

Acvatix™

## Rotary Actuator for Ball Valves Modbus RTU

G..B111.9E/MO



### Rotary actuator 5/10 Nm for 6-port control ball valves and 2-/3-port ball valves with Modbus communication

- GDB111.9E/MO with 5 Nm nominal torque
- GLB111.9E/MO with 10 Nm nominal torque
- Operating voltage AC 24 V
- For air-handling units (AHU) and other heating / cooling applications
- Modbus RTU communication
- UL listed
- For 2-port and 3-port control ball valves, internally threaded connections (VAI61.. and VBI61..) or externally threaded connections (VAG61.. and VBG61..), DN15 to DN50
- For 6-port control ball valve, externally threaded connections (VWG41..), DN20

## Functions

Function	Description
<b>Communication</b>	Modbus RTU (RS-485), galvanically separated
<b>Functions</b>	<ul style="list-style-type: none"> <li>- Setpoint 0..100%,</li> <li>- Actual value for position 0..100%</li> <li>- Override control Open / Close / Min / Max / Stop</li> <li>- Setpoint monitoring and backup mode</li> </ul>
<b>Supported baud rates</b>	9.6, 19.2, 38.4, 57.6, 76.8, 115.2 kbaud
<b>Supported transmission formats</b>	1-8-E-1, 1-8-N-1-, 1-8-O-1, 1-8-N-2
<b>Termination</b>	120 Ω electronically switchable
<b>Supported Modbus function codes</b>	03 Read Holding Registers, 04 Read Input Registers, 06 Write Single Register, 16 Write Multiple registers (max. 120 registers within one message)

For a detailed description of specific functions please refer to the product documentation CE1Z4634.

## Type summary

Product no.	Stock no.	Operating voltage	Positioning signal	Power consumption	Posit. time	Manual adjuster	Position feedback
GLB111.9E/MO	S55499-D206	AC 24 V	Modbus RTU	1 VA / 0,5 W 3 VA / 2,5 W <sup>1)</sup>	150 s	Yes	Yes
GDB111.9E/MO	S55499-D202						

<sup>1)</sup> Actuator rotates

## Accessories / Spare parts

### Spare parts

#### Ordering (Example)

Product no.	Stock no.	Description	Amount
GLB111.9E/MO	S55499-D206	Rotary actuator for Ball Valves with Modbus RTU communication	1

### Accessories

Type	Stock no.	Description
ALJ100	S55846-Z115	Temperature adapter for ball valves

## Equipment combinations

The rotary actuators are suitable for operation of the following Siemens ball valves:

VA..61.. 2-port and VB..61.. 3-port control ball valves							
Control ball valves with:				$k_{vs}$ [m³/h]	DN	G..B..9E..	
internal threads <sup>1)</sup>	Rp	external threads <sup>2)</sup>	G..B			$\Delta p_{max}$	$\Delta p_s$
–	–	VAG61.15..	G 1 B	1...6.3	15	350	1400
VAI61.15..	Rp ½"	–	–	0.25...10	15		
VAI61.20..	Rp ¾"	VAG61.20..	G 1 ¼ B	4...10	20		
VAI61.25..	Rp 1"	VAG61.25..	G 1 ½ B	6.3...16	25		
VAI61.32..	Rp 1¼"	VAG61.32..	G 2 B	10...25	32		1000
VAI61.40..	Rp 1½"	VAG61.40..	G 2 ¼ B	16...40	40		800
VAI61.50..	Rp 2"	VAG61.50..	G 2 ¾ B	25...63	50		600
Control ball valves with:				$k_{vs}$ [m³/h]	DN	G..B..9E..	
internal threads <sup>1)</sup>	Rp	external threads <sup>2)</sup>	G..B			$\Delta p_{max}$	$\Delta p_s$
VBI61.15..	Rp ½"	VBG61.15..	G 1 B	1.6...6.3	15	350	
VBI61.20..	Rp ¾"	VBG61.20..	G 1 ¼ B	4...6.3	20		
VBI61.25-10	Rp 1"	VBG61.25-10	G 1 ½ B	10	25		
VBI61.32-16	Rp 1¼"	VBG61.32-16	G 2 B	16	32		
VBI61.40-25	Rp 1½"	VBG61.40-25	G 2 ¼ B	25	40		
–	–	VBG61.50-40	G 2 ¾ B	40	50		
VBI61.50..	Rp 2"	–	–	40...63	50		

