

Original Assembly and Operating Manual

Electrical control drive MS3

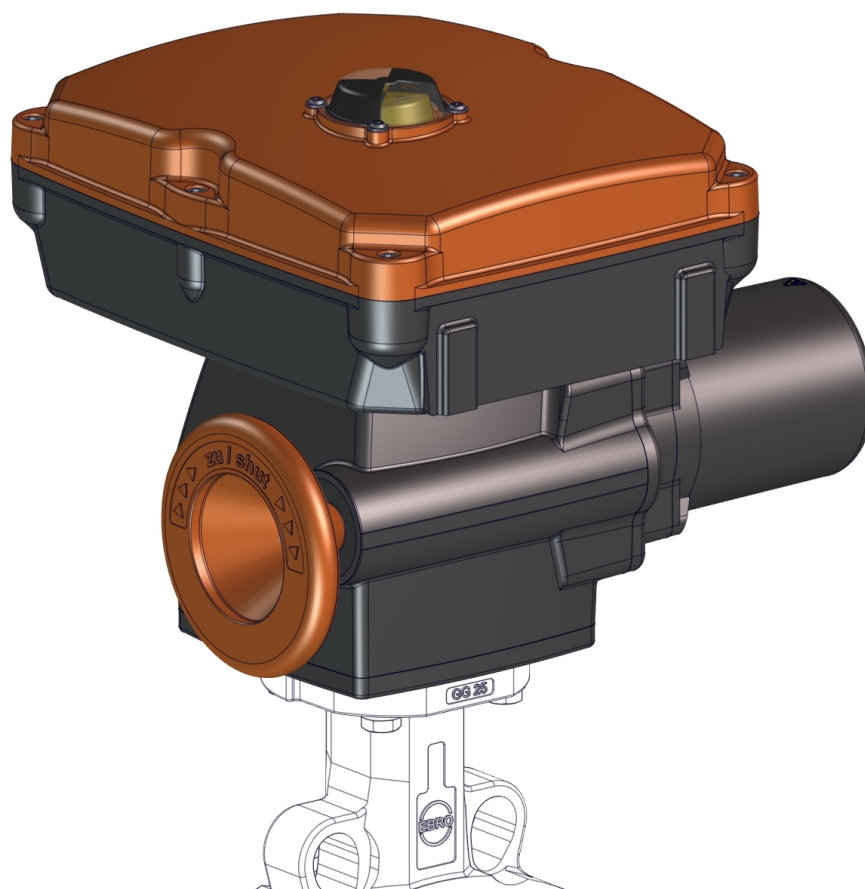


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1 ABOUT THIS OPERATING MANUAL

This is the assembly and operating manual of EBRO ARMATUREN Gebrüder Bröer GmbH for:

- Electrical control drive of type MS3.

Hereinafter:

- EBRO ARMATUREN Gebrüder Bröer GmbH ► EBRO
- ElectricalRegelantrieb of the type MS3 ► Control drive
- Assembly and operating manual ► Operating manual

This operating manual provides important safety and warning information. In addition to other useful information, this operating manual provides particular support during the product life cycle phases of transport, installation, operation, maintenance, and decommissioning to ensure efficient and reliable operation.

Read the operating manual with care and keep it in a safe place. EBRO shall not be liable for any damage caused by failure to observe the operating manual.

The operating manual must be available at the site of use of the control drive. The operating manual must be passed on if the site of use or the owner changes.

All rights and technical changes reserved.

1.1 Copyright

No part of this documentation must be reproduced or made accessible to any third parties without the explicit permission of EBRO ARMATUREN Gebr. Bröer GmbH.

This documentation, including all of its parts, is protected by copyright. Reproduction, translation, microfilming, as well as storage and processing in electronic systems require the written consent of EBRO ARMATUREN Gebr. Bröer GmbH.

Violations are punishable by law and shall obligate to compensation for damages. EBRO ARMATUREN Gebr. Bröer GmbH reserves all rights to exercise industrial property rights.

1.2 Warranty and liability

Warranty and liability shall be subject to the contractually agreed terms and conditions (for warranty terms and conditions, see Terms of Sale and Delivery of EBRO ARMATUREN Gebr. Bröer GmbH). Report any guarantee or warranty claims to EBRO ARMATUREN Gebr. Bröer GmbH at post@e-bro-armaturen.com immediately after discovering the defect or fault.

Any liability and warranty claim shall lapse in the event of software modifications without the knowledge and approval of EBRO ARMATUREN Gebr. Bröer GmbH.

EBRO ARMATUREN Gebr. Bröer GmbH accepts no liability for damage caused by improper use, improper storage or improper transportation.

1.3 Figures

All figures in this operating manual are schematic diagrams and serve to clarify the text. The figures only show the control drive to the extent necessary for understanding the text.

Figures may show product variants or accessories that are not included in the scope of delivery. Figures never justify any claim for subsequent delivery or modification of the delivered control drive.

1.4 Target groups

The target groups of these operating instructions are specialists who carry out activities on the component in the respective life phases.

A specialist is a person who is able to assess the work assigned to them and recognize potential hazards based on their specialist training, knowledge, and experience. Furthermore, the specialist has knowledge of the relevant regulations.

Only suitably qualified and trained specialists must work on the control drive. Persons who are still being trained or instructed must only work on the control drive under the constant supervision of a trained or instructed specialist.

Every person who works with the control drive or who performs work on the control drive must know and apply the content of the operating manual. The owner of the control drive is responsible for granting access to the operating manual and conveying its content by way of training and instruction.

1.4.1 Definition of the target groups

Transport personnel

Specialists responsible for the safe and efficient transportation of machines, systems, or components.

Assembly personnel

Specialists responsible for the professional assembly and installation as well as dismantling (decommissioning) of machines, systems, or components.

There may be overlaps with the “commissioning” phase during work of the assembly personnel.

Commissioning personnel

Specialists who are responsible for transferring machines, systems, or components from assembly to operating condition. The tasks of the commissioning personnel include testing, adjusting, and optimizing the systems to ensure safe and efficient operation.

Operating personnel

Specialists who are responsible for the use of machines, systems or components.

The work of operating personnel may overlap with the “commissioning” life phase.

Maintenance personnel

Specialists responsible for extending the service life and maintaining operational safety.

1.4.2 Definition of life phases

Transport

The component is transported to the place of use after production. Suitable transportation methods must be selected at this stage to avoid damage or malfunctions. This shall include packaging, load securing, compliance with transportation regulations, and, if necessary, climatic protection measures.

Assembly

The component is assembled and installed on site. This includes assembling individual parts, connecting them to supply networks (electricity, water, compressed air, etc.), and integrating them into existing production processes. Correct assembly is essential for subsequent functionality and safety of the component.

Commissioning

In this phase, the component is switched on and tested for the first time. This involves making settings, configuring control systems and performing safety checks. Any adjustments or optimizations are made before the component goes into regular operation.

Operation

This phase comprises the actual use of the component for the intended purpose. The focus here is on efficiency, productivity, and safety. Regular monitoring, documentation of operating data, and, if necessary, minor adjustments are required to ensure optimum performance.

Maintenance

Regular maintenance is required to ensure the service life and functionality of the component. This may include inspections, cleaning, lubrication, replacement of wear parts, and preventive maintenance measures.

Decommissioning

If the component is no longer economically or technically viable, it is decommissioned. This includes shutdown, emptying of operating equipment, and possibly temporary storage. We also check whether it makes sense to reuse or sell the product during this phase.

1.4.3 Who-does-what matrix

	Transport personnel	Assembly personnel	Commissioning personnel	Operating personnel	Maintenance personnel
Transport	●				
Assembly		●			
Commissioning		●	●	●	
Operation				●	
Maintenance					●
Decommissioning	●	●			

Tab. 1: Who-does-what matrix

1.5 Notices

Warnings serve to raise awareness of a possible hazardous situation, its avoidance and the physical integrity of persons.

General notices are aimed at preventing material damage or provide useful additional information for better understanding.

Use of mandatory, desired, and optional provisions

Expression	Conclusion on compliance
Mandatory	A mandatory provision contains clearly defined instructions that must be followed, i.e., it does not grant any discretionary space.
Desired	A desired provision is a recommendation. Although a desired provision contains instructions for action, there is a certain amount of discretionary space for exceptions or atypical situations.
Optional	A may-provision contains an option for action that the owner can consider, but do not necessarily have to follow.

Tab. 2: Mandatory, desired, and optional provisions

1.5.1 Meaning of the requirement and warning signs

Mandatory sign

Sign	Meaning
	Use head protection Protects from head injuries caused by objects falling on the head or hitting the head against objects

Sign	Meaning
	Use eye protection Protects from eye injuries due to mechanical, optical, chemical, thermal, biological, electrical hazards
	Use hand protection Protects from hand injuries caused by objects or contact with hot materials or chemicals
	Use foot protection Protects from foot injuries caused by objects or contact with hot materials or chemicals

Tab. 3: Mandatory sign

Warning signs

Sign	Meaning
	General warning sign Observe the danger conveyed by the additional sign.
	Warning of electrical voltage Take care not to come into contact with electrical voltage.
	Warning of suspended load Take care not to be hit by or run into a suspended load.
	Warning about hot surfaces Take care not to come into contact with hot surfaces.
	Warning of automatic start-up Be careful around machines with mechanical parts that start moving automatically and unexpectedly.
	Warning against hand injuries Take care to avoid hand injuries caused by closing mechanical parts of a machine/component.
	Warning of falling objects Take care to avoid being hit by falling objects.

Tab. 4: Warning signs

1.5.2 Definitions and structure of warnings

The purpose of warning notices is to inform users of potential dangers, raise their awareness, and provide safety-related information to prevent accidents or injuries.

Definition of warnings

DANGER	
	The signal word "DANGER" designates a hazard with a high degree of risk. The hazard will result in death or serious injury if it is not avoided.

WARNING



The signal word **"WARNING"** designates a hazard with a medium degree of risk. The hazard may result in death or serious injury if it is not avoided.

CAUTION



The signal word **"CAUTION"** designates a hazard with a low degree of risk. The hazard may result in a minor or moderate injury if it is not avoided.

Structure of warnings

- ① **CAUTION**
- ② **Medium may escape in an uncontrolled manner and be inhaled.**
- ③ Irritation of the respiratory tract.
- ④ ➤ Check the valve for leaks.
- ⑤ ➤ Observe the safety data sheet.

