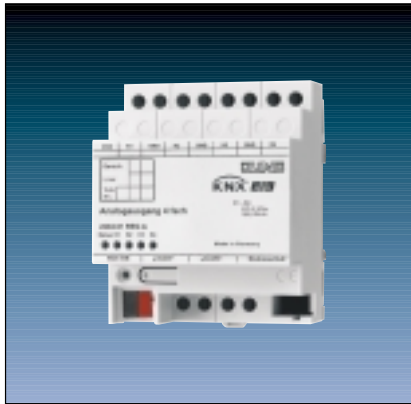


# Analog output

## 4-gang

1



2

	Ref.-No.
<b>KNX analog output</b>	<b>2204.01 REGA</b>
ETS-product family:	Output
Product type:	4-gang analog output
Series embodiment (SE)-device (4 units)	

3

The analog output converts measuring data received via KNX telegrams (DPT-ID 9.0xx and 5.010) into analog output signals. The analog output signals enable heating, ventilation and air conditioning units to adapt their output values to information received from the bus and thus to take part in control processes.

Voltage signals:	0 ... 1 V DC	0 ... 10 V DC
Current signals:	0 ... 20 mA DC	4 ... 20 mA DC

The analog output offers four analog outputs which can be software-parameterised for one of the ranges mentioned above.

Outputs not used can be deactivated.

The output variables can be force-controlled from a coordinating control system.

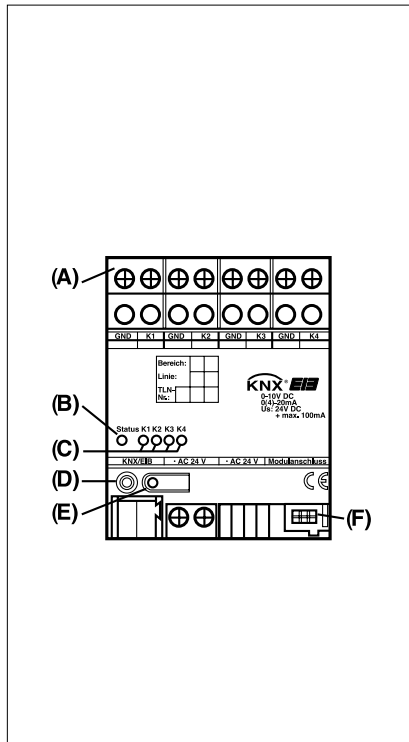
With an analog output extension module, the number of analog outputs can be increased from 4 to 8.

In conjunction with the "dimming" function of a sensor, both, the analog output and also the analog output extension module can be used as an active control unit for dimming applications.

The analog output needs 24 V AC for operation. The necessary power can be supplied by the power supply unit (WSSV 10). This power supply unit is capable of supplying power at the same time to a connected analog output extension module.

### 3

#### Layout:



#### Dimensions:

Width: 4 mod, 72 mm  
 Height: 90 mm  
 Depth: 58 mm

#### Controls:

A: Analog outputs 1 ... 4  
 B: Status LED of device, three-colour (red, orange, green)  
 C: Status LED's of the four outputs mono, yellow  
 D: Programming LED  
 E: Programming button  
 F: System connector, 6-pole, for analog output extension module

#### Status LED (B) indication for analog actuator:

LED off	no power supply
LED orange/on	modul scan by analog actuator
LED orange/flashing fast	module scan of analog output extension module
LED red/flashing slowly	fault: undervoltage at module connection / $U_s$ short-circuited
LED red/flashing fast	fault: no project, parameterization error
LED green/flashing slowly	module scan complete, projecting OK
LED green/flashing fast	parameter download into modules
LED green/on	parameter download to modules
	initialization process terminated, everything OK

slow flashing: approx. 1 Hz  
 fast flashing: approx. 2 Hz

#### Status LED (C) indication for the 4 analog outputs:

LED off	output signal is zero
LED on	output signal is greater than zero

### 4

#### Technical data

##### KNX Supply

**Voltage:**

21 – 32 V DC (SELV)

**Power consumption:**

typically 150 mW

**Connection:**

Bus terminal (KNX Typ 5.1)