<sup>1)</sup> Data sheet N4211

<sup>2)</sup> Data sheet N4212

VWG41.. 6- port control ball valve							
Ball valves with:				$k_{vs}$ [m³/h]	DN	G..B1..9E..	
internal threads	Rp	external threads <sup>5)</sup>	G..B			$\Delta p_{max}$	$\Delta p_s$
–	–	VWG41.20..	G1B	0.25 – 4.25	20	200	

<sup>5)</sup> Data sheet A6V10564480

Product no.	Stock no.	Description	Doc. type	Doc. number
AST20	S55499-D165	Handheld tool for commissioning and service	Datasheet	A6V10631836 <sup>1)</sup>
			Operating manual	A6V10555077 <sup>1)</sup>

## Product documentation

Title	Topic	Document ID
Rotary damper actuators without spring return GDB/GLB - Technical basics	Detailed information about rotary actuators without spring return (5/10 Nm), incl. Modbus types	CE1Z4634 <sup>1)</sup>
Mounting Instruction Rotary-type actuator	Mounting / installation instruction for G..B111.9E/MO	A6V10920701 <sup>1)</sup>

<sup>1)</sup> Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

<http://siemens.com/bt/download>

For more detailed explanations on device states, functions and error display, cf. product documentation CE1Z4634 <sup>1)</sup>.

### Push-button operation

Activity	Push-button operation	Confirmation
Display current address (in reverse order)	Press button briefly (<1 s)	Current address is displayed
Enter Modbus address with push-button	Press and hold button 1...5 s	See description next page
Enter push-button addressing mode (for use with Climatix™ controllers)	Press and hold button 5...10 s	LED shines orange (release button when red LED gets dark). Timeout after 1 min.
Reset to factory settings	Press and hold button >10 s	LED flashes orange

### LED colors and flashing patterns patterns

Color	Pattern	Description
Green	steady	Start-up
	1 s on / 5 s off	Fault free operation ("heart beat")
	flashing	Bus traffic
Orange <sup>1)</sup> / green	1 s orange / 1 s green	Device is in override control
Orange <sup>1)</sup>	1s on / 1 off	Bus parameters not yet configured
Orange	1s on / 5s off	Backup mode entered
Red	Steady	Mechanical fault / device jammed
	1s on / 5s off	Internal error
	0.1s on / 1s off	Invalid configuration, e.g. Min = Max

<sup>1)</sup> The color of the orange LED can vary depending on the viewing angle, and appear more yellow or greenish.

### Resetting the device by push button


The damper actuators can be reset by push-button:

1. Press and hold button >10 s.  
⇒ LED flashes **orange**.
2. Release button *while* LED is flashing.  
⇒ LED flashes for another 3 s.  
⇒ If the button is pressed again *during* these 3 s, **the reset is canceled**.
3. Press button *after* these 3 s.  
⇒ LED is lit **red** (reset) while the device restarts.

### Display current address (starting from lowest address position)

The Modbus address can be set without an extra tool using pushbutton addressing.

- ◆ Briefly press button (<1 s).
- ⇒ Current Modbus address is indicated.

Colors / blinking pattern		
1-digit: <b>rot</b>	10-digit: <b>grün</b>	100-digit: <b>orange</b>
Example for address 124:		
LED		
Hinweis	The address is both entered and indicated starting at the lowest digit (1st digit), see figure above. (Example: 124 starts with 4 x red)	

### Set new address (digits in reverse order)

- 1. Enter addressing mode:**
    - Press button >1 s, until LED is lit **red**.
    - Release button (before LED turns off).
  - 2. Enter digits: Press button n times.**
    - ⇒ LED flashes 1 x per press of the button as feedback.
    - Colors: 1-digit: **red** / 10-digit: **green** / 100-digit: **orange**
  - 3. Save digits:**
    - Press and hold button, until LED is lit the color of the following digit.
    - Release button.
  - 4. Save address:**
    - Press button, until LED is lit **red** (confirmation).
    - Release button.
- ⇒ Address is saved and repeated 1 x as confirmation.



Digits are skipped by holding the button until the LED is lit the color of the digit to be entered.



An address can be saved at any point, i.e. already after setting the 1-digit, or after setting the 1- and 10-digits.



If after entering the address, the button is released before the LED is lit red, the entered address is discarded.