Position	Explanation
1	Signal word: The corresponding signal word for the degree of danger is used to emphasize the urgency and nature of the danger.
2	Source of the danger: A clear and concise description of the danger in simple and easily comprehensible terms.
3	Consequence of non-compliance: Possible consequences or effects if the security instructions are not complied with.
4	Risk prevention: Instructions on how the user can avoid the consequences of non-compliance.
5	Pictogram: A pictogram is placed next to the source of the danger to reinforce the warning and emphasize the significance of the danger.

Tab. 5: Structure of warnings

1.5.3 Definition of general notices

NOTICE



A notice with the signal word **"NOTICE"** provides important information for the proper handling of the product.

Non-observance of such notices may cause faults in the product or affect its environment.

1.5.4 Symbols

Sign	Meaning
1. Screw ...	Instructions with step sequence
➤ Observe the safety data sheet.	Instructions without step sequence
• The control drive ...	Bullet point
①	Item number in figures for assignment to a list or supplementary information

Tab. 6: Symbols

1.6 Applicable documents

Always also observe the statutory provisions applicable at the site of use of the control drive and the owner's instructions in addition to the documentation provided by EBRO.

Also observe any supplier instructions, in particular their safety and warning notices.

1.6.1 Declaration of Conformity/Declaration of Incorporation

The control drive may be subject to a directive giving rise to a presumption of conformity. In this case, a supplementary EBRO Declaration of Conformity or an EBRO Declaration of Incorporation is also applicable.

The owner of the control drive is responsible for requesting and, if necessary, performing the conformity assessment procedure.

1.7 Contact details

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2 IMPORTANT SAFETY INSTRUCTIONS

2.1 Intended use

The electrical control drive of type MS3 is used to regulate or control the position of electrically actuated valves to control the flow of media. The control drive is intended exclusively for use in industrial applications.

Observe the limits of the control drive for intended use. Limits can be found in the technical data and on the identification plate of the control drive.

2.1.1 Reasonably foreseeable misuse

The following items constitute misuse:

- The control drive may be used in potentially explosive areas.
- The control drive may be used outside of its limits.
- The control drive may be used as a stepping aid.

2.2 Markings

NOTICE



Ensure that all markings remain preserved and legible at all times.

NOTICE



Not all information and symbols are used at all times, depending on the type and configuration of the component.

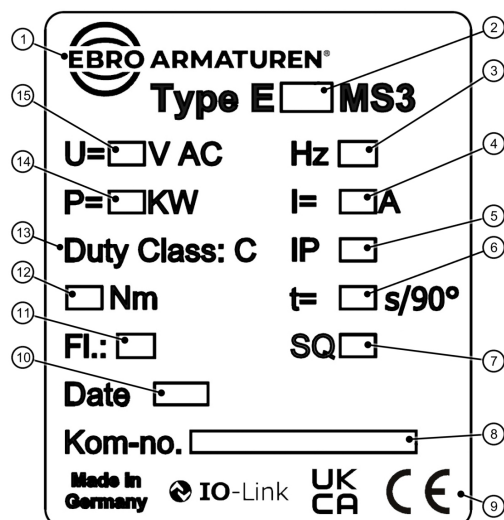


Fig. 1: Identification plate MS3

Item	Data item	Example	Comment
1	Manufacturer		Logo
2	Type E	110	Actuator type
3	Hz	50	Frequency
4	I=	1.3	Rated current (A)
5	IP	67	Protection class
6	t=	12	Running time 0° - 90° (s/90°)
7	Sq	17	Valve interface (mm)
8	Com-no.	113-00589823-20	Order number
9	Conformity		Certifies conformity with at least one relevant EU directive requiring a CE conformity assessment procedure (if applicable). Other conformity markings are possible.
10	Code (month and year of production)	09 25	
11	FL.	07/10	Flange connection
12	Nm	400	Torque (Nm)
13	Duty Class	C	Classification of duty cycles (1200 c/h)
14	P=	0.26	Power consumption (KW)
15	U=	220-240	Voltage (V)

Tab. 7: Markings on the electric actuator

2.3 Operationally safe condition

The control drive must only be operated when in impeccable technical condition. This includes in particular:

- The control drive must be fully assembled and properly commissioned.
- The control drive must only be operated within its limits.
- All functional tests must have been successfully completed.
- The signage (identification plates, warning stickers, etc.) must be present and recognizable.
- Cable entries must be used that are suitable for the respective cable and line types when connecting cables and lines. They must contain a suitable sealing element. Unused holes for cable entries must be sealed with plugs. The cables must be laid correctly.
- Structural changes are not allowable.
- The functions are only available after successful settings have been made for operationally safe condition.

Shut down the control drive immediately if any damage or faults occur. Only put the control drive back into operation once you have repaired all damage and malfunctions.

Spare parts and accessories not supplied by EBRO may change the characteristics of the control drive. Use of such parts may lead to hazards and damage. Only use genuine spare parts from EBRO and install them correctly.

2.4 Owner's obligations

Everyone charged with any work on the control drive must know and apply the relevant contents of the operating manual. The owner of the control drive is responsible for permitting access to the operating manual and conveying its content by way of training and instruction.

The owner must ensure that the operating manual is available at the place of use of the control drive.

The owner must ensure that only sufficiently qualified and experienced persons with the corresponding specialist knowledge work on the control drive.

Any hazard for the health and safety of personnel must be avoided. The owner must take appropriate organizational measures or use suitable work equipment.

The owner must perform hazard assessments etc. for the personnel based on national laws and regulations.

The owner must instruct the personnel in particular on the following items:

- Intended use and limits of the control drive
- Danger points
- Function, position, and operation of the protective devices
- Operation and monitoring

2.4.1 Checking the scope of delivery and configuration

The owner must verify that the control drive is complete and undamaged after delivery.

The owner is responsible for ensuring that the control drive configuration corresponds to its application.

2.4.2 Risk assessment/hazard assessment

The control drive is a partly completed machinery within the meaning of Directive 2006/42/EC (Machinery Directive).

After installation in other partly completed machinery or equipment or complete machinery, the integrator must perform a risk assessment. The owner must perform a risk assessment and take protective measures if necessary.

2.4.3 Residual risks

Electrical hazards

Incorrect machining of electrical components or damage to them can result in direct or indirect contact with live parts.

Thermal hazards

The motor can grow up to 40 °C hot. There is a risk of burns if hot surfaces are touched without protective gloves. Structural or spatial protective measures may be required as part of the owner's hazard assessment at the place of use.

Noise emission

The control drive may cause a sound pressure of > 80 dB(A). Structural or spatial protective measures may be required as part of the owner's hazard assessment at the place of use. Persons in the vicinity of the control drive must wear hearing protection if necessary.

3 DESCRIPTION OF THE COMPONENTS

The control drive comprises several components that are mechanically connected to each other for their intended use.

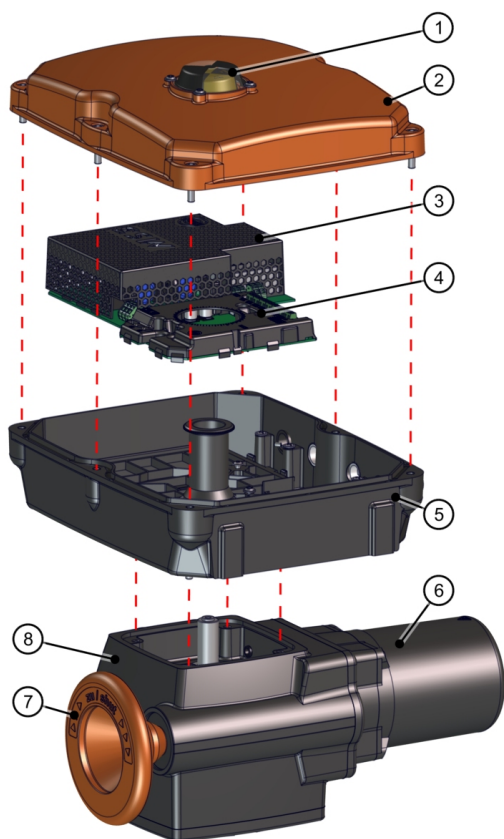


Fig. 2: Components

Position	Component
1	Position indicator
2	Switch box cover
3	Power PCB
4	Control PCB
5	Switch box base
6	Motor
7	Manual emergency override
8	Part-turn actuator with gearbox

Tab. 8: Designation the components

Switch box with position indicator

Power PCB

The power PCB serves to connect the power supply and transmit position signals from the microcontroller control unit to the motor. The integrated control room heating ensures constant heating of the switch box to avoid condensation of humidity.

Control PCB

The switch box of the control drive records the valve position 0-90° via an angle sensor. The switch box of the control drive serves as an electrical interface to the superordinate control system. The terminal point built into the switch box of the control drive can be used to move the valve disc to the desired intermediate position and simultaneously query the valve position. The position indicator shows these states visually. The yellow fields are parallel to the valve disc.

The switch box of the control drive also has an IO-Link communication interface that enables access to process data, switching setup, and diagnostic data. IO-Link makes it possible to parameterize and configure the device during operation. Operation of the switch box of the control drive via the IO-Link interface requires a suitable IO-Link master with port class A.

The control drive has a Bluetooth LE 4.0 radio-based communication channel as an additional communication interface. This provides process and diagnostic parameters in parallel with IO-Link that can be called up using a suitable platform. This interface serves as an additional communication channel and is operated independently. Simultaneous access to the process data is impossible if IO-Link communication is maintained at the same time. IO-Link has a higher priority at this point. However, access to the acyclic parameters is possible as long as an IO-Link read or write command is not taking place at the same time.

End position monitoring, integrated temperature sensor, and acceleration sensor increase operational reliability and process availability. Service and maintenance management can be optimized and faults and anomalies can be detected directly.

Part-turn actuator

The electric part-turn actuator operates the valve and can be used as an actuator and control drive. The position indicator shows the current position of the actuator.

Attachment to the valve

The electric part-turn actuators E65 to E160 can be mounted on all valves with part-turn movement (usually 90°) that have a mounting flange according to DIN EN ISO 5211:2024-10.

Actuator's output torque

The specified output torques of the control drives are nominal torques. They are achieved under any operating condition if the supply voltage is equal to the nominal voltage.

Design of the part-turn actuator

The main factors influencing the required actuating torque are determined by the valve (nominal size), the operating pressure, and the medium. The required actuating torque for the valve is determined by considering these parameters. EBRO recommends adding a safety reserve of 15 % to 20 % to the value specified by the valve manufacturer for the design of the part-turn actuator.

