SIEMENS

ACVATIX™

Wireless Radiator Actuator Thread

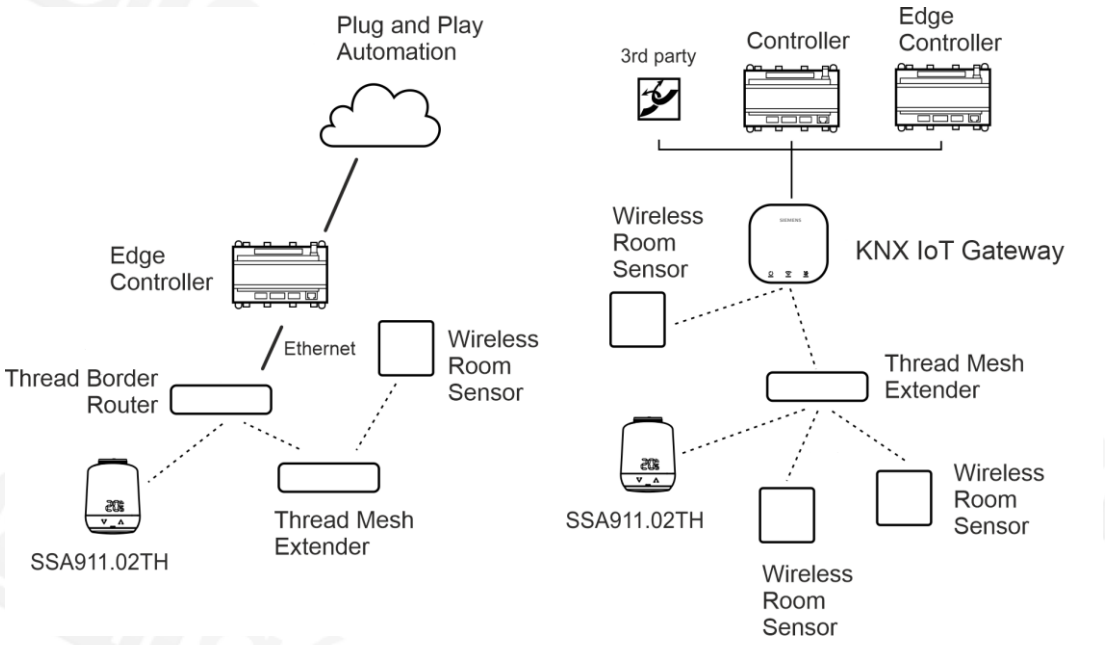
SSA911.02TH

Wireless radiator valve actuator Thread

- RF-controlled actuator communication based on the KNX IoT over Thread protocol (2.4 GHz, bidirectional)
- Connects and operates with KNX IoT BACnet IP Gateway and Plug and Play Automation
- Battery-operated with 2 x 1.5 V AA batteries
- Valve thread connection M30x1.5 mm
- Nominal stroke 5 mm
- Valve positioning force 90 N
- Adapts automatically to valve
- Integrated temperature sensor and PI controller
- Integrated temperature setting on the wireless radiator valve actuator or over the network.
- Touch element operation

Application

The SSA911.02TH wireless radiator valve actuator is designed to work on radiator valves from different manufacturers in HVAC applications using M30x1.5 thread. The SSA911.02TH operates the valve to control water flow and room temperature.



– – –	Wireless connection
———	Cable connection

Device designation	ASN	SSN	Open-loop control
Edge Controller	CXE200	S55842-Z135-A100	Plug and Play Automation
Thread Border Router	OCT110.BR	S55812-Y103	Plug and Play Automation
Thread Mesh Extender	OCT100.R	S55812-Y101	Plug and Play Automation KNX IoT to BACnet Gateway
KNX IoT to BACnet Gateway	OCT200.KNBA	S55812-Y102	KNX IoT to BACnet Gateway
Wireless radiator valve actuator	SSA911.02TH	S55181-A102	Plug and Play Automation KNX IoT to BACnet Gateway
Wireless room sensor	QAA2890/WI QFA2890/WI QPA2892/WI	S55720-S550 S55720-S551 S55720-S552	Plug and Play Automation KNX IoT to BACnet Gateway