### Set address "124"

1. Enter addressing mode: press button 1...5 s.
2. Enter 1-digit: press button 4 x.  
⇒ LED flashes **red** 1 x per press of the button.
3. Save 1-digit: press and hold button.  
⇒ LED is lit **green**.
4. Release button.
5. Enter 10-digit: press button 2 x.  
⇒ LED flashes **green** 1 x per press of the button.
6. Save 10-digit: press and hold button.  
⇒ LED is lit **orange**.
7. Release button.
8. Enter 100-digit: press button 1 x.  
⇒ LED flashes **orange** 1 x per press of the button.
9. Save address: press and hold button.  
⇒ LED is lit **red**.
10. Release button.  
⇒ Address is saved and repeated 1 x as confirmation.

### Set address "50"

1. Enter addressing mode: press button 1...5 s.
2. Skip 1-digit: press and hold button.  
⇒ LED is lit **green**.
3. Release button.
4. Enter 10-digit: press button 5 x.  
⇒ LED flashes **green** 1 x per press of the button.
5. Save 10-digit: press and hold button.  
⇒ LED is lit **orange**.
6. Release button.
7. Save address (skip 100-digit): press and hold button.  
⇒ LED is lit **red**.
8. Release button.  
⇒ Address is saved and repeated 1 x as confirmation.

### Set address "7"

1. Enter addressing mode: press button 1...5 s.
2. Enter 1-digit: press button 7 x.  
⇒ LED flashes **red** 1 x per press of the button.
3. Save address (skip 10- and 100-digits): press and hold button.  
⇒ LED is lit **red**.
4. Release button.  
⇒ Address is saved and repeated 1 x as confirmation.

For a detailed description of specific functions please refer to the product documentation CE1Z4634 <sup>1)</sup>.

Reg.	Addr.	Name	R/W	Unit	Scaling	Range / enumeration
<b>Process Values</b>						
1	0	Setpoint	RW	%	0.01	0...100 % = 0...10000
2	1	Override control	RW	--	--	0 = Off / 1 = Open / 2 = Close / 3 = Stop / 4 = GoToMin / 5 = GoToMax
3	2	Actual position	R	%	0.01	0...100 % = 0...10000
256	255	Command	RW	--		0 = Ready / 1 = Adaption / 2 = Selftest / 3 = RelnitDevice / 4 = RemoteFactory Reset

Reg.	Addr.	Name	R/W	Unit	Scaling	Range / enumeration
<b>Parameters <sup>1)</sup></b>						
257	256	Opening direction	RW	--	--	0 = CW / 1 = CCW
258	257	Adaptive mode	RW	--	--	0 = Off / 1 = On
259	258	Operating mode	RW	--	--	1 = POS
260	259	MinPosition	RW	%	0.01	0...100 % = 0...10000
261	260	MaxPosition	RW	%	0.01	0...100 % = 0...10000
262	261	Actuator running time	R	s	1	150
513	512	Backup mode	RW	--	--	0 = Go to BackupPosition / 1 = Keep last position / 2 = Disabled
514	513	Backup position	RW	%	0.01	0...100 % = 0...10000
515	514	Backup timeout	RW	s	1	0..900
516	515	Startup setpoint	RW	%	0.01	0...100 % = 0...10000
764	763	Modbus address	RW	--	--	1..245 246 = On-event addressing 255 = "unassigned" <sup>2)</sup>
765	764	Baud rate	RW	--	--	0 = auto / 1 = 9600 / 2 = 19200 / 3 = 38400 / 4 = 57600 / 5 = 76800 / 6 = 115200
766	765	Transmission format	RW	--	--	0 = 1-8-E-1 / 1 = 1-8-O-1 / 2 = 1-8-N-1 / 3 = 1-8-N-2
767	766	Bus termination	RW	--	--	0 = Off / 1 = On
768	767	Bus conf. command	RW	--	--	0 = Ready / 1 = Load / 2 = Discard
769	768	State	R	--	--	See below

<sup>1)</sup> Parameters may not be written cyclically!

<sup>2)</sup> If the address is set to 248 or higher, it is instead automatically set to the initial address 255 as soon as Reg. 268 is set to 1 ("Load").