Protection class

The actuator design of the E65 to E160 series fulfills protection class IP67 according to DIN EN 60529:2014-09. Ensure that the installation is performed electrically and mechanically correctly to ensure compliance with this IP67 protection class.

Corrosion protection

According to the standard DIN EN ISO 22153:2021-07 For electric actuators, this corresponds to corrosion category C4. The actuators were type-tested in salt spray in accordance with DIN EN IEC 60068-2-52:2018-08 (based on the requirements of Germanischer Lloyd). The test parameter was severity level 4 with a duration of 14 days. This defines the area of application of the actuators for industrial systems and/or in an ambient atmosphere with an increased salt concentration.

Self-inhibiting at standstill

All part-turn actuators are equipped with a self-inhibiting worm gear. As a result, the part-turn actuator remains in the end positions and also in the intermediate position of the last approached position even when de-energized. The medium cannot influence the position of the valve disc.

Rotational direction for electrical operation

According to the design standard DIN EN ISO 22153:2021-07 it is defined that the valve must close when actuated clockwise. The owner must implement this first via the correct mechanical assignment of the valve disc to the handwheel position (OPEN or CLOSED) and then by the correct power supply and control.

Manual emergency override

The manual emergency override is a rotating handwheel with direct action on the gear worm without a clutch. This means that the user can close or open the valve at any time (when the motor is de-energized) without the coupling mechanism with a maximum of approx. 15 turns. The safety regulations in accordance with EC Directive 2006/42/EC for rotating handwheels are met.

Option - special voltages

All actuators can also be designed for other voltages in addition to the standard voltages. Further technical details on request.

Option - plug connection system

All actuators are optionally available with various plug connection systems. The "Phoenix contact" brand will be used unless otherwise specified.

3.1 Technical data

MS3

Designation	Description
Valve body	Powder-coated aluminum
Operating elements / HMI	Pushbutton / IO-Link / Bluetooth / RGB light element
Temperature range	-20 °C to +60 °C (-4 °F to +140 °F)
Connection type	Screw terminal connection 26-16 AWG / 0.129-1.31mm ² (16 AWG), optional M12 panel connector
Recording range	100°
Dead zone	1-10% (factory setting 3%)
Safety position	Holding, closing or opening
Power supply	230 V AC (- 5% / +10%) 50 Hz / 60 Hz (110 V AC optional)
Sensor type position detection	Angle sensor, non-contact
Additional sensors	Acceleration sensor, temperature sensor
Analog input/setpoint specification	4-20 mA / 0-10 V
Additional analog inputs	4-20 mA / 0-10 V
Analog output	4-20 mA / 0-10 V
Digital input signals	3 (on/off, intermediate position, external process sensor)
Digital output signals	3 (feedback: on, off, fault/intermediate position)
Reverse polarity protection	Yes (power supply)

Designation	Description
Actuator sizes	E65-E160
Actuating times	12 s / 24 s
Insulation class	F
Cable gland	2 x M20 x 1.5; Ø min = 6 mm, Ø max = 13 mm
Manual emergency override	15 turns for 90°
Actuating force manual emergency override	4 Nm for E65 20 Nm for E110 35 Nm for E160

Tab. 9: Technical data Regelantrieb

E65WS

Nominal voltage	V	230	230
Actuating time from 0° - 90°	s	12	24*
Nominal torque	Nm	80	60
Nominal current	A	0.55	0.3
Start-up current	A	0.8	0.4
Absorption capacity	kW	0.125	0.066
Frequency	Hz	50	50
Flange sizes	F04 or combined flange F05 and F07 after DIN EN ISO 5211:2024-10		
shaft intakes	For square 10 mm, 11 mm, 12 mm, 14 mm, 16 mm, 17 mm, and 16 mm with fitting key		
* Option			

Tab. 10: Technical data E65WS

E110WS

Nominal voltage	V	230	230
Actuating time from 0° - 90°	s	12	24*
Nominal torque	Nm	400	320
Nominal current	A	1.3	0.65
Start-up current	A	2	1.5
Absorption capacity	kW	0.26	0.138
Frequency	Hz	50	50
Flange sizes	Combined flange F07 and F10 after DIN EN ISO 5211:2024-10		

shaft intakes	For square 12 mm, 14 mm, 16 mm, 17 mm, 22 mm, 24 mm, and 28 mm with fitting key
* Option	

Tab. 11: Technical data E110WS

E160WS

Nominal voltage	V	230	230
Actuating time from 0° - 90°	s	24	48*
Nominal torque	Nm	1200	800
Nominal current	A	1.3	0.65
Start-up current	A	2	2.5
Absorption capacity	kW	0.26	0.138
Frequency	Hz	50	50
Flange sizes	F10, F12, F14, and F16 after DIN EN ISO 5211:2024-10		
shaft intakes	For square 22 mm, 24 mm, 27 mm, 32 mm, and 40/50 mm with fitting key		
* Option			

Tab. 12: Technical data E160WS

3.2 Dimensions and weights

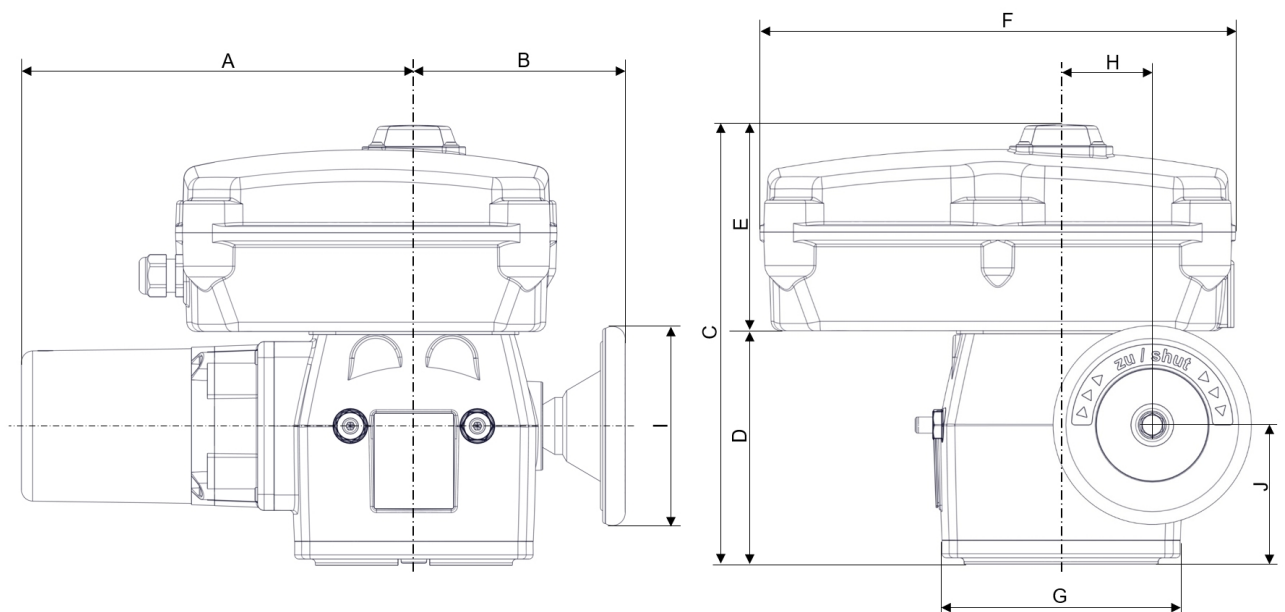


Fig. 3: Dimensions

Type	Main dimensions [mm]										Weight [kg]
	A	B	C	D	E	F	G	H	I	J	
E65	172	119	253	123	130	300	125	42	80	78	10.3
E110	247	136	275	145	130	300	150	58	125	88	19.0
E160	280	157	300	170	130	300	175	89	200	112	29.0

Tab. 13: Main dimensions

3.3 Conversion tables

Mass m

	kg	lb	cwt	t	sh ton
kg	1	2.205	0.0197	0.001	0.0011
lb	0.454	1	0.0089	4.54×10^{-4}	5.0×10^{-4}
cwt	50.802	112	1	0.0508	0.056
t	1000	2204.6	19.684	1	1.1023
sh ton	907.2	2000	17.857	0.9072	1

Tab. 14: Conversion table for mass m

Temperature t

°C	°F	°C	°F	°C	°F	°C	°F
-140	-220	-40	-40	60	140	160	320
-135	-211	-35	-31	65	149	165	329
-130	-202	-30	-22	70	158	170	338
-125	-193	-25	-13	75	167	175	347
-120	-184	-20	-4	80	176	180	356
-115	-175	-15	5	85	185	185	365
-110	-166	-10	14	90	194	190	374
-105	-157	-5	23	95	203	195	383
-100	-148	0	32	100	212	200	392
-95	-139	5	41	105	221	205	401
-90	-130	10	50	110	230	210	410
-85	-121	15	59	115	239	215	419
-80	-112	20	68	120	248	220	428
-75	-103	25	77	125	257	225	437
-70	-94	30	86	130	266	230	446
-65	-85	35	95	135	275	235	455
-60	-76	40	104	140	284	240	464
-55	-67	45	113	145	293	245	473
-50	-58	50	122	150	302	250	482
-45	-49	55	131	155	311	255	491

Tab. 15: Conversion table for temperature t

4 TRANSPORT AND ASSEMBLY

WARNING

**Parts may start moving unexpectedly.**

Injuries caused by crushing, pulling in, catching, grabbing, or rubbing and scraping as well as cutting.

- Only perform assembly work while the device is de-energized.
- Do not reach between the valve body and the valve disc.

Wear personal protective equipment!



General rules for storage, transport, and assembly

- Recommended storage conditions:
 - Room temperature >5 °C, <25 °C (>41 °F, <77 °F)
 - Relative humidity 50-60%
 - Avoid condensation
 - Protection against direct sunlight
- Leave the components secured in the factory packaging until assembly.
- Protect the components from dirt and moisture.
- Protect flanges and unprotected parts with suitable grease or oil.
- Leave all connections and electrical plug contacts closed until assembly.
- Check the control drive for damage before assembly.
- Store actuators on their flat sides only.
- Any installation direction is possible. If the part-turn actuator is installed in a lateral position, the owner must decide whether the part-turn actuator must be supported due to bending forces.

For storage exceeding 6 months:

- Check the tightness and function of the part-turn actuator.

If stored for longer than 3 years:

- Replace all seals on the part-turn actuator.

