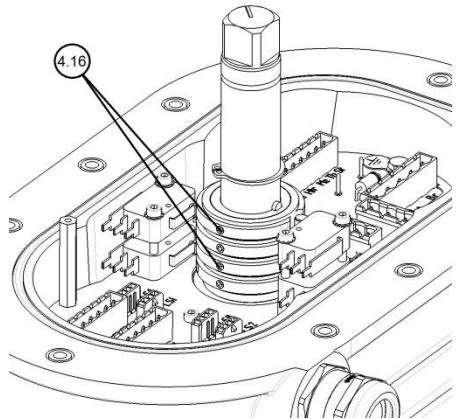
- Tighten the socket set screw (4.16) with a suitable level of torque.
- Move the unit to its “Closed” position at 0° or 180° (90° or 270° for transverse installation) with the aid of the hand lever (see the section

“Emergency manual operation”).
When setting with the valve, set the position so that the valve is fully closed.

ATTENTION!

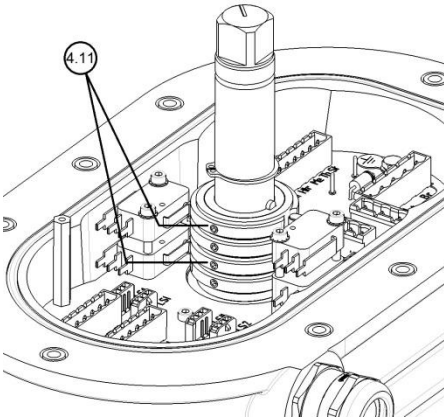
When setting with the valve, observe the separate operating instructions for the valve.

- Loosen the screws (4.16) from the cams for LS2 and LS4.



Assignment of end-position limit switches to switching cam levels.

Turn the switching cams (4.11) until the limit switches LS2 and LS4 are unloaded.



- Tighten the socket set screw (4.16) with a suitable level of torque.
- Check whether the electrical signals from the end-position limit switches are present and correct. If necessary repeat the above setting steps until the signals are correct.
- Make sure that all leads are connected according to the wiring diagram, and check the connections for possible short circuits.
- Re-install the unit or unit with valve in the plant.

The torque to tighten the screw or screws depends on their size.

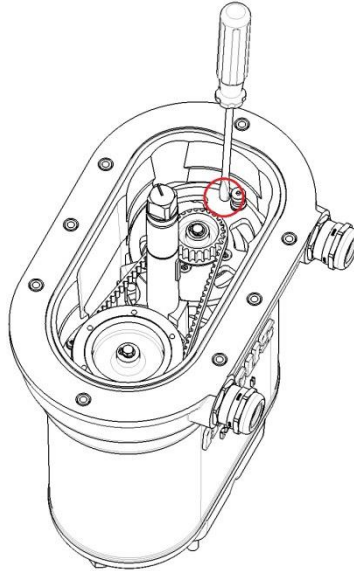
- See the table on page 20 for the correct tightening torques.

Changing the timing belt

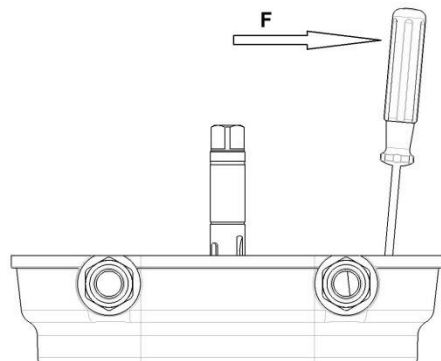
For work on the unit you need the following tools:

- ▶ Torque wrench to DIN EN ISO 6789
- ▶ Hexagon keys to EN ISO 4762 / ISO 272
- ▶ Open-ended spanners to EN ISO 4762 / ISO 272

- To change the timing belt, carry out the work steps as described in the section “Changing the limit switch plate” and remove the limit switch plate.
- Place a screwdriver as shown in the illustration:



- Press the screwdriver in the direction of the arrow to release the tension in the timing belt.