Reg.	Name	R/W	Meaning	Example
<b>Statistics/Counters</b>				
1025	Cumulated up time (HWord)	R	HWord + LWord = cumulated time device has been on (hex), i.e. the motor has been running or holding, in seconds	<ul style="list-style-type: none"> <li>1025 = 00 12 (hex)</li> <li>1026 = A2 E1 (hex)</li> <li>12A2E1 (hex) → 1221345 (dec)</li> </ul> → Cum. up time = 1'221'345 s
1026	Cumulated up time (LWord)	R		
1027	Cumulated running time (HWord)	R	HWord + LWord = cumulated running time (hex), i.e. for how long has the motor run, in seconds	<ul style="list-style-type: none"> <li>1027 = 00 08 (hex)</li> <li>1028 = 12 51 (hex)</li> <li>81251 (hex) → 528977 (dec)</li> </ul> → Cum. running time = 528.977 s
1028	Cumulated running time (LWord)	R		
1029	Repositioning counter (HWord)	R	HWord + LWord = how often has the positioning signal been changed	<ul style="list-style-type: none"> <li>1029 = 00 00 (hex)</li> <li>1030 = A0 01 (hex)</li> <li>A001 (hex) → 40961 (dec)</li> </ul> → Repositioned = 40.961 times
1030	Repositioning counter (LWord)	R		
1031	Power-up counter	R	How often (hex) has the device been started up	<ul style="list-style-type: none"> <li>1031 = 00 A2 (hex) → 162 (dec)</li> </ul> → Powered up = 162 times
1032	Jam counter	R	How often (hex) has the device breached the valve jam tolerance (reg. 264)	<ul style="list-style-type: none"> <li>1032 = 00 02 (hex) → 2 (dec)</li> </ul> → Jams counted = 2

Reg.	Name	R/W	Meaning	Example																								
Device information																												
1281	Factory index	R	Two bytes, each encoding an ASCII character	<ul style="list-style-type: none"><li>1281 = 00 5A (hex) → 0Z</li></ul> → Device is of series = "Z"																								
1282	Factory date (HWord)	R	Two bytes, the lower encoding the year (hex)	<ul style="list-style-type: none"><li>1282 = 00 18 (hex)</li><li>1283 = 02 0F (hex)</li></ul> <table><tr><td></td><td></td><td colspan="2">HWord</td><td colspan="2">LWord</td></tr><tr><td></td><td></td><td>-</td><td>YY</td><td>MM</td><td>DD</td></tr><tr><td></td><td>Hex</td><td>00</td><td>18</td><td>02</td><td>0F</td></tr><tr><td></td><td>Dec</td><td>00</td><td>24</td><td>02</td><td>15</td></tr></table>			HWord		LWord				-	YY	MM	DD		Hex	00	18	02	0F		Dec	00	24	02	15
		HWord		LWord																								
		-	YY	MM	DD																							
	Hex	00	18	02	0F																							
	Dec	00	24	02	15																							
1283	Factory date (LWord)	R	Two bytes, HByte encoding the month (hex), LByte encoding the day (hex)	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Hex</td><td>00</td><td>18</td><td>02</td><td>0F</td></tr><tr><td></td><td>Dec</td><td>00</td><td>24</td><td>02</td><td>15</td></tr></table> → Device was manufactured = February 15, 2024								Hex	00	18	02	0F		Dec	00	24	02	15						
	Hex	00	18	02	0F																							
	Dec	00	24	02	15																							
1284	Serial number (HWord)	R	HWord + LWord = Serial no. (hex)	<ul style="list-style-type: none"><li>1284 = 00 0A (hex)</li><li>1285 = A2 06 (hex)</li><li>→ AA206 (hex) = 696838 (dec)</li></ul> → Device has serial no. = "696838"																								
1285	Serial number (LWord)	R																										
1289	Firmware version (HWord)	R	Two bytes, HByte corresponds to the major version, LByte corresponds to the minor version	<ul style="list-style-type: none"><li>1289 = 03 01 (hex)</li><li>1290 = 03 07 (hex) → 775 (dec)</li></ul> → Firmware version = "03.01.0775"																								
1290	Firmware revision (LWord)	R	Two bytes, encoding the patch version (hex)																									



Reg.	Name	R/W	Meaning	Example
<b>Device information</b>				
1291	Hardware version	R	Two bytes, each encoding an ASCII character	<ul style="list-style-type: none"> <li>1291 = 42 00 (hex)</li> </ul> → Hardware version = "B"
1409...16	ASN [characters 16...1]	R	Two bytes per register, each of which encodes an ASCII character. First characters encoded in Reg. 1409.	<ul style="list-style-type: none"> <li>1409 = 47 4C (hex) → GL</li> <li>1410 = 42 31 (hex) → B1</li> <li>1411 = 31 31 (hex) → 11</li> <li>1412 = 2E 39 (hex) → .9</li> <li>1413 = 45 2F (hex) → E/</li> <li>1414 = 4D 4F (hex) → MO</li> </ul> → ASN = "GLB111.9E/MO"