4.1 Transporting components

WARNING



The control drive may fall if lifting gear and lifting devices with insufficient load-bearing capacity are used.

Injuries and even death may result from crushing, shearing or impacts.

- Only use lifting gear and lifting devices with sufficient load-bearing capacity.
- Only use lifting gear and load handling attachments that are in an undamaged condition.
- Never stand underneath any suspended loads.

NOTICE



You can find the weight of your assembly in chapter "Dimensions and weights".

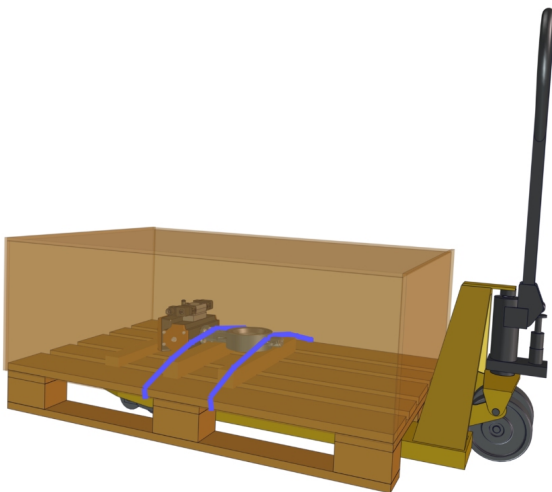


Fig. 4: Example illustration for transporting components

1. Transport the control drive to its place of use using a suitable means of transport, for example a pallet truck/forklift.

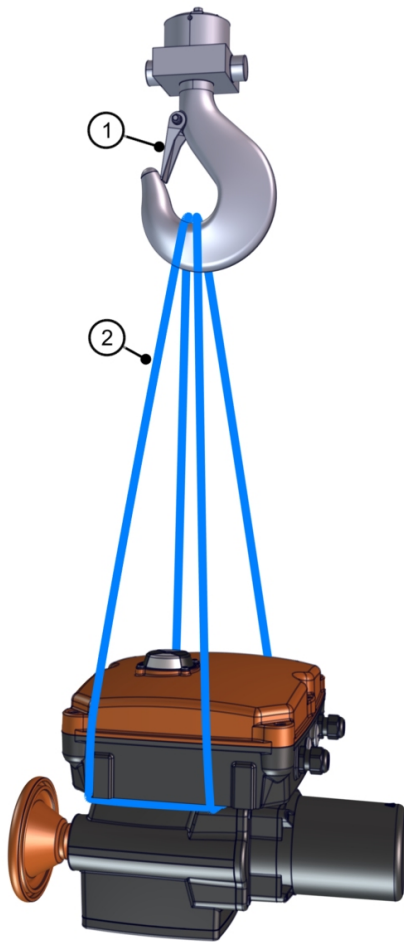


Fig. 5: Lifting control drive with a crane

2. Guide one round sling (item 2) around the switch box each on the side of the manual emergency override and the motor side.
3. Suspend the round slings from the crane hook.
Ensure that the crane hook safety catch (item 1) is closed.
4. Lift the control drive out of the transport box.
5. Transport the control drive to its installation site.

4.2 Mounting components

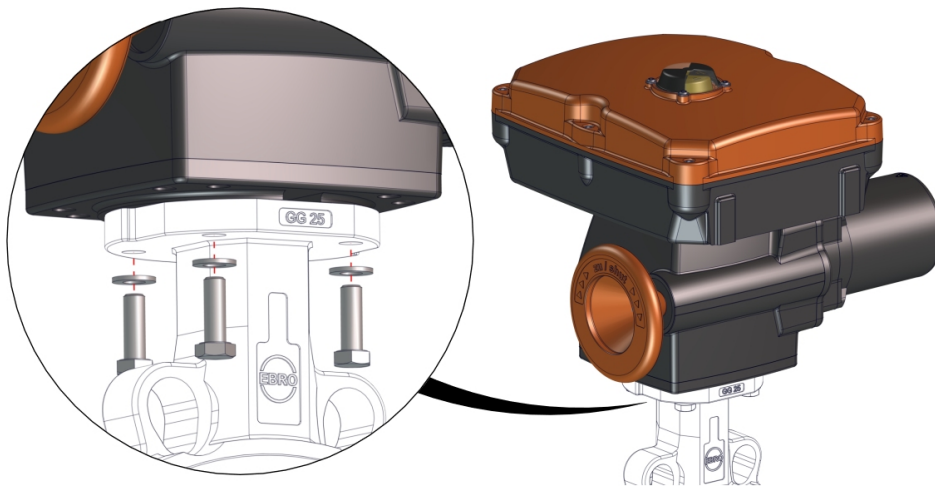


Fig. 6: Mounting components

1. Screw the control drive to the head flange from below using all hexagon head screws. Make sure that the valve disc is correctly positioned in relation to the control drive.

ISO flange size	F03	F04	F05	F07	F10	F12	F14	F16	F25
Thread size	5	M5	M6	M8	M10	M12	M16	M20	M16
Tightening torque in Nm	4.5	4.5	7.7	18.7	37.1	64.7	161.2	314.9	161.2
A tolerance of up to +10% is allowable for the tightening torques.									

Tab. 16: Tightening torques for the drive flange

4.3 Connecting components

WARNING



Parts may start moving unexpectedly.

Injuries caused by crushing, pulling in, catching, grabbing, or rubbing and scraping as well as cutting.

- Only perform assembly work while the device is de-energized.
- Do not reach between the valve body and the valve disc.

NOTICE



Ensure that the system data for control voltage, and frequency for all assemblies match the technical data marked on the identification plates of the actuator and additional assemblies.

NOTICE



The following shows the standard terminal diagram.
For special configurations, contact EBRO with the type designation in order to request the matching terminal diagram.
The type designation of your switch box can be found on the identification plate. The terminal diagram is also included in the cover of the switch box.

Electric connection of the control drive

DANGER



Danger to life due to electrical voltage!

Burns, unconsciousness, muscle cramps, cardiac arrhythmia, and even cardiac arrest.

- Ensure that there is no voltage pending.
- Ensure that the protective earth is properly connected.
- Secure the switch box against reactivation.

