

OpenAir™

Air damper actuators for railway vehicles

GDD261.1E/RW (DC 110 V)



Electromotoric rotary actuators for modulating control

- Nominal torque 5 Nm
- Operating voltage DC 110 V =
- Runtime 30 s
- Rotary angle 0...90°
- Connection cables railway specific
- Degree of protection IP54
- Printed circuit board with protective coating

Features

Air damper actuators in difficult operational conditions; they meet the main requirements for:

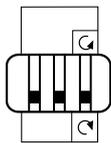
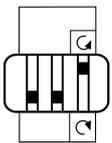
- EN 50155 (Railway applications - Electronic equipment used on rolling stock)
- EN 45545 (Railway applications - Fire protection on railway vehicles)
- EN 61373 (Railway applications - Rolling stock equipment - Shock and vibration tests)

Application

The damper actuators are expressly suitable for air conditioning units and air distribution systems for railway vehicles.

- For damper areas of ca. 0.8 m²
- Suitable for use with modulating controllers (DC 0/2...10 V).

Functions

Function		Description
Control type		Modulating control (DC 0/2...10 V)
Rotation direction		Clockwise or counterclockwise, selectable with switch. The actuator remains in the respective position with no power applied. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> CW  </div> <div style="text-align: center;"> CCW  </div> </div>
Position indication	Mechanical	Rotation angle position indication using a position indicator.
	Electrical	Output voltage $U = DC\ 0/2...10\ V$ is generated proportional to the rotation angle. The direction of action (inverted or non-inverted) for output voltage U is based on the DIL switch position.
Manual adjustment		The actuator can be manually adjusted by pressing the gear train disengagement button.
Rotation angle limitation		The rotation angle can be limited between 0...90° with a set screw.

Technical design

Housing

The housing is made of fiberglass reinforced plastic:

- Flame retardant
- Non-brominated
- Non-chlorinated

Actuator / gears

- Brushless, robust DC motors ensure reliable operation regardless of load.
- The valve actuators do not require an end position switch, are overload proof, and remain in place upon reaching the end stop.
- The gears are maintenance free and low noise.

Type summary

Type	Stock number	Operating voltage	Runtime	Auxiliary switch	Rotation direction switch
GDD261.1E/RW	S55499-D721	DC 110 V =	30 s	-	Yes

Accessories

Type	Designation	Application
ASK78.6	Centering insert, square profile 8 mm	To center a shaft with square profile (8 x 8 mm) in the coupling bushing of the actuator.
ASK78.7	Centering insert, square profile 10 mm	To center a shaft with square profile (10 x 10 mm) in the coupling bushing of the actuator.
ASK78.9	Centering insert, round 10 mm	To center a shaft with round diameter (Ø 10 mm) in the coupling bushing of the actuator.
ASK78.10	Centering insert, round 12 mm	To center a shaft with round diameter (Ø 12 mm) in the coupling bushing of the actuator.

Product documentation

Topic	Title	Document ID
Data sheet	Air damper actuators for railway vehicles GLD24..1E/RW	A6V12632198
Mounting instructions	Damper actuators for railway vehicles GDD..1E/RW, GLD..1E/RW	A6V12632260

Related documents such as the environmental declarations, CE declarations, etc., can be downloaded from the following Internet address:

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

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, commissioning, and service by properly trained personnel only.

Installation

⚠ WARNING



No internal line protection for supply lines to external consumers

Risk of fire and injury due to short-circuits!

- Adapt the wire cross sections as per local regulations to the rated value of the installed fuse.

Maintenance

GDD261.1E/RW actuators are maintenance-free.

Disposal



The device is considered an electronic device for disposal in accordance with European guidelines and may not be disposed of as domestic waste.

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

Technical data

Power supply		
Operating voltage		DC 110 V = + 25 % / - 30 % (77...137,5 V =)
Power consumption	Operation	1.8 VA / 1.8 W
	Hold	0.6 VA / 0.6 W

Operating data		
Torque	Nominal torque	5 Nm
	Max. torque	10 Nm
Rotational angle	Nominal rotational angle	90°
	Max. rotation angle (mechanically limited)	95° ± 2°
Runtime at nominal rotation angle 90°		30 s
Sound power level		32 dB(A)

Mechanical life	
Full cycles	100'000
Partial cycles	5'000'000

Connecting cable (specifically for railway vehicles)	
Cable length	0.9 m
Cable cross-section	0.75 mm ²