Basic functions

Functions	Description
Communication	The communications protocol is KNX IoT over Thread. Thread is an energy-saving, wireless mesh network protocol for device-to-device and device-to-cloud communication and is based on RF standard IEEE 802.15.4.
Parallel operation	Parallel operation as per the specification KNX IoT BACnet Gateway / Plug & Play Automation.
Connection	The wireless radiator valve actuator is connected to the controller using a connection workflow.
Calibration	The wireless radiator valve actuator automatically detects the radiator valve's closing point.
Temperature setting	Touch elements on the device set the setpoint temperature.
Display	The following info is displayed on the wireless radiator actuator valve: ● Setpoint temperature ● Wireless signal strength ● Battery status ● Error messages
Lock user interface	The user interface on the wireless radiator valve actuator can be locked.
Rotate the display by 180°	The display can be rotated by 180° depending on the installation.
Reset to factory settings	Connections to the KNX IoT BACnet Gateway / Plug & Play Automation components are deleted and the actuator stem retracts.
Wink function	The wink function identifies wireless radiator valve actuators in the system.
Battery status	The wireless radiator valve actuator displays the battery icon once the battery level drops below 20%.

Type summary

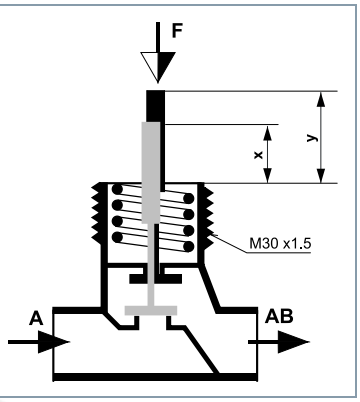
Type	Article number	Description
SSA911.02TH	S55181-A102	Wireless radiator actuator

Scope of delivery

- Wireless radiator valve actuator
- 2AA alkaline batteries (LR6) (included)
- Quick Guide (A5W00347900A)

Device combinations

The SSA911.02TH can operate third-party radiator valves without an adapter, provided they have a M30x1.5 mm connecting thread and meet the following requirements:

Force	90 N nominal	
Fully closed	x ≥ 9.0 mm	
Fully open	y ≤ 14.5 mm	

Accessories

Adapters for SSA911.02TH for use with third-party manufacturers:

Type	Article number	For use with...	Adapter thread
AV53	BPZ:AV53	Danfoss RA-N	-
AV54	BPZ:AV54	Danfoss RAVL	-
AV55	BPZ:AV55	Danfoss RAVL	-
AV56	BPZ:AV56	Giacomini	-
AV57	BPZ:AV57	Herz	M28x1.5
AV58	BPZ:AV58	Oventrop	M30x1
AV59	BPZ:AV59	Vaillant	-
AV60	BPZ:AV60	TA	M28x1.5
AV61	BPZ:AV561	MMA Markaryd	M28x1.5
AV64	BPZ:AV64	Pettinaroli	M28x1.5

Anti-theft protection:

Type	Article number	For use with...
ATN7	S55845-Z319	SSA911...

Product documentation

Title	Contents	Document ID
Wireless radiator valve actuator SSA911.02TH	Data sheet: Product description	A6V13245129
	Quick guide for installing the SSA911.02TH	A6V14002827
	Readme OSS	A6V15031225
	Operation instruction	A6V16313372
Edge Controller CXE200	Data sheet: Product description	A6V13951362
	Product and service data sheet (PSDS)	A6V14216768

Title	Contents	Document ID
	Installation quick guide	A6V13947204
Thread Border Router OCT110.BR	Data sheet	A6V14143075
	Installation quick guide	A6V15299327
Thread Mesh Extender OCT100.R	Operation instruction	A6V13058284
	Installation quick guide	A6V14143080
KNX IoT to BACnet Gateway OCT200.KNBA	Operation instruction	A6V13058284
	Data sheet	A6V13434938
	Installation quick guide	A6V13434940
	KNX IoT and Thread system limits: System description	A6V14455022
Wireless room sensors QPA2892/ WI, QFA2890/WI, QAA2890/WI	Data sheet	A6V12871702
	Installation quick guide	A6V12816395
	Operation instruction	A6V13058284
Thread engineering and installation guide	Installation, engineering	A6V14476178

Related documents such as the environmental declarations, declarations of conformity, etc., can be downloaded from the following Internet address:
www.siemens.com/bt/download

Notes

Safety

Batteries

Observe the following:

- Correct polarity.
- Use new batteries and check for damage
- Do not mix old and new batteries

Store, transport and dispose of the batteries in compliance with local requirements, regulations, and laws. Also observe the instructions of the battery manufacturer.