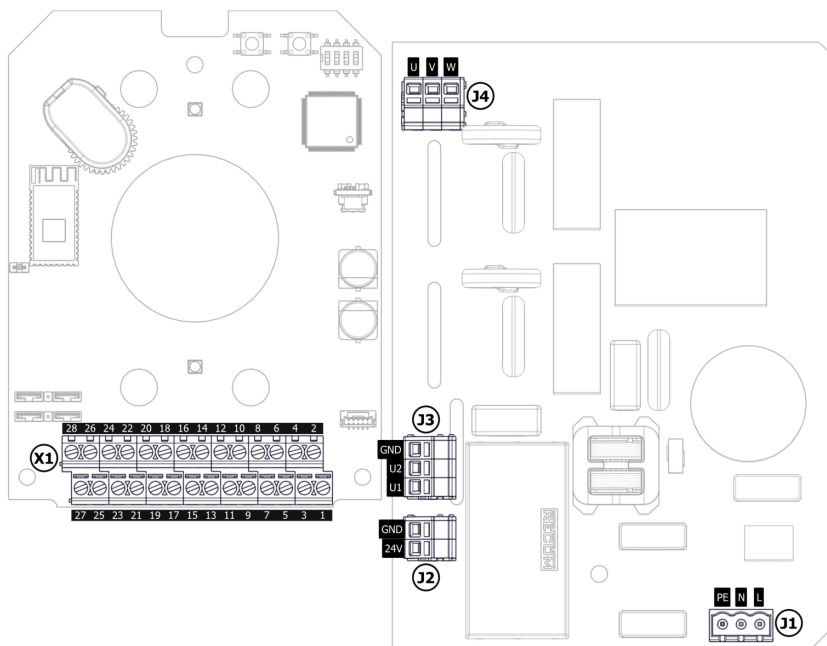


Fig. 7: Connection terminals

Terminal diagram standard

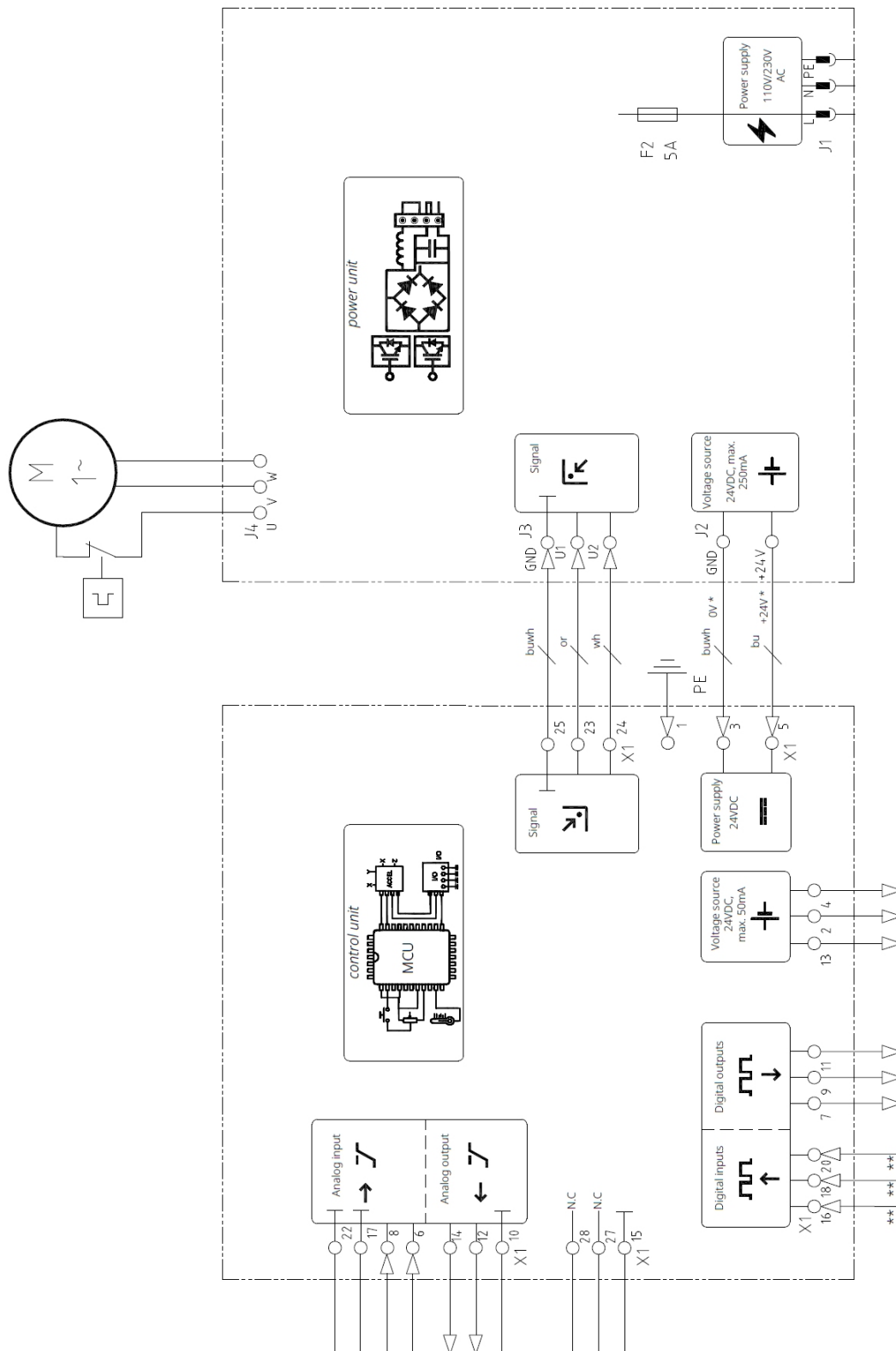


Fig. 8: Terminal diagram

Terminal diagram IO-Link

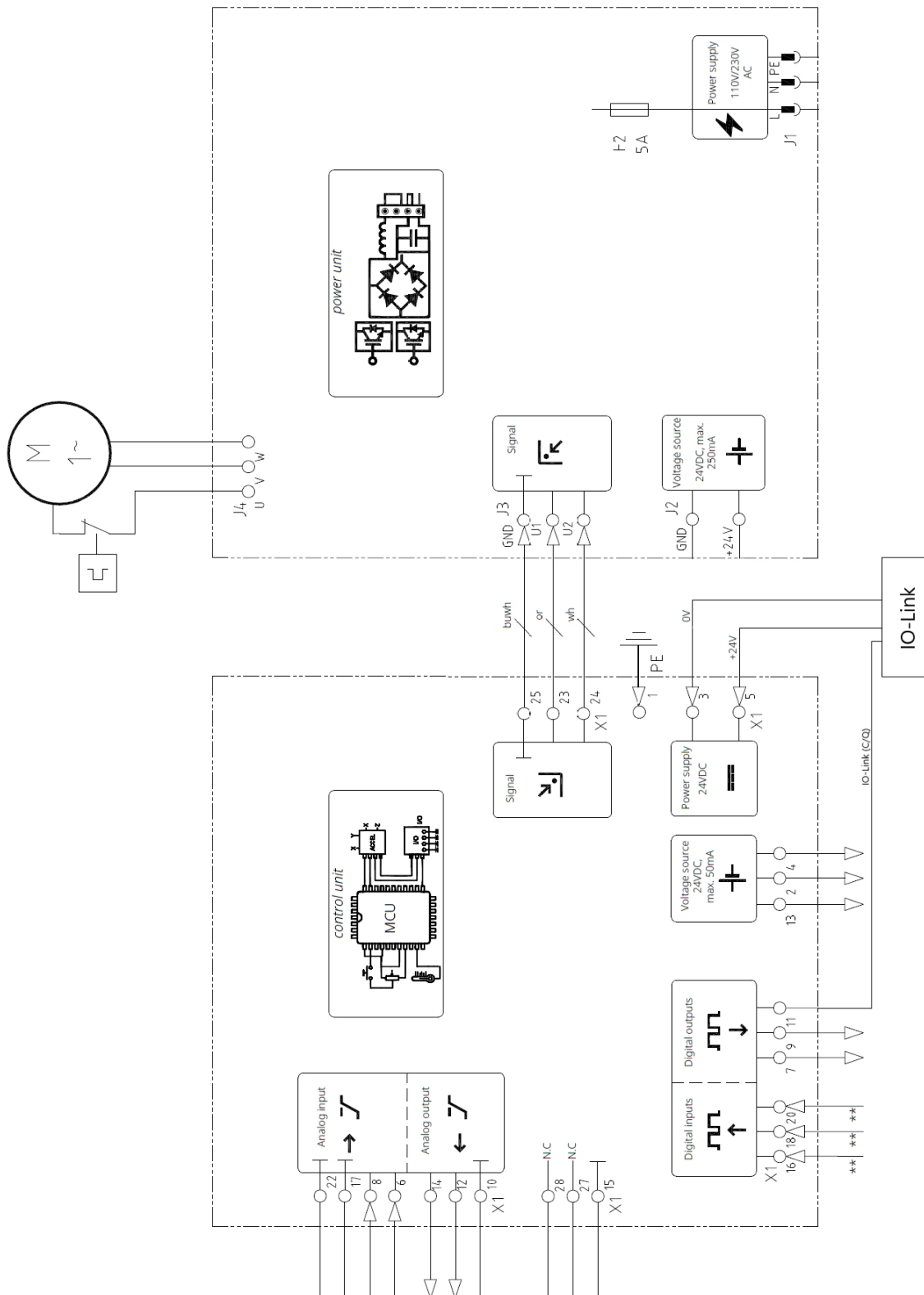


Fig. 9: Terminal diagram IO-Link

Function	Terminal	Assignment	Function	Terminal	Assignment
Power supply - control PCB -	X1.1	Protective earth (PE)	Reserved - control PCB -	X1.15	GND
	X1.3	Power supply GND (0 V)		X1.27	Reserved N.C.
	X1.5	Power supply +24 V DC		X1.28	Reserved N.C.
Voltage source - control PCB -	X1.2	Voltage source +24 V DC, max 50 mA	Signal - control PCB -	X1.23	Signal 1 to the power PCB
	X1.4	Voltage source +24 V DC, max 50 mA		X1.24	Signal 2 to the power PCB
	X1.13	Voltage source GND		X1.25	Signal GND
Analog input - control PCB -	X1.6	Analog input 2 (+)	Power supply - control PCB -	J1.L	Phase (L), power supply 230 V AC 50Hz (optional: 110 V AC)
	X1.8	Analog input 1 (+), setpoint 0-100%		J1.N	Neutral conductor
	X1.17	Analog input 2 (GND)		J1.PE	Protective earth (PE)
	X1.22	Analog input 1 (GND)	Voltage source - control PCB -	J2.GND	Voltage GND(0 V)
Analog output - control PCB -	X1.12	Analog output 0-10 V		J2.+24V	Voltage +24 V DC
	X1.14	Analog output 4-20mA	Signal - control PCB -	J3.GND	Signal GND
	X1.10	Analog output (GND)		J3.U1	Signal 1 from control PCB
Digital input - control PCB -	X1.16	Analog input 3		J3.U2	Signal 2 from control PCB
	X1.18	Analog input 2	Motor - control PCB -	J4.U	Actuator connection
	X1.20	Analog input 1		J4.V	Actuator connection
Digital output - control PCB -	X1.7	Digital output 1 - collective fault		J4.W	Actuator connection
	X1.9	Digital output 2 - position OPEN			
	X1.11	Digital output 1 - position CLOSED / IO-Link (C/Q)			

Tab. 17: Connection table

Special safety instructions for assembly and connection

- Supply contacts of the motor for 230 V AC after DIN EN 61010-1:2020-03. Overvoltage protection must be provided in the electrical system. This should comply with the requirements of overvoltage category II and pollution degree 2.
- Cable cross-sections of 0.2-2.5 mm² can be connected.
- The cables may be installed in a plugged-in state.
- The connection terminals must be connected and disconnected while no voltage is present on them.
- All mains circuits must be equipped with the necessary overcurrent protection devices. For the technical data, see chapter "Technical data"
- Provide a disconnecting device that is marked correspondingly and that is located within the engagement range of the actuator.
- Secure the cables in the connection compartment of the actuator against displacement after installation.
- In accordance with DIN EN 61010-1:2020-03 , the supply cables must comply with the requirements for reinforced core insulation within the cable for the dielectric strength test.
- The earthing/protective conductor connection is made between the two cable entries on the earthing screws (M4). The switch box cover, motor, and gearbox housing are earthed to each other by the manufacturer.