- When the tension is released, remove the timing belt and replace it with a new one.

- Reassemble in the reverse order to that described above.

All other types of repair work are only to be carried out by the manufacturer or by personnel authorised to do so by the manufacturer.

Taking the unit out of service

Removing hazardous substances

	<p>DANGER</p>
<p>For units installed in contaminated areas, there is a danger of severe or lethal injury from hazardous substances on the unit.</p> <ul style="list-style-type: none"> ➤ Work on contaminated units shall only be carried out by specialist personnel. ➤ Wear the specified protective clothing during all work in the contaminated area. ➤ Make sure the unit has been fully decontaminated before working on it. ➤ During such work follow the instructions for handling the hazardous media concerned. ➤ Make sure the unit is disconnected from all electric power supplies. ➤ Make sure the plant is switched off and secured against unauthorised switching back on. 	


Specialist personnel must have knowledge and experience of the following:

- ▶ legal regulations covering the handling of hazardous substances and high voltages that apply where the unit is installed,
- ▶ special instructions for handling the high voltages and hazardous substances that occur,
- ▶ use of the specified protective clothing.


<p>ATTENTION!</p>	
<p>For an installed valve, the following always apply: Environmental damage may be caused by residues of poisonous media.</p> <ul style="list-style-type: none"> ➤ Before disposal make sure the unit has been cleaned and is free of media residues. ➤ Dispose of all materials in accordance with the legal requirements that apply where the unit is installed. 	

- Remove all electrical wiring and cables, and, where appropriate, liquid residues in the valve; when doing this, observe the operating instructions for the valve.
- Dispose of all residues in accordance with the legal requirements that apply where the unit is installed.

Removing the unit


	DANGER
	<p>When working on equipment and components carrying electric voltage, or on pipework, very serious injuries or death can be caused by electric shock, burns, high pressure in the system, or poisoning.</p> <ul style="list-style-type: none"> ➤ Make sure there are no hot or hazardous media on the unit or the pipelines. ➤ If the valve is installed, make sure there is no residual pressure in the pipeline. ➤ Make sure the unit is disconnected from all electric power supplies. ➤ Make sure the plant is switched off and secured against unauthorised switching back on. ➤ Make sure the unit and pipelines have cooled so that they are no more than hand warm. ➤ Wear suitable protective clothing and, when necessary use suitable protective equipment.

For more information about suitable protective clothing and protective equipment, see the safety data sheet for the medium being handled.

	CAUTION
	<p>Danger of crushing injury if the unit falls or tips.</p> <ul style="list-style-type: none"> ➤ When dismantling the unit employ suitable measures to secure it against falling.

Suitable measures are, for example:

- Having a second person to support the unit.
- In locations with restricted access, support heavy units with lifting gear with adequate load capacity.
- Undo the unit's connections to the valve.
- Lay the unit on a suitable surface.

	WARNING
	<p>Danger of injury from reaching into the unit.</p> <ul style="list-style-type: none"> ➤ Secure the unit during test runs.

If necessary, dismantle the unit from the valve on which it is installed.

- Ensure that the valve and pipeline are pressure-free.
- When doing this, observe and follow the instructions supplied for the valve.
- Remove the valve together with the actuator from the pipeline.
- Store the combination of actuator and valve on a suitable support.
- Store the unit as described in the section *"Storing the Actuator"*.

Reusing the unit after storage

You can dismount the unit and reuse it at another location if you observe the following conditions:

- Make sure there is no damage to cable glands or electrical components and cables.
- Ensure that components subject to wear are in flawless condition.
- If necessary damaged components must be replaced to return the unit to a flawless condition.
- Use the unit only for the same application conditions as you would use a new unit.

Disposal of the unit

<i>ATTENTION!</i>
Environmental damage is possible from poisonous materials. <ul style="list-style-type: none">➤ Before disposal make sure the unit has been cleaned and is free of poisonous substances.➤ Dispose of all materials in accordance with the legal requirements that apply where the unit is installed.