## Register 769 "State"

<b>Service flags</b>			
Bit 00	1 = Reserved	Bit 06	1 = Not available
Bit 01	1 = Backup mode active	Bit 07	1 = Not available
Bit 02	1 = Not available	Bit 08	1 = Not available
Bit 03	1 = Not available	Bit 09	1 = Self-test failed
Bit 04	1 = Mechanical fault, device jammed or manual override <sup>1)</sup> or calibrating <sup>1)</sup>	Bit 10	1 = Self-test successful
Bit 05	1 = Not available	Bit 11	1 = Not available

<sup>1)</sup> After 10 seconds

## Supported function codes

<b>Function codes</b>	
03 (0x03)	Read Holding Registers
04 (0x04)	Read Input Registers
06 (0x06)	Write Single Register
16 (0x10)	Write Multiple registers (Limitation: Max. 120 registers within one message)

## Notes

## Safety

### **Caution**

#### **National safety regulations**

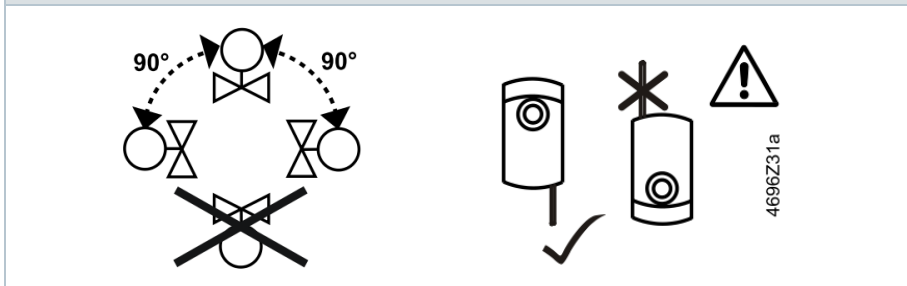
Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national provisions and comply with the appropriate safety regulations.

## Mounting

- Do not open the rotary actuators

Mounting positions, cf. mounting instr. A6V10920701 <sup>1)</sup>

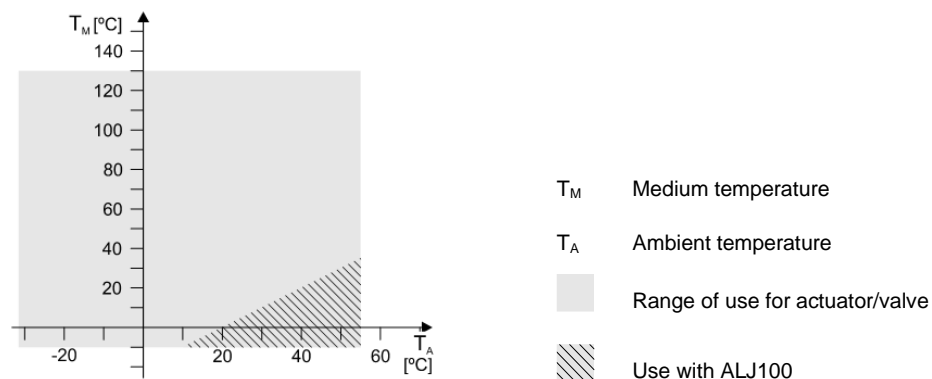


<sup>1)</sup> Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following internet address: <http://siemens.com/bt/download>

## Engineering

GDB..9E.. actuators may only be used at medium temperatures  $> 0\text{ }^{\circ}\text{C}$ .

If condensation occurs at the mounting site, the use of the temperature adapter ALJ100 is recommended in order to protect the actuator. If the medium temperature is  $\leq 0\text{ }^{\circ}\text{C}$ , the adapter shaft must be greased with silicon grease.



$T_M$  Medium temperature  
 $T_A$  Ambient temperature  
Range of use for actuator/valve  
Use with ALJ100

## Commissioning

### Parameterization

The following parameters must be checked or set prior to commissioning:

Parameter	Range	Description	Factory setting
Opening direction	CW (R) / CCW (L)	Opening direction of rotary actuator	CW (R)

### Commissioning workflow 1: Full or partial configuration by tool

When using the AST20 handheld tool, all bus and actuator parameters can be set.