**External supply, voltage:**

24 V AC  $\pm$  10 %

**Connection:**

Screw terminals: 0.5 mm<sup>2</sup> to 4 mm<sup>2</sup>, single-wire  
 0.34 mm<sup>2</sup> to 4 mm<sup>2</sup>, fine-wire (without ferrule)  
 0.14 mm<sup>2</sup> to 2.5 mm<sup>2</sup>, fine-wire (incl. ferrule)  
 Stud torque max. 0.8 nM

##### Response to voltage failure

**Bus voltage only:**

parameterizable: last value maintained; fixed value (in %)

**Mains voltage only:**

outputs down to 0 V or to 0 mA

**Bus and mains voltage:**

outputs down to 0 V or to 0 mA

##### Response to recovery

**Bus voltage only:**

parameterizable: no reaction; state of initialization; last value before failure

**Mains voltage only:**

parameterizable status request of group addresses, determination and setting

of the parameterizable output states with bus voltage applied

parameterizable status inquiry of group addresses, determination and setting

of the parameterizable output states with bus voltage applied

##### Bus and mains/operating voltage:

**Protection:**

IP 20

**Safety class:**

III

**Mark of approval:**

KNX/VDE

**Ambient temperature:**

-5°C ... +45°C

**Storage/transport temperature:**

-25°C ... +70°C (storage above +45°C reduces the lifetime)

**Mounting position:**

any

**Minimum distances:**

none

**Fastening:**

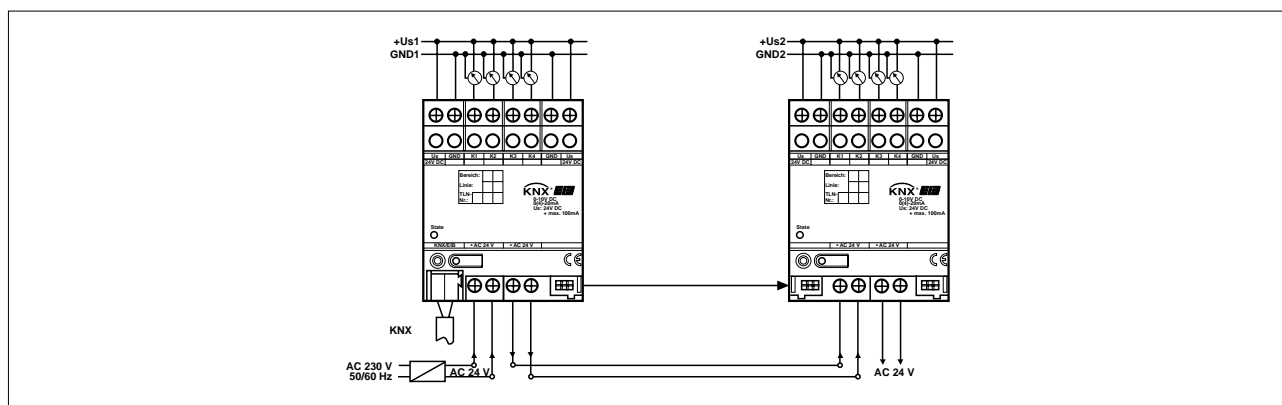
on DIN rail 35 x 7.5

## 4 Technical data

### Module connection

<b>Number:</b>	1
<b>Connection:</b>	6-pole system connector for extension module
<b>Analog outputs</b>	
<b>Number:</b>	4
<b>Type of signal:</b>	0 ... 1 V DC, 0 ... 10 V DC, 0 ... 20 mA DC or 4 ... 20 mA DC, depending on parameterization
<b>Output signal load:</b>	voltage signal: $\geq 1 \text{ k}\Omega$ current signal: $\leq 500 \Omega$
<b>Output current:</b>	voltage signal: max. 10 mA per channel current signal: ma.x 20 mA pe channel
<b>Connection:</b>	Screw terminals: 0.5 mm <sup>2</sup> to 4 mm <sup>2</sup> , single-wire 0.34 mm <sup>2</sup> to 4 mm <sup>2</sup> , fine-wire (without ferrule) 0.14 mm <sup>2</sup> to 2.5 mm <sup>2</sup> , fine-wire (incl. ferrule)

### Connection of an extension module



### Remarks on the Hardware

- The GND terminals must not be connected to the corresponding terminals of another device.
- The outputs of the analog output and of the analog output extension module must not be connected to the 1 ... 10 V interface of electronic ballasts or electronic transformers.
- All connected components must ensure safe separation from other voltages.