- For details of the materials used in the unit, please contact the manufacturer.

Technical data

You will find all relevant technical data for the ARGUS E25 MOD II on the unit's type plate, and in the Technical Data Sheet.

Working clearance

To be able to remove the unit from an installed valve, you need at least 750 mm working clearance above the unit.

Application limits

Details of the application limits are given on the unit's type plate.

CE Conformity / Certification

On the following pages you will find a copy of the EU Declaration of Conformity for the ARGUS E25 MOD II. If the declaration has since been updated or modified, it will be supplied with the unit or can be downloaded from our website.

The declaration certifies under the responsibility of the manufacturer that on the grounds of the design, manufacture and quality assurance of the electric actuator:

- ▶ The essential requirements for a "partly completed machine" within the meaning of Directive 2006/42/EC (Machinery Directive) are fulfilled and
- ▶ the explosion protection in accordance with Directive 2014/34/EU ("ATEX Directive") in the designated classification is guaranteed.

In compliance with the respective regulations concerning their applicability, Directive 2014/35/EU ("Low Voltage Directive") and 2014/30/EU ("EMC Directive") are not mentioned in the EU Declaration of Conformity.

The appendix also includes the EU Type Approval Examination Certificate (ATEX).

Certificate No. IECEx EPS 15.0046x, issued by Bureau Veritas, certifies the classification and conformity with the requirements for explosion protection according to IECEx.

Since 1988, the quality assurance system for our works manufacturing ball valves and actuators in Ettlingen, Baden, has been certified as meeting the requirements of the international standard ISO 9001.

Appendix: EU Declaration of Conformity



ARGUS

EU Declaration of Incorporation acc. Directive 2006/42/EC and
EU Declaration of Conformity acc. Directive 2014/34/EU
(Translation of original A22210_DE)

Product: **Electric Rotary Actuator Type E25 MOD II**

Manufacturer: **Flowserve Flow Control GmbH
Rudolf-Plank-Str. 2
D-76275 Ettlingen**

Directive:
2006/42/EC of the European Parliament and Council, dated 17 May 2006 - "European Machinery Directive"

Flowserve Flow Control GmbH as manufacturer declares herewith on its sole responsibility that the electric rotary actuators Type E25 MOD II, intended for automatic operation in conjunction with control elements such as ball valves or ball-valve combinations, comply with the essential requirements of Directive 2006/42/EC as "partly completed machinery": Annex I, Items 1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.3.2, 1.3.3, 1.3.4., 1.3.7, 1.5.1, 1.5.2, 1.5.4, 1.5.6, 1.5.7, 1.5.13, 1.6.1, 1.6.3, 1.7.1, 1.7.2, 1.7.3 and 1.7.4. The evaluation of conformity was carried out according to the harmonised standard EN ISO 12100:2010 ('Safety of machinery. General principles for design. Risk assessment and risk reduction').

The partly completed machinery must not be put into service until the final machinery, into which it is to be incorporated, has been declared in conformity with the provisions of Directive 2006/42/EC, where appropriate.

The relevant technical documentation for the partly completed machinery to Annex VII Part B of the Directive has been prepared and the manufacturer is obliged to transmit these documents electronically to the authorities of an individual state on submission of a reasonable request.

Responsible for the documentation: Sabine Reichenauer (address as above)

Directive:
**2014/34/EU of the European Parliament and Council dated 26 February 2014
"... for equipment and protective systems intended for use in potentially explosive atmospheres"
- "ATEX Directive"**

Further, the manufacturer Flowserve Flow Control GmbH declares on its sole responsibility that the listed electric actuators, when used as intended, comply with the requirements of Equipment Group II, Category 2 (Zone 1) to Directive 2014/34/EU.