- Connect the AST20 to the rotary actuator and navigate to the bus configuration menu
- Set bus parameters as desired
- Optionally make changes on actuator parameters.

#### Note

With AST20, all parameters can be set using the mass configuration function. The bus parameters are included in the mass configuration function. It can be selected that the address is automatically incremented with each programmed actuator.

## Commissioning workflow 2: Full or partial configuration via bus

The devices can be configured via bus if the pre-commissioning settings allow for a connection between the Modbus client/programming tool and peripheral devices (i.e. non-conflicting addresses and matching baud rate / transmission format).

- *Full configuration over bus:* Given a unique Modbus address, the client/programming tool can establish a connection after start-up using the presets for transmission format and baud rate (or auto-baud).
- *Partial configuration over bus:* Given a non-unique Modbus address, the address must first be set to a unique value, e.g. by inputting it with the pushbutton. Subsequently, the client/programming tool can establish a connection after start-up using the presets for transmission format and baud rate (or auto-baud).

Once a connection is established, the bus and actuator parameters can be set via bus to the intended values. When writing to the bus parameters, "1 = Load" must be written to Reg. 768 within 30 seconds; otherwise, the changes are discarded.

**Example:** Table shows bus configuration registers before and after changing them over bus.

Reg.	Name	Pre-commissioning	New value (ex.)
764	MacAddress	46	12
765	Baud rate	0 = auto	1 = 9600
766	Transmission Mode	0 = 1-8-E-1	3 = 1-8-N-2
767	Termination	0 = Off	0 = Off
768	BusConfigCmd	0 = Ready	1 = Load

## Maintenance

The rotary actuators are maintenance-free.

Disconnect the electrical connections from the terminals if you want to work at the device.

## Disposal



The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

## Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

## Technical data

Power supply		
Operating voltage	G..B111.9E/..	AC 24 V $\pm$ 20 % (SELV) or AC 24 V class 2 (US)
Frequency		50/60 Hz
Power consumption	at 50 Hz	
	Actuator holds	1 VA / 0.5 W
	Actuator rotates	3 VA / 2.5 W
Function data		
Positioning time for nominal rotation angle	G..B111.9E/..	150 s (50 Hz) 120 s (60 Hz)
Nominal / maximum torque	GLB..	10 Nm / < 14 Nm
	GDB..	5 Nm / < 7 Nm
Nominal / maximum rotation angle		90° / 95° $\pm$ 2°
Direction of rotation	Adjustable by tool or over bus	Clockwise (CW) / Counter-clockwise (CCW)
Permissible medium temperature in the valve in combination with GDB.. actuators		0...120 °C
Connection cables		
Cable length		0.9 m
Power supply / Communication	Number of cores and cross-sectional area	5 x 0.75 mm <sup>2</sup>
Service interface	Terminal strip	7-pin, grid 2.00 mm
Communication		
Communication protocol	Modbus RTU	RS-485, galvanically separated
	Number of nodes	Max. 32
	Address range	1...245 / 255 Default: 255
	Transmission formats	1-8-E-1 / 1-8-O-1 / 1-8-N-1 / 1-8-N-2 Default: 1-8-E-1
	Baud rates (kBaud)	Auto / 9.6 / 19.2 / 38.4 / 57.6 / 76.8 / 115.2 Default: Auto
	Termination	120 $\Omega$ electronically switchable Default: Off
Degree of protection		
Degree of protection	Degree of protection acc. to EN 60529 (see mounting instruction)	IP54
Safety class	Safety class acc. to EN 60730	III

Environmental conditions		
Applicable standard		IEC 60721-3-x
Operation	Climatic conditions	Class 3K6
	Mounting location	Indoors
	Temperature general	-32...55 °C
	Humidity (non condensing)	5...95 % r. h.
Transport	Climatic conditions	Class 2K3
	Temperature	-25...70 °C
	Humidity	5...95 % r. h.
Storage	Climatic conditions	Class 1K3
	Temperature	-5...45 °C
	Humidity	5...95 % r. h.