4.3.1 Switching suggestion

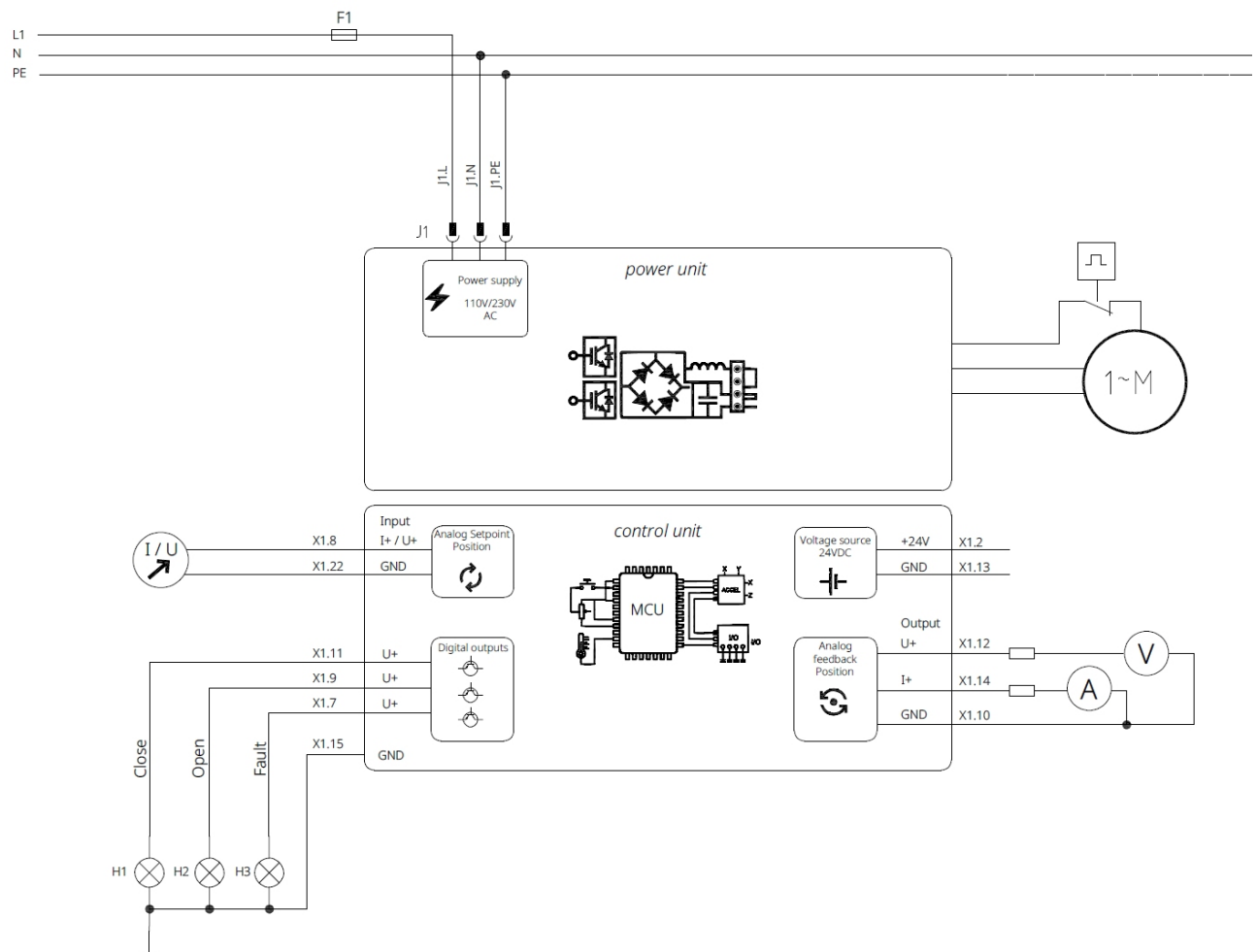


Fig. 10: Switching suggestion electrical control drive MS3

A	Feedback signal 4-20 mA	I/U	Input signal 4-20 mA / 0-10 V for target value
F1	Fuse	J1	Power supply for electrical control drive
H1	Signal lamp position CLOSED	V	Feedback signal 0-10 V
H2	Signal lamp position OPEN	X1.x	Interface control PCB
H3	Signal lamp error		

Tab. 18: Switching suggestion electrical control drive MS3

5 COMMISSIONING

CAUTION



The motor can grow up to 40 °C hot.

There is a risk of burns if hot surfaces are touched without protective gloves.

- Wear your personal protective equipment.

Wear personal protective equipment!



NOTICE



Also observe chapter "Target groups".

Put the control room heating (connection to the nominal voltage in accordance with the identification plate) into operation immediately after installing the actuator

- at high humidity and/or
- changing temperatures

Commissioning of the actuator mounted on a valve is only permitted if the valve is enclosed on both sides by a pipe or apparatus section. Any actuation before this means a risk of crushing and is the sole responsibility of the owner.

5.1 Settings

The matching terminal diagram is enclosed inside of the control room cover.

- Ensure that the system data nominal voltage, control voltage (and frequency) match the data entered on the actuator's identification plate.

Functions

NOTICE



Parameterization may be performed while the process is running with IO-Link.

NOTICE



A detailed description of the parameters and process data of the IODD is available at www.ebro-armaturen.com.

Process inputs

The control drive has 5 process inputs. 3 digital inputs and 2 analog inputs (4-20mA / 0-10V). This interface can be used to wire, for example, nearby sensors in the control drive, put them into opera-

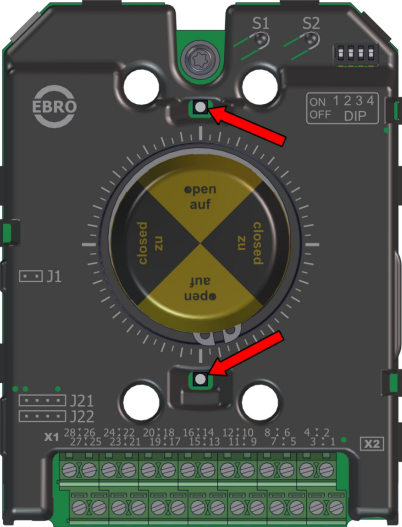
tion, and retrieve the states (high/low (digital) or 4-20mA (analog)) via the IO-Link. An analog input is intended for the setpoint control variable (see circuit diagram).

Advanced sensor technology

The positioner has a built-in acceleration sensor in addition to control drive and temperature sensors. This sensor is used to detect the installation position of the valve in addition to providing the acceleration value. Installation recognition and sensor value calibration will be run automatically when the switch box starts up.

Meaning of the LED display

The colors can be freely adjusted via IO-Link.

Figure	LED color (factory setting)	Description
	Green permanently lit	Status feedback "Position CLOSED"
	Yellow permanently lit	Status feedback "Position OPEN"
	Blue permanently lit	Status feedback "Intermediate position reached"
	Red 1 Hz alternating	Status feedback "Fault"
	Cyan 1 Hz alternating	Automatic tuning process (Autotune) running
	Red/cyan 1 Hz alternating	Automatic tuning process (Autotune) → Error
	Red/blue 1 Hz alternating	Control errors
	Blue/green 1 Hz alternating	Mode teaching in end positions, position CLOSED active
	Blue/yellow 1 Hz alternating	Mode teaching in end positions, position OPEN active
	Blue 1 Hz flashing	Mode end position teaching completed

Tab. 19: Meaning of the LED colors

DIP switch and push-button

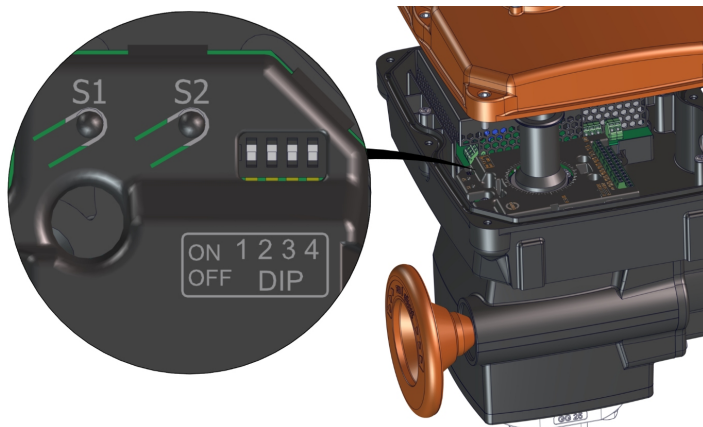


Fig. 11: DIP switch and push-button

DIP switches 1-4 are used to configure the following functions (default=OFF):

DIP	Function	OFF (default)	ON
1	Automatic / Manual	Automatic mode In automatic mode, buttons S1 + S2 have no function.	Manual mode Manual mode also activates the use of buttons S1 + S2. The S1 + S2 buttons only have a function in this mode.
2	Inversion of setpoint input	Rising current/voltage input equivalent to the valve position 4 mA = 0% (closed) 20 mA = 100% (open)	Inverted 4 mA = 100% (open) 20 mA = 0% (closed)
3	Setting end positions	Mode teaching end positions: Inactive	Mode teaching end positions: Active
4	Selection of signal type 4-20mA / 0-10 V	4-20 mA This applies to both the input signal (setpoint) and the output signal (feedback).	0-10 V This applies to both the input signal (setpoint) and the output signal (feedback).

Tab. 20: DIP switch

The button elements S1 and S2 are used to manually actuate the valve and start the automatic setting function (Autotune). DIP switch 1 must be set to "ON" (manual mode) and the end positions must be set.

Button	Function	Description
S1	Valve disc closes	Actuation (holding down) of the button causes activation in the closing direction. This function is available after a successful automatic setting (autotune).

Button	Function	Description
S2	Valve opens	Actuation (holding down) of the button causes activation in the opening direction. This function is available after a successful automatic setting (autotune).
S1 + S2 >5 s	Start Automatic tuning (autotune)	Successive actuation of button S1 and within <1 s of button S2 with an actuation time of >5 s starts the automatic setting function (autotune) and serves to tune the control drive with the valve unit.

Tab. 21: Push-button

Setting the end positions

The end positions must be set before autotuning.

1. Starting the function by DIP 3=ON
LED flashes blue/green
2. Manually move to travel stop 0% with the handwheel
3. Hold down S1 for 2 seconds
LED flashes blue/yellow
4. Manually move to travel stop 100% with the handwheel
5. Hold down S2 for 2 seconds
LED flashes blue
6. Ending the function by DIP 3=OFF

Automatic tuning (autotune)

WARNING



The actuator, the valve disc and the position indicator are moved several times in both directions during automatic adjustment (autotune)!

Injuries caused by crushing, pulling in, catching, grabbing, or rubbing and scraping as well as cutting.

- Do not touch any moving parts.
- Do not reach between the valve body and the valve disc.
- Wait until the parameterization is complete. The LED display is no longer lit in cyan.

WARNING



All (safety) functions are immediately available after a successful automatic setting (autotune) and switching the mode from "Manual" to "Automatic". This may leads to immediate activation of the actuator.

Injuries caused by crushing, pulling in, catching, grabbing, or rubbing and scraping as well as cutting.

- Do not touch any moving parts.
- Do not reach between the valve body and the valve disc.

NOTICE



The control drive is ready for use at assembly with a valve in the factory. The control drive must be parameterized in case of assembly by the owner.

NOTICE



Ensure that the valve disc can move freely in the piping.

The valve disc moves several times to the CLOSED position (0%) and to the OPEN position (100%) during automatic adjustment (autotune). The LED display lights up in cyan during automatic tuning (autotune); the LED display lights up in green once automatic tuning (Autotune) has been successfully completed.

1. Apply voltage to the control drive.
2. Open the cover of the switch box.
3. Set DIP switch 1 to "ON" (manual mode).
4. Start parameterization by actuating the S1 and S2 buttons within 1 second in succession and hold them for 5 seconds. The LED display changes to cyan.
5. Wait until the parameterization is complete. The LED display no longer lights up cyan. If the automatic setting (autotune) was not successful, the LED display flashes alternately in red and cyan. Further notices can be found in "Troubleshooting" in the chapter Maintenance.
6. Set DIP switch 1 to "OFF" (automatic mode).

NOTICE



Please note that all (safety) functions are available immediately after a successful automatic setting (autotune) and switching the mode from "Manual" to "Automatic". This may lead to immediate activation of the actuator!