The actuators are marked as follows:

CE 2004 (Ex) II 2 G Ex d IIB+H2 T3 Gb

Standards taken into account:

EN 60079-0:2012 + A11:2013; EN 60079-1:2014; EN 1127-1:2019

The notified body Bureau Veritas Consumer Services Germany GmbH (2004) carried out the conformity evaluation process and has issued the EU Type Approval Examination Certificate EPS 15 ATEX 1 015 X.

Ettlingen, 20 July 2020



Peter Benien
Managing Director



Dirk Malischewsky
Head of Research & Development

A22210 EN S.1/1
Rev.: B

Appendix: ATEX Type Approval Examination Certificate

AZ2209 DE S1/2


(1) EG-Baumusterprüfbescheinigung

- (2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen – **Richtlinie 94/9/EG**
- (3) EG-Baumusterprüfbescheinigungsnummer
- EPS 15 ATEX 1 015 X** **Revision 0**
- (4) Gerät: Elektrischer Antrieb Typ E25 MOD II
- (5) Hersteller: Flowserve Flow Control GmbH
- (6) Anschrift: Rudolf-Plank-Straße 2, D-76275 Ettlingen
- (7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.
- (8) Die Bureau Veritas Consumer Products Services Germany GmbH bescheinigt als Benannte Stelle Nr. 2004 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaft vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie. Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht 14TH0475 festgelegt.
- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

EN 60079-0:2012+A11:2013

EN 60079-1:2014

- (10) Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das in Verkehrbringen dieses Gerätes.
- (12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:

II 2G Ex d IIB+H2 T3 Gb



Zertifizierungsstelle Explosionsschutz

Nürnberg, 21.03.2016



D. Zitzmann

Seite 1 von 2

Bescheinigungen ohne Unterschrift haben keine Gültigkeit. Diese Bescheinigung darf nur unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung von Bureau Veritas Consumer Products Services Germany GmbH. EPS 15 ATEX 1 015 X, Revision 0.

Rev.: -

Appendix: ATEX Certificate



QM-Notification

- (1)
- (2) **for approval of the quality assurance of the production process**
- (3) Equipment and protective systems intended for use in potentially explosive atmospheres – Directive 2014/34/EU
- (4) Certificate number: **EPS 19 ATEX Q 104**
- (5) Product Category: Electrical equipment and components
- (6) Manufacturer: Flowserve Flow Control GmbH
- (7) Address: Rudolf-Plank-Straße 2
76275 Ettlingen
Germany
- (8) Bureau Veritas Consumer Products Services Germany GmbH, notified body No. 2004 in accordance with Article 21 of the Council Directive 2014/34/EU of 2014-02-26, certifies that the manufacturer maintains a quality assurance for the production, which conforms with Annex IV of the Directive.
- (9) This certificate is based upon the Audit Reports No.19TH0054, issued on 2019-04-10 and is valid until 2022-04-09.

The certificate can be withdrawn if the manufacturer does no longer meet the requirements of appendix IV.

The results of the quality assurance re-assessment will become part of the certificate.
- (10) According to article 16 (3) of the Directive 2014/34/EU, the CE-marking shall be followed by the identification number 2004 identifying the notified body involved in the production control stage.



Nuremberg, 2019-05-03

Certificates without signature are void. This certificate is allowed to be distributed only if not modified.
Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services Germany GmbH. EPS 19 ATEX Q 104



(11) **Appendix**

EPS 19 ATEX Q 104

List of the EC-type examination certificates covered by the audit:

Unit	Product	Protection mode	Zertificate
1	Electric drive type E25 MOD II	d	EPS 15 ATEX 1 015 X
2	Limit switch module type CZP	i	TPS 14 ATEX 87087 001

Certificates without signature are void. This certificate is allowed to be distributed only if not modified.
 Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services Germany GmbH. EPS 19 ATEX Q 104

Appendix: IECEX Certificate of conformity

AZ2219 EN S.1/3



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEX Scheme visit www.iecex.com

Certificate No.:	IECEX EPS 15.0046X	Issue No: 0	<u>Certificate history:</u> Issue No. 0 (2016-06-17)
Status:	Current	Page 1 of 3	
Date of Issue:	2016-06-17		
Applicant:	FlowsERVE Flow Control GmbH Rudolf-Plank-Straße 2, D-76275 Ettlingen Germany		
Equipment:	Actuator type E25 MOD II		
Optional accessory:			
Type of Protection:	"d"		
Marking:	Ex d IIB+H2 T3 Gb		

Approved for issue on behalf of the IECEX
Certification Body:

Dieter Zitzmann

Position:

Certification manager

Signature:
(for printed version)

Date:



1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEX Website.