Safety class and degree of protection	
Protection class	III as per EN 60730
Degree of protection of housing	IP54 as per EN 60529

Environmental conditions	
Temperature	-40...70 °C
Overtemperature	...85 °C (max. 10 min / 15 °C)
Humidity	<95 % r.h.
Condensation	Permissible

Directives and standards	
Product standards	EN 60730 Part 2-14: Particular requirements for electric actuators
Railway application	EN 50155 Railway applications - Electronic equipment used on rolling stock
	EN 61373 Shock and vibration
	EN 45545-2 Fire prevention in railway vehicles
Electromagnetic compatibility (field of use)	For railway applications Residential, commercial, and industrial environments
EU conformity (CE)	A5W00026942 ¹⁾
UK conformity (UKCA)	A5W00219359A ¹⁾
RCM conformity	A5W00026946 ¹⁾
EAC conformity	Eurasian conformity

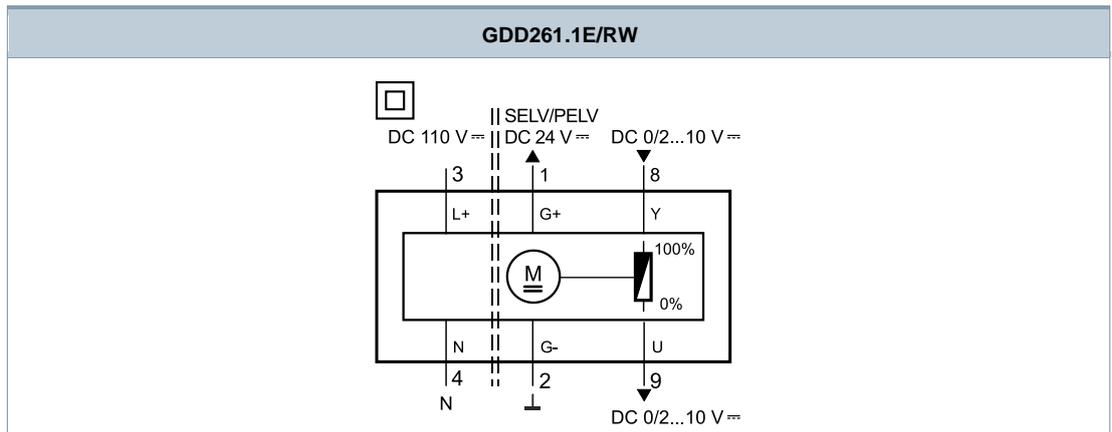
Environmental compatibility
The product environmental declaration A5W00026066 ¹⁾ contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

Dimensions and weight			
Actuator (W x H x D)		See Dimensions [► 8]	
Damper shaft	Square		6... 12.8 mm
		Min. length	20 mm
		Max. shaft hardness	300 HV
	Round		8... 16 mm
		Min. length	30 mm
		Max. shaft hardness	300 HV
Weight	Without packaging	GDD261.1E/RW	0.465 kg

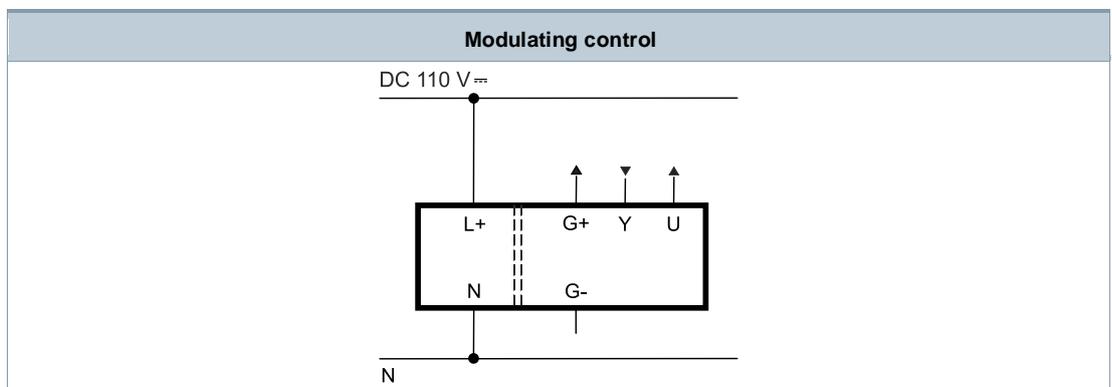
¹⁾ The documents can be downloaded at <http://siemens.com/bt/download>.