⚠ WARNING	
	**Leakage of electrolyte** Severe burns ● Wear protective gloves to handle damaged batteries. ● In case of contact with electrolytes, rinse eyes immediately with water. Consult a doctor.

⚠ WARNING	
	**Explosion due to fire or short circuit, even with empty batteries** Risk of injury due to flying parts ● Do not expose batteries to water. ● Do not recharge batteries. ● Do not damage or disassemble batteries. ● Do not expose batteries to temperatures over 85 °C.

⚠ WARNING	
	**Risk of burns from hot surface** The screw nut that fastens the actuator to the radiator valve can become hot. Risk of burns from touching the screw nut. ● Switch off the radiator and allow it to cool down.

⚠ 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

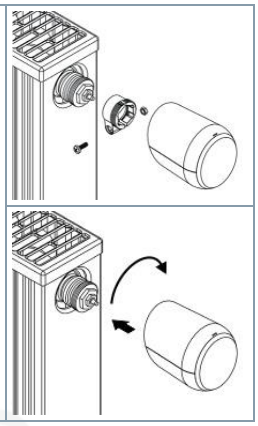
The radiator valve actuator is mounted on the radiator valve. There are no preferred mounting positions; the radiator valve actuator can be operated in all mounting positions. Make sure that the display and the touch elements on the radiator valve actuator are visible and accessible.

Additional information on mounting is available in Product documentation [▶ 4].

⚠ WARNING	
	**Falling objects** Overhead installation may result in injury from falling objects. ● Do not install the radiator valve actuator more than 2 m above ground

◈ Turn the screw nut clockwise by hand onto the valve or radiator valve actuator

⇨ The radiator valve actuator is installed.



Commissioning

Mechanical adaption / connect to controller

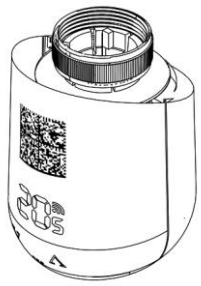
To commissioning SSA911.02TH, see Product documentation [▶ 4].

✓ The actuator stem on the wireless radiator valve actuator SSA911.02TH is fully retracted.

1. Install the wireless radiator valve actuator on the radiator.
2. Prepare control as per product documentation.
3. Scan the DataMatrix code on the wireless radiator valve actuator.
   ⇨ The system assigns the actuator.
4. Remove the insulation strip from the battery compartment or install the batteries.
   ⇨ The actuator mechanically adapts to the radiator valve (takes ca. 10-15 seconds).
   ⇨ Connects automatically.
   ⇨ **PA** displays. The wireless symbol flashes.
   ⇨ It takes up to 1 hour until the radiator actuator valve is paired and operational.
   ⇨ In the event of an error message on the display remove the batteries and reinstall to restart the device.

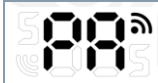
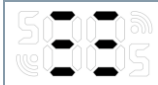
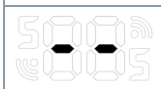
⇨ Commissioning is completed.

Operation

User interface			
The UI consists of two touch elements The following info is displayed on the radiator actuator valve: ● Setpoint temperature ● Wireless signal strength ● Error messages ● Battery status			
▽	Lower temperature	Press once	Lower room temperature by 0.5 °C.
		Press and hold	Immediately lowers room temperature by 0.5 °C, followed by another 0.5 °C every 0.5 s the button is held or until the lowest temperature is reached.
△	Increase temperature	Press once	Increase room temperature by 0.5 °C.
		Press and hold	Immediately increases room temperature by 0.5 °C, followed by another 0.5 °C every 0.5 s as long as the button is pressed or until the highest temperature is reached.

User interface

The display on the radiator actuator valve is in sleep mode during normal operation to save energy and increase battery life.