Certificate issued by:

Bureau Veritas Consumer Products Services Germany GmbH
Businesspark A96
86842 Türkheim
Germany



Rev.: -

AZ2219 EN S.2/3



IECEX Certificate of Conformity

Certificate No:	IECEX EPS 15.0046X	Issue No: 0
Date of Issue:	2016-06-17	Page 2 of 3
Manufacturer:	Flowserve Flow Control GmbH Rudolf-Plank-Straße 2, D-76275 Ettlingen Germany	

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- | | |
|---------------------------------------|---|
| IEC 60079-0 : 2011
Edition: 6.0 | Explosive atmospheres - Part 0: General requirements |
| IEC 60079-1 : 2014-06
Edition: 7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" |

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[DE/EPS/ExTR15.0042/00](#)

Quality Assessment Report:

[DE/EPS/QAR16.0007/00](#)

Rev.: -



IECEX Certificate of Conformity

Certificate No:	IECEX EPS 15.0046X	Issue No: 0
Date of Issue:	2016-06-17	Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The E25 MOD II electric actuator is designed for the operation of industrial valves. The enclosure is made by light alloy. The motor and electronics are situated inside flameproof enclosure with connection by certified cable glands direct entry.

Electrical data:

Motor: U = 110-125VDC/AC, I = 2,1A; P=130W; or U=220VDC/AC I=0,95A P=130W or U=380-440-V 50Hz / 460-480V 60Hz
 Brake: U= 110-125V DC/AC or 220VDC/AC
 Heater: U= 110-125V DC/AC or 220VDC/AC
 Control: U= 24-220VDC/AC

CONDITIONS OF CERTIFICATION: YES as shown below:

Ambient temperature range: -20°C to +120°C.

A repair of flameproof joints is not allowed.

Only certified cable glands and cables shall be used. Unused openings must be closed with certified blind plugs.

Appendix: ISO 9001 Certificate of conformity

AZ1785 EN S.1/1

CERTIFICAT

CERTIFICADO

СЕРТИФИКАТ

認證證書

CERTIFICATE

ZERTIFIKAT

MS/11-00/2018

Rev.: G



Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that



Flowserve Flow Control GmbH
Rudolf-Plank-Straße 2
76275 Ettlingen
Germany

has established and applies
a Quality Management System for

**Development, Manufacturing and Distribution
of Ball Valves and Actuators.**

An audit was performed, Report No. 70013371.
Proof has been furnished that the requirements
according to

ISO 9001:2015

are fulfilled.

The certificate is valid from 2018-09-11 until 2021-09-10.

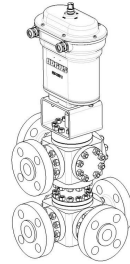
Certificate Registration No.: 12 100 27527 TMS.

Product Compliance Management
Munich, 2018-09-14



Notes

Notes



Manufacturer:

Flowserve Flow Control GmbH

Rudolf-Plank-Str. 2, D-76275 Ettlingen

Telephone +49 (0) 72 43 / 103 - 0

Telefax +49 (0) 72 43 / 103 - 222

E-mail argus@flowserve.com

Internet www.flowserve.com

For our representatives around the world, please go to: www.flowserve.com

You will find these operating instructions in other languages at:



<http://flowserve-argus.de/produkte/dokumentationen/produktatetenblaetter>

Document No. BA3001 rev. C status 2020-02