Directives and Standards		
Product standard		EN60730-x
Electromagnetic compatibility (Application)		For residential, commercial and industrial environments
	<b>GLB111.9E/MO</b>	<b>GDB111.9E/MO</b>
EU Conformity (CE)	A5W00000176 <sup>1)</sup>	A5W0003842 <sup>1)</sup>
UK Conformity (UKCA)	A5W00198019A <sup>1)</sup>	A5W00198029A <sup>1)</sup>
RCM Conformity	A5W00000177 <sup>1)</sup>	A5W0003843 <sup>1)</sup>
UL, cUL	AC 24 V	UL 873 <a href="http://ul.com/database">http://ul.com/database</a>

Environmental compatibility	
The product environmental declaration A6V10209938 <sup>1)</sup> contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).	

Dimensions / Weight		GLB111.9E/MO	GDB111.9E/MO
Weight	Without packaging	0,9 kg	0,9 kg
Dimensions		88 x 112 x 143 mm	88 x 112 x 143 mm

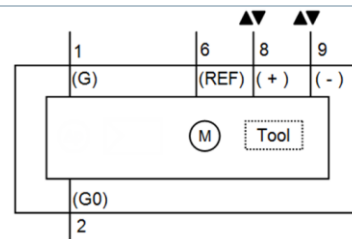
<sup>1)</sup> The documents can be downloaded from <http://siemens.com/bt/download>

## Diagrams

### Internal diagrams

The rotary actuators are supplied with a prewired connecting and communication cable. All interconnected devices must be connected to the same G0.

Core design.	Core color	Terminal code	Description
1	red (RD)	G	System voltage AC 24 V
2	black (BK)	G0	System neutral AC 24 V
6	violet (VT)	REF	Reference
8	grey (GY)	+	Bus (Modbus RTU)
9	pink (PK)	-	Bus (Modbus RTU)

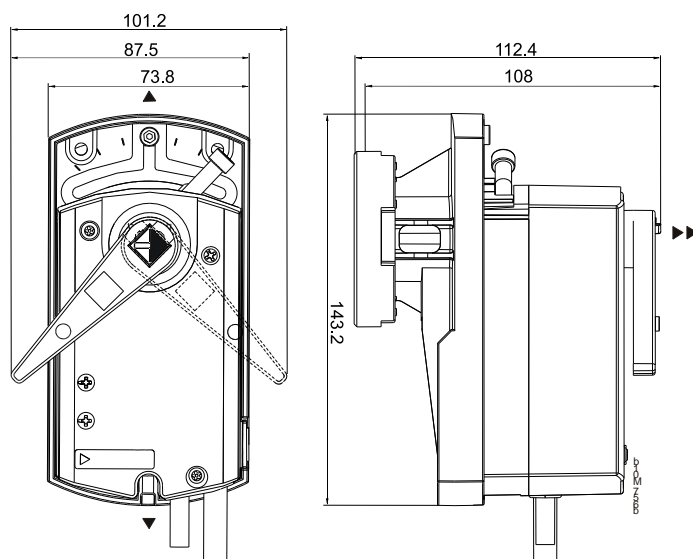


### Note

The operating voltage at terminals G and G0 must comply with the requirements under SELV or PELV. Safety transformers with twofold insulation as per EN 61558 required; they must be designed to be on 100 % of the time.

## Dimensions

### Actuator

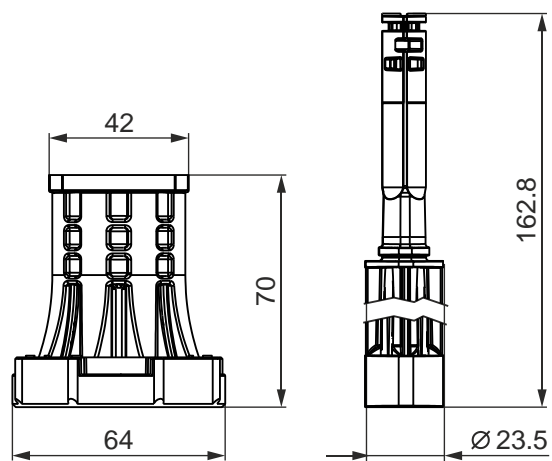


Dimensions in mm

- ▶ = > 100 mm
- ▶▶ = > 200 mm

Minimum clearance from ceiling or wall for mounting, connection, operation, maintenance etc.

### Temperature adapter (optional)



### Revision numbers

Type	Valid from rev. no.
GLB111.9E/MO	..B
GDB111.9E/MO	..C

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