Status information and functions	
	Indicates the connection status. On: Connected to the system. Off: Not connected to the system.
	Animation: Flashes while the device is pairing. ***NOTICE!*** **Do not operate the wireless radiator valve actuators in pairing mode for longer periods; this quickly drains the batteries. Reset the wireless radiator valve actuator if pairing fails several times. Reset the wireless radiator valve actuator to factory settings and attempt to restart pairing as per the documentation.**
	Animation: On during adaptation.
 	Animation: On if button lock is enabled/disabled.
	On if battery capacity drops below 20%.
	Wink function (to identify wireless radiator valve actuators)
	Rotate display by 180°
	Display actuator information (AI: *actuator information*) from the wireless radiator valve actuator (battery, connection, FW version) ● Battery status indicator **b1- b3** ● Connection quality **1-3** ● Firmware version **F**

Error messages

An error message displays for communication errors as well as actuator faults.

Error messages		Solution
	Mechanical adaptation failed.	Use the correct adapter and check the valve.
	Valve cannot move.	Is the valve stem stuck?
	Lost connection to controller.	Restart pairing.
	Not connected to controller.	Check the system.

Operating modes

Operating modes are set in the controller (see Product documentation [▶ 4]).

Maintenance

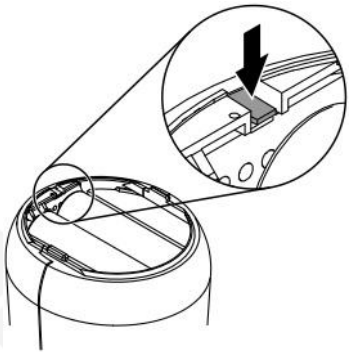
The wireless radiator valve actuator SSA911.02TH is maintenance free.

Removal

⚠ CAUTION	
!	**Removing the wireless radiator valve actuator with an extended actuator stem may damage the device.** Removing the SSA911.02TH with an extended actuator stem sets the actuator to an undefined state. This makes if difficult to reinstall the device without damaging it. Reset the SSA911.02TH to factory settings prior to removing it.

✓ The wireless radiator valve actuator is removed from the controller.

1. Press the reset button in the battery compartment for ca. 10 seconds.



⇨ A counter displays and counts from 5 to 10.

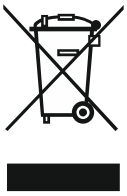
2. Release the reset button after 10 seconds.

⇨ The display turns off and the valve stem goes to the mounting position.

⇨ Turn the screw nut counterclockwise and remove the device from the radiator valve actuator.

⇨ The SSA911.02TH is removed.

Disposal



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

- Use only designated channels for disposing the devices.
- Comply with all local and currently applicable laws and regulations.
- Dispose of empty batteries at designated collection points.

Warranty

The application-specific technical data is guaranteed only in combination with the Siemens products listed in the 'Device combinations' section. If third-party products are used, any guarantee provided by Siemens will be invalidated.

Radio equipment directive

The device is using harmonized frequency in Europe, and is also in compliance with the Radio Equipment Directive (2014/53/EU, formerly 1999/5/EC).

Technical Data

Power supply	
Battery type	2 x alkaline batteries LR6 (AA); 1.5 V
Battery life	Ca. 2 years

Radio communication	
Frequency range	2.4 GHz
Transmitter power	<8 dBm
Range	≤ 30 m, depending on use and building
Protocol	KNX IoT over Thread

Wireless radiator valve actuator		
Stroke	5 mm	
Positioning force	Typical	90 N
Noise level	EN ISO 3741	< 30 dB(A)

Integrated temperature sensor	
Measuring range	0...50 °C

internal controller	
Type	PI
Adjustable temperature range	8...28 °C

Degree of protection	
Protection class	Class III per IEC 60730-1
Protection degree of housing	IP 20 [1)] per IEC 60529
Degree of pollution	Class 2 per IEC 60730

Environmental conditions		
Operation	Temperature	0...55°C
	Humidity	< 95 %
Transportation	Temperature	-45...70°C
	Humidity	< 95 %
Storage	Temperature	-25...55°C
	Humidity	< 95 %

Environmental conditions	
Permissible temperature of medium in the connected valve	1...90°C