### Please observe the following basic rules when installing the analog output extension module:

- An analog output extension module is connected to the analog output only with the 6-pole system connector (supplied with the analog output extension module).
- One extension module only can be connected to the device.
- An analog output extension module can be replaced (e.g. in case of defect) while the system is in operation (disconnect the voltage supply from the module). After the replacement, the analog output makes a reset after abt. 25 s. This action re-initializes all outputs and resets them to their original state.
- Removal or addition of modules without adapting the project and subsequent downloading into the analog output is not permitted as this will result in system malfunctioning.
- The GND terminals of the analog output extension module must not be connected to the corresponding terminals of another device, e.g. the analog output.
- After initial start-up, the analog output performs a module scan (status LED: "orange/on").
- Since a new device contains generally no project, the status LED switches thereafter to "red/flashing fast".

## 5 Application

### Objects

Number of addresses:	200
Number of assignments:	200
Communication objects:	58

Object	Function	Name	Type	DP-Type	Flag
0 ... 3	Input value output 1 ... 4	Analog output	9.0xx	2 Bytes	C, W, T <sup>1)</sup>
0 ... 3	Input value output 1 ... 4	Analog output	5.001	1 Byte	C, W, T <sup>1)</sup>
4 ... 7	Status output 1 ... 4	Analog output	9.0xx	2 Bytes	C, R, T <sup>1)</sup>
4 ... 7	Status output 1 ... 4	Analog output	5.001	1 Byte	C, R, T <sup>1)</sup>
8 ... 15	Forced control 1 / 2 output 1 ... 4	Analog output	1.001	1 Bit	C, W, T <sup>2)</sup>
16 ... 19	Switching output 1 ... 4	Analog output	1.001	1 Bit	C, W, T <sup>2)</sup>
20 ... 23	Dimming output 1 ... 4	Analog output	3.007	4 Bits	C, W, T
24 ... 27	Alarm output 1 ... 4	Analog output	1.001	1 Bit	C, R, T
29 ... 32	Input value output 5 ... 8	Extension module	9.0xx	2 Bytes	C, W, T
29 ... 32	Input value output 5 ... 8	Extension module	5.001	1 Byte	C, W, T <sup>4)</sup>
33 ... 36	Status output 5 ... 8	Extension module	9.0xx	2 Bytes	C, R, T <sup>4)</sup>
33 ... 36	Status output 5 ... 8	Extension module	5.001	1 Byte	C, R, T <sup>4)</sup>
37 ... 44	Forced control 1 / 2 Output 5 ... 8	Extension module	1.001	1 Bit	C, W, T <sup>3) 4)</sup>
45 ... 48	Switching output 5 ... 8	Extension module	1.001	1 Bit	C, W, T <sup>4)</sup>
49 ... 52	Dimming output 5 ... 8	Extension module	3.007	4 Bits	C, W, T <sup>4)</sup>
53 ... 56	Alarm output 5 ... 8	Extension module	1.001	1 Bit	C, R, T <sup>4)</sup>
57	Alarm	Extension module	1.001	1 Bit	C, R, T <sup>4)</sup>

<sup>1)</sup> The type of the "Input value ..." and "Status ..." objects depends on the setting of the "Input format" parameter.

<sup>2)</sup> The "Switching" and "Dimming" objects of an output are visible only if the "Input format" parameter is set to "8 bits".

<sup>3)</sup> The "Forced control" objects of an output are visible only if the "Forced control object" parameter is set to "Forced control active with ...".

<sup>4)</sup> Objects 29 .... 57 are visible only if the "Extension module present" parameter is set to "Yes".

### Scope of functions:

For each channel separately programmable:

- Type of signal output (0 ... 10 V, 0 ... 1 V, 0 ... 20 mA, 4 ... 20 mA)
- Format of input value (8-bit or 16-bit) presettable
- Dimming actuator operation (with 8-bit input objects)
- Output value after initialization
- Up to two forced-control modes
- Cyclical monitoring of input values
- Response in the event of exceeding of monitoring time presettable
- Response to bus voltage failure presettable
- Response on return of bus voltage presettable