Connection diagrams

Internal diagrams



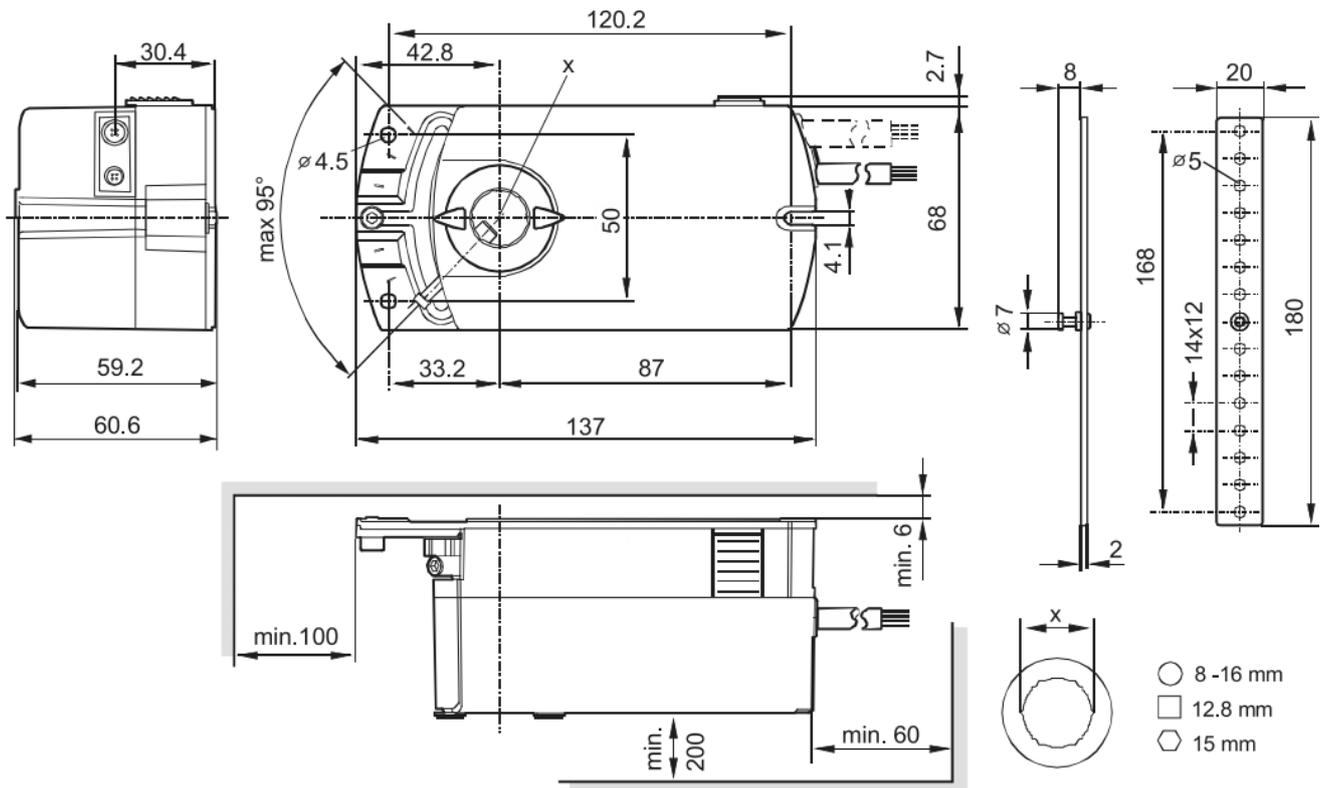
Connection diagrams



Cable designations

Pin	Cable				Meaning
	Code	Number	Color	Abbreviations	
Actuators DC 110 V =	G+	1	Red	RD	System potential DC 24 V = (auxiliary power)
	G-	2	Black	BK	System neutral (aux. power supply)
	L+	3	Brown	BR	Positive line DC 110 V =
	N	4	Light blue	BU	Neutral line (Common DC)
	Y	8	Gray	GR	Signal input
	U	9	Pink	PK	Signal output

Dimensions



Dimensions in mm

Revision numbers

Type	Valid from rev. no.
GDD261.1E/RW S55499-D721	..A

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