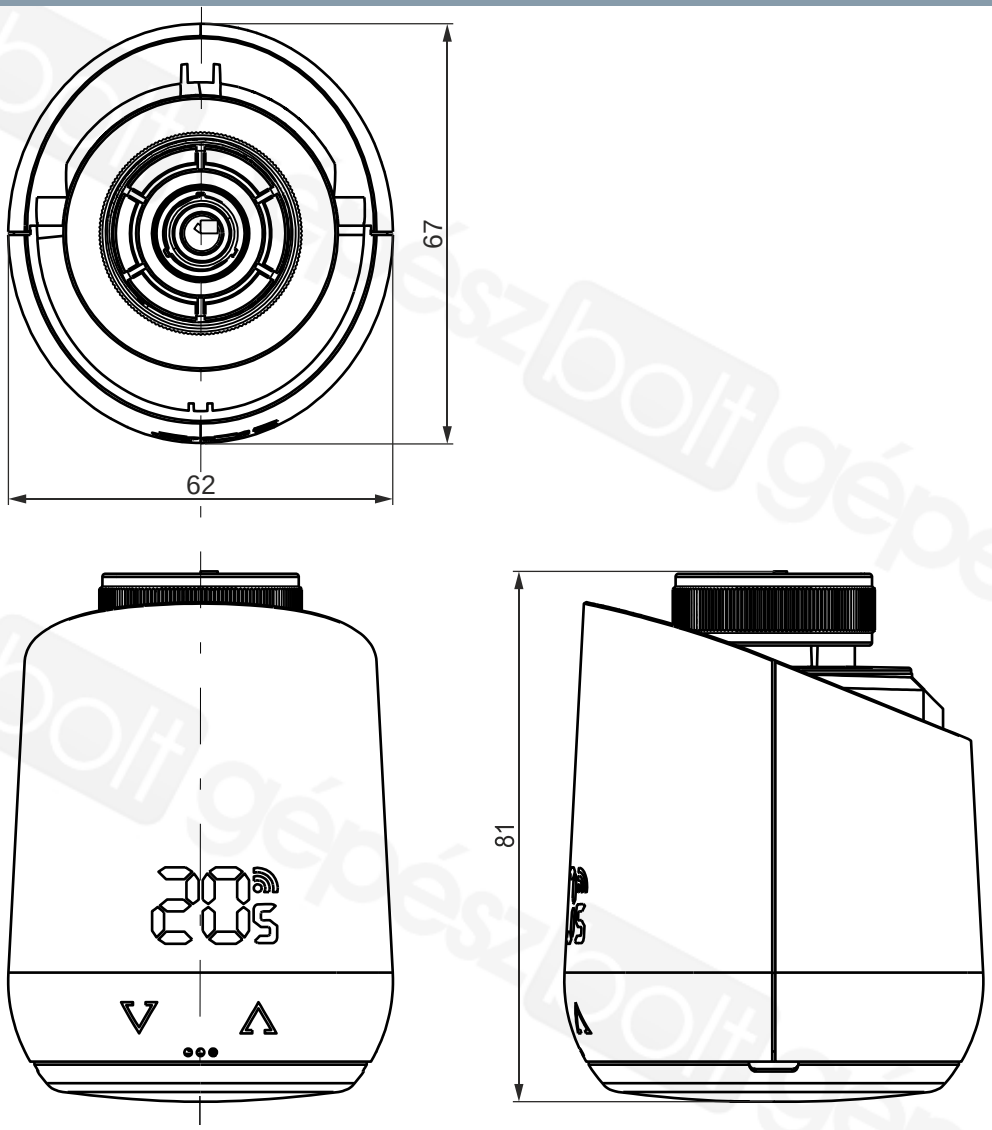
Directives and standards	
Product standard	IEC 60730-1
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	A5W00090263A-005 [2)]
UKCA	A5W00206069A-003 [2)]

Environmental compatibility
The product environmental declaration A5W00185612B[2)] contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

Material and dimensions		
Housing	Material	Plastic, light ASA+PC
	Color	RAL9003 Signal white
Connecting thread	M30x1.5	
W x H x D	See Dimensions [▶ 12]	
Weight		

1)	Fully mounted
2)	Documents available at http://www.siemens.com/bt/download

Dimensions



Weight kg	
Including batteries	0.16

Revision numbers

Type	Valid from rev. no.
SSA911.02TH S55181-A102	..01

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Siemens Switzerland Ltd
Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
CH-6300 Zug
+41 58 724 2424
www.siemens.com/buildingtechnologies

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