Status LED

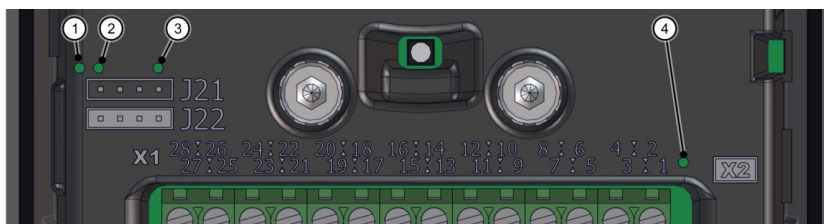


Fig. 12: Status LED

Position	Function
1	Control output 2 activated (green)
2	Power supply for Control unit is pending

Position	Function
3	Control output 1 activated (green)
4	Power supply is connected correctly (green)

Tab. 22: Status LED

5.2 Checks

The control drive supplied was produced, factory-set, and tested for the technical data specified in the order. Nevertheless, you must ensure that the control drive functions properly after it has been fully installed.

- Check that all control drive components are assembled correctly.
- Check that the control drive is correctly assembled on the valve.
- Check the grounding.

Protective earth

- This device has a protective earth connection. Ensure that the protective earth is properly connected. An improperly connected protective earth may lead to dangerous contact voltages in case of error.

Release the electrical connection.

- Perform a test run.
Check that the control drive moves to the intended end position or intermediate position with the corresponding control commands.

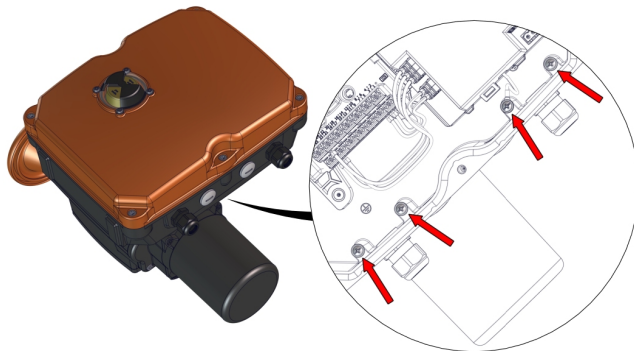


Fig. 13: Protective earth connection

6 OPERATION

CAUTION



The motor can grow up to 40 °C hot.

There is a risk of burns if hot surfaces are touched without protective gloves.

- Wear your personal protective equipment.

Wear personal protective equipment!



NOTICE



Also observe chapter "Target groups".

The position indicator visually shows the position of the valve disc. The position indicator shows the current position of the actuator.

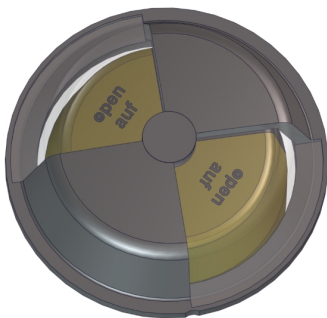


Fig. 14: Position indicator

The control drive is preset to modes at the factory. This simplifies and speeds up commissioning. Changeover is possible via IO-Link, please refer to the IODD.

NOTICE



The factory mode can be found in the type code on the identification plate. If the mode is changed, we recommend that the owner attaches a corresponding notice to the control drive.

Type code Mode	MS3-P-XX-... Control drive	MS3-D-XX-... On/off
Analog input 1 – function	(1) Setpoint specification	(0) Inactive
Analog input 2 – function	(0) Inactive	(0) Inactive

Type code Mode	MS3-P-XX-... Control drive	MS3-D-XX-... On/off
Analogue output function	(1) Actual position	(0) Inactive
Digital process input 1 – function	(0) Inactive	(0) Inactive
Digital process input 2 – function	(0) Inactive	(1) Mode on/off
Digital process input 3 – function	(0) Inactive	(0) Inactive
Digital output 3 function	(0) Inactive	(1) Feedback closed
Digital output 4 function	(0) Inactive	(1) Feedback open
Digital output 5 function	(1) Collective fault	(1) Collective fault
Tightly closing	(255) active	(255) active

Tab. 23: Modes

NOTICE



The tight-closing function ensures that the valve is completely closed if the setpoint is undercut by 5% (default, adjustable). This prevents damaging movements in the area of the valve sealing seat.

NOTICE



The windings of all motors are thermally protected and are automatically switched off in the event of overheating.

The control drive has an integrated thermoswitch in the winding, which triggers when the maximum allowable temperature is reached and interrupts the power supply to the motor. The motor stops, cools down, and the thermoswitch resets automatically.

6.1 EBRO Plus App

NOTICE



Attention

Operation of the control drive in an unprotected network environment:
Possible unauthorized read or write access to data.
Possible unauthorized influence on device function.
► Limit access to authorized users.
► Assign new password for the Bluetooth access.

The control drive contains digital communication interfaces. The range of the Bluetooth interface is limited. The spatial restriction serves as the first level of access protection. The owner must ensure that nobody gains unauthorized access to the installed systems. Security measures have been taken on the product side to restrict access to the device. The owner of the device must ensure that unauthorized persons have no physical access to the device. An individual risk assessment of the safety requirements must be performed and documented. If necessary, additional protective measures are required to ensure the safety of the appliance.

The first time the control drive is accessed via Bluetooth, a password query is started with a default password. The user will be prompted to change the password after entering the password. The data interface is only activated and access enabled once the password has been changed. Access is only

possible again by entering the changed password. The password must be changed by connecting to the EBRO Plus app when commissioning the control drive. The connection must be interrupted using the "Disconnect device" symbol before closing the application.

As long as a mobile end device is connected to the control drive, the control drive remains invisible to other mobile end devices. Further access is then not possible. Bluetooth communication is secured and encrypted via standards in the protocol. Access via Bluetooth can be completely disabled by removing jumper J1 on the control PCB. This interrupts the power supply to the interface module and access is not possible.

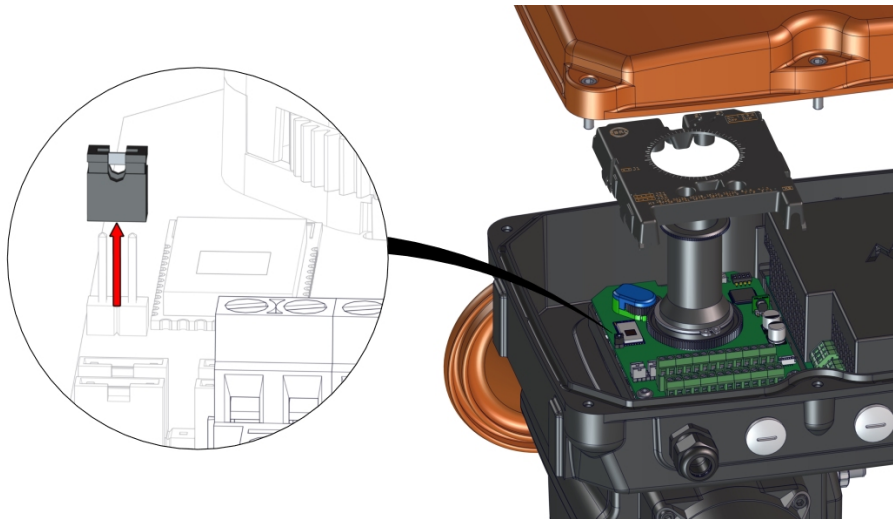


Fig. 15: Jumper

7 MAINTENANCE

DANGER



Danger to life due to electrical voltage!

Burns, unconsciousness, muscle cramps, cardiac arrhythmia, and even cardiac arrest.

- Ensure that there is no voltage pending.
- Ensure that the protective earth is properly connected.
- Secure the electric part-turn actuator against being switched on again.

WARNING



Parts may start moving unexpectedly.

Injuries caused by crushing, pulling in, catching, grabbing, or rubbing and scraping as well as cutting.

- Only perform assembly work while the device is de-energized.
- Do not reach between the valve body and the valve disc.

CAUTION



Assembly and disassembly of actuators when the valve is under pressure.

Parts may be accelerated in an uncontrolled manner.

- Only perform assembly and disassembly work when the valve is depressurized.

CAUTION



The motor can grow up to 40 °C hot.

There is a risk of burns if hot surfaces are touched without protective gloves.

- Wear your personal protective equipment.

NOTICE



Maintenance depends on various factors, such as the local environment, medium, temperature, and actuation. The owner will determine maintenance intervals in accordance with operational conditions and requirements.

Wear personal protective equipment!



NOTICE



Also observe chapter "Target groups".

Maintenance work is limited to an external inspection of the control drive:

- Keep the control drive free from deposits.
- Check the control drive for leaks.
- Check that the signage (identification plate / warning and mandatory stickers, if applicable) is complete and intact.



Fig. 16: Signage

Fault remedy control drive

Type of fault	Cause	Measure
Collective fault	Runtime monitoring: Exceeding the set runtime (default value: 0 s ► deactivated)	Check the following components: • Fitting valve actuated • Actuator function • Position of the cam disc • Jamming in the piping Fault is automatically reset as soon as the repeated trip is within the time tolerance.
	Max. duty cycles: Reach the maximum set duty cycles. (default value: 0 n ► deactivated)	Check the duty cycles performed. Reset or increase the counter.
	Temperature exceeded / Temperature undercut	Check the control drive environment.

Type of fault	Cause	Measure
Control drive oscillates around setpoint	Dead zone too small	Increasing the dead zone
Control drive does not respond to setpoint	DIP 1 still active (manual operation)	Switching to automatic mode
	Setpoint specification not configured correctly	The operating mode is pre-parameterized at the factory (for an explanation of the operating mode, see chapter "Operation"). The mode can be found in the type code on the identification plate A different mode can be parameterized via IO-Link or the EBRO Plus APP if required.

Tab. 24: Fault remedy switch box

Type of fault	Cause	Measure
Actuator does not start	Thermoswitch has tripped	Resets automatically after cooling down
Motor grows very hot	Duty cycle too long	Check cycle times
	Faulty wiring	Compare existing circuit to circuit suggestions if necessary
	Mechanical stop is reached before the limit switch is activated	Repeat end position adjustment
	Valve torque too high	Check the torque of the valve and compare it with the manufacturer's specifications.
Blockage recognition trips	Valve torque too high	Compare to manufacturer's specifications.
	Actuator hits the mechanical stop	Repeat end position adjustment
	Blockage in the piping	Check valve and piping
Condensation in the actuator	Heating not connected	Supply heating permanently with voltage
	Sealing seat or cable gland faulty	Check and rework if necessary

Tab. 25: Troubleshooting E65-160

Contact

 +49 2331 904-0
 service@ebro-armaturen.com



7.1 Bill of materials

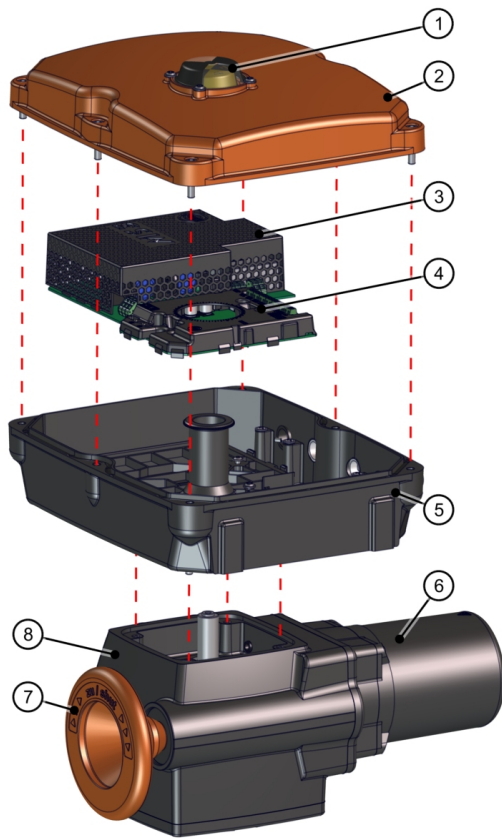


Fig. 17: Components

Item	Naming
1	Position indicator
2	Switch box cover
3	Control PCB
4	Power PCB
5	Switch box base
6	Motor
7	Manual emergency override
8	Part-turn actuator with gearbox

Tab. 26: Bill of materials MS3

8 DECOMMISSIONING/DISASSEMBLY

DANGER



Danger to life due to electrical voltage!

Burns, unconsciousness, muscle cramps, cardiac arrhythmia, and even cardiac arrest.

- Ensure that there is no voltage pending.
- Ensure that the protective earth is properly connected.
- Secure the switch box against reactivation.

WARNING



The control drive may fall if lifting gear and lifting devices with insufficient load-bearing capacity are used.

Injuries and even death may result from crushing, shearing or impacts.

- Only use lifting gear and lifting devices with sufficient load-bearing capacity.
- Only use lifting gear and load handling attachments that are in an undamaged condition.
- Never stand underneath any suspended loads.

WARNING



Parts may start moving unexpectedly.

Injuries caused by crushing, pulling in, catching, grabbing, or rubbing and scraping as well as cutting.

- Only perform disassembly work while the system is depressurized.
- Only perform disassembly work while the device is de-energized.
- Do not reach between the valve body and the valve disc.

CAUTION



The motor can grow up to 40 °C hot.

There is a risk of burns if hot surfaces are touched without protective gloves.

- Wear your personal protective equipment.

Wear personal protective equipment!



NOTICE

Also observe chapter "Target groups".

For extended deactivation:

- Protect the control drive from soiling and dust.
Also observe the general rules for storage, transport, and assembly in the chapter "Transport and assembly".
- Check the control drive for damage and function at recommissioning.

For permanent decommissioning:

- Dispose of the components in an environmentally friendly and professional manner in accordance with local regulations.
- Look out for oily residues in actuators and bearings.

For disassembly, refer to chapter "Transport and assembly" et seq.

EU Declaration of Conformity

The manufacturer

EBRO ARMATUREN Gebr. Bröer GmbH
Karlstraße 8
DE 58135 Hagen

declares that the series

EBRO MS3 in the variants E65 MS3, E110 MS3, and E160 MS3

hereby, subject to its sole responsibility, that the above devices comply with the essential requirements of the following directives and that the following harmonized standards were applied:

Low Voltage Directive 2014/35/EU (LVD)

DIN EN IEC 62477-1:2024-09	Safety requirements for power electronic converter systems and equipment - Part 1: General
DIN EN 61010-1:2020-03	Safety requirements for electrical equipment for measurement, control, and laboratory use - part 1: General requirements

RoHS Directive 2011/65/EU

DIN EN IEC 63000:2019	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
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Radio Equipment Directive 2014/53/EU (RED)

DIN EN 300328:2019-10	Wideband transmission systems - Data transmission equipment operating in the 2,4 GHz band - Harmonised Standard for access to radio spectrum
V 2.2.2	
DIN EN 301489-1:2020-06	Electromagnetic compatibility (EMC) standard for radio equipment and services - Part 1: Common technical requirements - Harmonised Standard for Electromagnetic compatibility
V2.2.3	
DIN EN 301489-17:2025-02V3.2.4	Electromagnetic compatibility (EMC) standard for radio equipment and services - Part 17: Specific conditions for Broadband and Wideband Data Transmission Systems - Harmonised Standard for Electro-Magnetic Compatibility

Electromagnetic Compatibility Directive 2014/30/EU (EMC)

DIN EN IEC 61800-3:2024-04	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods for PDS and machine tools
DIN EN 61000-6-2:2006-03	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
EN 61000-6-3:2022-06	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic currents

Risk analysis in accordance with:

DIN EN ISO 12100:2011-03	Safety of machinery - General principles for design - Risk assessment and risk reduction
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Hagen, April 15, 2026

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Chair of the management, Lydia Bröer

Notice:

This is a translated version of the original document. Only the signed original document in German is legally binding.

Declaration of Incorporation

The manufacturer

EBRO ARMATUREN Gebr. Bröer GmbH
Karlstraße 8
DE 58135 Hagen

declares that the series:

EBRO MS3 in the variants E65 MS3, E110 MS3, and E160 MS3

in accordance with the

Machinery Directive 2006/42/EC (MD)

1. are "partly completed machinery" within the meaning of Art. 2 g) of this directive.
2. This declaration is the declaration of incorporation within the meaning of this directive.
3. The following basic safety and health protection requirements in accordance with Annex I of Directive 2006/42/EC are complied with:
Articles 1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.6, 1.3.1, 1.3.4, 1.3.7, 1.3.8, 1.5.1, 1.5.2, 1.5.3, 1.6.3, 1.7.1, 1.7.3, 1.7.4
4. The risk analysis has been performed in accordance with DIN EN ISO 12100:2011-03

The following product documentation is available:

Technical data sheets, operating manual, assembly instructions

The following applies to compliance with the above directive:

1. The user must comply with the <intended use> as defined in the "assembly instructions" enclosed with the delivery and must observe all notices in this manual.
Failure to comply with this instruction may – in important cases – release the manufacturer from their product liability.
2. Commissioning of this partly completed machinery is prohibited until the system in which the actuator is installed has been declared in conformity with all applicable EC directives mentioned above by the person responsible. A separate declaration is provided for the above actuator.
3. The manufacturer EBRO-ARMATUREN Gebr. Bröer GmbH has performed and documented the necessary risk analyses. The employee responsible for this available documentation is Mr. Matthias Jortzik, EBRO ARMATUREN Gebr. Bröer GmbH, Karlstraße 8, 58135 Hagen, Germany.

Hagen, April 15, 2026

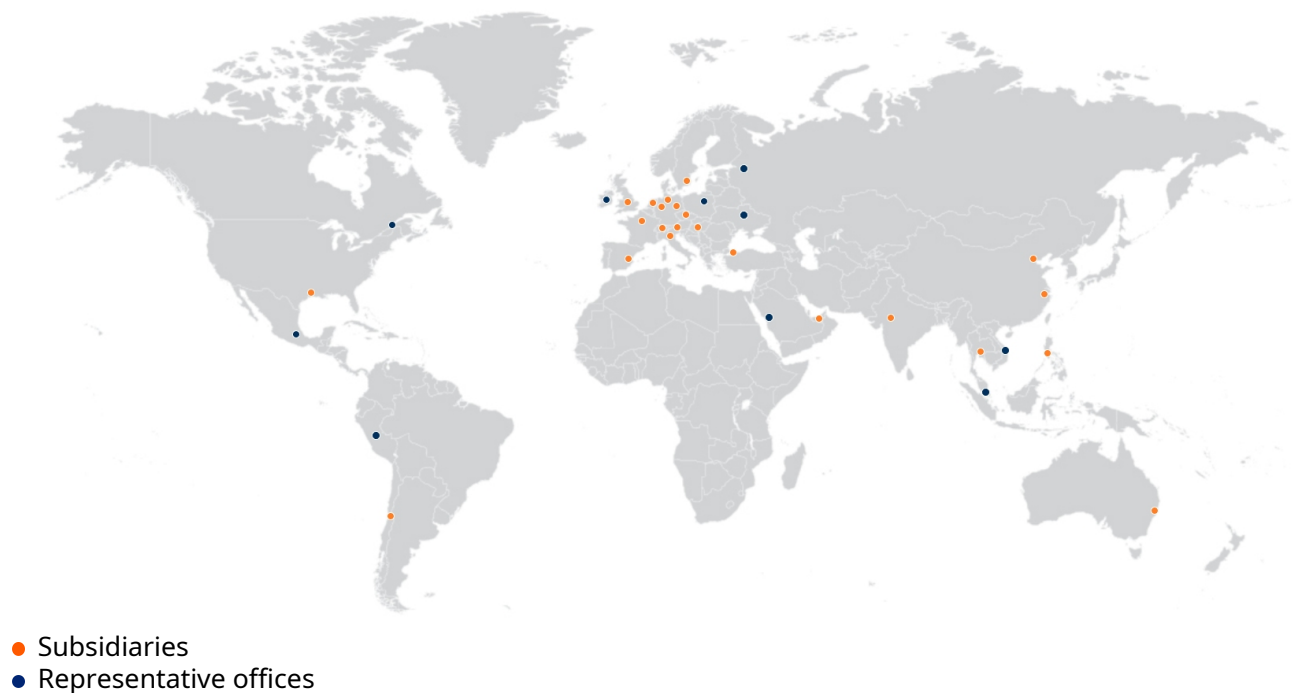
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Chair of the management, Lydia Bröer

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THE WORLD OF EBRO ARMATUREN

Our international network



Since the company was founded in 1972, EBRO ARMATUREN has been developing, producing and selling shut-off and control valves as well as automation technology for industrial applications. More than 1,000 employees at two domestic and 30+ international subsidiaries ensure that EBRO products are available in over 100 countries worldwide. Within the global network, production takes place at the headquarters in Germany and in Italy, Sweden, China and Thailand with uniformly high manufacturing and quality standards.

In 2005, the Swedish manufacturer Stafsjö Valves AB was acquired and the product range was extended by an extensive portfolio of knife gate valves.

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A company of the Bröer Group



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